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Doing Multicultural Education in Times of Trouble: A Case of PBL in Bilingual Arab-Jewish School in Israel

Raz Shpeizer, Kaye Academic College of Education, Israel
Orit Freiberg, Kaye Academic College of Education, Israel

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Abstract
Israeli society, like many contemporary societies, consists of various cultures and sub-cultures. This diversity finds expression in Israel's education system, albeit through segregation, since the system is divided into culturally-based educational sectors, most prominently among Jews and Arabs. This segregation strengthens mutual cultural alienation rather than intercultural dialogue. Against this tendency, a few bilingual-bicultural Arab-Jewish schools have been established in Israel, one of which is situated in Beer-Sheva, a city in the southern region of Israel, whose demographic consists predominantly of Bedouins-Arabs and Jews.The bilingual school in Beer-Sheva was built on multicultural and intercultural principles. The school's underlying pedagogical assumption is that there should be a connection between the school's educational agenda and the forms of teaching that it deploys. Thus, in order to advance social transformation in the spirit of multiculturalism and interculturalism, a pedagogical approach that fosters students' activism, initiative, critical thinking and collaborative abilities needs to be adopted. Such an approach can be found in PBL (project-based learning), a proactive, student-centered, group-oriented and practice-oriented teaching method.Therefore, in this lecture we explore a case study of a 4-months PBL initiative that took place in Beer-Sheva's bilingual Arab-Jewish school. Through a rich and thick description, we expose the different layers of the case and provide a holistic picture of it, arguing that the study's findings affirm the positive connection between PBL and a multicultural agenda. Based on these findings, we offer some guidelines for the implementation of PBL in the context of multicultural and intercultural education.

Keywords: Multiculturalism, Interculturalism, Education, Bilingual Schools, Project-Based Learning (PBL), Israel

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Prolog

Our story begins in 2006 in the city of Beer-Sheva, when a group of Jewish and Arab parents, who knew each other socially, got together and decided to create a Jewish-Arab community and local bilingual education system. In order to understand the uniqueness of this step, we need to give you some context and information about Israel.

The context

Israeli society, like many contemporary societies, is a multicultural and multiethnic society. The Arab-Israelis, or *Palestinian citizens of Israel*, as they preferred to be called (Mandel, 2018; Mossawa Center, 2016), are, by far, the largest minority group in Israel. Their population is estimated at 1.9 million, which is about 21.0% of the overall Israeli population, 75% of which are Jewish-Israelis (Israel Central Bureau of Statistics, 2019). The Palestinian population within Israel is comprised of either people who lived in the region prior to 1948, or their descendants. 1948 was the year in which the Israeli state was established, after a prolonged armed conflict between the Jews and the Arabs who occupied the region (the latter, at some stage, were joined by the armies of the surrounding Arab states). During this conflict, an estimated 700,000 Palestinians fled or were forced into exile, and hundreds of Palestinian villages were deserted or destroyed (Morris, 2003). It is no wonder, then, that while the Jews refer to the 1948 war as the *War of Independence*, Palestinian citizens of Israel, and the Arab world as a whole, call it *al-Nakba* (the catastrophe. See Mori, 2009). This dichotomy expresses in a nutshell the ongoing tension and conflict between the two ethnic groups.

The vast majority of Palestinian citizens in Israel live in separate communities, and this segregation usually exists even in the ethnically mixed cities of Israel. It also exists in the Israeli education system which is divided into culturally-based educational sectors. Thus, the Arab education system and the Jewish education system in Israel are mostly separated, a situation which duplicates and reinforces the tension and alienation between the two groups rather than encouraging intercultural dialogue. Against this tendency, several bilingual-multicultural Arab-Jewish schools have been established in the last few decades (as for today, there are 8 of them. See Weininger, 2019). One of these schools is the bilingual school in Beer-Sheva, a city in south Israel, a region with a relatively large population of Arabs (mainly Bedouins) alongside the Jewish population.

The case study's actual and conceptual arena

The bilingual school in Beer-Sheva is an elementary school, which is part of a larger local bilingual educational structure, which offers also private daycare and pre-kindergarten. From the outset, this educational apparatus was conceived by its founders in terms of community – the *Hagar* community – which includes the families of the students and encompasses shared activities both inside and outside the framework of the school. As of today, in the bilingual school of Hagar study, in mixed classrooms, 260 children, with approximately equal numbers of Arab and Jewish students and teachers.

Hagar's community and school were built on multicultural and intercultural principles. As many scholars (e.g., Raţă, 2013) have noted, there is no one accepted definition of multicultural education, and since a serious exploration of the concept is not possible here, we would like to focus on the school's explicit and implicit agenda in order to understand its attitude toward multiculturalism. An analysis of this agenda (which included analysis of school's curriculum, official documents and internet site) reveals 3 levels of multiculturalism:

1. The values level. On this level, the school adheres to principles of social justice, social activism, equality, equity and pluralism.
2. The vision level. On this level, the school aspires its students to become self-aware autonomous agents, who are committed to respecting not only their own but other peoples' right to live as autonomous people in a democratic society. At the same time, the school explicitly aims to the transformation of schoolling and of society as a whole.[1] "To build an egalitarian civil society in the Negev and in Israel as a whole through our bilingual, integrated schools…" (Hagar: Jewish Arab Education for Equality, vision section, n.d.).
3. The pedagogical level. The school's underlying pedagogical assumption is that there should be a connection between the school's overall agenda, that is, between its vision and values, and the forms of teaching that it employs. In other words, there should be a match between the content and the form of what is taught and learned in order to advance both individual growth and social transformation in the spirit of multiculturalism and interculturalism. Regarding content, the school: Acknowledges and gives voice to the different historical narratives of the two cultures; combines the core studies with multicultural themes; and incorporates the study of the three main monotheistic religions – Judaism, Islam and Christianity – and their cultures into the curriculum. Regarding form, the school embraces a progressive learning approach combined with bilingual methods. Hence, the students are active and engaged participants in the learning processes, and lessons are taught by Arab and Jewish co-teachers in both languages.

One of the teaching-learning methods used in the school is PBL (project-based learning), which, according to one definition

> Engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks (Markham, Larmer & Ravitz, 2003, p. 4).

By being a proactive, student-centered, group-oriented and practice-oriented teaching method, PBL was thought by the school's educational leadership to provide a suitable framework for advancing the school's educational and ideological goals. Thus, it was gradually incorporated into the curriculum, although none of the projects which were conducted was on the scale of the project which is the focus of the present study.

[1] We use here Gorski's (2010) terminology, since it corresponds well with school's manifested vision.

The case study description

There were 23 students and two homeroom teachers – one Arab and one Jewish – in the fourth-grade class of the bilingual school in Beer-Sheva. The PBL took place over 4 months, as part of the students' humanities studies. Its title was: "My, your and our living space." The underlying research question was: "How can we live together in a multicultural neighborhood?" The students started by observing and characterizing their own homes and neighborhoods. They presented their findings in class, acknowledging the wide variety of lived environments. They further learned about the geographic area in which they live – the Negev – and its uniqueness. They constructed some understanding of the principals of multiculturism through conceptualization.

Based on their research, as well as the knowledge and insights they gathered, the students decided that the class project would be to plan a special neighborhood, which they decided to name "Living together." They had to combine their understanding of the notion of "living space" with the variety of needs of a multicultural society, in order to plan the neighborhood. The students were divided into a number of small groups, and each group had to plan, design and build an architectural model of a common area, like a park, or public institution, such as a school, a community center, a mall, a house of worship (for each religion), and so forth. In the final stage of the project, all the models were combined, and the houses of the neighborhood were added to them, so a model of the complete neighborhood was created.

Few teachers and experts were involved in the PBL process:

- The homeroom teachers led and guided the project and taught the humanities topics.
- The math teacher taught the students to calculate areas and to use an architectural plan.
- The art teacher was responsible for helping build the models with the students.
- The pedagogical counselor and a PBL advisor guided the teachers in the process**.**
- A professional architect gave a lecture about the fundamentals of architecture.

In the closing event of the project, the students presented and explained their work to an audience comprised of their families and educational experts. A few days later, the mayor of Beer-Sheva and the city's education minister arrived at the school, met the students and their teachers, and learned about the project.

Study rationale, objectives and questions

Although, as mentioned, there is no one accepted definition of multicultural education, there is a considerable consensus among educators and researchers regarding some main aspects of it. Thus, for example, many would agree that multicultural education should promote equality and equity, "Tolerance, respect, understanding, awareness and acceptance of self and others in the diversity of their cultures" (Arslan, 2015, p. 16). There is also wide agreement that multicultural curriculum should include various cultural perspectives, and that the way of teaching should generally be student-centered, sensitive to students' different cultural backgrounds, and favor collaboration (Anderson et al., 2000; Norley, 2014). However, the discussions about the "Art of multicultural curriculum delivery"

(Thompson, 2014, p. 11) tend to be abstract, and there is not much information or research regarding specific methods for teaching and educating for multiculturalism (Sleeter & Grant, 1987; Thompson, 2014).

Given this situation, the project that was carried out at the bilingual school in Beer-Sheva presented us with an opportunity to study the connections between PBL, which is a well-established teaching method, and the actual life and goals of a multicultural educational institution. Accordingly, two main research questions were formulated:

- How do students and education staff in a bilingual multicultural Arab-Jewish school experience the process of PBL?
- How do students and education staff in a bilingual multicultural Arab-Jewish school perceive the connections between PBL and the school's multicultural agenda?

Methodology

The main research method we employed was participative case study, which is a special genre of case study in which the researchers, who observe and study the case, are also participants (Baskerville, 1997; see also, Reilly, 2010). Using the participative case study method allowed us to maintain a close connection with the process and the participants, and, at the same time, provide consulting when needed. Furthermore, it allowed us to put more emphasis on the participants' voice, and to advance their knowledge, skills and sense of self-efficacy, all of which are goals of PBL. In order to keep the research rigorous and fair-minded, we integrated the action research iterative cycle (see, e.g., Carr and Kemmis, 1986) into the process.

The research tools we used were semi-structured in-depth interviews with both teachers and students, during and after the project; participant observation; photographs; and a research log. The data analysis applied was a free version of the constant comparative method (Strauss & Corbin, 1998), wherein categories are extracted, compared and re-shaped from the beginning until the end of the field work.

Findings

We will focus on three main themes that the data analysis revealed and are relevant to the research questions:

- Guidance, support and preparation
- A sense of the real
- Bonding through collaborative doing

1. Guidance, support and preparation

> The willingness to listen […], I had someone to talk with. There is somebody who hears me […]. And also the professional tools we have received. These are things that helped us a lot (Miriam, teacher).[2]

All of the educational staff emphasized the importance and need of close guidance, attentive support and thorough preparation and planning. For the teachers, the two

[2] The names of the teachers and students were changed to ensure anonymity.

major needs expressed were guidance in the technique and process of PBL and emotional support. In accordance with some teachers' observations, it seems that the need for the latter is the consequence of the combination of intense work, uncertain conditions, and the close interactions between the teachers themselves, and between them and the students: "Sometimes there was some tension regarding the teachers co-operation;" "The work on the project was very intense and time consuming."

Both teachers and managing-supportive staff (i.e., the schools' pedagogical counsellor, the PBL advisor and the school principal) agreed on the importance of preparation. "Planning, planning, planning," said another teacher, Rina, "PBL requires very good planning." However, looking back, the managing-supportive staff felt that there was also a need for more theoretical preparation regarding the foundations of multiculturalism. "It was the first big PBL in our school," noted the principal, "So naturally we have focused more on the ways of doing it. In future projects, we will more explicitly connect the multicultural principles and foundations to the actual project, though, of course, these principles and foundations are present in all our educational activity."

2. A sense of the real

> We really learned. It wasn't just opening a book (Munar, student).

The observations and interviews reveal that all project participants – teachers and students alike – experienced the process not merely as a theoretical exercise, but as an activity directly connected to their real everyday life. This sense of the real was expressed: First, by the level of engagement and emotional involvement: "It was very interesting and important to me, as a teacher […]. I was really happy when we successfully completed the project, and the children were so proud of their work;" second, by participants' reference to a meaningful and memorable experience: "This is something I'll always remember"; "This is something I don't forget. I spoke with all my friends about it;" and third, by participants (especially the students) explicitly connecting their learning and the project's subject matter to their lives:

> We have learned that in real life you have to work hard to get results […], and we believed that this project can really make a change, help stop racism and violence, help stop some of the bad things in the world.

3. Bonding through collaborative doing

The connection to real life was first and foremost facilitated by the action-oriented character of PBL, which encourages learning by doing. All of the study's participants repeatedly mentioned the importance and impact of the element of doing:

> My strongest experience was that of learning by doing. You really learn through active doing (Suha, teacher).
> The doing was real fun, and we also learned a lot from it (Daniel, student).

Most of the project work was done in groups. The teachers worked, at least part of the time (e.g., planning, coordination), as a group, and the students worked mainly in small (3-4 students) – ethnically-mixed – groups, and sometimes as a whole-class

group. As already hinted at above, this collaborative doing occasionally yielded tensions and arguments. However, it is important to note that most of the students did not view these disagreements in a negative light, but rather as part of a natural process of collaborative work, which eventually leads to a better understanding of the others, and better connection with them.

- Maybe there were…well, not fights but, for example, we didn't agree about the design […]. There were conflicts and disagreements, but it has also taught me how to agree.
- The fact that you work with other people, and it is not only a Jewish neighborhood, but a neighborhood of different religions, different cultures, it made everything to connect.
- It was difficult sometimes, but it also was fun, and in the end it has unified the class. Even after the project finished, we continued to share things with each other.

Discussion

The need to provide teachers with guidance regarding the foundations and implementation of both PBL and multiculturalism is well acknowledged in the literature (see, e.g., Arslan, 2013; Shpeizer, 2019; Thompson, 2014). The same is true about the need for careful planning of any PBL project (Markham, Larmer and Ravitz, 2003. See also, Chandler, 2015; D'Ambra, 2014). What is less obvious and yet, according to our findings, equally important is the need for emotional support for teachers engaging in a multicultural PBL. It seems that the combination of a demanding teaching method, cooperative work, and a multicultural framework and content, creates an intense experience for teachers. Thus, much like students, they need attentive and empathic support throughout the process so that they can share and unpack their feelings.

Multicultural education aims to transform individuals and society (Gorski, 2010). Hence it is a praxis, rooted in and oriented toward real life. The fact that the study's participants experienced and perceived the project as a real-life process indicates that the PBL method, with its emphasis on authentic and active learning and actual product, suits this goal particularly well. Students and teachers not only accumulated knowledge and appreciation of the other's culture, but also strengthened their belief in the possibility of pro-actively changing society, thus enhancing their ability to work and live together.

What further contributed to this learning was the collaborative way of work. Although PBL work can, and sometimes does, take the form of individual projects, our findings agree with the PBL literature which usually encourages students engaging in PBL to do it through collaborative learning (Shpeizer, 2019; Yiping & MacGregor, 2004). The present study's findings suggest that the students – as well as the teachers – who worked on the multicultural PBL improved not only their general social competence and skills, but also their ability to move from a segregated cultural and ethnic point of view toward a more inclusive, and in a way more cosmopolitan, one. Actual collaborative work means that the participants learn with each other and from each other, a process that is "much richer and more enduring than merely 'tolerating' them" (Hansen, 2009). In this sense, the arguments and disagreements that occur

between the participants during the project should not necessarily be seen in a negative light. They are part and parcel of any deep human interaction, and indeed of any multicultural society. As Rachel Har-Zion, the school pedagogical counsellor of the Bilingual Arab-Jewish School in Beer-Sheva, puts it: "The project brought forth some of the [multicultural] conflicts, but it has also shown that we must deal with them together, in a dialogical way." And this, surely, is a pre-condition for the advancement of any multicultural society.

Conclusion

PBL, which is built on the foundations of in-depth, authentic, active and preferably-collaborative learning, provides multicultural education a beneficial ally and mode of pedagogy. This alliance has the potential to foster the art of living together in a heterogeneous multicultural society, as well as students' belief in the possibility of improving such a society. However, for this alliance to be fruitful, it should not be taken lightly. A good deal of guidance and support is needed in the basics of both multiculturalism and PBL, as well as on the cognitive, emotional and practical levels.

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Contact emails: razsp@yahoo.com
oritfr17@gmail.com

What's Noteworthy and What Needs to be Taken Note of: An Exploratory Examination of a Learning Center for Refugee Children

Jennifer Tan Poh Sim, HELP University, Malaysia

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Abstract
This paper examines the initiatives of a faith-based, non-governmental learning center set up to teach basic literacy and numeracy skills to a group of Rohingya refugee children in Malaysia. Using the four criteria mentioned in the SAFE Approach; Sequenced, Active, Focused, Explicit, the purpose of the study is to highlight the noteworthy practices of the center as well as to identify what are some essential weaknesses that need to be taken note of in order for sustained teaching and learning to happen. Based on the exploratory nature of the research purpose, face-to-face, in-depth, semi-structured qualitative interviews and observations were used to collect the study data. Findings showed that while good intentions to serve the community seem to drive the initiatives, there is a dire need to see a shift in focus to training and development of human resources, particularly towards the teachers and volunteers who scaffold the children as they begin the challenging process of navigating a new educational environment. Finally, this paper concludes with some recommendations for a more sustainable program; particularly in the area of teacher/volunteer development.

Keywords: Noteworthy Practices, SAFE, Refugee Community

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Background of the study

The latest available data on refugees in the world, according to the United Nations High Commissioner for Refugees (2020), showed the highest levels of displacement on record; 79.5 million people around the world have been forced to flee their homes since 2019 and among them, 26 million are refugees. There are also millions of stateless people, who have been denied a nationality and lack access to basic rights such as education, health care, employment and freedom of movement. At least 1 per cent of the world's population have caused millions to flee their homes as a result of conflict or persecution and countries that account for two-thirds of today's refugees (68%) come from Syria, Iraq, South Sudan, the Central African Republic, and Myanmar.

In Malaysia, by end August 2020, there were 178,140 refugees and asylum-seekers registered with UNHCR in Malaysia and from the registered numbers, some 153,430 were from Myanmar- 101,530 Rohingyas; remaining were ethnic groups from conflict-affected areas or fleeing persecution in Myanmar such as Karens and Chins. Rohingya refugees in Malaysia do not live in camps. They reside with the local community, often in overcrowded housing situations. Although the Rohingyas have been living in Malaysia since the 1990s, they are still without proper access to basic healthcare and education. Rohingyas in Malaysia are not allowed to work legally and do not have access to free healthcare and education in this country. To make a living, Rohingya men collect scrap metal for resale, work in the wholesale markets and try to find work doing odd jobs which are sometimes available in the construction site; the women stay at home to take care of the families. While some adult Rohingya refugees can read and write in Jawi from the religious classes attended on regular basis, many have not receive any form of formal education, thus are unable to read and write; however, most can speak the Malay language after years of living amongst Malaysians.

In the absence of access to public education, Rohingya refugees attend UNHCR-funded learning centers or community-based schools. More than 46,000 are below the age of 18 and of the school going age group, only 30 per cent are reported to be enrolled in schools (NST, 2019). Among the community, there are parents who consider education as essential in ensuring stability and a sense of normalcy for the children; the purpose of education is for their children to succeed and have a better life. They understand that acquiring literacy will ensure their children a better future, whether they are resettled or repatriated to a third country. However, there are also many parents who have more traditional mindsets i.e. girls will be married off by the time they reach puberty whilst boys are expected to help their fathers earn a living, usually as scrap metal or cardboard collectors.

Learning Centres

Many refugee children study in learning centres run by the community and faith-based organisations. After school hours, the children will attend religious classes which are usually taught by a Rohingya imam who heads the community's mosque or surau. While there is a small number of licenced learning centres which have been running for more than a decade, most centers are run on the goodwill of organisations, aided by volunteers who are usually not trained to teach; these centres are also not like schools in that they do not have the facilities, educational personnel and education policy of an established formal institution of learning. As such, the challenges faced in these centres

are numerous, for example staff movement and retention, lack of standardized teaching and learning, professional development and formal training in educational content and pedagogy. Parental involvement is also at times limited and dependent on the particular community; in a more traditional Rohingya community, girls' education can be severely restricted due to parents' unwillingness to send adolescent girls to mixed gender educational facilities. Some parents may also consider education to be of secondary importance compared to finding work to support the family, which means children can be taken out of these centres at any time.

Purpose of the study

This study documents practices which are noteworthy as well as to identify what are some essential weaknesses that need to be taken note of in order for sustained teaching and learning in a center set up to teach teach basic literacy and numeracy skills to a group of Rohingya refugee children in Malaysia. While the Inter-Agency Network for Education in Emergencies (INEE) Minimum Standards Framework (2010) is usually referred to for evaluating programs/organisations in disaster induced situations as it provides the minimum standards that a learning centre should have to provide quality education, this study will refer to the SAFE Approach; Sequenced, Active, Focused, Explicit instead. The SAFE Approach proposes that social and emotional skills, attitudes, and behaviors can be taught using a variety of approaches, and this is vital when dealing with programs that involve children who come from varied backgrounds and experiences which include war, violence, abandonment and even death. While the INEE focuses on minimum criteria for quality education, the SAFE Approach focuses on social and emotional learning (SEL) which is the process through which knowledge is acquired and applied to develop healthy identities, manage emotions and achieve personal and collective goals in order to co-exist effectively with those around. Practices in the learning center were noted by referring to the four elements represented by the acronym SAFE-

Sequenced: Connected and coordinated activities to foster skills development

Active: Active forms of learning to help students master new skills and attitudes

Focused: A component that emphasizes developing personal and social skills

Explicit: Targeting specific social and emotional skills

The duration of observation/study was carried over one semester, a total of 12 weeks. The researcher visited the center on a weekly basis, and was involved in both consultative and teaching roles. Data gathered included indepth interviews with the Centre's management, volunteer teachers and children. Observations of teaching and learning sessions and document paraphernalia completed the triangulation of data for validity and reliability purposes.

Background of the Centre

Set up in the communal hall in the local mosque and operational for more than a year, the Centre is run by a religious non-governmental organization. The Head and Assistant Head are professionally qualified in fields other than Education, while the five full time

volunteers have attended 12 years of formal schooling in their respective countries of Indonesia, Myanmar and China. The occasional volunteers may come in on a once-a-week basis or could just do a one-time 'dropping by visit'.

During the morning class sessions, the communal hall of the mosque is partitioned by three curtains to form three classrooms corresponding to the three different learning levels. Tables are mobile makeshift planks which will be put away once school is over for the day. In the class for older children, girls and boys sit separately, as required by the parents, and the seating position is not conducive as the girls sit diagonally, against a wall, facing the boys, instead of the teacher in front. This causes a lot of distraction and very often, fights erupt. The cramped space also provides little opportunity for physical activities for the early childhood classes. There is no play area for these children and because of this, there is no physical education. During recess, the children's primary activity is to eat their meals the entire period, as there is no place for them to run about. On Fridays, a volunteer professional sports coach would to train the boys in soccer and the girls in Frisbee at a neighbourhood playground which is a distance from the settlement. Teachers organise end-term excursions to the downtown area in the capital city and hikes to the nearby waterfall for the older children, and sometimes, these excursions are treats as a result of good behaviour or academic accomplishments.

There are 3 levels of schooling; Early Childhood Education which does not prescribe to any particular curriculum, while the Early and Upper Primary/Lower Secondary levels follow an American home-school curriculum which seeks to integrate character-building lessons into the academic context, with self-instructional activities designed to develop thinking skills and to create mastery learning. Materials are adapted to suit the culture and needs of the children (and community) and the students are taught using worktexts. Meanwhile the children attending the Early Childhood Level watch educational videos and do arts and crafts most of the time.

Evaluation of the Centre using the SAFE Approach

Sequenced: Connected and coordinated activities to foster skills development – Social and Emotional Outcomes

The teaching and learning is predominantly through a teacher-centred approach, even at the Early Childhood level. Most times, questions posed by the teachers were primarily factual or definitional in nature, offering very few opportunities for students to ask questions or engage in creative thought, while the children hardly probed concepts or received further explanation. The teachers award recognition for the children's learning efforts at the end of the school year - a progress report of their academic achievement and cooperative behaviour. The fathers of the children often express their aspirations to see tangible results of what their children learn at the centre and their primary wish is for their children to be awarded recognised certification from the internationally recognised SATs (or Standard Assessment Tests).

Active: Active forms of learning to help students master new skills and attitudes

Volunteers from a private university work together with the Centre by helping the children learn life skills. Using a Project Based Learning approach, projects such as

growing vegetables on a plot of land nearby the settlement and setting up a rabbit hatchery proved successful in allowing the children develop important life skills as they had to learn to work with one another. At the start of the planting project, the children were very competitive, almost to the point of destructive- they would stomp on and destroy the plants of someone else which were growing well. However, they slowly began to learn to work together as individual groups, and as a whole class once they realized each group had their own 'secrets' to growing the plants, and in order for everyone to succeed, they would need to share information as well as be humble to ask for help. See picture below of both boys and girls working together to grow their vegetables.

Figure 1: Children at their vegetable plots

Focused: A component that emphasizes developing personal and social skills

The children were given the opportunity to write their own class rules which included "do not fight with one another", "don't tell lies", "listen to teacher." Deciding on their own rules allowed them the opportunity to reflect on their own behaviour and what was (in)appropriate. The activity also provided the opportunity for ownership and management of their own (mis)behaviour.

In the Rohingya community, men and women have very specific roles, women are relegated to cooking and cleaning. However, volunteers created opportunities to create awareness on the importance of shared responsibilities through the Gardening Project; as the children's garden bore fruit, they were able to harvest the vegetable for a meal. This activity provided the opportunity to work together, more importantly, both boys and girls were involved in the process of food preparation, cooking and cleaning up afterwards as seen in the picture below.

Figure 2: Cooking a meal together

Explicit: Targeting specific social and emotional skills

Occasionally, volunteers would take a class for various purposes for example, to give the teacher a break or to 'model' a particular teaching approach. These sessions were not part of the usual teaching and learning routine. On these occasions, all levels were combined and various activities incorporated so that no child got left out, regardless of age and/or capabilities. As these were 'stand alone' teaching classes, volunteers were able to showcase a variety of teaching and learning techniques and approaches, for example, tell stories, use play to teach or conduct art and craft sessions which were tied to a particular skill or theme. During a story telling session, the children were read a story, 'Soraya's Blanket' which is about a young girl who left her home country (and her grandmother) behind. The story resonated with many of the Rohingya children who left behind family members back in Myanmar. The question and answer session proved cathartic to them as they were given opportunities to recall who was left behind, and how they felt. Afterward, the children made cards to express their feelings toward particular family members or friends. Many cards contained expressions of gratitude, longing, remorse and according to the class teachers, this was a rare occasion that the children managed to express themselves. These sessions were particularly targeted for specific purposes, for example, stories with certain themes were chosen to teach a moral lesson or to allow children to speak their minds, music and craft was used for expression and creativity while games inculcated sportsmanship.

Recommendations and Conclusion

An area to note is the emphasis on empowering the children to be able to be a participant and contributor in whichever country of their eventual settlement. This is not only achievable through excellent grades but also to be exposed to the multifaceted aspects of people from other countries. Lessons should incorporate aspects of social studies, history, geography and literature besides the 3 main subjects of Math, Science and English.

Character-building which are universal and traits such as integrity, resilience, respect, cooperation, and the 21st Century skills have to be emphasised throughout the school years. Life skills that enable them to improve their financial prospects and well-being and vocational and technical skills should incorporated into learning at the centre as it is expected of the children, upon reaching the age of fifteen or sixteen, to find work and contribute financially to the family.

An important group of people- the regular volunteers have to go through some form of carefully planned action plan for training. Through interviews with them it was found that there were some pertinent issues that needed addressing particularly in the areas of pedagogy and methodology. Additionally, there seemed to be little room for professional development as some of the volunteer teachers were without official documentation that allows for enrolment in local educational institutions. Therefore, it is not enough to have ad-hoc sessions to plug temporary gaps but rather, there should be a clear understanding of what is required to train the volunteers in. As the centre has been running for a while now, set ways and ideas may be difficult to change. From observations and as mentioned a 'start from scratch' approach should be considered, and a tailored teacher training package for non-experienced volunteers, and one that is contextually specific to Rohingya children, has to be put in place.

To conclude, while there are many challenges in providing quality education to the Rohingya refugee children at the learning centre, the paper has shown that there have also been a lot of innovative practices which catered to their social emotional development, an area that is often neglected due to preference over academics and tangible accolades. It is therefore necessary to note that it will not just be paper qualifications that will help pave the path for a better future for these children, the social and emotional aspects also need to be taken note of, and learning centres can play an important role in ensuring these children grow up to be well rounded adults who are able to contribute positively in the country they choose to call home.

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Using Assignments Linked with Assessments to Teach Qualitative Research in Education

Yukiko Inoue-Smith, University of Guam, United States

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Abstract
Educational researchers make use of highly diverse qualitative methods but teaching these methods to students involves considerable challenges. This paper describes master's level qualitative research assignments that employ student-centered and masterly learning approaches. The paper addresses the increasingly important issues of how best to create course assignments of qualitative inquiry; and how to assess learning outcomes. The assignments described here focus on three interconnected challenges: (i) doing interviews and observations; (ii) writing fieldwork reports; and (iii) presenting orally qualitative data. The paper systematically explains how these sequencing assessments will promote students' practical understanding of qualitative data collection for a mini-ethnographic case study. The approach to designing the assignments proposed in this study can be applied to both traditional and online courses.

Keywords: Qualitative Research, Triangulation, College Teaching, Learning by Doing

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Introduction

Qualitative research places emphasis on exploring and understanding with a focus on drawing meaning from the experiences and opinions of participants (Almalki, 2016). Qualitative research is "usually described as inductive, with the underlying assumptions being that reality is a social construct, that variables are difficult to measure, complex, and interwoven, that there is a primary of subject matter, and that the data collected will consist of an insider's viewpoint" (Rovai et al., cited in Almalki, 2016, p. 291). Furthermore, "rather than speak of 'generalizability' (where data or interpretations are understood to be directly transferable to other places or situations), qualitative researchers more often engage social theory as a means to speak beyond the nuances of their empirical studies" (Delyser, 2008, p. 234). In essence, according to Malterud (2001):

Qualitative research methods are founded on an understanding of research as a systematic and reflective process for development of knowledge that can somehow be contested and shared, implying ambitions of transferability beyond the study setting. Drawing on these assumptions, the researcher must be prepared to use strategies for: questioning findings and interpretations, instead of taking them for granted; assessing their internal and external validity, instead of judging them obvious or universal; thinking about the effect of context and bias, without believing that knowledge is untouched by the human mind; and displaying and discussing the processes of analysis, instead of believing that manuals grant trustworthiness. (p. 483)

"Increasingly, there has been a focus on developing research methodologies that promote social justice, inclusion, and empowerment of people" (McNicoll, cited in O'Connor & O'Neill, 2004, p. 20); and qualitative methods "tend to move beyond a positivist frame of reference which advocates that there is only one 'true' reality" (p. 20). Qualitative research data therefore "should be collected in the form that will increase understanding of human experience in the real life. However, qualitative researchers often do not know at the beginning of a study where they will find their most rusted information" (Dabić & Stojanov, 2014, p. 362). Hernández-Hernándeza and Sancho-Gilb (2015) noted that data collection methods in qualitative research "came to understand micro- ethnography as a powerful method for studying practices in dynamic social systems" (p. 657). The qualitative research methods "do not form a 'how to do' set of skills that can be applied in the textbook fashion of quantitative methodologies and statistical analyses" (Mason, 2002, p. 69).

"Whereas quantitative research provides insight into the types and the strengths of relationships amongst variables, qualitative research may afford a better understanding regarding the nature of those relationships" (Bender & Hill, 2016, p. 93). The following are commonly used data-collection approaches in qualitative research: ethnography phenomenology; historical; grounded theory; case study; narrative inquiry; and exploratory-descriptive (Astroth & Chung, 2018). Breslin and Buchanan (2007) discuss a case study approach as follows:

The application of case study methodology in the social sciences has correlations with the emerging field of design research, but the connection runs deeper than that. Formal case study structure requires researchers to determine a problem, make initial

hypothesis, conduct research in gathering information and making observations, revise hypotheses and theory, and tell a story. These all are acts that strikingly similar to the work of a designer. The result is that the act of researching and writing a case study easily am an application of the design processes. (p. 38)

In qualitative research and case studies, data collection instruments "such as observation, open-ended question, in-depth interview (audio or video), and field notes are used to collect data from participants in their natural settings. The methods employed in data collection give a full description of the research with respect to the participants involved" (Daniel, 2016, p. 92); and qualitative research "views human thought and behavior in a social context and covers a wide range of phenomena in order to understand and appreciate them thoroughly" (p. 93). As noted by Daniel, two of the major disadvantages of qualitative research are: (i) findings may be limited to the particular groups of people or individuals studied; and (ii) sampling procedures that may produce source material no more accurate than the products of biased samples.

"The art of being a qualitative researcher frequently is overshadowed by a concern for teaching the technical aspects of research" (Start & Watson, cited in McAllister & Rowe, 2003, p. 296)—and so, "Although students may acquire the characteristics of qualitative researchers by observing role models, there is much the educational process and skilled teachers can do to emphasize and develop students' passion for being qualitative researchers" (p. 296).

This paper describes the master's level assignments promoting students' passion for qualitative research. The assignments facilitate a mastery of skills by providing maximum opportunities for students to practice and apply what they learn. Addressing the increasingly important issues of how best to create or design course assignments in qualitative research courses, and how to assess learning outcomes, the paper focuses on three interconnected challenges: (i) conducting effective interviews and careful observations while taking field notes; (ii) writing organized fieldwork reports; and (iii) presenting orally qualitative data informatively. The paper explains how these interconnected assessments will promote students' practical understanding of qualitative inquiry when a mini ethnographic case study is used. The approach to designing the assignments proposed in the current paper can be applied to both traditional and online courses.

THE STUDY——Assignments Linked with Assessments

Methodological training is essential in research courses at the graduate level (Wells et al., 2015), because "qualitive research poses many challenges for educators. The named approaches to qualitative research are numerus and diverse; it is not a single unified tradition, as is probabilistic qualitative research. Difference in epistemologies, research purposes, methods, and reporting styles make simple generalization about qualitative research difficult" (Drisko, 2008, p. 85).

Most important is that in qualitative research where the *researcher* is considered as a research instrument. "Since qualitative research is very much about *doing*….Some qualitative and ethnographic research courses include what could be called a 'mini-ethnography' component, where students practice ethnographic techniques such as

participant observation and interviewing at a local site of their choosing" (Este et al., cited in Delyser, 2008, p. 239). "In ethnographic research, the investigator is often involved in group activities, spends extended time in the field, and interviews participants" (Eller, 2019, p. 38).

The assignments described in this paper are designed based on a mini ethnographic case study approach. Although a mini ethnographic case study design uses data collection methods blending a mini ethnography and a case study, this type of design "allows researchers to explore causality links, which is not typical for ethnographies…the use of a mini-ethnographic case study design enables researchers to generate as well as study theory in real world applications" (Fusch, Fusch, & Ness, 2017, p. 926).

Targeting master's level students (in-service teachers mostly) in a qualitive research methods course, the above-mentioned interconnected assignments provide ample opportunity for hands-on experience to develop and enhance students' both theoretical knowledge and practical skills in conducting a small-scale qualitative research. As illustrated in Chart 1, students will be assigned to a research project in which they will interview and observe potential individuals in schools or other educational settings, collecting data in the form of field notes, summarizing and analyzing the fieldwork data in the form of written reports on their interviews and observations, and presenting these reports orally and formally in class.

The course syllabus will provide the details of learning objectives and activities. The assessments are aligned with Bloom's (revised) taxonomy that is a classification of different objectives and skills for learning, teaching, and assessing. The taxonomy consists of the following six levels within cognitive domain of learning: Level 1 (memorizing); Level 2 (understanding); Level 3 (applying); Level 4 (analyzing); Level 5 (evaluating); and Level 6 (creating). In the revised version, the lowest level of the original version of "knowledge" was renamed as "remembering." Chart 1 illustrates the entire picture of the course assignments described in this paper.

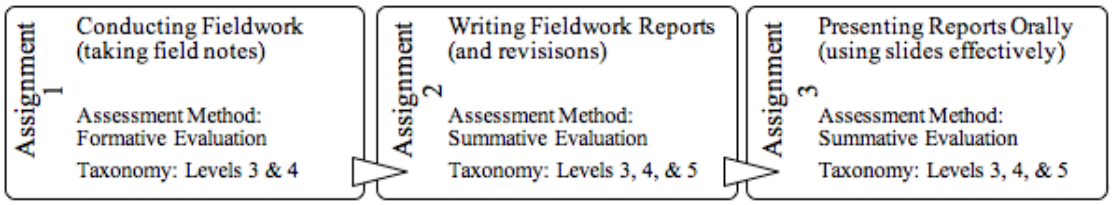

Chart 1. Three Interconnected Assignments (the first slide of the PPT file)

A case study—typically qualitative in nature—is a research method generally used in social sciences, resulting in a narrative description of behavior or experience. "The case study approach is familiar to social scientists because of its popularity in psychology (Freud), medicine (case analysis of a problem), law (case law), and political science (case reports). Case study research has a long, distinguished history across many disciplines" (Creswell, 2006, p. 73). Qualitative case study design actually "evolved out of ethnographic design" (Fusch et al., 2017, p. 926)—and so, "Contemporary case study design is much like historical case study design—both have specific boundaries, but within those boundaries there is a great deal of room for personal design: interviews, direct observation, document review, focus group sessions, journaling, participant observation, and more (Amerson, cited in Fusch et al., 2017, p. 967).

"Case studies may be *exploratory*, *explanatory*, or *descriptive* and may involve one organization and location or multiple organizations and locations for a comparative case study design" (Yin, cited in Fusch et al., 2017, p. 926). These characteristics of case studies are particularly appropriate for the assignments designed in this study. Charts 2, 3, and 4 illustrate the step-by-step processes of the assignments for students: indicating how the assignments are conducted and assessed. Chart 5 illustrates the use of triangulation in the assignments. Each Chart is illustrated in PowerPoint (PPT) slides (one chart per one slide in the file) created by the instructor: the five slides, which explain specifically the assignment steps and rubric links, are posted on the course page. Students can click to see the assessment rubric at any time to work on each step of work.

Assignment 1

Both summative and formative assessments are needed for effective teaching and learning. For assessing students' field notes, it is important for the instructor (the author of this paper) to provide students with *actionable* feedback in a timely manner to promote student learning. As Wiliam (2013) argued, "The term formative should apply not to the assessment but to the function that the evidence generated by the assessment actually serves" (p. 15)—for this to happen, the instructor must know the process in learning: specifically, where the student is right now; where the student needs to be; and how to get there.

For Assignment 1, students will develop observational guidelines and interview questions: select study participants for their research; conduct a 40-minute observation for two participants and a 40-minute interview for two participants; and transcribe their semi structured interviews with supplementary notes. Submitted assignments will include descriptive and reflective notes, and sketches describing important features of the individual or the setting. Students' field notes and interview transcripts will be assessed using formative assessments. These assessments will be kept simple, to make checking the list straightforward. The list includes three categories: (i) observation guidelines and interview questions are developed in an orderly manner; (ii) observation notes are detailed and fact-based; and (iii) the interview transcripts are based on the established interview questions. And then, students will write their fieldwork (Chart 2) assignment reports (Assignment 2) based on the instructor's assessment-based feedback.

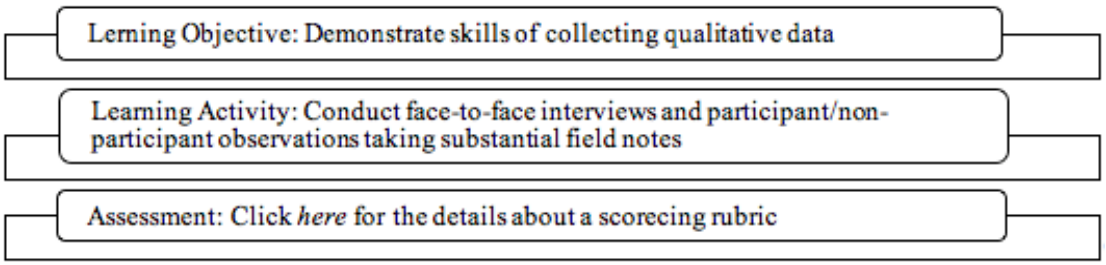

Chart 2. Assignment 1: Collecting Qualitative Data (the second slide of the PPT file)

Assignment 2

Online learning communities can be best described as a group of people that share a common purpose or interest. As an example, "By requiring students to choose an argument and support the view-point with a rationale, students were better able to

construct knowledge as related to course content" (Howell, LaCour, & McGlawn, 2017, p. 487).

At this stage of the assignment 2, students share portions of their fieldwork reports by posting to the discussion forum. The instructor must encourage students providing timely feedback, which is *specific* and *descriptive*, not general or vague. Such feedback certainly helps students to revise their fieldwork reports. The rubrics for assessing Assignment 2 cover the following five categories of evaluation: (i) the *content* rubric evaluates the degree to which the report is a fully developed description: demonstrating the student's abilities to interview and to observe carefully, and to generate coherent records of interviews and observations; (ii) the *organization* rubric addresses the degree to which the report has an engaging introduction and is logical and well organized, as well as the adequacy of the student's conclusions; (iii) the *disposition* rubric quantifies the degree to which the student's interpretation of field relations provides a basis for continued inquiry; and the relevance of the information included; (iv) the *length* rubric rates the degree to which the number of pages the report contains is appropriate for this assignment; and (v) the *writing and style* rubric addresses the degree to which the report is stylistically strong, demonstrating that the student can revise successfully.

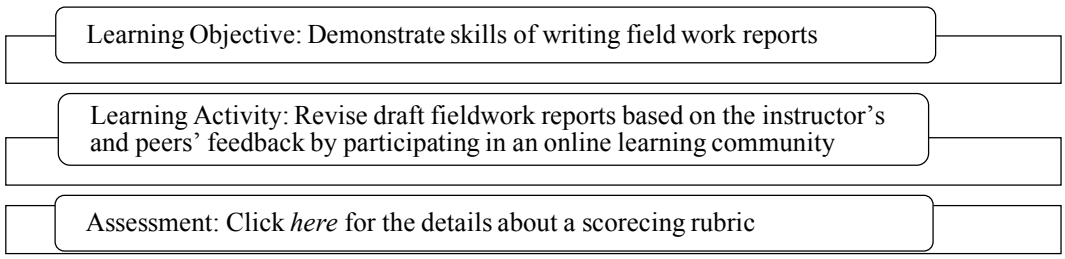

Chart 3. Assignment 2: Analyzing Qualitative Data (the third slide of the PPT file)

Assignment 3

Virtually everyone agrees that oral presentations—which are commonly assigned in college courses—provide positive learning experiences. An in-class presentation is a "chance for students to gain insight into knowledge and skills that make a good lecturer, which often turns to become their vocation… sharing their knowledge in a constructive way both for their audience and themselves with structured planning and organization" (Živković, 2014, p. 469). Rubrics are often used to assess student oral presentations and written reports. In terms of using rubrics for course assignments, Rippé's (n. d.) describes as follows:

There is no room for bias or subjective prejudice in rubric utilization because a rubric is impartial. A student either meets that defined objectives or does not. This helps promote fairness and increases satisfaction, since there is no preferential treatment when everyone is measured using the same benchmarks. (pp. 12–13)

Student presentations in Assignment 3 are assessed using a rubric, focusing on the four categories of evaluation: (i) the *organization* rubric addresses the degree to which the student presents information adequately in logical and interesting sequence which audience can follow; (ii) the *topic knowledge* rubric evaluates the degree to which the

student demonstrates knowledge by answering questions with explanation and elaboration; (iii) the *graphics and tables* rubric assesses the degree to which the student's graphics fully explain and reinforce screen text and presentation; and (iv) the *delivery* rubric rates the degree to which the student delivers the message in a confident, poised, and enthusiastic fashion.

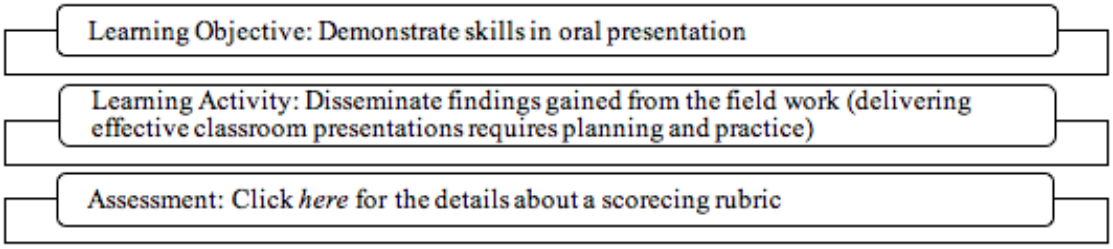

Chart 4. Assignment 3: Reporting Qualitative Data (the fourth slide of the PPT file)

Triangulation is "somewhat like looking through a crystal to perceive all the facets/viewpoints of the data. Moreover, he posited that triangulation should be reframed as *crystal refraction* (many points of light) to extrapolate the meaning inherent in the data and thereby mitigating one's bias" (Denzin, cited in Fusch et al., 2017, p. 927). Triangulation requires using more than one approach to investigate the same research question. In most cases, researchers involve five types of triangulation for establishing the validity of research: (i) data triangulation (using different sources of information); (ii) investigator triangulation (using several investigators in data analysis); (iii) theory triangulation (using multiple perspectives in data interpretation); (iv) methodological triangulation (using multiple methods to study the person or event); and (v) environmental triangulation (using different locations or settings related to the environment).

The assignments described here basically apply methodological triangulation. As illustrated in Chart 5, through their hands-on experience, students may realize that ethnographic interviews and observations are valuable tools for case studies to collect meaningful data about people (study participants) interacting in a natural setting. Students may also realize that one key to getting meaningful data from interviewing is to ask well-thought-out questions. These types of real-life experiences *are* truly the best teachers for students who are taking a qualitative research methods course. In qualitative research, the researcher participates actively both in data collection, and in transforming the data into important findings.

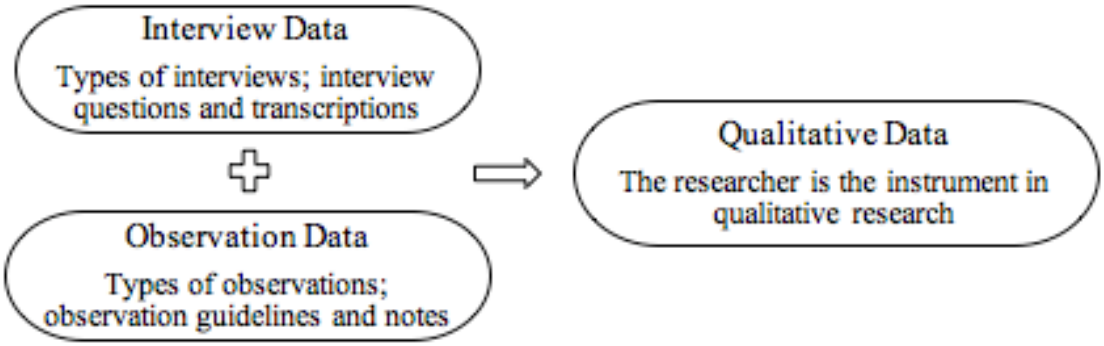

Chart 5. Triangulation of Data for a Mini Ethnographic Case Study (the fifth slide of the PPT file)

Conclusion

Goussinsky, Reshef, Yanay-Ventura, and Yassour-Borochowitz (2011) explained a three-phase model in qualitative research: "While in the first phase students are exposed to the qualitative thinking and writing, they are required in the second phase to take a qualitative research methods course that includes practice. The third and final phases include conducting a qualitative research seminar" (p. 126). An instructor can facilitate student learning, but students must accept some responsibility for their own learning (Centra & Gaubatz, 2005). As a proverb goes, "You can lead a horse to water, but you cannot make it drink."

As noted by Goussinsky et al., much learning among master's level students occurs through practice, and by making *connections* between classroom experiences and the outside world. Such meaningful learning occurs when students take responsibility for their own learning. This is particularly true in qualitative research courses. What the instructor can do is to stimulate such learning through *assignments* and *assessments* by providing—effectively and efficiently—formative assessments with feedback and encouraging work that develops students' competencies in a small-scale qualitative research project.

It should be emphasized that learning by doing is a central concept in qualitative research courses, given that "qualitative research is very much about *doing*…" (Este et al., cited in Delyser, 2008, p. 239). Confucius' saying can be also applied to teaching qualitative research: "I hear and I forget. I see and I remember. I do and I understand." Once students are equipped with substantial knowledge of philosophical assumptions and theoretical perspectives of qualitative research, it is time for them to develop hands-on understanding of techniques used in qualitative research, applying Goussinsky et al.' (2011) three-phase model discussed here.

Highlighting the importance of integrating methodologies and paradigmatic elements when teaching qualitative methods, Terkildsen and Petersen (2015) recommend focusing on teaching epistemology, instead of teaching methods for methods' sake. This paper described how to teach qualitative research systematically, integrating students' real-life experience. The author strongly believe that individual students do not really learn qualitative research until they start collecting and analyzing data from their own research. Assigning a mini ethnographic case study described herein will be implemented in the next academic year, with learning outcome-based assessments of each of the interconnected assignments.

Finally, the concepts of practice, coaching, and teamwork are as important in qualitative research as in team sports. Just as athletes improve their skills with practice, researchers improve their skills through practice. In student centered learning, the instructor acts as a coach or a guide. To benefit from their practice, students will need support and feedback as they encounter predictable challenges in reviewing the literature, clarifying researchable questions, and collecting and analyzing their data. In a master's level research course, the goal should be cooperation, not competition: encouraging students to become resources for one another. As a result of practice, feedback, and collaboration, students will come to see how qualitative methods can provide uniquely useful answers to important questions in education.

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Encountering and Embracing Differences through Experiential Learning: Business Classroom Design for Perspectives Broadening

Kant Thongtawee, Valaya Alongkorn Rajabhat University, Thailand

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Abstract
In this current disruptive, diverse world of digital economy and globalisation, classroom design for students in business management field to prepare them to face and embrace the dynamic world full of differences could be challenging. Through experiential classroom design, students could have the possibility to encounter different worldview from fieldwork, which could eventually broaden their perspectives, preparing them for the diversified environment of the real business world. This study aimed to explore the experiential learning techniques used in an undergraduate business management course in Thailand to broaden students' perspectives. The classroom was designed for students to directly encounter and interact with business entrepreneurs, to learn from their experiences on business techniques used through economic challenges. Qualitative methods of participant observation and in-depth interview were used in data collecting and analysis. It was found in this study that the experiential classroom design could provide students opportunity to gain different perspectives, broadening their understanding on real-world business management.

Keywords: Embracing, Encountering, Differences, Perspectives, Worldview, Business Management, Classroom Design, Experiential Learning

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Introduction

In this current disruptive, diverse world of digital economy and globalisation, classroom design for students in business management field to prepare them to face and embrace the dynamic world full of differences could be challenging. Through experiential classroom design, students could have the possibility to encounter different worldview from fieldwork, which could eventually broaden their perspectives, preparing them for the diversified environment of the real business world.

Objective

This study aims to explore the experiential learning techniques used in an undergraduate business management course in Thailand to broaden students' perspectives.

Methodology

Qualitative methods of participant observation and in-depth interview were used in data collecting and analysis.

The classroom studied was designed for students to directly encounter and interact with business entrepreneurs, to learn from their experiences on business techniques used through economic challenges.

Key informants were chosen by purposive samplings.

Conceptual Basis

Through Experiential Learning model's four processes of learning, with awareness of real-world business context, a business management classroom design could help preparing students to embrace different views and broaden their perspectives.

The conceptual basis of this study could be shown as in the following diagram:

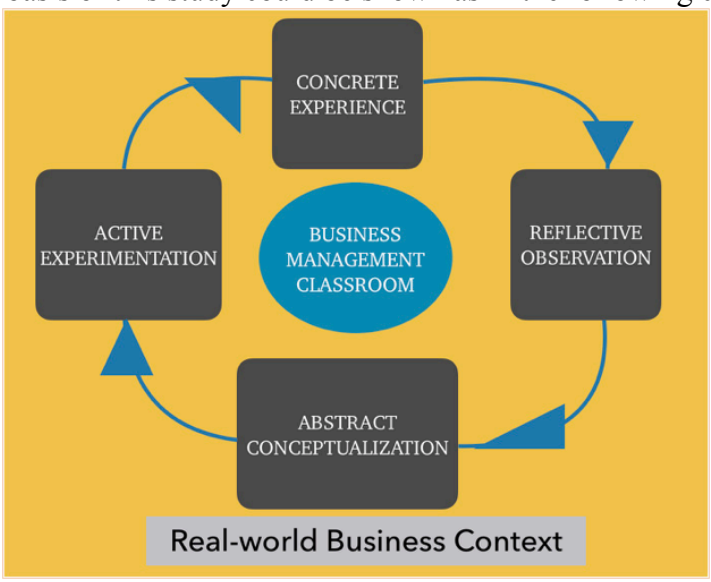

Figure 1: Conceptual Basis

Literature Review

Experiential Learning Theory

From the Experiential Learning Model (ELM) of David Kolb , the cycle of Experiential Learning Model is consisted of 4 learning processes:

1. Concrete Experience: the first learning process of experimental practice.
2. Reflective Observation: the process when learners start to reflect. This would need learners 'own initiation.
3. Abstract Conceptualization: the process when the learners would try to conceptualize what they have leant for future practice/experiment application.
4. Active Experimentation: the process when the learners would try to experience the practice again, in order to prove their own learning and understanding.

Learners could truly learn through experiences, which include emotional reaction and reflection over such experiences (Moon, 2004).

Learners, in experiential learning process, are encouraged to initiate their own learning and reflection. Learners take initiation by posing questions or inquiring to develop solution. (Blumenfeld et al., 1991)

Learners learning through these processes of experiential learning could acquire new skills and new judgement, which could lead to new direction of judgement making (Chickering, 1977).

Results

Case Study 1 : Traditional Noodle Shop

The classroom studied was a business management class for undergraduate students. The students were assigned to plan their own individual business plan. Then they were asked to go as a small group for participant observation of a business store of their own choices. After discussion with classmates in the group, each students could get to reflect upon real-life understanding of business management. Then they were asked to bring the new understanding to adjust the business plan designed prior to field visit.

The student, Patcharin Malay, with a group of classmates, spent times observing and participating in the management of a traditional noodle shop in Amphawa, a touristic town of Thailand.

This experiential learning had given her the new perspectives on how to plan the management of her business model designed prior to field visit.

"...I would apply some successful techniques in shop management from this traditional noodle shop to my own future business plan: the uniqueness of recipe. However, I would also improve some aspects: seating and shop appearance design, wide varieties of choice in the menu, and impressive service..." (P. Malay, May 20, 2020)

Case Study 2 : Traditional Beverage Shop

The student, Kanjana Glaharn, with a group of classmates, spent times observing and participating in the management of a traditional beverage shop in Amphawa, a touristic town of Thailand.

This experiential learning had given her the new perspectives on how to plan the management of her business model designed prior to field visit.

"... I would apply some successful strategy of this beverage shop to my future business plan of barbecue shop, especially, the competitive pricing. I would also adopt the technique of paying attention to daily cost calculation and daily raw materials stocking. This could greatly reduce loss and create more benefits. Giving attention to detailed taste preference of each customer could also attract them to come back...I would improve the appearance of the shop to be more stylish though. Customers nowadays prefer shops where they could take nice photos to share on social media..." (K. Glaharn, May 20, 2020).

Discussions and Conclusion

From study results, students, being directly exposed to real-life experience of business management, could develop understanding and insight through reflective observation and conceptualization of what was going on and what to do in the future.

It was found in this study that the experiential classroom design could provide students opportunity to gain different perspectives, broadening their understanding on real-world business management.

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Developing Creativity through Design-by-Analogy with Word Trees

Hung-Hsiang Wang, National Taipei University of Technology, Taiwan

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Abstract
This study aims to understand the effect of the Design-by-Analogy (DbA) WordTree method, proposed by Linsey (2007), on the individual's development of creativity. The method was introduced to two training workshops using near-sources and to two others using far-sources. The Creativity Assessment Packet (CAP) and the Kaufman Domains of Creativity Scale (K-DOCS) were used in the pre-test and the post-test for the participants, who were 100 students of a university. The progress of each participant's creativity was examined. Results reveal that the participants' domain-general creativity and domain-specific creativity both largely rose after taking the whole training workshops. The ideas generated in the workshops also show that the far source and the near-source are equivalent in enhancing idea generation by analogy. Future studies should conduct controlled experiments to compare the method with others.

Keywords: Creativity, Design Education, Word Trees, Design-by-Analogy

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Introduction

Analogical thinking plays a vital role for designers to obtain inspiration in product design and development (Keane, 1987; Dahl & Moreau, 2002). Design-by-Analogy (DbA) is a method that helps designers generate creative solutions by searching for analogs which are similar to the target problem and blending the problem and analog (Linsey, 2007). In the process, we need not only some structures to map the problem and analogies (Larkin, McDermott, Simon & Simon, 1980), but also some principles to select potential sources of analogy.

Many analogical principles for source selection focus on the structural similarity between the target and source. Literature recommends that the best sources of inspiration for creative breakthroughs are those who have higher structural similarity and lower surface similarity to the target problem (e.g., Gentner & Markman, 1997; Ward, 1998; Han, Shi, Park, Chen & Childs, 2018). However, it is still arguable that how similar (or dissimilar) a source should be to the target being mapped (Chan, Dow & Schunn, 2015).

A new approach, namely, DbA-WordTree, has demonstrated the advantages of generating creative solutions in the domain of engineering design (Linsey, Markman & Wood, 2008). However, how effective is the approach to develop individuals' creativity remains a question. The present study is an attempt to find out how effective is the approach to develop general creativity.

Literature Review

1. Design-by-Analogy

Analogy is a promising tool for innovation by mapping from the inspiration source in a domain to the target problem in the other domain to make sense of the solution (Gentner, 1983). The former is typically called the source of the analogy, and the latter the target. For example, children can learn the concept of the atom by using the solar system as the source, because the structure and behavior of an atom are similar to that of the solar system.

In the cognitive process model for analogical reasoning, the process of human reasoning by analogy can be divided into four steps. Before a target problem is given, the person has encoded some source analogy and store it in memory. Once the problem is given, the person retrieves an appropriate analogy from memory. The next step is to find a mapping between the problem and the source. Finally, the person generates solutions by finding the inference based on the mapping.

Professional designers often use analogies at the ideation stages of design processes (Casakin and Goldschmidt, 1999; Christensen & Schunn, 2007). The use of analogy to assist designers in identifying and developing analogies, including examples, related cases, scenarios, and connected experiences, to solve design problems is called DbA (Linsey, 2007; Goldschmidt, 2001). How to identify and develop the best sources of inspiration for creative breakthroughs is a great challenge. Empirical studies reveal the principles of a better source are still controversial (Fu, Chan, Cagan, Kotovsky, Schunn & Wood, 2013).

Some studies assert the better sources for creative breakthroughs should be structurally (in terms of such relationship of object features as mechanically, spatially, and causally) similar but superficially (in terms of such object features as shape, material, and temperature) dissimilar to the target (Gentner & Markman, 1997; Ward, 1998; Holyoak & Thagard, 1996; Ward, 1998). More specifically, other research claims the better sources for novelty, quality, and flexibility of ideation should be conceptually far from the target sources (Dahl, D. and Moreau, P. 2002; Chan, Fu, Schunn, Cagan, Wood & Kotovsky, 2011; Chiu & Shu, 2012). In contrast, some studies find there are no obvious benefits from conceptually far source for creative thinking (Fu, Chan, Cagan, Kotovsky, Schunn & Wood, 2013; Chan & Schunn, 2014; Dunbar, 1997) or the effects of far and near sources have equal advantages (Malaga, 2000).

2. Word trees

A word tree illustrates multiple parallel sequences of words to analyze unstructured texts. Based on the visualization of abstract tree structures, it is used to show which words most often follow or precede a target word or to show a hierarchy of terms. There are many tools developed in an interactive form of the keyword-in-context (KWIC) technique (Wattenberg & Viégas, 2008). The word tree tools developed by Fernanda Viégas and Martin Wattenberg (see http://hint.fm/projects/wordtree/) and Jason Davies (see https://www.jasondavies.com/wordtree/) are typical examples. The advantage of these interactive tools is threefold: (1) easy to spot repetition in the contextual words that follow a phrase, (2) clear to display the natural tree structure of the context, and (3) easy to explore the context further.

A novel approach, DbA-WordTree method, has been developed by Julie Linsey (2007) to systematically identify far sources and find a mapping between the source and the target. Since enhancing analogical retrieval requires that design problems are represented in multiple forms ranging from very domain-specific to domain-independent to provide a variety of related effective retrieval cues (Chan, Dow & Schunn, 2015). A tree structure or tree diagram is a way of representing the hierarchical nature of a structure in a graphical form. It is named a "tree structure" because the classic representation resembles a tree, even though the chart is generally upside down compared to an actual tree, with the "root" at the top and the "leaves" at the bottom. All the tree elements are called "nodes," and the lines connecting elements are called "branches". Nodes without children are the leaves. Every finite tree structure has a member that has no superior; this member is the root.

The WordTree method is a promising tool because it can create multiple linguistic representations by focusing on alternative functional representations. An experiment in workshops using the DbA-WordTree method shows that designers can identify a greater number of analogies and alters their search approaches leading to more unusual analogous solutions being located (Wattenberg & Viégas, 2008).

The process of the workshop comprises five steps:
(1) List key problem descriptors, which are single-word action verbs derived from the functions and customer needs in the problem statement.
(2) Re-represent the key problem descriptors using the WordTrees method through both the team’s knowledge and a large lexical database of English, WordNet

(see https://wordnet.princeton.edu/). The team uses rotational brainwriting to create sticky note WordTrees, and using WordNet to retrieve additional keywords. Combining both the results to identify and search potential analogies and analogous domains, and create multiple problem statements.

(3) Generate ideas using WordTrees and rotational brianwritng.

(4) Summarize results and continue with the design process.

Although the WordTree method is a powerful approach for the re-representation of design problems and the generation of creative ideas in the engineering domain, how it works in the context of domain-general is worth studying.

3. Creativity assessments

Human creativity can be developed by training (Davies, 2011). If a group of participants is trained by the DbA-WordTree workshop, how their creativity changes should be measured. There are many tools for measuring cognitive aspects of creativity with certain reliability and validity. The cognitive aspects refer to basic thinking processes that lead to creative production, which include identifying, defining, and redefining the problem, selective encoding (Barbot, Besançon & Lubart, 2011).

In cognitive creativity measurements, the Creativity Assessment Packet (CAP) can measure the cognitive thought factors of fluency, flexibility, elaboration, originality, vocabulary, and comprehension (Williams, 1967; Williams, 1980). It is useful for the workshop which involves identifying and searching for action verbs.

Aside from the rather domain-independent approach to measuring cognitive creativity, there are some domain-specific assessment tools. The Kaufman Domains of Creativity Scale (K-DOCS) is a relatively new measure for assessing domain-specific creativity in five domains: everyday, scholarly, performance, science, and art (McKay, Karwowski & Kaufman, 2016; Kaufman, 2012). These five domains are consistent with the Big Five personality factors, extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience. That means K-DOCS is not only a measurement tool for cognitive aspects but also conative aspects.

K-DOCS is a 50-item self-report measure assessing the five domains. The instructions ask the participants to compare to people of approximately their age and life experience, how creative would they rate themselves for each of the items. Items were rated on a 5-point scale (much less creative too much more creative). K-DOCS is suitable for specifying which domain the participant's creativity progresses.

Besides, product-based assessment is required for assessing the achievement of a creative product resulting from workshops. Typically, these products are evaluated by experts of the domain using the Consensual Assessment Technique (CAT) (Amabile, 1982). The requirements of CAT include (1) judges should all have had some equivalent experience with the domain in question, (2) the judges must make their assessments independently, (3) the judges should rate the products relative to one another, rather than rating them against some absolute standards they might hold, (4) each judge should view the products in a different random order (Hennessey, Amabile & Mueller, 2011).

Given the literature review, the present study focuses on the relationship between the DbA-WordTree method and the individual's development of creativity. Hypotheses for the training include (1) the participant's domain-general creativity makes much progress after training, (2) the participant's domain-specific creativity makes much progress after training, and (3) the far-source is more likely than the near-source to enhance the participant's ideas generated by analogy.

Methods

1. Participants

Participants of the workshops were 122 second-year students from colleges of mechanical and electrical engineering (51), electrical engineering and computer science (9), engineering (23), management (24), design (12), and humanities and social science (3). They were randomly divided into 30 groups. Each group consists of four to 6 participants, who come from at least two different colleges.

2. Instruments

The participants' cognitive creativity was assessed using K-DOCS and CAP. The revised Chinese edition CAP (Wang & Lin, 1986), published by Psychological Publishing Co., Ltd, Taiwan, was used. The K-DOCS was translated into Chinese edition. The participants' product-based creativity was assessed by three experts who have three-month training of the DbA-WordTree method in a CAT way. The items of the assessments were to determine the following indexes:

(1) Ratio of valid nodes (Rn) = (the number of the nodes that indicate the clue for exploring or mapping the sources to the target) / (the number of all the nodes of the word tree)

(2) Ratio of valid analogies (Ra) = (the number of the analogies that are related to the valid nodes of the word tree) / (the number of all the analogies generated in a workshop)

(3) Ratio of valid ideas (Ri) = (the number of the ideas that mix the analogous source to solve the target problem) / (the number of all the ideas generated in a workshop)

Also, each workshop used specific worksheets to help participants focus on the design task given along with the DbA-WordTree method. Each worksheet contained the instruction, the sub-tasks in sequence, and background layout.

3. Procedures

Before attending the workshops, all the participants took the K-DOCS and CAP as the pre-test. When completing all workshops, they took the K-DOCS and CAP again as the post-test. Two workshops used the far-sources and the other two used the near-sources. All of the tasks were selected from (Van Gundy, 2005), which collected many analogical thinking activities. Either the far-sources (i.e., the unrelated stimuli of inspiration) or the near-sources (i.e., the related stimuli of inspiration) were available in various activities. Table 1 shows the tasks of the four workshops. The activities '#70 What's the Problem?' and '#82 Brain Purge' were used for workshops

with near sources, whereas the activities '#21 Tickler Things' and '#97 The Name Game' were used for workshops with far sources.

Table 1: Tasks of workshops

Near sources		Far sources	
Workshop 1	Workshop 2	Workshop 3	Workshop 4
#70. What's the Problem? Design a new tape dispenser.	#82. Brain Purge Design a new peeler.	#21. Tickler Things Design a method to recruit more club members.	#97. The Name Game Design a new mosquito trap.

The activity of each workshop contained two stages. In the word tree stage, each group was requested to complete a word tree using brainwriting for the initial problem given. Afterward, in the design stage, each group used their word tree as the structural guidelines to create ideas to solve the problem given.

In each activity, an initial problem was given. The original process of each activity, adopted from the book of Van Gundy (2005), was adapted to follow the five steps of the DbA-WordTree method, as described earlier. For each group, the sequence of each workshop activity was randomized to avoid the bias of the learning effect. Once all the workshop outcomes had been collected, the three judges examined the word trees created by each group in every workshop.

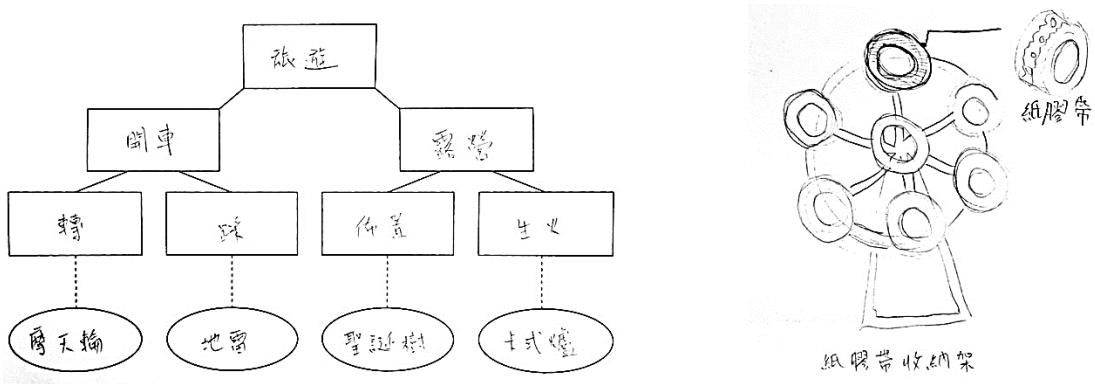
For instance, the activity for the first workshop is '#70. What's the Problem?', adapted from the Synectics of William Gordon (1961). The objective was to help the participants reverse their natural tendency to exhaust all conventional solutions and then declare they have run out of ideas. The target problem for each group was to design a new tap dispenser by following the steps:

(1) Describe a general, abstract problem (how to remove unpleasantness and avoid worry) without revealing the target problem (how to design a new tape dispenser).
(2) Use word trees to generate ideas for the abstract problem.
(3) Reveal the real problem and instruct the group members to examine the ideas for the two abstract problems and use them as stimuli for new ideas.
(4) Write down any ideas on posters for evaluation.

Results

Only 100 participants of 26 groups completed the whole process, from the pre-tests, the four workshops, to the post-tests. Figure 1 illustrates an example completed by a group in the first workshop. The word tree, as shown in Figure 1(a), is developed for the abstract problem about removing unpleasantness. The root is "to travel," which has two children nodes, "to drive" and "go camping". These two nodes respectively have two leaves. For example, the leaves of the node, "to drive", is "to turn" and "apply brake". When the key verbs for the abstract problem have been obtained, each of them is related to an object that most represents the key verb. For example, "Ferris wheel" is chosen as the representative of the verb, "to turn". Afterward, each object is seen as the inspiration source to develop ideas for solving the real problem,

"designing a new tape dispenser". The sketch, as shown in Figure 1(b) depicts a tap dispenser using the Ferris wheel as a source of DbA.



(a) (b)

Figure 1: Example worksheets completed by a group in workshop 1

1. Progress of creativity

The pro-test with the pre-test was compared to determine the effect of the training through four workshops on the participants' creativity. First, the participants' pro-test of CAP made extremely significant progress (24.3%, p<.01), as shown in Table 2. The greatest progress made was the elaboration factor (113.4%) while the other factors, originality (30.3%), fluency (15.8%), and flexibility (13.2%) also had relatively large progress.

Second, the comparison of the pro-test and the pre-test was displayed in Table 3. Except for the creativity in the everyday domain, all the others had extremely significant growth (p<.01). Both domains of the performance (13.9%) and science (12.9%) have much progress, though the progress of Scholarly was much lesser (3.2%). Still, the domain of art increases (9.6%, p<.05).

Table 2: Pre-test and pro-test of CAP

Factor	Assessment	N	M	SD	Progress	*t*-value
Fluency	Pre-test	100	10.10	3.17	15.8%	-4.564**
	Pro-test	100	11.70	1.69		
Comprehension	Pre-test	100	24.88	8.52	1.6%	-.373
	Pro-test	100	25.27	6.06		
Flexibility	Pre-test	100	6.65	2.18	13.2%	-3.036**
	Pro-test	100	7.53	1.91		
Originality	Pre-test	100	17.03	7.21	30.3%	-5.461**
	Pro-test	100	22.19	6.11		
Elaboration	Pre-test	100	9.30	7.39	113.4%	-9.930**
	Pro-test	100	19.85	7.63		
Vocabulary	Pre-test	100	13.87	6.43	9.1%	-1.569
	Pro-test	100	15.13	4.80		
Total	Pre-test	100	81.83	27.35	24.3%	-5.730**
	Pro-test	100	101.71	21.35		

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

Table 3: Pre-test and pro-test of K-DOCS

Domain	Assessment	N	M	SD	Progress	*t*-value
Everyday	Pre-test	100	3.24	.66	9.3%	-1.401
	Pro-test	100	3.54	.66		
Scholarly	Pre-test	100	3.78	.62	3.2%	-3.229**
	Pro-test	100	3.90	.60		
Performance	Pre-test	100	2.67	.88	13.9%	-2.788**
	Pro-test	100	3.04	.99		
Science	Pre-test	100	2.95	.88	12.9%	-3.176**
	Pro-test	100	3.33	.84		
Art	Pre-test	100	3.24	.90	9.6%	-2.416*
	Pro-test	100	3.55	.89		

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

2. Creativity of ideas

Independently examining each group's DbA-WordTree per workshop, the three judged identify the number of nodes, analogies, and ideas that were related to the target problem to calculate the ratio of valid nodes (R_n), the ratio of valid analogies (R_a), and the ratio of valid ideas (R_i). Table 4 exhibits the difference between these ratios of the near-source workshops and far-source workshops. Results show that the far-source workshops had a significantly higher R_a than did the near-source, though the difference was trivial (3.2%, $p<.05$). The other two ratios, R_n and R_i between the near-source and far-source workshops were not significantly different.

Table 4: Pre-test and pro-test of K-DOCS

Item	Source	N	M	SD	Change Rate	*t*-value
R_n	Near	26	3.24	.66	9.3%	0.70
	Far	26	3.54	.66		
R_a	Near	26	3.78	.62	3.2%	0.03*
	Far	26	3.90	.60		
R_i	Near	26	2.67	.88	13.9%	0.09
	Far	26	3.04	.99		

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

Conclusion

The first two hypotheses are supported, but the third one is not supported. As the results of the CAP showed that the participants' domain-general creativity largely rose, the first hypothesis is not rejected. Also, since the participants' domain-specific creativity mostly rose to a certain degree, the second hypothesis is not rejected. It is noticed that the present study adapted the DbA-WordTree method of (Linsey, 2007). It did not involve using WordNet database, and its activities were designed for laymen instead of specific professionals. Still, the groups were of cross-domains instead of the engineering domain. Despite the adaptation, the results supported the findings of many researchers, such as (Linsey, 2007; Linsey, Markman & Wood, 2008; Linsey,

Markman & Wood, 2012), and recommend that the method can enhance the participants' creativity.

After the training by the four workshops, the participants' creativity assessments mostly rose. Either the far-source or the near-source contributed to developing the participants' cognitive and conative creativity to a certain extent. This raises a question on the usefulness of even random sources as stimuli for DbA. Future research needs some controlled experiments to compare the effect of the DbA-WordTree method and other methods.

The third hypothesis is rejected. Although the far source was more likely than the near-source to generate valid analogy, yet the far-source does not have an advantage over the near-source in developing valid word trees or valid ideas. The results were consistent with the findings of Malaga (2000), where the effects of the far-source and the near-sources have equal advantages.

In the studies of Linsey and her peers (Linsey, 2007; Linsey, Markman & Wood, 2012), all the participants were engineering students. In contrast, the majority of participants in the present study came from engineering-related colleges (83, 68%), and the rest were from non-engineering colleges (39, 32%). The effect of the cross-disciplinary grouping on the individual development of creativity and the collaborative idea development is worthy of future study.

To sum up, the major advantage of the DbA-WordTree method may lie in the fact that it requires the participants to use action verbs for identifying and mapping more potential concepts towards the target design problem. This leads them to better control divergent thinking to move forwards the target.

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Contact email: wanghh@ntut.edu.tw

Stand-Alone Worksheets for Basic Mathematical Computation Skills Developement

Jaymar L. Bonaobra, Bicol University Graduate School, Philippines
Richard M. Lorente, Bicol University Graduate School, Philippines

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Abstract
The recent National Achievement Test (NAT) results proved the mathematics performance of Filipino learners fall below the DepEd's 75% MPS target. Additionally, international assessments including TIMSS and PISA revealed similar poor results of Filipino students in math. This study developed "Stand-alone Worksheets" (SAWs) to address least mastered computation skills; it revealed the developed Grade 6 basic mathematical computation skills preparatory to Grade 7 and performance gains of the mathematically challenged Grade 5 completers along basic mathematical computation skills. A one-group pre-test and posttest pre-experimental design was used in this study. There were 880 pupils from three (3) representative large schools in Albay of S.Y. 2018-2019 screened from where the lowest 25% participants were taken. Fifteen (15) worksheets were developed covering multiple operations on whole numbers, estimations and four basic operations on fractions and decimals. The SAWs increased the pupils' performance. The said improvement is statistically significant at $\alpha = 0.01$. Further, the SAWs can be adopted and/or modified to enhance learners' performance level, and that teachers should focus on deepening pupils' conceptual understanding of basic computation skills. This paper suggests that a better mathematical performance is achievable in both primary and secondary levels when teachers focus on developing basic math skills among students.

Keywords: Basic Computation Skills, Conceptual Understanding, Primary Math Education

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Introduction

Even with the presence of digital mathematical devices which can perform various mathematical procedures, basic foundation skills in math remain integral parts of learner's mathematics education because they lay the foundation for success in learning higher mathematics (Harris, 2017). In general, every citizen needs to have a strong mathematical background to be able to pursue higher education and eventually, thrive in a highly technological workplace. However, over the past years in the Philippines, the National Achievement Test (NAT) results of primary Filipino pupils in math remained low (Philippine Statistics Authority, 2016). Recently, in 2018, the country also participated in an international benchmark assessment of PISA in reading, mathematics and science. Unfortunately, the results were as frustrating as the country ranked the lowest among the 79 participating countries in reading comprehension and ranked second to the last (78^{th}) in mathematics and science (BusinessWorld, 2019). The Philippines was outperformed greatly by its neighboring Asian countries such as China, Japan and Singapore among others.

Basic computation is one of the predominant competency areas in primary mathematics curriculum. It comprises the most salient foundational competencies such as basic arithmetic, conversions, estimations, and rounding off rational numbers. These skills are entrenched in the primary math curriculum along Numbers and Number Sense Strand which "focuses on learners' understanding of numbers such as counting numbers – whole numbers, integers, fractions, decimals, real numbers and complex numbers, properties, operations, estimation and their application to the real-world situations" (SEI-DOST&MATHTED, 2011). Developing such skills among primary learners should be a priority of primary mathematics teaching if the goal is to augment students' performance in the subject. More specifically, maintaining the need to increase the performance of secondary students in math, early proficiency assessments on these skills among pupils who are moving to the secondary level (upper elementary i.e. Grade 4, 5 and 6) and providing interventions which could create a positive impact on the current math performnce status of Filipino students is an imperative. This research developed intervention materials that address least mastered skills along numbers and number sense strand in primary mathematics.

Table 1. Least Mastered Skills in Grade 7 along Numbers and Number Sense and their Prerequisite Skills

Commonly Least Mastered Skills in NAT	**Least Mastered Skills among the Respondents which are Prerequisites in Grade 7 Competencies Along Numbers and Number Sense**	
Grade 7	**Grade 6**	**Grade 5**
Operations on whole numbers and rational numbers: integers, decimals, fractions and percent	1. Performs basic operations on integers 2. Performs series of operations following GEMDAS rule 3. Estimates sums and differences of fractions and decimals in simple and or mixed form 4. Adds and subtracts fractions in simple mixed forms with or without regrouping 5. Adds and subtracts decimals and mixed decimals through the thousandths with/out regrouping 6. Estimates products of whole numbers, fractions and decimals 7. Multiply fractions in simple and mixed forms 8. Multiplies decimals and mixed decimals through thousandths with/out regrouping with zero difficulty 9. Estimates quotients of whole numbers, fractions and decimals 10. Divides fractions and decimal numbers in simple and mixed forms 11. Divides whole numbers (2-5digits) by decimals (1-2digits) 12. Divides mixed decimals by whole numbers 13. Divides whole numbers by mixed decimals 14. Divides mixed decimals by mixed decimals 15. Divides decimals by	1. Simplifies a series of operations on whole numbers involving more than two operations using the PMDAS/GMDAS rule. 2. Estimates sums, and differences, products and quotients of fractions and mixed numbers 3. Adds fractions and mixed numbers with/out regrouping 4. Subtracts fractions and mixed numbers 5. Multiplies a fraction and a whole number and another fraction 6. Divides, simple fractions; whole numbers by a fraction and vice versa 7. Estimates the sum or difference of decimal numbers 8. Adds and subtracts decimals through thousandths with/out regrouping 9. Adds and subtracts mixed decimals with/out regrouping 10. Estimates products of decimal numbers 11. Multiplies decimals by multiples of 10 and 100 12. Multiplies decimal numbers of values up to hundredths 13. Multiplies mixed decimals with tenths and hundredths by whole numbers 14. Multiplies mixed decimals by mixed decimals with tenths and hundredths 15. Estimates the quotients of decimal numbers 16. Divides decimal numbers by whole numbers 17. Divides decimal numbers of

	powers of ten 16. Computes common percentage problems	values up to hundredths 18. Finds percentage in a given problem

The continuous decline of NAT results of the Filipino students has triggered reforms and innovations in mathematics curriculum, and driven numbers of researches aimed at reducing the ripple effects (Mirabueno, 2019). However, recent report of DepEd Regional Office 5 informs that the Bicolano students' performance remained low in the subject. This said report presented a summary and interpretation of the NAT results and noted the hard-to-teach, and least-learned competencies in both primary and secondary mathematics. This information formed the baseline data of this study and strengthened the need to conduct an assessment and early intervention. Cawley and Miller (1989) cited that while it is likely that the curriculum may account for some achievement deficits, learning gaps of students may actually be due to intrinsic factors and are not solely caused by poor teaching or curriculum design. Hence, this study developed and validated worksheets specifically designed to fit the needs of the respondents. Each worksheet embeds a set of basic computation skills which is geared towards proficiency.

Table 2. Developed Skills and Competency Rating by School by Competency Area

Area	Competency No.	Pre-Test				Post-Test			
		Schools			Row Mean	Schools			Row Mean
		F	I	J		F	I	J	
Whole Number	**Simplifies a series of operations on whole numbers involving more than two operations** (Comp 1)	10.9	29.4	16.7	**19%**	39.13	38.2	34.4	**37%**
Fraction	**Estimates sums, and differences, products and quotients of fractions and mixed numbers** (Comp 3)	10.9	20.6	11.7	**14%**	33.7	17.7	31.7	**28%**
	Adds fractions and mixed numbers with/out regrouping (Comp 4)	8.7	19.6	0	**9%**	20.3	37.3	20	**26%**
	Subtracts fractions and mixed numbers (Comp 5)	0	2.94	0	**1%**	19.6	29.4	23.3	**24%**
	Multiplies a fraction and a whole number and another (Comp 6)	0	5.88	0	**2%**	34.8	29.4	33.3	**33%**
	Divides simple fractions, whole numbers by a fraction and vice versa (Comp 7)	0	5.88	10	**5%**	23.9	88.2	26.7	**46%**
Decimal	**Estimates the sum or difference of decimal numbers** (Comp 8)	15.2	29.4	10	**18%**	26.1	94.1	23.3	**48%**
	Adds and subtracts	15.	11.	28.	**18%**	29.	64.	38.	**44%**

	decimals and mixed decimals through thousands with/out regrouping (Comp 9)	2	8	3		3	7	3	
	Estimates products of decimal numbers (Comp 10)	10.9	8.82	10	**10%**	47.8	64.7	53.3	**55%**
	Multiplies decimals by multiples of 10 and 100 (Comp 11)	13.0	0	6.67	**7%**	32.6	47.1	46.7	**42%**
	Multiplies decimal numbers of values up to hundreds (Comp 12)	23.9	0	6.67	**10%**	26.1	64.7	50	**47%**
	Multiplies mixed decimals with tenths and hundreds by whole numbers (Comp 13)	10.9	5.88	10	**9%**	45.6	29.4	43.3	**39%**
	Multiplies mixed decimals by mixed decimals with tenths and hundredths (Comp 14)	13.1	20.6	20	**18%**	26.1	20.6	36.7	**28%**
	Estimates the quotients of decimal numbers (Comp 15)	10.9	2.94	16.8	**10%**	23.9	20.6	40	**28%**
	Divides decimal numbers by whole numbers (Comp 16)	15.2	14.7	26.7	**19%**	23.9	35.3	30	**30%**
	Divides decimal numbers of values up to hundredths (Comp 17)	17.4	14.7	20	**17%**	26.1	23.5	16.7	**22%**

Conclusions

Based from the results of the study, it can be inferred that the respondents were able to develop the basic computation skills which are prerequisites of higher mathematics by the use of stand-alone worksheets. This effect proves that the said materials were adequate and effective in increasing learner's performance. However, although such increase is statistically significant, performance rating of the respondents per competency has not met the 75% cut-off score. This condition suggests that further assessments should be done to monitor the learners' learning progress and teachers and/or researchers should further conduct interventions. In addition, materials to supplement instructional tools other than worksheets should also be developed and employed. This can be those which engage and allow learners to use multiple senses. This further implies that teachers need to demonstrate flexible and effective teaching methodologies, strong classroom organization and management skills in order to ensure that the students learning needs are appropriately addressed.

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Contact email: jaymar.bonaobra@bicol-u.edu.ph
rmlorente@bicol-u.edu.ph

The Study of Factors that Affect Zhuhai Undergraduates' Willingness to Get Master Degree in Hong Kong

Li Pinzhong, HKBU-BNU United International College, China
Hu Dongxue, HKBU-BNU United International College, China

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Abstract
Previous research is limited in analyzing students' willingness to study abroad in specific political settings. This paper used a Push-pull model to develop a model that links political, economic, and cultural factors with Zhuhai undergraduates' willingness to get a master's degree in HK. We tested this model with the data got from five universities in Zhuhai and a sample size of 150. Regression results showed that perceived safety and cultural adaptation positively influenced Zhuhai undergraduates' willingness to get a master's degree in HK. Two hypotheses proposed in the paper were verified. While the perceived cost of living and tuition fees have a low effect on Zhuhai undergraduates' willingness to get a master's degree in HK.

Keywords: Higher Education, Master Degree, Hong Kong

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Introduction

In the global comprehensive competition, talents have become a significant growth pole. The international exchange of talents is improved and expanded. Global student enrollment in higher education rises from 2 million to 4.5 million in the first decade of the 20th century. China's rapid development and construction have also strengthened the demand for talents. In the process of meeting such demand, to cultivate high-quality talents, more and more Chinese parents and students choose to get further education abroad -- in 2018, the number of Chinese students studying abroad reached 662,100, maintaining a growth rate of more than 8% from 2016 consistently. With the rise of China's international status and the sharing of educational resources across the borders, universities in the western countries, and the two special administrative regions of China, have set relatively looser admission requirements for Chinese students than before, making the choices of Chinese students more abundant.

In the context of more choices and increasing demand for higher education, competition among education groups has intensified, making attracting students a challenge. What factors affect the educational decision-making of college students has attracted extensive attention worldwide. A vast number of researches have been conducted to investigate the international students' choices of education. Previous research indicates that there are seven major categories of factors that influence students' choice of international education, including personal, cultural, economic, social, legal, and political, environmental, and HEIs-related factors (Paulino & Castaño, 2019). Some researches focused on China, which indicates that the government's role in both sending and receiving students has changed from direct sponsors into regulators and facilitators. Market forces play an increasing role in matching demand and supply (Mei Li, 2007). Those research focus on financial and time costs; employment prospects; postgraduate education as a cultural adventure; linguistics; visa issues; admissions; climate; the influence of referents; academic image and reputation. They find that financial and time costs are of vital importance for Chinese undergraduates (Zhu & Reeves, 2018).

Also, a survey from overseas education institutions found that Hong Kong, America, Australia, and the UK were the most popular places for mainland Chinese to continue further study. Data from the UIC campus shows the following allocation of further study destinations: HK 29.7%, UK 29.4%, US 10.6%, Australia 26.5%. Among these, Hong Kong not only is the closest destination for mainland Chinese but also has unique advantages in its higher education. All universities in HK determines its positioning based on social needs with the division of different key major, which pursues scientific allocation of educational resources. The inclusive culture and harmonious environment in HK attract scholars, making it an ideal place for mainland graduates who want to study abroad.

However, due to political reasons, a series of riots occurred recently in Hong Kong that seriously affected its social stability. Accordingly, how and to what extent the choices of mainland undergraduates are affected becomes worth investigating. The present paper adds to the existing literature by choosing Hong Kong as one qualifier and aiming to identify the crucial factors that influence mainland undergraduates' willingness to have further education in Hong Kong after the protest activities

happening, taking Zhuhai as the representative.

The research studies on the factors that affect Zhuhai undergraduates' willingness to get a master's degree in HK after the protest activities in HK. The research objects are undergraduates who are willing to get further education and plan to apply for a master's degree outside of mainland China (overseas, HKSAR, and Macao). The timing of our research starts in June 2019, which is the beginning of HK protest activities. The geography scope of our research objects is within Zhuhai.

Factors that affect the willingness of the undergraduates can be classified as political, economic, and cultural categories from the perspective of motivation and value. In each of the three aspects, the most influential factors will be summarized and hypothesized. More detailed operational meanings for the 3 categories will be explained as follows.

For factors in the political category, the research factor focuses on perceived safety which is the measurement of perceived social stability of Zhuhai undergraduates. Blöbaum & Hunecke (2005) mentioned in the survey the perceived personal safety was defined as the perceived danger that affected behavior and incidents.

For factors in the economic category, the cost mentioned in our hypothesis 2 includes tuition fees and the cost of living in host countries. Opportunities cost (e.g. time a person spends) for finishing students' master's degrees were excluded. Also, to exclude the influence of people's different income levels, the cost we mentioned below is students' subjectively perceived cost instead of the standard and quantifiable criteria.

For factors in the cultural category, cultural adaptation (sociocultural and psychological) and the desire to experience other cultures are the two factors included. Cultural adaptation is our focus in current research, among which, sociocultural adaptation refers to the more practical and behavioral aspects of adaptation to a new culture; however, psychological adaptation refers to the degree to which a person feels comfortable and happy in the new culture, or anxious and uncomfortable (Demes & Geeraert, 2014).

Literature Review and Hypotheses

Push-pull model

The push-pull factor is a model reflecting tourists' travel motivation. As Eder, Smith, and Pitts (2010) explain, "Individuals are influenced by motivational factors that push them into a travel decision, or in other words 'whether to go,' while pull factors indicate how they are attracted by a location, or in other words 'where to go' (Baloglu & Uysal, 1996; Kim, Jogaratnam, & Noh, 2006)."

Previous work in tourism serves as an inspiration for cross-border student movement models. Mazzarol and Soutar (2002) extend the model of push and pull factors from destination choice in tourism to cross-border higher education. Push factors consist of variables that cause students or their families to look into the option of cross-border higher education. Pull factors, as the focus of our research, is a common focus of

inquiry hoping to reveal how to best draw students to a destination. Bodycott (2009, p. 354) identifies ten common pull factors drawn from (1) Knowledge and awareness of the institution, its reputation, and general knowledge of the destination country, (2) Positive attitude toward supporting international education in the destination country, (3) Recommendations and the influence of relatives, parents, and friends, (4) Tuition fees, living expenses, travel cost, and social cost, (5) Environment considerations including climate, lifestyle, crime, safety, and racial discrimination, (6) Geographical proximity, (7) Social or educational links to family or friends living in the destination country, (8) Immigration prospects after graduation, (9) Perceived higher standards of education and employment prospects, and (10) Availability of scholarships for study.

Political Factors

In the political category, the previous focused on social stability, visa policy, and immigration policy. Rafi and Lewis (2013) indicated that Australian educational policy provided the best interest for Indian undergraduates. With the streamlined visa policy and preferential treatment on the immigration applicants of graduates, the number of Indian students choosing Australia for higher education destinations had increased significantly, showing a positive trend. The findings of Daglish and Chan (2005) illustrated that two factors influenced Indian undergraduates' choice of Australia including the difficulty of applying for a US visa and the complexity of the process. Shih (2016) researched the relationship between American international enrollment and the opening of the US labor market under the H-1B plan (mainly reflected in the number of visas issued). According to American Economic Association data, a visa issued by a country is higher than the country's arrival in the United States. The H-1B visa was reduced in October 2003, resulting in a 10% reduction in foreign enrollment.

Exploring the security factor in social stability, in the research of Deumert, Marginson, Nyland, Ramia, and Sawir (2005), Australia was considered a relatively safe social and political environment compared to other countries. Compared with other countries as learning destinations, parents, and students in China, Taiwan, and Indonesia preferred to choose Australia to accept higher education. Mazzarol and Souter (2001) signified that the presence of social stability was the most significant predictor of intentions to choose an education importing destination. Under the violent demonstration in HK, according to a report on *ChinaDaily*, the title "Protests disrupt city's stability and operations" indicated that protest had led to low social stability in HK and people's safety has been threatening.

Under the violent protest and poor social stability, every undergraduate has a different perception of HK social turmoil and makes different choices whether to decide HK as a further education destination. So, the research factor in the political categories is decided in the perceived safety of Zhuhai undergraduates:
Hypothesis 1: Throughout factors in the political categories, perceived safety has a positive correlation with Zhuhai undergraduates' willingness to get a master's degree in HK.

Economic Factors

The economic factor is one of the two most influential determinants of international student mobility (Wei, 2013). The cost that influences students' willingness to study abroad mainly includes the cost of the program or tuition fee, cost or standard of living, mobility cost, and other related expenses (Beine, Noel, & Ragot, 2014; Chapman & Pyvis, 2004; Cao et al., 2016; Coryton, 2014; Dahari & Abduh, 2011; Naidoo, 2007; Perkins & Neumayer, 2013; Shanka, Quintal, & MEdman, 2006; Soo & Elliott, 2009; Tan & Goh, 2014; Wei, 2013; Zwart, 2013).

When analyzing the influence of economic factors on students' decisions, different scholars have a different emphasis. Maringe and Carter's (2007) trade economy (and home country capacity) is a push factor that motivates students to study abroad. Basha et al.'s (2016) emphasize the university-level factors. Meanwhile, Maybelle A & Mary Caroline N mentioned that students are motivated to study abroad by possible financial aid or scholarship grants and of the potential increase in the future expected income (Paulino, M. A., & Castaño, M. C. N). Vrontis et al.'s (2007) focus on the environmental determinants (economy of the host countries). While Hemsley-Brown and Oplatka (2015) mentioned the outcome and benefits (student /institutional factors), which is an important factor in the return on educational investment that people need to carefully consider.

In the study of economic factors, some scholars use quantitative methods while others use qualitative ones. Cao et al (2016) used a quantitative study to analyze the economic factors that influence Chinese students' choice of overseas educations. While Rudd et al. (2012) studied the cost of living with some qualitative themes.

Based on the analysis above, previous researchers have analyzed future career, financial support, scholarship, the potential increase in future expected income, cost of living, and tuition cost aspects in the economy category. This paper will discuss Zhuhai undergraduates' willingness to get a Master's degree in HK under the current political situation. The cost of living and tuition costs will be discussed in detail because they are more measurable and representative features. Although cost is a standard and quantifiable criterion, different people with different incomes will perceive it differently for the same price (or cost). Based on these different perceived costs, different people will also behave differently. Therefore, to exclude these influences on students' choices, we mainly discuss their perceived cost. Hypothesis one is proposed:
Hypothesis 2: Throughout factors in the economy categories, students' perceived cost of living and tuition fees have a positive correlation with Zhuhai undergraduates' willingness to get a master's degree in HK.

Cultural Factors

Culture is defined as the beliefs, norms, behavioral patterns, and values of a national group (Paulino & Castaño, 2019). It is considered as one of the most significant factors influencing undergraduates' choice of study destination, particularly for students from Confucian societies (Bodycott, 2009). In terms of cultural factors, the previous research mainly focused on cultural adaptation and the desire to experience other cultures. Different ethnic groups have disparate levels of cross-cultural pressure

(Paulino & Castaño, 2019). Vergara et al. (2010) signify that not all undergraduates are subject to culture shock and the pressure of cultural changes and unacquainted cultures. Certain college students stay in a place around various cultures with pleasure and have a desire to experience other cultures (Busher, Lewis, & Comber, 2016). Zhu and Reeves (2019) state that part of the Chinese undergraduates treats postgraduate education as a cultural adventure to explore how to get along well with others with diverse cultural backgrounds.

In the process of transition from the home country to the host country, international students always need to deal with various adaptation problems, which is known as cultural adaptation (Popadiuk & Arthur, 2004). According to the model of Searle and Ward (1990), there are two distinguishing sides of cultural adaptation–sociocultural and psychological. In the transition process, international students need to not only adapt to the cultural environment of the host country but learn new cultural norms and values (Rujiprak, 2016). Based on more representative and measurable cultural adaptation in cultural factors, it will be discussed in detail relating to the current situation in Hong Kong. Hence, Hypothesis 3 is proposed:
Hypothesis 3: Throughout factors in the cultural categories, the cultural adaptation has a positive effect on Zhuhai undergraduates' willingness to get a master's degree in HK.

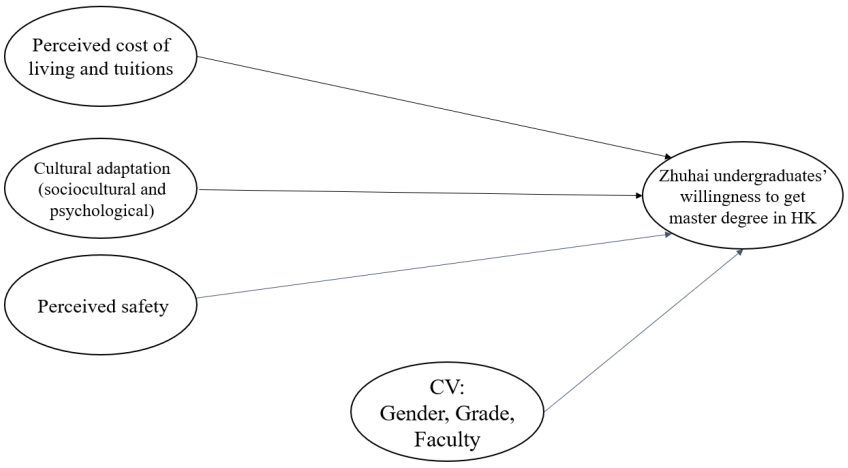

Figure 1: Push-pull model

Methodology

Sample and procedures

Participants in the current study were undergraduates in Zhuhai, a city in Southern China, and were mainly concentrated on five campuses (UIC[1], BNUZ, Beijing Institute of Technology Zhuhai campus, Jinan university Zhuhai campus, Sun Yat-Sen University Zhuhai campus).

[1] UIC: United International College
BNUZ: Beijing Normal University, Zhuhai

Quota sampling was used for the offline survey. Five campuses in Zhuhai was chosen firstly based on location. The same questionnaires in paper format were administered to students on each campus. The offline questionnaires were distributed to 200 students from five universities, including 70 students from BNUZ, 17 students from UIC, 79 students from Beijing institute of technology Zhuhai campus, 15 students from Sun Yat-Sen University Zhuhai campus, and 19 students from Jinan university Zhuhai campus (with the total amount of 71500 students in the five universities). Respondents were informed that the survey aimed to examine factors that affect their willingness to get a master's degree in Hong Kong and were assured of the confidentiality of responses. Two days were allocated in this stage.

Snowball sampling for the online survey was also planned to be used. However, it had been given up due to uncontrollable political reasons.

Of the 200 respondents, we excluded 50 students who chose not to get a master's degree outside mainland China. Among the 150 respondents who remained, 27.33 percent were male. Respondents reported an average grade of 2.23 years (S.D.[2] =0.99), and 66 percent of students whose faculty belongs to liberal arts (S.D. =0.48).

Measures

The current research described the factors for undergraduate students in Zhuhai in choosing to get a master's degree in Hong Kong. Gatfield and Chen (2006) have identified the key factors that affect students' choices in selecting the studying overseas destination, we used them as a guide to developing the scales. To ensure that the measurement results are consistent with the Chinese and English versions, standard translation, and back-translation procedures (Brislin, 1980) were applied. We reworded a few items, making them more relevant to the current topic. Unless otherwise stated, responses to items were mainly measured on a Five-Point Liker Scale, ranging from 1, “extremely disagree” to 5, “extremely agree”.

The perceived cost of living and tuition cost. We used two-item scales developed by Julie Zwart (2012) to measure students’ perceived cost of living and tuition. It was used to measure the importance of factors when choosing a country for overseas study. Sample items were, “Which country is it most and least expensive to live in?” and “University from which country has the highest and lowest tuition cost?” The scale’s reliability was .78.

Perceived safety. Researcher, Mialm, Furr-Holden, and Leaf (2010), have used 5 perceived items, rated on a 5-point Likert scale as the measurement of the perceived safety of school climate. This research measured the students’ perceived safety from school climate, which was relevant to our research purpose, the undergraduates’ perceived safety from the social background of HK. So, we did some adaption on original scale items to fix our research background. We changed the items on the paper of students’ perceived safety from school climate, for example, changed “school” to “Hong Kong’s universities”, “students in school” to “undergraduates in universities of HK”, “student drug/alcohol abuse is a problem” to “Undergraduates in

[2] Standard Deviation: S.D.

Hong Kong's universities have too much freedom" and "student possession of weapons is a problem" to "Undergraduates in Hong Kong's universities are aggressive. " The sample items were "I feel safe at school in HK", "I feel safe going to and from school in HK", "A lot of broken windows, doors, or desks at schools in HK". The scale's reliability was .66. to improve the reliability in the political category, we delete the third question on the data analysis which is "Undergraduates in Hong Kong's universities have too much freedom."

Cultural Adaptation. The model of Searle and Ward (1990) stated that cultural adaptation including two aspects, socio-cultural and psychological. We used Demes and Geeraert's (2014) eleven-item scale to measure sociocultural adaptation. Base on the research context, the sample item was, "The pace of life is fast in Hong Kong." Meanwhile, the item "Natural environment (plants and animals, pollution, scenery)" was deleted because it was not much related to the research context. For psychological adaptation, a ten-item scale also developed by Demes and Geeraert (2014) was used. In terms of the research context, the sample item was, "Happy with your day-to-day life in Hong Kong". The scale's reliability was .77.

Zhuhai undergraduates' willingness to get a master's degree in HK. We used a two-item scale developed by Hom, Griffeth, and Sellaro (1984) to measure students' willingness to get a master's degree in different countries. It was used to measure intentions to pursue graduate education. The items were "I intend to pursue a university graduate degree within the next 12 months" and "I am planning to apply for at least one university graduate program by this time next year." The scale's reliability was .89.

Control variables. The demographic factors including gender, grade, and faculty were considered as control variables. Previous research has shown that grades and faculty are related to future career prospects (Jackson, 1982). Gender is related to cultural adaptation (Hsieh, 2010). Gender was coded 1 for "male" and 2 for "female." The four grades of undergraduates were coded from 1 for "junior" to 4 for "senior". Also, given many faculties in different divisions, we divided them into two major parts, where 1 represented liberal arts and 2 represented science-related faculties.

Data Analysis

Descriptive statistics were first conducted on the samples and the statistical distribution of them was determined based on gender, grade, and faculty. Then, we conducted an adverse response to the research questions and analyzed the internal reliability among scales of three different IV separately using SPSS. After screening out the unreliable scales, we calculated the mean value of all questions for each participant under three IV's (one IV corresponded to one mean value; each person has three representatives mean value. Finally, to test Hypotheses 1, 2, and 3, we conducted a regression analysis based on the mean values of three IVs for each participant.

Results

Table 1 presents the means, standard deviations, reliabilities, and correlations among the study variables. Table 2 presents the results of the regression analysis.

As shown in Table 2, perceived safety (β = .193, p < .01) and cultural adaptation (β = .236, p < .01) were positive related to the intention that get master degree in Hong Kong. Moreover, the results showed that the perceived cost has a weak influence on the intention in the current environment of Hong Kong because the perceived cost's significant value (.617) is more than .05. Their interaction term accounted for 15 percent of the explained variance in intention (overall R^2 = .152). Therefore, hypothesis 1 and hypothesis 3 were fully supported while hypothesis 2 was not supported.

Table 1: Means, Standard Deviations, Reliabilities, and Correlation among Study Variables

Variables	Mean	s.d.	1	2	3	4	5	6	7
1. Gender	1.73	.44							
2. Grade	2.23	.99	.062						
3. Faculty	1.35	.48	-.226**	-.025					
4. Cultural Adaptation	3.02	.36	.043	-.212**	-.189*	(.771)			
5. Perceived Safety	2.59	.64	-.089	-.253**	-.068	.382**	(.660)		
6. Perceived Cost	4.07	.90	-.012	.203*	-.041	-.038	-.077	(.782)	
7. Intention	2.58	.86	-.153	-.097	-.038	.303**	.294**	.018	(.887)

[a] Correlation coefficients of .20 or greater are significant at p < .01. Correlation coefficients that are greater than .16 and less than 0.20 are significant at p < .05. n=150 with listwise deletion.

Table 2: Results of Regression Analysis

Variables	Intention	Sig
Controls		
Gender	-.148	.065
Grade	.002	.979
Faculty	-.012	.878
Direct effects		
Perceived Safety	.193	.025
Cultural Adaptation	.236	.007
Perceived Cost	.040	.617
Overall R^2	.152	
Overall F	4.267	

[a] n = 150 with listwise deletion. Standardized regression coefficients are shown.

Discussion

Theoretical Implications

Our findings regarding willingness contribute to the overseas education literature in several ways. First, our findings support the cultural effects as one of the significant factors influencing undergraduates' choice of study destination in which Bodycott (2009) proposes that students from Confucian societies care about the cultural adaption in international study mobility. Besides, our finding is consistent with that college students stay in a place around various cultures with pleasure (Busher, Lewis, & Comber, 2016), further underscoring the Chinese students are with more desire to adapt to a different culture.

Second, our finding supports the research made by Mazzarol and Souter (2001) that signified that the presence of social stability was the significant predictor of intentions to choose an education importing destination. Specifically, in the contemporary

context of protests, our findings suggest that when choosing to study overseas, perceived safety is much concerned with Chinese undergraduates. The undergraduates tend to choose the studying destination in peace and safety (Deumert, Marginson, Nyland, Ramia, and Sawir, 2005), and it is stressed by Chinese students currently.

Third, the effects of the perceived safety factor and cultural adaptation factor beyond the perceived cost of living and tuition factor to the willingness of getting further study in Hong Kong. They lead us to suggest that, in the contemporary context of protests are becoming more serious, the previous research demonstrates that perceived cost factor is one of the two most influential determinants of international student mobility (Wei, 2013), does not affect the willingness to get further education in Hong Kong significantly. According to our findings, future research may need to take into account that the perceived cost factor of international student mobility does not always play an important role, when the perceived safety, as the precondition, cannot be assured in serious protests.

Practical Implications

The results of our study have several practical implications.

First, it exists a change in mainstream international studying mobility. As the undergraduates tend to concern about the perceived safety and cultural adaption, overseas study enterprises and universities should pay attention to these two factors influencing the willingness of studying abroad and the effects on the trend of studying abroad in the future.

As there is decreasing perceived safety in Hong Kong recently and the cost advantage of studying is not so significant, if Hong Kong still wants to be an attractive studying destination, the perceived safety should be concerned to improve. Or the willingness to get further education in Hong Kong would be decreased.

Therefore, second, overseas study enterprises or international schools should not be too dependent on the business that concentrates on getting an education in Hong Kong. A diverse development of overseas studying business system should be built, to spread the risk and loss that might happen in the uncertain situation of changes from regional policies or safety. If possible, focus on the destination with high perceived safety and Chinese students' desire to make the cultural adaption.

Third, as the total amount of Chinese overseas students is increasing, the relationship to share the talents between the universities in Hong Kong and the universities in other countries like Singapore or Britain is alternative (Baohua，2019), the universities in other countries should prepare for accepting this transfer flow of Chinese undergraduates. Make the plan to decide whether to expand the enrollment or set higher qualified selection.

Limitation

First, on the methodology, we found the scale items in the existing paper and translated them into Chinese. And also, we edited some questions which made them fix our research background. The translation and adaption made slight differences

compared to the original scales. These errors could lead to some divarication of understanding the meaning of the question from our research.

Second, the hypothesis of perceived cost is not supported by the sample data which indicates that the perceived cost only has a weak effect on influencing undergraduates' willingness. The reasons for the rejected hypothesis, we summarize reasons as following: to begin with, except undergraduates in UIC, other undergraduates in our sample are more likely to get a domestic master's degree and they do not plan to go aboard to get further education. So, this part of the sample, may pay less attention to Hong Kong's current situation and don't know much about the cost of studying abroad. And participants may misunderstand our ranking options and reversed the most expensive with the cheapest option. Lastly, the research finding of our research applies in a specific situation that cannot be applied to the general situation. Because the research of Zhuhai's undergraduates' willingness to study in HK universities is based on the background of current violent protests in HK. So, the result of our research has timeliness.

Conclusion

From the analysis of the results, we can summarize the conclusion of the hypotheses. The hypotheses of political and cultural factors are valid. So, students' perceived safety and cultural adaptation have a positive correlation with Zhuhai undergraduates' willingness to get a master's degree in HK. However, the hypothesis on perceived cost is rejected and the data analysis shows that perceived cost has a weak influence on the intention of Zhuhai undergraduates' willingness under the recent situation. The implication of the research, different from the past, today on choosing the destination of further education, undergraduates would take more consideration on perceived safety and culture adaptation. The enterprise relative with overseas study should refer to HK current situation which causes the falling attraction as an oversea study destination and enterprise from a diversified business system to reduce the risk of focusing the business on one choice, and the related universities of other countries need to plan to deal with the transfer flow of Chinese undergraduates.

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Contact email: 18927400129@163.com

Appendix

Items for perceived safety

I feel safe at HK's universities.
I feel safe going to and from HK' universities
Undergraduates in Hong Kong's universities have too much freedom.
Undergraduates in Hong Kong's universities are aggressive.
A lot of broken facilities, windows, or office at HK' universities.

Items for psychological adaptation (Five-Point Liker Scale)

Excited about being in HK.
Out of place, like you don't fit into HK culture.
A sense of freedom being away from the home country.
Sad to be away from my home country.
Nervous about how to behave in certain situations.
Lonely without your home country family and friends around you.
Curious about things that are different in HK.
Homesick when you think of the home country.
Frustrated by difficulties adapting to HK.
Happy with your day-to-day life in HK.

Items for sociocultural adaptation (Five-Point Liker Scale)

Climate (I like the climate in HK)
Social environment (The pace of life is fast in HK)
Living (I have the same sleeping practices as Hong Kong people)
Practicalities (The transportation is convenient in HK)
Food and eating (I like eating Hong Kong food)
Social norms (I have the same punchline as Hong Kong people)
Values (I have the same values about right or wrong things as Hong Kong people)
Beliefs (I have the same religious beliefs as Hong Kong people)
People (Hong Kong people is friendly to the mainlander)
Friends (It is easy to make friends with Hong Kong people)
Language (It is easy to communicate with Hong Kong people)

Items for the cost of living and tuition cost (Ranking questions)

Which country is it most and least expensive to live in?
University from which country has the cost of the highest and lowest tuition

Items for Zhuhai undergraduates' willingness to get a master degree in Hong Kong

I intend to pursue a university graduate degree within the next 12 months
I am planning to apply for at least one university graduate program by this time next year

Supporting the Academic Dimension of the Transition to University

A. C. Spowage, Queen Mary University of London, United Kingdom
Xinru Deng, Queen Mary University of London, United Kingdom

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Abstract
The transition from further to higher education is both an exciting and challenging time for first year undergraduate engineering students. This work focuses on developing a tool to support the academic dimension of the transition, specifically the identification and closing gaps in student's pre-requisite knowledge, skills and reasoning. A transition survey was developed and deployed to a large cohort of Chinese engineering students on a British Transnational Education Programme (TNE). The first iteration of the survey was first deployed to Queen Mary Engineering School (QMES) students in September 2018. The results from which are presented in this paper. The transition survey was enhanced with support from colleuges from two other universities (Hassell, D, G., Gan, S, Y., Spowage A.C. 2019) and deployed to students in three partner Universities in September 2019. Selected results from this second iteration deployed to QMES students are included in this paper for comparison purposes.The results indicate the approach can support students in identifying and closing gaps and thus support them in the management of the academic dimension of the transition to undergraduate engineering education. However, additional work and access to data from a graduating cohort is needed to completely address the research question. The work identified several areas where students background knowledge skills and reasoning are incomplete to take full advantage of the learning opportunities presented to them. The work defined several areas of improvement for future iterations of the survey.

Keywords: Academic Transition, Transnational Education, Transition Survey

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Introduction

The transition from further to higher education is an emotionally and intellectually challenging experience. Harvey et al identified several factors which influence a successful transition. The impact of student retention, satisfaction and performance has led to support of the first-year transition being considered a high-priority research area. The transition in the United States is considered by social and academic integration theories. In British universities more emphasis is given for preparedness for higher education, expectation management, satisfaction and the quality of the experience (Harvey, Drew, & Smith, 2006). The most common way universities support students during their transition is the resource (or "best practice") approach (Fox, 1986) (Barefoot, 2000). Many universities provide counselling, online resources and written guides to help support students make the transition (Mutch, 2005).

The literature suggests that in order to understand the issues students are having during the transition it is important to appreciate their background (Eriksen & Strommer, 1991). Queen Mary University of London (QMUL) has established a "Joint Education Institute" with Northwestern Polytechnical University in Xi'an China. The school, Queen Mary Engineering School (QMES), currently runs two, four year long, undergraduate bachelor's programmes in "Materials Engineering" and "Polymer Science & Engineering" the first two years of which are undifferentiated. Each programme has approximately 120 students per year and at the time of writing the first cohort is in their 4th year of study.

After a review of past work, the approach of (Goodhew, Murphy, McCartan, & Myler, 2011)(McCartan & Goodhew, 2010) (Goodhew, Bullough, McCartan, & Connor, 2013) (McCartan C. D., 2015) were considered to be most adaptable to the objectives of this work. The objectives of this early work are different to that in this work. However, the question bank developed holds the greatest potential to support the objectives of this work.

The aim of this work is to support QMES engineering students during their transition from school to a UK based engineering programme. The research question in this initial study is: could a transition survey support the academic dimension of the transition to a transnational engineering education programme. Put it another way the work aims to help students with the transition by enabling them to identify any gaps in their prerequisite knowledge, skills and reasoning. Once these gaps are identified support should be made available to close the gaps.

This paper presents the findings for the first iteration of the transition survey and contrasts them with the basic results from the second iteration.

Materials and Methods

The primary reference for the transition survey is that of (McCartan & Goodhew, 2010). The authors developed a diagnostic tool, referred to in this work as a "transition survey" which aimed to "assess the knowledge and experience of incoming engineering students". Effectively the authors develop a comprehensive question bank with links to related background reading although the purpose of the

study and the mode of deployment (paper based) did not really encourage students to use the links.

This work used the same question bank to determine if a "transition survey", the term used in this work, could be used to address the research question. The latest version of the questions was generously provided by Prof. Goodhew, the complete dataset contained 80 questions. These questions were reviewed for relevance to the QMES programmes and suitability for deployment within the Chinese context. The web-links in the transition survey needed to support student close any gaps identified. The links were reviewed for suitability to the purpose of this work and accessibility in China.

Questions were classified into a number of ***areas*** relating to discipline, and subclassified into the following question ***types***: knowledge, skills and reasoning (McCartan C. D., 2015). The survey was deployed via the schools Moodle based virtual learning environment (VLE).

Prior to deployment of the first iteration of the survey it was beta tested by several graduate students. The survey was opened for two weeks, and students could access the quiz as and when they chose.

The question bank for the second iteration of the survey was heavily modified in conjunction with colleuges from the university of Bath and the University of Nottingham Malaysia Campus (Hassell, D, G., Gan, S, Y., Spowage A.C., 2019). Limited results from the second iteration are contrasted with those from the first iteration where appropriate.

Results & Discussion

In the first iteration of the transition survey data was collected from a total of 225 students', the basic data is summarised in Table 1. The percentages of students that attempted the survey was high (100%). However, the number of students completing the quiz was significantly lower (87%). Informal discussion with students that did not complete the survey suggested it was too long or that they were actively working on it and simply forgot to submit before it closed. To improve the submission rate the number of questions was reduced in the second iteration (Hassell, D, G., Gan, S, Y., Spowage A.C., 2019). In addition, several reminders were sent to encourage completion and submission before the survey closed. The approach improved the number of students that managed to complete the survey, the result was a higher number of successful submissions in the second iterations, Table 1.

The response rate was better than in the original work (72%) which was delivered synchronously in class using a paper-based approach (McCartan & Goodhew, 2010). This may be associated with the way the survey was administered or the character of the QMES students. Another explanation could be the different focus of the work i.e. this work aimed to help students identify and then close gaps in their STEM background while the original work had a stronger focus on assessing knowledge and experience which may not translate as readily into a direct benefit for students. While the questions were similar, the purpose would be perceived very differently by students. Additional work and comparisons with UK students on those on other

Transnational Education Programmes is recommended to help decouple these observations in future iterations of the survey.

When the scores in the first iteration of the transition survey are mapped against the QMUL grading bands a relatively high percentage of students (38.8%) obtained 1st class marks (70% or more). This is not too surprising as the transition survey focuses on knowledge, skills and reasoning that the students should have mastered as pre-requisites to starting their undergraduate engineering programmes. At the opposite end of the spectrum nearly one quarter of students (22.3%) scores were in the 3rd class or below bands. Assuming that the questions are indeed related to areas important for success within the degree programme, then this observation suggests a real need to support at least a subset of students to close gaps in their pre-requisite knowledge. The average performance of students in the second iteration was higher than in the first, Table 1.

Analysis of the time students invested to complete the survey indicated that on average students spent over 2days accessing the survey in both iterations. The observation indicate that students were following the links and closing gaps as the survey would have taken less than 2hrs to complete. This is the only metric available to assess if students actually followed the links to close any gaps identified. A more direct metric is needed to determine the extent to which students followed the links, and if possible, how much time they spent closing the identified gaps. In both iterations some students clearly did not follow any of the links as the time taken was far too short.

Analysis of correlation between the time taken to complete the transition survey and their average mark in QMES modules was investigated. The results indicate weak or no correlation between time taken with either entry grade, transition survey performance or the 1st academic year average mark.

Statistic	Value	Value
Number that attempted the quiz	225 (100.0%)	227 (100.0%)
Number that finished the quiz	195 (86.7%)	222 (97.8%%)
Average grade	41.7 (63.2%)	32.6 (74%)
Number of questions	66	44
Number of questions answered correctly by 90% or more of students	2 (3.0%)	13 (29.5%)
Number of questions answered incorrectly by 90% or more of students	3 (4.5%)	0
Average time taken (must have finished)	2 days 1hours 23min 7s	2 days 14 hours 30 mins
Correlation – Gender and transition survey score	None	None
Correlation – Entry grade and transition survey score	None	None
Correlation – Between question types	Moderate to Strong	Strong
Correlation – Between question areas	Weak to Strong	Weak to Strong
Correlation – Time taken in the survey and score, first year average or module marks	None	Weak

Table 1: Transition survey basic Statistics

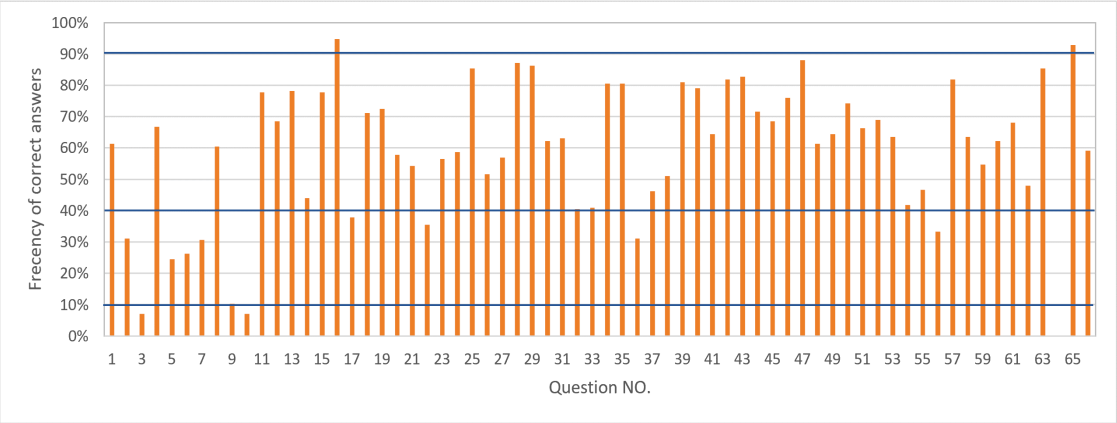

Figure 1: Frequency of correct answers for each question in the transition survey 1st iteration

The frequency of correct answers for each question in the first iteration is shown in Figure 1. The results indicate only two questions were answered correctly by over 90% of students. The results indicate that except for these two questions, the question bank focused on areas that represented gaps to a major proportion of students. In the second iteration some questions were removed, and new questions added. The results indicated that a higher number of questions (13) were answered correctly by more than 90% of students. It is not clear if this is reflective of the differences between cohorts or that the updated question bank was less challenging to students.

McCartan 2015 found (in there 40 question, 600 student survey that used a subset of the questions from iteration 1 of this work) that in 2 questions less than 10% of students and in 16 questions less than 40% of students got the correct response. On a macro level these results would seem comparable. Comparing the questions where

less than 40% of students got the correct response, the UK based students found difficulty in areas of Manufacturing, Mechanics and Maths. However, the QMES students found most difficulty in skill type questions (4 of 15 questions got lower than 40% accuracy), math topic (4 of 13 question got lower than 40% accuracy). McCartan noted that it was surprising that even when students had very high mathematics entry grades that did not necessarily translate to a high score in the math focused questions of their quiz. Combining these observations may suggest that the issues QMES students found with the math questions may not be completely associated with language. Additional work and more direct comparison with British and students on other transnational education programmes should be considered in future studies.

Three questions from the first iteration were answered incorrectly by over 90% of students. These questions were evaluated and either the phraseology improved, or they were replaced in the second iteration. As a result no questions were answered incorrectly by more than 90% of students in the second iteration.

The transition survey in this and the questions in the original work targeted three *types* of questions; skill, knowledge and reasoning, Figure 2. In the first iteration the significance coefficient (2-tailed) for the total average score and the average score for each question *type* indicated no significant difference for all question *type*s. Analysis by question types indicated that in only 6 (out of 38) knowledge, 4 (out of 15) skills and 2 (out of 13) reasoning questions did 40% or more of students get the correct answers. The observations indicate that the gaps in students STEM background, and that the student's backgrounds are quite diverse.

In the second iteration student performance in skills type questions was similar (64%) to that in the first iteration but significantly higher in the knowledge (81%) and reasoning (79%) type questions. Figure 2. Due to the differences in the question banks used it is not clear if the results are reflective of differences between cohorts or if the questions asked.

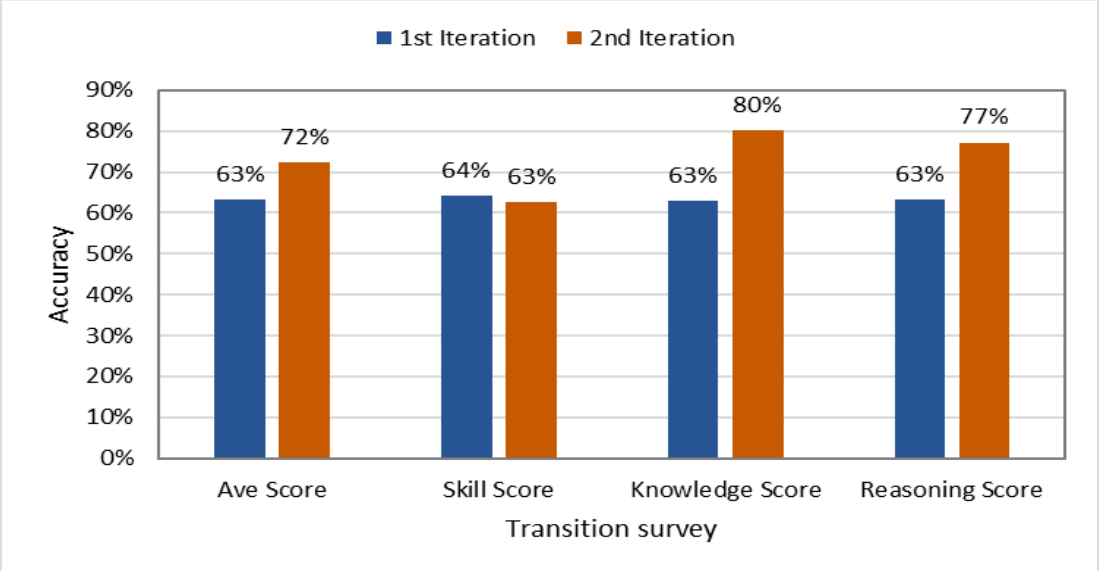

Figure 2: Comparison of all question types from the 1st iteration of the transition survey.

The Pearson correlation coefficient between questions types is shown in Table 2. Skills, Knowledge and Reasoning question types all indicate moderate to strong correlation between *types*. That is it can be expected that students who scored highly in knowledge type questions would also score well in skills and reasoning type questions, Table 2.

Skills-Knowledge	Skills-Reasoning	Knowledge-Reasoning
1st Iteration		
0.7 Strong correlation	0.5 Moderately correlation	0.6 Strong correlation
2nd Iteration		
0.70 Strong correlation	0.59 Strong correlation	0.65 Strong correlation

Table 2: Pearson relevance among question types

The question *type* QMES students found most challenging were associated with skills in both iterations. It was suspected that issues with skills related question was associated with English language capabilities e.g. the names of hand tools of other specialist vocabulary. The lack of correlation with the English language module scores might be due to the lack of engineering specific terminology within the module which might be an important factor in curriculum review. Either way it is an important area and discussions with the English language team and a suitable glossary of technical terms should be added to the survey for future iterations.

The relatively low performance of QMES students in mathematics related questions (many of the reasoning type questions) in the was something of a surprise as mathematics is given considerable attention in the student's pre-university education. It was suggested by Chinese colleuges that the result may be associated with the students not understanding the questions or how to apply their previous knowledge to the way the questions were phrased. Further, there was no correlation between the student's performance in the transition surveys maths questions and the mathematics modules they study in their first year. This issue needs additional investigation in future iterations in the survey.

Questions in the transition survey were also divided into several *areas* based on discipline lines. The performance of male and female students, and between programmes in each question area are considered in Table 3. The *area* of best performance was MS Office & IT and the worst was General Knowledge. However, there were only a small number of questions in each of these *areas*. ANOVA analysis indicates the average scores were similar in each *area*. The question areas were reorganised in the second iteration so a direct comparison would not be appropriate. However, in each question area the performance of students was generally higher in the second iteration with the exception of the "how they work" and "MS office and IT" areas.

Number of correct answers in each topic	Number of Questions	Performance
Chemistry	3	55.3%
The Workshop	4	62.8%
Nuclear Power	1	64.4%
How They Work	5	63.9%
General Knowledge	2	41.6%%
MS Office & IT	4	72.4%
General Physics	14	59.6%
General Engineering	7	59.9%
Materials Properties	13	57.2%
Maths	13	56.2%

Table 3: Analysis by question area 1st iteration

Table 4 indicates some question *areas* from the first iteration are strongly correlated with other question *areas* such as MS office & IT skills, General Physics, General Engineering, Materials Properties and maths. While other question *areas* have only a week/moderate correlation such as chemistry, the workshop and general knowledge. Similar observations can be made about question areas from the second iteration.

The student's entry grades were based on the Chinese Gaokao examinations. Gaokao or the "The National Higher Education Entrance Examinations" cover six modules. For science stream students this includes elements of Chinese, Math, English, Physics, Chemistry and Biology. The Ministry of Education determines the current years key enrolment benchmark depending on the number of applicants and the capacity of the universities. This will be different in different provinces (Davey, De Lian, & Higgins, 2007). As a result, the Gaokao scores cannot be compared directly between provinces. In this work the score over key

	The Workshop	Nuclear Power	How They Work	General Knowledge	MS Office & IT	General Physics	General Engineering	Materials Properties	Maths
Chemistry	0.34 weak	0.27 weak	0.40 weak	0.30 weak	0.37 weak	0.48 moderate	0.45 moderate	0.50 moderate	0.46 moderate
The Workshop	-	0.28 weak	0.57 moderate	0.34 weak	0.47 moderate	0.54 moderate	0.52 moderate	0.61 strong	0.58 moderate
Nuclear Power	-	-	0.33 weak	0.30 weak	0.47 moderate	0.45 moderate	0.35 weak	0.49 moderate	0.40 weak
How They Work	-	-	-	0.38 weak	0.56 moderate	0.66 strong	0.57 moderate	0.62 strong	0.60 moderate
General Knowledge	-	-	-	-	0.44 moderate	0.49 moderate	0.49 moderate	0.48 moderate	0.47 moderate
MS	-	-	-	-	-	0.70	0.63	0.70	0.63

Office & IT						strong	strong	strong	strong
General Physics	-	-	-	-	-	-	0.61 strong	0.73 strong	0.69 strong
General Engineering	-	-	-	-	-	-	-	0.66 strong	0.63 strong
Materials Properties	-	-	-	-	-	-	-	-	0.71 strong

Table 4. Pearson relevance among different question areas 1st iteration

benchmark rate has been used for comparisons between provinces and termed "Entry Grade" for simplicity.

The student's entry grades were based on the Chinese Gaokao examinations. Gaokao or the "The National Higher Education Entrance Examinations" cover six modules. For science stream students this includes elements of Chinese, Math, English, Physics, Chemistry and Biology. The Ministry of Education determines the current years key enrolment benchmark depending on the number of applicants and the capacity of the universities. This will be different in different provinces (Davey, De Lian, & Higgins, 2007). As a result, the Gaokao scores cannot be compared directly between provinces. In this work the score over key benchmark rate has been used for comparisons between provinces and termed "Entry Grade" for simplicity.

The relationship between *entry grade* and transition survey performance was investigated using the Pearson correlation coefficient. There was no significant correlation between entry grades and student's performance in both iterations of the transition survey. The observations indicate that *entry grades* alone cannot be used to predict QMES student performance. It is possible that the additional subjects studied in the entry qualifications diluted any correlation with performance in the transition quiz. Future iterations should look for a correlation between the scores in the relevant science subjects of the entry examinations and the results of the transition survey.

The Gaokao examinations are locally administered and there can be differences between the areas covered, and, emphasis given to certain subjects in different provinces. This can be thought of being analogous to different A-level examination boards in the UK which might have a greater or less focus on specific areas. QMES students are from different provinces. Figure 3 has been ordered highest entry score by province on the left to lowest on the right. Province 1 has the highest *entry grade* (0.6) and province 16 the lowest (0.1). Interestingly the province with the best entry grade didn't perform very well in the transition survey. That is Pearson correlation between the score in transition survey and *entry grades* shows a negative correlation, Table 5, in both iterations.

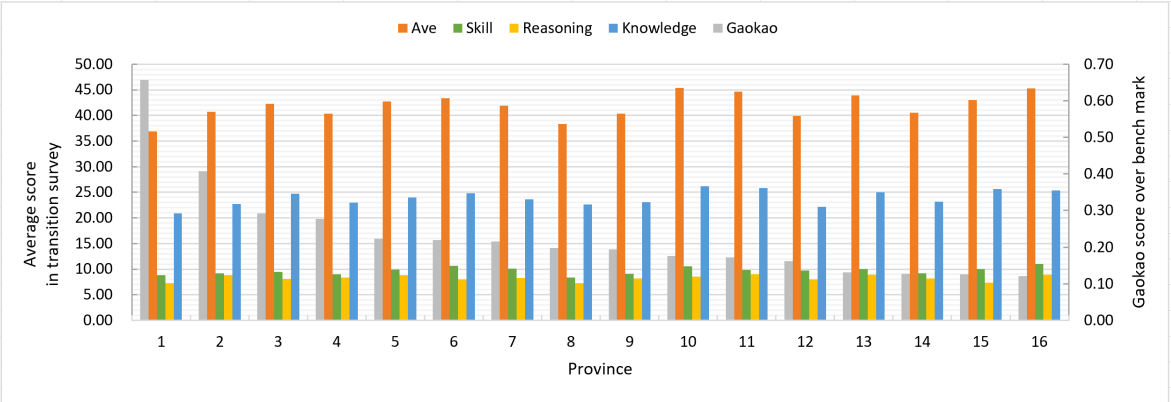

Figure 3: Comparison of the performance of students from different provinces in Entry Grade and in each question type of Transition survey 1st iteration

Similar comparisons have been done for each question *type,* Figure 3. The results indicate that Skill, Knowledge and Reasoning have Moderate, Strong and Weak NEGATIVE correlation respectively with entry grade. The observation is interesting but there is inadequate data for to draw any meaningful conclusions. It is however an area which warrants additional consideration in future surveys.

Pearson correlation coefficient indicates no correlation between the year average performance and the transition survey scores. This is to be expected as the students complete the transition questions before receiving the feedback which in turn helps them close any gaps. In this initial iteration of the transition survey no metric exists to measure the effectiveness of the survey, in future iterations direct measures of assessing the survey's effectiveness in helping students close gasp in their STEM knowledge, skills and reasoning needs to be investigated.

While there was no correlation between average first year marks, there was a correlation between the transition survey scores and specific modules. Similarly, Harvey et al. did not find a link between entry grades (A-level) and overall performance. However, they went on to say that "prior knowledge or expertise in a subject and the grades achieved in the early part of the first year are indicators of success but only in combination with other variables". It will be interesting to review the data available post-graduation to determine if the transition survey, perhaps in combination with the entry grades and other variables, are able to predict either performance or identify potential problem areas.

The average score in QMES modules for students that did not submit the transition survey were all lower than the score of students who did complete it. This observation needs to be investigated future as it could act as a useful metric for the value of the transition survey and as a warning system to flag students that might be at risk of underperforming.

Conclusion

The research question could not be fully answered based on the results of the first two iterations of the transition survey. The gaps identified indicate a need to help students identify and close them. Further, the QMES students were willing to spend time closing those gaps as indicated by the high completion percentages. Together this

suggests that the survey has value to QMES students. Additional metrics are required to fully evaluate the research question over the long term.

Although no graduating class was available for comparison at the time of writing this, the initial results suggest a link between first year performance in some modules and the transition survey. Performance in the transition survey is not a direct reflection of the extent to which completing the survey supports closing gaps. That is, the students take the survey before getting the links which helps close the gaps. Other metric need to be developed to determine the effectiveness of the transition survey.

The results from this work indicate that indeed students who sat the transition survey scored higher in the QMES examinations. There are of course other factors which confound a direct correlation, methods of decoupling these need to be developed in future iterations.

The transition survey is a student centred, deficiency model i.e. it helps to identify and fill in the gaps in students' knowledge, skills and reasoning. In the terminology of (Palmera, O'Kaneb, & Owensc, 2009) the transition survey could represent a "key turning point" in helping student with their transition. Completing the transition survey has the potential to support students feeling that they are truly ready for at least the academic dimension of university life and successful completion will build academic confidence right at the start of their higher education journey. Additional work is required to understand the scope of any improvements in these areas.

The concept of "academic and social" integration implies that students must possess the pre-requisite academic capabilities if they are to engage in the ongoing academic conversation (Barefoot, 2000) (Tinto, 1993). It is generally believed that this engagement is essential to support higher performance and provide validation as an integral member of the university. A portion of new students are not equipped with the knowledge, skills and reasoning capacities that some within the academic community consider important for success. The transition survey provides a means to support all students to enhance their pre-requisites capabilities and in doing so smooth their academic journey.

Research suggests that students may accept the principle of autonomous learning (Harvey, Drew, & Smith, 2006). However, they need help in becoming autonomous learners. It is hypothesised that the way the transition survey is delivered, could, itself represent a turning point on this journey. To that end future iterations of the transition survey should also aim to further enable independent and active learning.

The available research suggests that, overall, predicting first-year outcomes is complex and requires a wide range of variables. There is little doubt that academic background is one of the most important predictors of success (Van den Broecka, De Laetb, & Lacantec, 2019). While it may not be possible to predict final grades with any degree of certainty, it is feasible that the transition survey can be used to support identification of potential problem areas in the students near term future. Further, by allowing students to close any gaps enhance their chances of attaining higher grades.

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Contact Email: a.spowage@qmul.ac.uk

Suicide Intervention Experiences and Practices of School Counselors: Basis for Development of Practice Guidelines

Joel C. Navarez, De La Salle University, Philippines

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Abstract
The current study investigated the Filipino school counselor's knowledge, attitudes, and competencies in suicide intervention as well as their experiences and practices in suicide intervention. The study also aimed to develop and standardize suicide intervention guidelines. The study has two (2) phases. Phase 1 utilized the descriptive and generic qualitative inquiry methods of research. Purposive and convenience sampling was applied, and participants were college counselors from the National Capital Region (NCR), Luzon, Visayas, and Mindanao. Results revealed that counselors do not have high level of knowledge on suicidal behaviors, have some negative attitudes toward suicidal behavior, and need to acquire better intervention skills. The findings also showed that the trainings received by counselors are not enough to advance their suicide intervention skills which would help enhance positive attitudes towards suicide risk assessment and management. Some common experiences of the counselors in suicide intervention were focused on the areas of accountability, stigmatizing attitudes of parents, and confidentiality issues. Phase 2 of the study was the development of suicide intervention practice guidelines using the Delphi process. The tentative guideline was based on the content analysis of interventions taken from literature and from the actual intervention practices of counselors as seen from the findings of the qualitative study of Phase 1. After three (3) Delphi rounds and the consensus from sixteen (16) mental health experts, 145 recommended actions can be implemented by school counselors in suicide.

Keywords: Counselor Competencies, Counselor Development, Practice Guidelines School Counselors, Suicide, Suicide Intervention

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Introduction

Suicide among adolescence has become a major public health issue. Suicide occurs throughout the lifespan and is the second leading cause of death in young adults ages 15 to 24 years old (Centers for Disease Control and Prevention, 2015), and is likely the second among college students (Suicide Prevention Resource Center, 2014). Suicide accounted for 1.4% of all deaths worldwide, making it the 17th leading cause of death in 2015. Rates have increased more sharply since 2006. According to the World Health Organization (2017), close to 800,000 people die due to suicide every year, which is one person every 40 seconds. Statistics also showed that 78% of suicides occurred in low and middle-income countries in 2015.

A vast body of literature addresses suicide as an important issue for the counseling profession while it is of concern that the experiences of school counselors have been neglected in the research literature. School counselors face child and adolescent suicide as frequently as any other group of mental health professionals (Schmidt, 2003). Therefore, school counselors' experiences of client suicide merits further study (Valente, 2003).

Many counselors lack the knowledge and information required for the competent assessment of a potentially suicidal client. This is particularly alarming, because approximately 50% to 70% of people who committed suicide had been in contact with a health professional during the days or months prior to their death (Kutcher & Chehil, 2007). This lack of screening is tragic, because screening for suicide risk is one of the most powerful suicide prevention strategies (Mann et al., 2005; Suicide Prevention Resource Center, 2004). And even those counselors possessing this knowledge on suicide risk assessment often find themselves in profound ethical conflict regarding treatment options (Laux, 2002). Counselors remain poorly trained and ill prepared for the aftermath of suicide (Dexter-Mazza, & Freeman, 2003).

Studies have highlighted the importance of knowledge and attitudes toward suicide, as well as training and experience, in effectively counseling potentially suicidal clients (Neimeyer, Fortner, & Melby, 2001). Conversely, studies have found that professionals with previous training in suicide risk assessment and management show more positive attitudes toward suicide prevention (Herron et al, 2001). Also, professionals with more training and experience dealing with suicidal clients show better intervention skills than less experienced and trained professionals (Neimeyer et al., 2001; Scheerder, Reynders, Andriessen, & Van Audenhove, 2010). In summary, knowledge, attitudes, competencies, and training related to suicide may influence suicide intervention skills and therefore aid or hamper suicide prevention.

Further, despite the abundant and continually growing body of knowledge regarding suicide, very few studies have been conducted to address factors relating to school-based suicide intervention in the local setting (Miller, 2011). To date, in the Philippines, there is a lack of research that examines the experiences and intervention practices of school counselors who work with suicidal clients. Moreover, there is no research to date in the Philippines that investigates the presence of suicide intervention within school crisis plans or the degree to which school suicide intervention protocols are aligned with recommended practices and which

recommended practices are employed throughout school suicide intervention protocols has yet to be investigated.

Most of the studies focused mainly about the epidemiology of suicide and suicidal behavior in the Philippines and although its incidence is reported to be low, there is likely to be under-reporting because of its non-acceptance by the Catholic Church and the associated stigma to the family (Redaniel, Lebanan-Dalida, & Gunnell, 2011). In spite of the fact that guidance and counseling has been a licensed profession in the Philippines, the national organization for school counselors has not come forward with guidelines, policies, and procedures for the school counselors to follow in dealing with suicide cases. Therefore, given the dearth of existing local research investigating the counselors' professional experiences and practices in working with suicidal clients, the current research proposed to advance scientific knowledge by exploring the professional experiences and practices of school counselors, hearing their voices, and understanding their subjective opinions when working with this vulnerable population of adolescents. The present study was designed to address these concerns.

The availability and presence of a suicide intervention practice guidelines is highly significant not only to safeguard the practice of the school counseling profession but primarily for the safety of students-at risk. The focus of this study was two-fold: (1) to explore the knowledge, attitudes, and competencies in suicide intervention among school counselors as well as their experiences and practices in suicide intervention; and (2) to develop and standardize-suicide intervention guidelines.

This study sought to make a significant contribution to the field of school counseling by narrowing the gap between the existing counselor's knowledge base about suicide intervention practices and actual needs of schools in the area of suicide intervention. Understanding counselors' experiences will provide a rich description and a deeper understanding on the journey of professional school counselors with suicidal clients. The results of this study provided valuable information with implications for the training and practice of Philippine school counselors on suicide prevention, intervention, and postvention. The practical implications of this study will be both in the area of improved knowledge and a clear guideline in managing health emergencies like suicide.

Findings

Quantitative Study

The results revealed that counselors have an adequate degree of suicide literacy. This finding is also consistent with the study conducted by Roberts-Dobie and Donatelle (2007) in which they found out that professional school counselors did not report high levels of knowledge on suicidal behaviors. As what has been pointed out in some studies, many counselors lack the knowledge and information required for the competent assessment of a potentially suicidal client (Kutcher & Chehil, 2007).

The importance and the need to increasing counselor's knowledge about suicide was a significant finding of this study. Level of knowledge of suicide can be considered a significant predictor of counselor's perceived self-efficacy in identifying and

intervening with students at risk for suicide. This finding supports the notion that by increasing counselor's knowledge of suicide, counselors experience increased confidence in their ability to identify, work with, and refer suicidal youth.

With regard to counselors' attitudes towards suicide, the findings suggested that some counselors still hold stigmatizing attitudes toward suicidal behavior. Studies have stressed the importance of attitudes toward suicide in effectively counseling potentially suicidal clients (Neimeyer, Fortner, & Melby, 2001). Understanding attitudes toward suicide is important because of its possible relationship to other variables, such as intervention skills and effectiveness in dealing with suicidal clients (Botega et al., 2007; Bamero, Smith, Bates, & Fairbrother, 2008; Kodaka, Postuvan, Inagaki, & Yamada, 2011). If negative attitudes influence clinical behavior, they may affect suicide risk management because the mental health professional underestimates risk (Herron, Ticehurst, Appleby, Perry, & Cordingley, 2001), and may make non-therapeutic responses toward people who have attempted suicide (Demirkiran & Eskin, 2006).

The findings of this study showed that counselors have varying degrees of competencies in terms of their intervention skills. Although though it's noteworthy to mention that there are counselors who need to acquire better intervention skills, personal and professional factors might have contributed to this wide disparity. Enhanced skills related to suicide intervention could make a difference between the life and death of a client. The counselor's response to suicidal crises is a unique skill and different than other skills practiced and acquired during training (Neimeyer, Fortner, & Melby, 2001). While basic counseling skills can help facilitate a working therapeutic relationship between client and counselor, these skills alone are not enough to help counselors intervene with a suicidal person.

The results of the study suggested that there is a need for increased training with regards to suicide intervention and that training in suicide intervention must be a high priority for counselors. Shapiro (2008) also noted in their research findings that professional school counselors felt inadequately trained to work with this vulnerable and at-risk population. Counselors remain poorly trained and ill prepared for the aftermath of suicide (Dexter-Mazza, & Freeman, 2003; McAdams & Foster, 2000). With the rising trend of severe mental health problems among the college student population (Haas et al., 2003) and given the strong link that exists between severe psychopathology and suicide (Bret & Perper, 1995; Tanney, 1992), more training is clearly needed in this area. Conversely, studies have found that professionals with previous training in suicide risk assessment and management show more positive attitudes toward suicide prevention (Bainero et al., 2008; Herron et al, 2001). Also, professionals with more training and experience dealing with suicidal clients show better intervention skills than less experienced and trained professionals (Neimeyer et al., 2001; Scheerder, Reynders, Andriessen, & Van Audenhove, 2010). In summary, knowledge, attitudes, and training related to suicide may influence suicide intervention skills and therefore aid or hamper suicide prevention.

Qualitative Study

The findings of the qualitative study of Phase 1 provide a broader information about the counselors' experiences and practices in dealing with suicidal clients. Counselors felt an overall responsibility to protect clients and with this accountability come anxiety. Anxiety, which is consistent with previous research (Wachter Morris & Barrio Minton, 2012), was brought up repeatedly when discussing suicide, working with suicidal clients, or the thought of working with suicidal clients in the future. As the school counselors' professional responsibilities extend beyond traditional domains, ethical and legal obligations are increased, resulting in the probability of the counselors' entanglement in new and sometimes precarious situations (Drodge, 1997).

Because school counselors are mandated reporters, weighing out the ethics of when to appropriately breach confidentiality and acquiring the knowledge base to effectively implement strategies to assist these students is a challenge for school counselors. The ethical and legal responsibilities of a school counselor require the counselor to make the determination of when to notify parents (Isaacs & Stone, 1999). This study acknowledged that in acute situations counselors may need to breach confidentiality to ensure client safety. Confidentiality is a basic principle of mental health care and is an integral part of establishing trust and building a therapeutic alliance. The idea of absolute confidentiality is, however, unrealistic and must be tempered by common sense (Backlar, 1996). When a client represents a clear danger to self or others, breaking confidentiality may be necessary (Thelen, Rodriquez, & Sprengelmeyer, 1994) and is indeed ethically and legally required (Allan, 2003; Bongar et al., 1998). Van de Creek and Knapp (1989) suggest that it may sometimes be necessary for counselors to take such active measures as communicating with the client's family and social support system about their suicide potential and other specifics of the case in order to recruit support for the client and to gain additional information (in the event of an uncooperative or resistant client).

Competence issues related to suicide tend to bother counselors and the current study also recognizes this concern. Counselors viewed that assessments of suicidal risk are commonly inadequate and many counselors continue to rely on an utterly inadequate intervention for suicide risk which is simply the utilization of a safety or no-harm contract (Rudd, Mandrusiak, & Joiner, 2006).

Counselors in this study have stressed the need for a risk assessment as an important part of suicide intervention. As discussed by various authors (Jobes, 2006; Joiner, Walker, Rudd, & Jobes, 1999), the adequate assessment of suicide risk should be a thorough, extensive, and multifaceted activity. Although asking about suicidal ideation is a start, there should be a more thorough assessment of history (Rudd & Joiner, 1998), relational aspects of suicide risk (Jobes et al., 2004; Joiner, 2005), cognitive aspects (e.g., hopelessness and suicide-related cognitions; Beck, 1986), environmental factors (e.g., access to lethal means; Lester, 1989) and among other things to allow counselors to adequately understand the potential for suicidal behavior.

Counselors agreed that in assessing suicide risk there can be limits to purely interview-based clinical judgments which underscore the obvious value of supplementing interview assessments with additional assessment tools. In this vein,

Barnett and Porter (1998) highlighted the importance of using objective assessment measures to supplement more subjective interviews. A myriad of measures, scales, and diagnostic tools are available to assess suicide risk. These falls into two broad categories: clinician assessment and self-assessment instruments (Range & Knott, 1997). The Los Angeles Suicide Prevention Center Scale is an example of a clinician-rated assessment tool which focuses on demographic and clinical characteristics to predict the likelihood that a client will engage in suicidal behavior (Farberow, Helig, & Litman, 1968). Examples of self-rated suicide assessment tools include the Beck Depression Inventory (BDI), Beck Hopelessness Scale (BHS), and the Minnesota Multiphasic Personality Inventory – 2 (MMPI-2) (Packman, Marlitt, Bongar, & Pennuto, 2004). Other measures, such as the Reasons For Living Inventory, attempt to establish protective factors rather than assess risk factors (Range & Knott, 1997), the Columbia Suicide Severity Rating Scale (C-SSRS) is a suicidal ideation and behavior rating scale to evaluate suicide risk. It rates an individual's degree of suicidal ideation on a scale, ranging from "wish to be dead" to "active suicidal ideation with specific plan and intent and behaviors."

For the initial management of suicide risk, the counselors concurred that parent notification and referring out to an outside professional was best practice when working with students who have suicidal risk. Referral to mental health specialists like psychiatrists or psychologists was considered as a standard of care for further assessment of the student and to initiate treatment and primary management in order to mitigate risk of suicide. Counselors stressed that communication about the primary management with mental health services should be clear so that roles can be established. In most cases, counselors only rely on the treatment provided by mental health specialists and so counselors focus on following up and monitoring the student at risk.

Counselors also emphasized the need for key support people like the academic team and crisis team to be integrated within the initial management of suicide risk. Counselors consult with the school administrator who will then inform the appropriate personnel to minimize any immediate risk. Then, the counselor informs the family or caregivers of the risk and proposes management as appropriate. To ensure the student’s immediate safety, counselor arranges for any hand-over of responsibility (including information about safety precautions) to the family or caregivers or a health professional.

The “No Suicide Contract” is still currently being utilized by counselors, however there is an increasing controversy regarding its use. There are no data that support the idea that no-suicide contracts reduce suicide (Rudd, Mandrusiak, & Joiner, 2006) or if a student in the midst of a suicidal crisis would decide not to make an attempt because he or she signed a piece of paper. In place of a no-suicide contract, the current best practice standard of care is to create a safety plan (Brent, Poling, & Goldstein, 2011; King, Foster, & Rogalski, 2013). The basic idea behind safety plan is that rather than being a legal document, it is a clinical tool that the student can use before and during a suicidal crisis. Eventually, some of the counselors who participated in this study have been introduced this practice and some have implemented it as an intervention tool.

Counselors in this research study felt more competent when they utilized professional support resources, such as supervision, consultation, or peer support groups. Regularly scheduled clinical supervision was noted as very essential during the case management of suicidal clients and was discussed as a means of providing counselors with an opportunity for reflective practice and self-care. Counselors in this study also emphasized the importance of regular access to high-quality, relevant continuing professional development related to managing suicidal ideation.

With regards to treatment modality, counselors also agreed that cognitive– behavioral and problem-solving approaches are core interventions that are effective at reducing suicidal ideation, depression, and hopelessness which also supported the findings of Rudd et al. (2001). As Linehan (2007) has recently discussed, that psychosocial interventions are most effective for treating suicidal ideation and behaviors. Yet, medications are still widely used and may well be the primary treatment response for suicidal people. Beyond considerations of suicide risk, it is interesting to note that although medications appear to work for many patients, they do not work for many others, and length of treatment is an important consideration (e.g., Rush et al., 2006).

Participating counselors highlighted the importance of ongoing suicide risk assessment. Follow patients at risk of suicide regularly and reassess risk frequently, particularly when they return to school. The frequency of contact should be determined on an individual basis and increased when there are increases in risk factors or indicators of suicide risk. Support should include reinforcement of the safety plan at regular intervals. Contact and support can be helpful even when telephone, letters, or brief intervention provides it.

Conclusion

The current study investigated the Filipino school counselor's knowledge, attitudes, and competencies in suicide intervention as well as their experiences and practices in suicide intervention. The study also aimed to develop and standardize the guidelines in delivering the appropriate interventions for suicidal clients.

The study is composed of two (2) phases. Phase 1 has quantitative and qualitative studies that utilized a descriptive method of research. 100 counselors that are twenty-five (25) were selected from the National Capital Region, Luzon, Visayas, and Mindanao who participated in the quantitative study of Phase 1. The counselors were asked to answer three (3) standardized instruments to measure their level of knowledge, attitude, and competencies regarding suicide.

Phase 1 of the study revealed that counselors did not report high levels of knowledge on suicidal behaviors, the results suggested that some counselors still hold stigmatizing attitudes toward suicidal behavior and that there are counselors who need to acquire better intervention skills. The trainings received by counselors may not be sufficient enough and it may influence their attitudes towards suicide risk assessment and management. The lack of training and experience among some counselors may also affect how they deal with suicidal clients because they may lack intervention skills to be able to provide the necessary support among clients with suicide risk.

Meanwhile, from the 100 counselors, twenty (20) were selected (five (5) from each geographical location) to participate in the qualitative part of Phase 1. The qualitative phase used thematic analysis to analyze the data gathered from the interviews. The data revealed that counselors perceived that working with suicidal clients posed high accountability. It was also a dilemma to be able to break the confidentiality about their client's harm to self.

All of the counselor participants utilized a specific screening tool in assessing the risk of suicide among students. Counselors value the process of assessment in order to identify contributory factors of suicidal behavior among their clients by observing the existence of warning signs and recognizing risk and protective factors. Counselors would notify the parents of the students at risk for suicide as an initial management practice. Counselors also recognized the support of the academic team in handling suicidal students. They make immediate referral to a specialist particularly to a psychiatrist for low to moderate risk of suicide. Generally, but not all counselors of this study provide evidence-based counseling interventions to their clients because some rely on the intervention provided by the psychiatrists in terms of medication or by the psychologists who provides psychotherapy sessions. There are schools that set re-entry conditions prior to the student resuming attendance by seeking medical clearance and recommendations from the psychiatrists or psychologists as to whether the student is fit to resume study. Counselors viewed that follow-up of clients at risk of suicide should be done regularly and reassess risk frequently as well as monitor their treatment compliance. Counselors have also suggested to explore different ways in following up the client so that they will not fall out of the session.

In summary, knowledge, attitudes, and training related to suicide may influence suicide intervention skills and therefore aid or hamper suicide prevention and that enhance suicide intervention skills could make a difference between the life and death of a client. Counselors in this study have stressed that risk assessment is an important part of suicide intervention and that counselors should be competent in this area. Involvement of parents in the treatment and referral to mental health services is being practiced by counselors when working with students who have suicidal risk. Counselors felt more competent when they utilized professional support resources, such as supervision, consultation, or peer support groups. Schools lack written and structured protocol in handling suicidal crisis.

For the Phase 2 of the study, suicide intervention practice guidelines were developed using the Delphi process. The tentative guideline was constructed based on the content analysis of the actions related to suicide intervention taken from previous studies and from the practices implemented by counselors taken from the qualitative study of Phase 1. After three (3) Delphi rounds and the consensus from sixteen (16) mental health experts, 145 intervention actions can be implemented by school counselors in handling suicidal clients.

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Contact email: joel.navarez@dlsu.edu.ph

College Students Informal and Formal Ways of Seeking Help: Who's to talk with?

Maria Cristina M. Firmante, De La Salle University, Philippines

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Abstract
Records show various ways to better understand help-seeking behavior. Literatures also showed that despite the fact that free counseling is available in the campus; only limited numbers of students are accessing the said service. The current study investigated the college students' informal and formal ways of seeking help among 488 samples enrolled at a private university in Metro Manila. These college students were 18.5 years old on average [*219 or 44.8% are males and 269 or 55.1% are females*]. Findings reveal that 57% have not received or sought counseling while 43% were found to be aware of the presence and have received or sought a counseling service. Half or 55% proportions have expressed a need to talk their concerns if offered and 45% expressed no interest of expressing their concerns. The present study revealed that these college students marked preference for informal ways of seeking help specifically to their friends, parents, and other significant others but also showed interest in accessing the formal ways of seeking help. These results highlight the needs to explore better mechanisms as to how the campus-based counseling can maximize students' informal ways of seeking help. Working with students significant others can be explored by creating a peer support system and easy access to counseling. Furthermore, results point the need for the school counselors to further promote the services of the campus school counseling centers by educating the students, parents, and campus stakeholders of the benefits of counseling.

Keywords: Theory of Planned Behavior, Filipino College Students, Informal and Formal Ways of Help-Seeking

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Introduction

University campuses and colleges offer an exceptional opportunity to address students' problems and have channels that help promote a positive effect on students' mental health (Hunt & Eisenberg, 2010). However, despite the free counseling services available for students, only a few percentages use the said service (Vogel, Wester & Larson, 2007). For instance, Atik & Yalçýn (2011) posited that when students in a university are faced with various challenges that require psychological help, an attitude toward seeking help is a salient factor that affects their decision. This decision is either to seek or not to seek psychological assistance. Students are reluctant to seek help from formal sources like school counselors and psychologists on the campus (Boldero & Fallon, 1995).

Research suggests that several factors are associated with one's decision to seek help. Gender differences have found to be associated with help-seeking intentions among females in some studies (Komiya, Good & Sherrod, 2000; Yu, Liu, Hu, Liu, Yan, Zhou & Xiao, 2015; Amarasuriya, Jorm & Reavley, 2018), perceptions of public stigma contributed to the experience of self-stigma influenced help-seeking attitudes and help-seeking willingness (Vogel, Wade & Hackler, 2007), and certain personality characteristics such as willingness or unwillingness to seek help were also identified (Bouchard, 2003).

Acceptance of help-seeking procedures is a vital connection between the onset of mental health problems and the services that can be given by health care professionals (Al-Krenawi, Graham, Dean, & Eltaiba, 2004). Having a deeper understanding of students' help-seeking behavior is important to be able to address and cater to the needs of students. Counseling services help prevent the onset of psychological disorders by helping students deal with their stressful life events and treating some possible pre-existing psychological concerns (Eisenberg, Hunt & Speer, 2013).

The Informal and Formal Ways of Help-seeking

According to Rickwood, Dean, Wilson & Ciarrochi (2005), there is a differentiation in sources of help according to the different stages of the lifecycle. Help-seeking is defined as a behavior of seeking help, communicating with other people to get help in any form such as advice, understanding, information, treatment, and or general support in response to a problem. It is also defined as receiving support from informal (e.g. family, friends, community) and formal sources of support (e.g. mental health professionals) to solve emotional and behavioral problems (Rickwood, Dean, Wilson & Ciarrochi, 2005). Young ones are more likely to seek help from informal resources rather than formal resources. Seeking help from friends tends to be the preferred source for their personal and emotional problems while parents ranked second to friends (Boldero & Fallon, 1995; Schonert-Reichl & Muller, 1996). Although there are a lot of studies that examined positive psychological factors that could facilitate the help-seeking process, little research has examined informal sources of help-seeking (Rickwood & Thomas, 2012).

Help-seeking and the Theory of Planned Behavior

The Theory of Planned Behavior (Ajzen, 1980) explored multiple variables affecting the help-seeking behavior of an individual (Ajzen, 2011). It premised that a more positive attitude, subjective norms, and perceived behavioral control increase an individual's behavioral intention that also increases the likelihood of engaging or executing certain behavior such as seeking help. Human action is guided by three kinds of considerations: beliefs about the likely outcomes, beliefs about the normative expectations of others, the motivation to comply with these expectations, the beliefs about the presence of factors that may facilitate or impede the performance of the behavior, and the perceived power of these factors (Ajzen, 2002).

The TPB hypothesized the prediction of mental health services requires knowledge of individual general assessment of help-seeking services and their information of their subjective norm and perceived behavioral control seeking help (Mackenzie, Knox, Gekoski & Macaulay, 2004). For instance, Mak & Davis (2014) tested the application of the theory of planned behavior in explaining the intention to seek mental health services and understand factors related to intention to seek mental health services. The model suggested that attitude, subjective norm, and perceived behavioral control were all significant predictors of help-seeking intention although symptom severity, prior help-seeking, and gender did not significantly directly predict help-seeking intention. Hess and Tracey (2013) tested the TPB model specifically for three common problem areas of students such as anxiety or depression, career choice concerns, and alcohol or drug use. They found out that it was significant variables that were executed of a person when considering whether to seek or not to seek psychological help.

The Present Study

Campus policies and mental health prevention programs are important means of increasing students' personal positive believes towards mental health treatment (Chen, Romero, & Karver, 2016). Counseling services are beneficial for the students on campus. It caters to students' concerns like academic, personal difficulties, student success, adjustment, and mental health concerns. Counseling on the campus is free and easy access for the students (Lee, Olson, Locke, Michelson, & Odes, 2009). However, despite the fact the free counseling is available inside the campus only a few have utilized the counseling services.

It is in this light that the researcher would like to explore college students' informal and formal ways of help-seeking to be able to have a better understanding of their internal and external resources in helping themselves cope. Understanding students' help-seeking preferences will be able to help school counselors in developing creative ways in promoting counseling programs and services.

Findings

A total of 488 participants' responses were collected, tabulated, and analyzed. As shown in Table 1, the result of this group revealed that more than half (n= 277 or 57%) of the respondents have not received or sought a counseling service but also show a good number for those who have received or sought counseling (n=211 or 43%). Proper information and awareness campaigns of the counseling center

programs and services can lead the students to avail of the services. Still, the result shows that many students are aware of the counseling service and have sought a formal way of seeking help.

	Frequency	Percentage
Have received/sought counseling	211	43%
Have not received/sought counseling	277	57 %
Total	488	100%

Table 1: Tabulation of participants who have received/sought and have not received/sought counseling

Table 2, indicates the participants' responses when asked if they would like to talk about their concerns if the opportunity is offered. Most of the responses show that if the opportunity is offered, the majority (n= 268 or 55%) will likely talk or discuss their concerns and less than half will opt not to talk or discuss their concerns (n= 220 or 45%).

	Frequency	Percentage
Yes	268	55%
No	220	45%
Total	488	100%

Table 2: Tabulation of participants when ask if they would like to talk their concerns if opportunity is offered

Moreover, Table 3 shows the participants' preferences in seeking help. There were seven identified informal ways of seeking help and two formal ways of seeking help. Results shows that most of the students preferred to seek help from their friends (Rank 1, n=208 or 42.6%) followed by their parents (Rank 2, n=132 or 27.0%), school counselors (Rank 3, n= 118 or 26.3%), boy/girlfriend (Rank 4, n=99 or 20.2%), psychiatrist/other mental health professionals (Rank 5, n= 86 or 17.6%), priest/pastor/religious (Rank 6, n= 61 or 12.5%), siblings (Rank 7, n= 58 or 11.8%), no one (Rank 8, n =47 or 9.6%), teachers (Rank 9, n= 44 or 9.0%) and relatives (Rank 10, n= 43 or 8.8%).

Results indicate that friends, parents, and school counselors were the top 3 resources of students. It shows that for this group, they accessed both informal and formal ways of seeking help. Studies show that there was a significantly higher preference for seeking help from friends and family members rather from professional counselors and or psychotherapists (Bunagan, Tuliao, & Velasquez, 2011). However, it is interesting to note that participants from this study sought help from school counselors. It seems that students for this group are aware of the benefits that they can get from a professional. Supported by the Theory of Planned Behavior, individuals who have the belief that they have accessed and can get proper help from the counseling center are likely to intend to seek help and talk their concerns to school counselors. Campaigns of the counseling centers can help facilitate students' own volition of seeking help and making them aware of the benefits that they can get from the counseling service.

	Frequency	Percentage	Rank
Informal Ways of Seeking Help			
Parents	132	27.0%	2nd
Friends	208	42.6%	1st
Boyfriend/Girlfriend	99	20.2%	4th
Teachers	44	9.0%	9th
Siblings	58	11.8%	7th
Priest/Pastor/Religious	61	12.5%	6th
Relatives	43	8.8%	10th
No One	47	9.6%	8th
Formal Ways of Seeking Help			
School Counselor	118	26.3%	3rd
Psychiatrist/Other Mental Health Professionals	86	17.6%	5th

Table 3: Tabulation of participants Informal and Formal Ways of Seeking-Help

Conclusion

The findings of this study have contributed to college students' preferences in seeking help. It shows that generally college students sought help from their significant others specifically towards their friends but accessed a wide range of both formal and informal ways of seeking help. It highlights that for this group, participants show an interest in seeking help if the opportunity is being offered. This information is very helpful in the delivery of programs and services of every counseling center. Educating students can enhance the help-seeking acceptance and therefore can enhance their own volition of seeking help.

More quantitative and qualitative with a larger population size could be done to further explore and understand students' help-seeking behavior. It is also important to acknowledge that students generally talk and discuss first their concerns to significant others. It is interesting to note that perhaps school counselors can think of programs that could highlight the value of the support system and the referral. Cultural factors can also be explored to see other patterns and uniqueness of help-seeking behavior among students.

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Contact email: maria.cristina.firmante@dlsu.edu.ph

Boosting Self-Care Strategies and Resiliency Manual for Promoting Counselors' Wellness

Rosemarie A. Tayoto, De La Salle University, Philippines

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Abstract
Counselors' wellbeing is very essential in the fulfillment of their day to day task of providing counseling services to their clients. It is expected that a counselor with a positive physical, mental, spiritual, and emotional states will be able to develop a therapeutic alliance, demonstrate empathy, and design an appropriate intervention plans to address the client's presenting concern. On the other hand, prolonged exposure to individuals experiencing a high level of stress may place counselors at risk of vicarious stress, secondary stress disorder, compassion fatigue, and burnout. Thus, it is at utmost importance that school counselors should prioritize their own mental health. This current manual aims to provide a set of group intervention activities that will offer a proactive approach to self-care practices and enhance resiliency to promote counselors' wellness. Counselors' level of professional vitality, personal vitality, professional stress, and personal stress will be measured using the Skovholt Practitioner Professional Resiliency and Self-Care Inventory (Skovholt, 2014). This will serve as a sounding board for counselors to reflect on their current state of wellbeing and self-care practices. The proposed manual is composed of 6 sessions which will run for one and a half hours every session and will be scheduled on a weekly basis. Strategies will include group sharing, individual journaling, creative works, reflections, and processing. At the end of the group intervention, counselors are expected to have their own self-care plan that will aid them to maintain positive mental health amidst the challenges brought by both personal and professional life.

Keywords: School Counselors, Resiliency and Self-Care, Wellness, Group Manual

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Introduction

Often school counselors are handling clients who are suffering from a high level of distress and psychological crisis. Because of this, counseling professionals are vulnerable and predisposed to a lot of work-related risks such as compassion fatigue, burnout, vicarious trauma, and secondary stress disorder (Tyre, Griffin, and Simmons, 2016).

In this regard, the proposed intervention aims to provide a venue for the counseling professionals to contemplate on their current state of well-being as school counselors using the Skovholt Practitioner Professional Resiliency and Self-Care Inventory (Skovholt, 2014). The different group sessions target to promote counselors' wellness through different activities such as group sharing, individual journaling, creative works, reflections, and processing. The main objective of this manual is for the participants to come up with their own self-care plan that will help them improve their resiliency and sustain positive mental health while fulfilling professional and personal tasks.

This concept has been studied by numerous numbers of researchers and proved that having proactive self-care activities can avert the harmful effect of stress and boost wellness to mental health practitioners such as psychologists, psychiatrists, social workers, and school counselors. In a specific study conducted to psychologists, results revealed that the main impact of self-care practices on an individual is reducing stress level, preventing possible burnout, and attaining life satisfaction (Rupert and Dorociak, 2019). Likewise, it is also found among mental health professionals that self-care plays an important role and is significantly associated with wellbeing (Richards, Campenni, Muse-Burke, 2010) and taking a proactive approach to self-care particularly in integrating this to the professional development program of the institutions and professional organizations (Posluns and Gall, 2019). Furthermore, in the study conducted to a group of therapists, it has been found that an increase in their self-care activities will decrease the level of burnout and effect of secondary traumatic stress to them, in addition to the positive effect of self-care to compassion satisfaction towards their clients (Catlin-Rakoski, 2012).

Figure 1. Conceptual Framework on Boosting Self-care Strategies and Resiliency for Promoting Counselors' Wellness

School counselors are susceptible to experience a high level of stress (Lambie, 2006) and burnout (Lawson, 2007) due to the nature of their work. They are expected to build therapeutic rapport with clients dealing with negative emotions and design appropriate treatment plans to address the client's concern. Often, counselors are focus on attending to client's needs and find it difficult to prioritize their own wellness and self-care (Skovholt, Grier, & Hanson, 2001).

Aside from these, there are also varying environmental reasons such as too much workload, unsupportive and unhealthy relationships with peers, lack of formal supervision from the supervisor, and poor program support from the teachers, administrators, and other school personnel (Maslach, 2003).

With this kind of work environment and demands it is important that school counselors have a high level of resiliency in order to execute daily tasks and work effectively despite the challenges, they confront everyday both in their personal and professional life through adequate problem-solving skills, effective coping strategies as well as self-care activities (Pooley & Cohen, 2010). Self-care practices are different activities that counselors do in a conscious effort to maintain her physically, mentally, emotionally, and spiritually healthy which will give support to carry on positive energy, determination, and commitment in performing expected responsibilities with happiness and satisfaction.

The Code of Technical Standard for Registered Guidance Counselors (2015) in the Philippines stated the importance of giving attention to the counselors' well-being and its direct effect on the professional practice of counseling. Professional counselors are accountable to maintain a healthy mind and body that will enable them to serve their clients effectively. They are also expected to seek out professional help and support once they experience mental health concerns or counselor impairment. Likewise, the American Counseling Association Code of Ethics also emphasized that counselors should monitor themselves for possible signs and symptoms of dysfunction in their physical, emotional, and mental health. Counselors are advised to stop providing services during impairment and submit themselves to appropriate intervention and treatment when seen necessary to avoid malpractice (ACA, 2014).

School counselors who have lesser coping strategies and low levels of self-awareness are at a higher risk to experience compassion fatigue, vicarious traumatization, and burnout due to prolonged exposure to clients experiencing emotional suffering and mental crisis (Robino, 2019).

To prevent impairment to school counselors, it is very important that they have conscious efforts to engage regularly in self-care practices. It is an ethical obligation and should be the top priority for counselors and other mental health practitioners. Richards, Campenni, and Muse-Burke (2010) explained the definition of self-care and its four components. First is physical self-care wherein it involves physical activities that encourage the person to use his/her energy such as exercises, sports, household chores, and daily functioning that facilitates body movement for which a person may feel positive and energize. Second is the psychological definition of self-care that refers to submitting himself/herself to personal counseling. This will allow the counselor to recognize his/her own personal and professional struggles and it gives an opportunity to get support from another person. The third is the spiritual component

of self-care which refers to finding meaning and sense of purpose in everything a person does and its connection to one another. This may include activities such as meditations and participation in religious activities and the likes. Lastly is the support component of self-care. Establishing a positive relationship with colleagues and family can be a very helpful support system for those who are in the human service profession. Likewise, regular supervision, case consultation and continues education in the field of work can also benefit the professional and personal well-being and development of the counselor.

Practicing self-care strategies on a regular basis will help counselors enhance their resilience. The concept of resilience has been well studied and defined from different perspectives. According to Leipold and Greve (2019), through resiliency skills, a person will be able to overcome and cope effectively with a very challenging situation. Another common definition was "resilience is the ability to bounce back and overcome adversity" (McCubbin, 2001; p.2). A similar definition to this was stated by Connor and Davidson who identified resilience as "personal qualities that enable one to thrive in the face of adversity" (2003, p.76). Furthermore, Sadler-Gerhardt and Stevenson (2012) pointed out that there is a way in order for a counselor to avoid depletion and burnout due to the occupational hazard caused by a day to day encounter with people who are in distress, victims of trauma, or suffering from mental health conditions. For them, it is highly important that those in the helping profession should prioritize building their resilience as they go through the process of helping others. Once the counselor learns to build his resilience, there will be a lesser chance of malpractice, enhance the drive to help clients, and increase job satisfaction.

In this regard, with continuous self-care practices among school counselors, it is expected that their ability to cope with adverse life events both personal and professional will increase hence their resiliency level was enhanced and counselors' wellness has been promoted. As defined by the World Health Organization (WHO, 2000), wellness is the optimum condition of the health of a person. There are two focus areas when it comes to wellness. First is the realization of the fullest potential of the individual in terms of physical, psychological, social, and spiritual aspects of an individual. Second is the performance in whatever role they are in with their life successfully. In line with this definition, a counselor's wellness refers to personal advancement and professional proficiency that encompass mental, emotional, spiritual, social, and vocational well-being (Roach and Young, 2007).

Conclusion

The following are the specific guidelines and procedures in facilitating the intervention manual for school counselors. The main objective of this proposed intervention manual is to lead school counselors towards achieving wellness through proactive self-care strategies that will aid them in enhancing resiliency skills and prevent mental health concerns. Specifically, the following goals are expected to be met at the end of the process:

a.) To become aware of their current state of wellbeing and self-care practices.
b.) To recognize the importance of self-care strategies and their vital role in resiliency building.
c.) To explore different types of self-care strategies that would help them to become more resilient with stress and burnout.

d.) To increase the capability to design their own self-care plan that promotes personal and professional wellness.
e.) To practice self-care purposefully to enhance psychological resources in handing daily demands and achieves life satisfaction.

The group intervention is suitable for 10 – 15 members. This will run for 6 meetings with one and a half hours per session once a week. Participants will be asked voluntarily for their participation in the intervention therefore once consent was given, they will be requested to actively take part and complete the entire program. The schedule of the sessions will be plotted strategically on a common preference and availability of the members of the group since all are expected to have their work residency as school counselors.

Figure 2. Boosting Self-Care Strategies and Resiliency Manual for Promoting Counselors' Wellness (Intervention Process)

The figure above shows the process of the proposed intervention for school counselors. Volunteered participants will be asked to accomplish the Skovholt Practitioner Professional Resiliency and Self-Care Inventory (Skovholt, 2014) to gauge their level of resiliency and self-care practices. This will serve as a sounding board for school counselors to reflect on their current state of well-being. The sessions will be composed of different structured learning experiences such as group sharing, creative works, self-reflections, and processing. At the end of each session, they will be asked to create an individual journal based on what they have experienced and realized in the intervention. Lastly, after the completion of the six sessions, counselors are expected to design their own self-care plan that will help them to maintain positive mental health amidst the challenges brought by personal and professional life.

Outline of the Sessions

Session 1: Purpose, Activities, and Process

The purpose of the first session is to discuss to the participants the purpose of this intervention program and its possible benefits to school counselors. Everyone will be encouraged to take an active role in all the activities and their commitment to the sessions. Openness and confidentiality will be emphasized as an essential part of the intervention. More so, the first session will also be intended to take full advantage of getting to know one another, develop rapport, and to be comfortable with the presence of everyone in the group as well as the facilitator.

The first activity will be an introduction from the facilitator. The participants will be asked to introduce themselves to the group and will be encouraged to share their reasons for joining the intervention. The facilitator will then synthesize the answers of the group and highlight the common reasons stated by the participants. Afterward, the participants will be asked to read and accomplish the Skovholt Practitioner Professional Resiliency and Self-Care Inventory (Skovholt, 2014). This activity will lead the participants to reflect on their current state of well-being in both personal and professional domains and their self-care practices. Participants will be asked to share their observations and reflections in their output specifically towards the level of stress in personal and work life and how much self-care activities they practice in their daily schedule. The facilitator will present a mini-lecture on risk factors of mental health practitioners to different mental health conditions and the important role of self-care and resiliency to prevent these conditions.

Session 2: Purpose, Activities, and Process

The second session of this intervention will be intended for the first type of self-care strategies which is physical self-care. The purpose of this is to put emphasis on the importance of taking care of once physical health to function well in daily tasks. Thus, the activity will lead the participants to realize that when an individual starts taking care of his/her body, it will make him/her think and feel positive too.

The facilitator recaps the activities and discussion that took place during the first session and asks each participant what part of the previous session they like most. Then, the facilitator will introduce the different types of self-care to the group. Starting on physical self-care, each participant will be asked to list down all the things that they do to take care of their physical health (examples: sleeping pattern, food intake, rest and relaxation activities, sports, exercise, and other activities that facilitate body movement) which they are going to share to the whole group afterward. The next activity will encourage the participants to experience a simple 20-minute exercise by doing the “Happy Walk Workout” by Leslie Sansone. After this activity, the facilitator will explore participants’ reactions, thoughts, and feelings toward the recent activity. This session will underline the benefits of active physical self-care activities to combat stress and burnout due to personal and professional demands.

Session 3: Purpose, Activities, and Process

The purpose of this session is to help the participants become aware of their psychological vulnerability as a school counselor. This aims to help them understand the importance of dealing with their own emotions and to seek professional help when it is necessary as part of their psychological self-care.

The facilitator will again review the previous session and asks the participants for their learning insights then connect it to the new activity for the third session. Each participant will be requested to think of a difficult situation or challenges they face both in their personal and professional life. They will be given art materials to be used to draw an image that will represent how they feel when they are in that current situation. After this, participants will be asked to choose a partner with whom they are comfortable sharing their work. The facilitator will then emphasize the importance of

openness and confidentiality in this activity. Then processing follows which will evolve in what they think and feel towards the activity, participants' ways in managing their own emotions, and strategies they do to help them feel recharged when facing difficult situations. Lastly, in a mini-lecture, the facilitator will discuss the importance of submitting oneself to personal counseling to help the counselor recognize his/her own personal and professional struggles and it gives an opportunity to get support from another person.

Session 4: Purpose, Activities, and Process

The objective of the 4th session is to enable the participants to focus on the spiritual component of self-care. This will help them develop deeper meaning and sense of purpose in their life both in personal and professional aspects. The session will also emphasize that spiritual self-care will help them to improve a healthier lifestyle.

The facilitator will recap on the discussion that took place in the previous session and ask some volunteers to share their realizations from the last activity. For this current session, the facilitator will instruct the participants to walk outside the session room, bring out their cellular phones, and take three photos of things that can represent the meaning or purpose of their life. These can be objects, places, people, pets, scenery, etc. Participants can use symbols and are encouraged to be creative. After completing the three photos, they will be given time to reflect on each photo and write their answers to these questions; "What does this photo represent? and Why it is meaningful for you?". After this, participants will be group into three and ask to share their work with the members. A representative from each group will be requested to make a summary of the individual sharing and give his/her insights from the activity. In conclusion, the facilitator with then engage the participants in an interactive discussion and synthesize the insights gained by the whole group. Emphasis on the importance of nurturing spirit, finding deeper sense of purpose in life, and understanding the connection to the universe.

Session 5: Purpose, Activities, and Process

The objective of this session is to highlight the importance of connecting to others as an essential part of social self-care. Thus, the activity will help the counselors reflect on their own social needs and how they attend and give attention to these needs despite the demanding roles they play both in their personal and professional life.

The facilitator will review what has been discussed in the last session and asked the participants to share what they have learned from spiritual self-care. For this session, the facilitator will show different pictures of places (examples: beach, mountain, park, restaurant, movie house, bowling alley, art gallery, karaoke bar, etc.) on the screen. Participants will be asked to pick and list down 3 places that they like and identify people that they wanted to spend time in their chosen places. They will be asked to look for a partner to share their work and answer these questions; 1.) Do you allocate enough time to spend with your family and friends? and 2.) How do you nurture your relationships with family and friends? After the sharing, the facilitator will synthesize the activity by encouraging the participants to share their insights. Hence, leading the discussion on the importance of addressing their own social needs by establishing and maintaining a healthy relationship with family members, friends, co-workers, and

organizations that can serve as their support system. Moreover, the facilitator will also highlight that socialization and positive relationship with others is an effective self-care strategy and promote wellness.

Session 6: Purpose, Activities, and Process

The purpose of this last session is to accomplish the most important objective of this module which is for the participants to design their own self-care plan that will eventually become part of their daily routine to combat stress brought by their personal and professional life.

The facilitator will review to the participants the different types of self-care that they have experienced in the previous sessions. Underlining their learning especially on the significance of self-care activities in building resilience and boosting the positive wellbeing of school counselors. For the last activity, participants will be given different writing and art materials that they can utilize in creating a self-care plan for a month. This can be in a form of a bucket list, scrapbook, planner, or any other creative output setting in mind the areas in their life that need more attention and self-care. After finishing the task, all participants will be given a chance to present their work to the whole group. Then, the facilitator affirms the active participation of the group and their efforts to achieve the goals of each session. In addition, the facilitator encourages the commitment of each participant to implement their self-care plan, assess its positive effect on their mental health, and eventually continue their attempts to consciously incorporate self-care strategies every day.

Strategies to Evaluate the Group

In the last session, participants will be asked to accomplish an evaluation made by the researcher to measure the effectiveness of the program. Specifically, a Likert scale will be utilized to determine if the objectives are met in terms of the content, delivery method, activities, and strategies utilized by the facilitator. Also, a qualitative part will also be provided by asking the participants to write their insight gained throughout the whole six sessions.

The facilitator takes note of the different processes, participation, group dynamics, and individual learning insights of the group at the end of each session. This will help in documenting the progress of the group and monitoring if the objectives are being achieved.

Referral Procedure

The participants who will be needing further assessment, individual counseling, or other therapeutic intervention will be properly referred to a psychologist or psychiatrist with their consent to address their mental health concerns and improve wellbeing.

Implications to Counseling

This proposed manual can be used and incorporated in the professional development program of different guidance center to help promote mental health and wellbeing among school counselors. A proactive approach in promoting self-care practices and increasing resilience among counselors is vital to prevent stress, burnout, and other mental health concerns due to the nature of their workload. In addition, a counselor with a sound mind and body is more likely to fulfill tasks effectively. A counselor with positive mental and physical health can build a therapeutic relationship, compassionate, committed, accountable, shows genuine concern, and able to can design an evidenced-based intervention programs for his/her clients. More so, prioritizing self-care improves resilience in coping with daily challenges, reduce the risk of illness brought by personal and professional life. Thus, it helps increase happiness, job satisfaction, quality of life, personal and professional relationship, and overall wellness.

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Contact email: rosemarie.aquino@dlsu.edu.ph

The Development of Lesson Plan Based on CIPPA Model in Principles of Guidance Course

Karakada Nugkim, Kasetsart University, Thailand
Chakree Kerdsomboon, National Dong Hwa University, Taiwan

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Abstract
The aim of this study was to develop the pedagogical approach under the concept of CIPPA instructional model in order to enhance the 26 students' logical and rational skills that enrolled in The Principle of Guidance course of the first semester in 2019. Classroom research was utilized for this research. The three significant research instruments employed for investigation are; 1) Lesson plan based on the CIPPA model 2) The respondent questionnaires 3) The application form of reflection and focus group. The findings indicated that according to students' opinion toward the benefits of activity participation, it was found that students have possibly learned and comprehended other perspectives of thinking knowledge/understanding learning process of the CIPPA model at the highest level, and the development of thinking process/ thinking skills for themselves and the others. Regarding reflection on behaviors in order to convey students' thinking/thinking skills expresses during participating learning activities are Creative, Analytical thinking, Step thinking, and Self-learning knowledge construction. In term of activity participate on, the supportive and encouraging activities which stimulated students to express their most thinking behaviors and skills were Collaboration, Conceptual summarization, and Presentation. According to the focus group of the learners' perspectives toward activity participation based on the CIPPA, it was found that participating in activities has strengthened Leadership skills, Communication skills, Adaptation, Positive attitudes toward themselves, and classroom participation.

Keywords: CIPPA Model, Guidance, Lesson Plan

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Introduction

Since the 1999 National Education Act serves as a basis for the education reform of Thailand, including higher education(Office of the National Education Commission, 1999). The 1999 National Education Act states that "Learning reform is the key to education reform." In chapter 4 National Education Guidelines, section 22 indicates that "Education shall be based on the principle that all learners are capable of learning and self-development, and are regarded as being most important. The teaching-learning process shall aim at enabling the learners to develop themselves at their own pace and to the best of their potentiality"(Office of the National Education Commission, 1999). Faculty of Education, Kasetsart University is the primary department that produces personnel to drive the educational reform process as well as continuously develop techniques and innovations in order to encourage learners to develop to their full potential by taking into account individual differences. In 2019, the faculty of Education had adjusted its vision to be an "Institution of thinking" (Thinkin Faculty) with indicators for pedagogy by using teaching process that emphasized thinking skills for learners (Faculty of Education, 2019).

One instructional model that has the potential to correspond to the policy is the CIPPA instructional model. The teaching for thinking skill by using diverse instructional models and processes focusing on thinking such as CIPPA instructional model by Kheammanee (2002) CIPPA was focus on the learner as a center in learning activities (Klinbumrung, Tansriwong, & Akatimagool, 2015). CIPPA provide the pupils freedom of learning, in which they had an opportunity to study themselves, as well as collaboration that they learned together with their peers (Swekwi & Songkampol, 2019). Thus, it helps the students to learn skills in terms of content, principles, theory, and practice. Consequently, they are able to create knowledge by themselves (Thita & Ariya, 2020).

Based on a review of previous studies, there has been no research related to the CIPPA model of instruction in guidance. A lot of applications of the CIPPA instructional model in science learning are carried out at the secondary school level.

The objective of this study was to develop the pedagogical approach under the concept of CIPPA model in the instruction and study students' opinions after the implementation of the CIPPA instructional model.

CIPPA is a principle that can be used to organize different learning activities for the students. The process of CIPPA model allows for a variety of methods and processes that could be arranged into various patterns. The process consists of 7 steps as follows:
Step 1 Review of prior knowledge

This step reviews the students' existing knowledge on the topic of the lesson to provide a linkage between previous and new knowledge. Teacher can make use of a variety of instructional methods.

Step 2 Search for new knowledge

This step encourages the pupils to search for new knowledge from information or sources prepared by the instructor.

Step 3 Study to understand new information or knowledge and to connect the new knowledge to the existing knowledge

This step encourages the students to study and understand the acquired information or knowledge. The students must create meanings for new information or experiences by themselves using different processes, for example, the thinking process and the group process in a discussion, before summarizing their understanding of the information based on the connection between the new information and the existing knowledge.

Step 4 Exchange the knowledge and understanding with group members

This part applies to the group dynamics to act as a tool to check and enhance the students' knowledge and understanding and assist the students in sharing their knowledge and understanding with others and simultaneously, to benefit from the knowledge and understanding of others.

Step 5 Summarize and organize the knowledge

This step summarizes all the attained knowledge, both previous and new, and systematically organize the learned lesson to help the students remember what they have learned more easily.

Step 6 Practice and/or exhibit the performance

This step provides an opportunity for the students to showcase their performance as a result of knowledge construction. This helps them to repeat or check their understanding, to exercise their creative thinking, and to exhibit the effects of their practice.

Step 7 Apply the knowledge

This step encourages the students to practice using their knowledge and understanding in a diversity of situations to increase their expertise, understanding, problem-solving ability, and memory on the topic concerned.

Step 1 – 6 constitutes the process for the construction of knowledge in which the instructor can provide activities to continually engage the students in learning interactions and the process of learning. Each step offers various types of activities that help promote physical, intellectual, emotional, and social participation and help make the students alert and able to learn and acquire the knowledge well.

Step 7 benefits in the students' application of the knowledge, hence completing the CIPPA principle.

Methods

Participants

Participants included 26 students of Kasetsart University. The sample of 26 students was purposively selected from students who enrolled in the Principles of Guidance course in the first semester of the academic year 2019.

Measures

The research instruments designed by the researcher and employed for the data collection included the following:

1. Lesson plans based on the CIPPA model

The researcher studies the related theory and related work regarding using CIPPA model in the instruction and sent lesson plans to three experts for examined content validity

2. Students' opinion toward the benefits of activity participation questionnaire

The researcher sent a questionnaire to three experts to confirm content validity.

3. Forms of reflection and focus group

The researcher delivered forms of reflection and focus group to three experts to review content validity and construct validity.

Analytic strategy

The means and standard deviations were calculated for the students' opinions toward the benefits of the activity participation questionnaire.

The transcripts were analyzed inductively. The main categories were allowed to arise from the data by reading several times. The transcripts were read many times to salient points that emerged to be placed into categories. The last categorization of the data was verified by another researcher for consistency in the categorization of the data.

Results

This study aims to develop the lesson plan based on CIPPA model and study students' opinions toward the benefits of activity participation.

The analysis following the CIPPA model instruction utilized the qualitative method. Furthermore, the students' opinions employed the statistical method. The results of the data analysis could be divided into three parts, as follow:

The process of CIPPA	Activity	Product	Indicator (CIPPA)
1.Reviwe of prior knowledge	The instructor checks the students' prior knowledge through activities. For example, asking questions; What is guidance service? Then, ask students to discuss in the group of three or four.		I (Interaction)
2.Search for new knowledge	The instructor organizes hands-on activities that require information searches about guidance service from the library and technological media		C (Construct) I (Interaction)
3.Study to understand new information or knowledge and to connect to the existing knowledge	- The instructor asks students to understand about guidance principle and create a brochure to present to the class by group - After the presentation, students could ask, discuss, and reflect - The instructor explains more about the guidance principle and asks students to summarize together	- Brochure - PowerPoint	C (Construct) I (Interaction) P (Process skill)

Table 1: Example of a lesson plan based on CIPPA instructional mode

The development of a lesson plan based on CIPPA model

The researcher has improved and developed the lesson plan, which is divided into 3 sections by taking notes after teaching. It also discusses with learners to improve and evolve teaching and learning each time (see Table 1).

The analysis of the data concerning the students' opinion toward the benefits of activity participation

Regarding the students' response to the questionnaire, table 2 presented the average score and standard deviation of the students' opinions toward the benefit of activity participation. The score from 4 items that higher than 4.49 (5-point scale), and four items that lower than 4.49 but not lower than 4.27.

	Item	Mean	SD
1	Students understand the learning process based on CIPPA instructional model after participating in activities	4.58	.504
2	Students are developed thinking skills with others	4.54	.582
3	Students are developed their thinking skills	4.35	.745
4	Students are developed their thinking process	4.50	.648
5	Students understand and realize the importance of developing thinking skills	4.38	.697
6	Students have guidelines for developing thinking skills for themselves and their peers	4.50	.583
7	Time for activities used effectively	4.27	.724
8	Media and equipment for activities are appropriate	4.42	.758

Table 2: The analysis of the data concerning the students' opinion toward the benefits of activity participation

Students' opinion from reflection form and focus group

Analysis of the salient points of the data resulted in two questions of students' opinion.

1. Participation in activities, students are encouraged to employ any thinking skill?

We found many thinking skills that students indicated—for example, creative thinking, critical thinking, and problem-solving.

Eleven of the respondents expressed that they were encouraged to employ critical thinking and creative thinking skills. One respondent commented:
"There are so many thinking skills that I employed, such as critical thinking, synthesis thinking, creative thinking, etc. These skills could enhance student competence and for a future career."

Another respondent expressed a similar perception; he said:
"This activity promotes students' creative thinking, and I have extended my thinking skills."

2. Please, identify your behaviors that demonstrate thinking skills during your participation in the activities

Fourteen of the students perceived that the behaviors that illustrate thinking skills during their participation in activities are working with others and make a conclusion of concept. One respondent commented,
"Working step by step, understanding the information, design production, such as presentation, the conclusion of concept…"

Another respondent added:
"I have opportunities to work with others those I am not familiar with."

Conclusion

The findings indicated that students perceive constructivism is essential for learning. Constructivism is based on the idea that learners actively construct or make their own knowledge, and that reality determined by their experiences as a learner. Basically, learners use their previous knowledge as a foundation and build on it with new things that they learn. This was in accordance with Boonklum (2015)'s research study entitled "The development of the learning achievement in the course politics, economy and society using CIPPA model instruction."

Regarding students' opinion toward the benefit of activity participation, it was found that students have possibly learned and comprehended other perspectives of thinking knowledge/understanding learning process of the CIPPA model at the highest level, and the development of thinking process/ thinking skills for themselves and the others. Regarding reflection on behaviors in order to convey students' thinking/thinking skills expresses during participating learning activities are Creative, Analytical thinking, Step thinking, and Self-learning knowledge construction. In term of activity participate on, the supportive and encouraging activities which stimulated students to express their most thinking behaviors and skills were Collaboration, Conceptual summarization, and Presentation. According to the focus group of the learners' perspectives toward activity participation based on the CIPPA, it was found that participating in activities has strengthened Leadership skills, Communication skills, Adaptation, Positive attitudes toward themselves, and classroom participation.

There is a limitation of the present study that deserves attention. Findings from this study were based on qualitative data concerning the classroom learning experience. Consequently, more research on learning achievement within a class should be performed. In addition, it will be useful to supplement qualitative data with a quantitative approach to increase the robustness of the results. Future research should investigate other student-centered learning approaches to encourage the thinking process of learners.

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Contact email: karakada@yahoo.com

Developing Advanced Critical Thinking Skills in Education Systems: Higher-Order Thinking Processes in an Era of Rapid Change

Nathaniel Edwards, Yamaguchi National University, Japan

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Abstract
This paper examines the close connections between critical thinking and cognitive development, logic, and emotionality and the growing importance of promoting and developing higher order thinking processes in education systems and work environments in an era of rapid change. Students and employees require advanced critical thinking skills to carefully evaluate and effectively use vast amounts of information and data from a growing number of sources. Educational institutions in many countries have given priority to the development of critical thinking skills in curricula, most notably at the university level. Teachers at all levels of education have been advocating the use of critical thinking skills in classes in recent years. Critical thinking skills can be improved by training students in the use of Socratic dialogue and by promoting an advanced self-awareness of thinking processes (Braun, 2004). Logical reasoning, problem-solving and related skills are important elements in critical thinking, but emotions may also play an important role in thinking processes. Emotions may influence logical, objective thinking and a certain level of emotional self-awareness and self-control may enhance critical thinking processes (Ruggiero, 2004). Critical thinking has become an important topic in education systems in many countries, and the need for self-aware, resilient, and resourceful students and employees who can think critically, flexibly, creatively, and independently is increasing.

Keywords: Critical Thinking, Cognitive Development, Logic, Emotions

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Introduction

This paper explores the close relations between critical thinking and cognitive development, logic, and emotionality and the increasing importance of promoting and developing higher order thinking processes in education systems and work environments in an era of rapid change. The ability of students and employees to think critically is becoming increasingly important in a complex global economy and interconnected international society. Educators and managers require a detailed understanding of critical thinking and need to foster its development in students and employees so that organizations and societies can function effectively, logically, and efficiently. Critical thinking encompasses a broad range of skills, abilities, and habits and is connected to and influenced by cognitive development, logic, and emotionality (Schwarze & Lape, 2001). An understanding of critical thinking requires a multidisciplinary approach. In an era of accelerating change in technology, society, and work, students and employees need advanced critical thinking skills to carefully evaluate and effectively use exponentially growing amounts of information and data from a steadily increasing number of sources (Petrucco & Ferranti, 2017). Students and employees need to identify false information and to modify hypotheses, theories, and beliefs based on new, reliable information. Critical, evidence-based thinking based on sound reasoning is an ongoing process which examines beliefs, identifies contradictions and inconsistencies, and continually tests hypotheses (Braun, 2004). Critical thinking is at the core of scientific reasoning and innovation and is necessary for the maintenance and continual improvement of an increasingly complex global society.

Definitions and Characteristics of Critical Thinking

The concept of critical thinking has become so all-encompassing that it is difficult to define with one single, simple, complete definition. Critical thinking is a powerful, empowering model of thinking and logical reasoning, but it may also be difficult to comprehend and to teach without a great deal of self-reflective study and mental effort. Critical thinking may, in part, be defined and classified as a form of higher-order thinking that is involved primarily in the evaluation of arguments in a purposeful manner enhanced by an objective self-awareness of one's own decision-making processes (Astleitner, 2002). Indeed, purpose must be a key element of higher-order thinking and complex decision-making processes. Role modeling can be used to explain the process of critical thinking which can be defined as a highly structured method of thinking which is particularly useful when making decisions in a high-stress environment (Carroll-Johnson, 2001). Logical structure is a key component in critical thinking, giving it a strong but flexible framework with a consistent level of validity and reliability that can be applied to any challenging situation.

Meta-cognition, an objective self-awareness and understanding of one's own thinking processes, plays an important role in critical thinking (Braun, 2004). Critical thinking includes some level of ability to self-monitor one's own thought processes and to identify logical inconsistencies, contradictions, and various forms of bias that may distort the reasons given for certain choices. Class discussions, debates, and independent research assignments can aid in the development of critical thinking skills (Hermond & Tanner, 2020). Some more detailed and extended definitions of critical thinking deal primarily with the analysis of arguments and facts, and the identification of common logical fallacies. For example, critical thinking may be defined as the ability

to distinguish between evidence-based facts and statements of value, and as the ability to identify bias and unstated assumptions (Duplass & Ziedler, 2002). Critical thinking is also described and defined with detailed lists of attributes and general human characteristics such as inquisitiveness, the ability to seize new opportunities, open-mindedness, flexibility in thinking and behaviour, persistence and attention to detail among many others (Cheung, Rudowicz, Kwan, & Yue, 2002). Some of the multiple terms used to describe and define critical thinking may be ambiguous and difficult to define precisely. Critical thinking is a complex concept, a higher-order thinking process used to make logical choices and decisions, and an ability which defies simple definitions.

Cognitive Development and Critical Thinking

Cognitive development in children is linked to a frequent questioning of the surrounding environment and to the development of basic critical thinking skills (McDaniel, 2004). Aspects of critical thinking such as problem-solving skills can be introduced into the lower grades in schools. Teachers can create classroom environments in which elementary school pupils can start to acquire the habits of interpreting, analyzing, evaluating, and explaining various situations and phenomena (Leasa, Corebima, & Batlolona, 2020). The natural curiosity of children can be used to support the development of basic critical thinking skills and of a more sophisticated and persistent examination and reevaluation of the surrounding environment by children. If critical thinking is to become ingrained as a lifelong habit of active, purpose-driven, self-reflective thinking and behaviour, then appropriate aspects of critical thinking should be taught as early as possible in schools. The methods of knowledge transmission in schools can limit or enhance the ability to think critically and independently (Manzo, 1998). Schools can discourage critical thinking by avoiding controversial topics and by putting an emphasis on only one correct answer for each question posed in class. Critical literacy, the ability to question and interpret texts and stories in different ways, can be taught using fairy tales (McDaniel, 2004). Students need to learn how to interpret information from a variety of viewpoints and to be able to modify or change opinions and beliefs to adapt to a rapidly changing and increasingly technological world.

In addition to storytelling and literature, art studies can be used to promote cognitive development and critical thinking in young students. For example, drawing pictures can be combined with the teaching of narratives and social studies (Coufal & Coufal, 2002). Art is a system of symbols that children can use to express feelings and concepts that they may not yet be able to clearly communicate in their own words. Social interaction and collaborative activities and projects enhance cognitive development and the ability to question aspects of the surrounding environment (Thayer-Bacon, 1997). A significant amount of knowledge about the world is acquired through social interaction. Language and art are systems of communication based on symbols and are closely related to cognitive development and critical thinking.

Logic and Critical Thinking

Critical thinking is essential for the development of formal logic and the use of deductive and inductive reasoning (Kirby & Goodpaster, 2002). A desire to change or modify existing viewpoints and to explore alternative explanations makes the use of logical arguments possible. Valid arguments and formal reasoning can be developed through the Socratic method, a process of questioning, analyzing, evaluating, comparing, and reinterpreting viewpoints and understandings (Schwarze & Lape, 2001). A clear link exists between critical thinking skills and an understanding of formal logic and the ability to apply it to a wide range of situations. Logical arguments are made possible by critical thinking skills (Duplass & Ziedler, 2002). Advanced critical thinking skills are essential for effective scientific reasoning and continual innovation.

The Influence of Emotions on Critical Thinking

Humans are not completely rational creatures devoid of emotions. The temporary moods and emotions experienced by an individual may fluctuate frequently and influence personal decisions, opinions, and attitudes. Emotions may influence logical, objective thinking and a certain level of emotional self-awareness and self-control may enhance critical thinking processes (Ruggiero, 2004). A person who can objectively evaluate his or her own emotional state and who can exercise some self-control may also be capable of monitoring his or her own thinking processes and of self-evaluating his or her own opinions and beliefs. Extreme or violent emotions and emotionally charged language can inhibit the use of critical thinking and logic (Schwarze & Lape, 2001). Although emotions can have a negative impact on critical thinking and logical reasoning, an overreliance on logic may also result in negative outcomes. For example, managers who make decisions based on logic alone may not have enough empathy to understand the emotional and motivational needs of workers (Steininger, 1994). Emotions have an impact on critical thinking that needs to be acknowledged and systematically evaluated.

Developing Higher-Order Thinking Processes in Education Systems

Education systems in many countries have given priority to the development of critical thinking skills in curricula, most notably at the university level. Critical thinking has become an important topic among educators, and the importance of its development in college students in the United States has been recognized as a national educational goal that is essential for the success of the economy (Braun, 2004). Critical thinking skills are essential for students and workers in a globalized world shaped by rapidly changing technology and an exponentially increasing flow of information and data.

Collaborative learning is a common theme in many university courses that emphasize practical project-based learning connected to real-world outcomes. Collaborative team learning projects combined with real-world data collection, consulting, and problem solving are an effective method to develop critical thinking skills in university business students (Canziani & Tullar, 2017). Some online learning platforms can be as effective as traditional classroom settings. Critical thinking skills can be developed in interactive, collaborative learning environments, including online university courses that require self-reflection (Hermond & Tanner, 2020). University courses can also promote critical thinking, rational analysis, and objective evaluation through class discussions and

debates.

Problem-solving exercises that require the use of design, creativity, and technology can improve critical thinking skills (Matthee & Turpin, 2019). The ability to evaluate the truth, accuracy and value of online information and online sources is becoming increasingly important. A clear methodology combined with increased self-awareness of thinking processes allows students to improve critical thinking skills (Petrucco & Ferranti, 2017). University courses and research projects connected to real-world problems and digital information literacy prepare graduates for careers in a constantly changing, evolving, and increasingly technological work environment.

Conclusion

In conclusion, critical thinking is of vital importance in both educational and working environments in an increasingly complex, interconnected, and technological world. An objective awareness of one's own thinking processes and patterns and the ability to engage in Socratic dialogue are key aspects of effective critical thinking (Braun, 2004). Cognitive development is influenced and enhanced by critical thinking skills. Logical reasoning, problem-solving skills and related skills are important elements in critical thinking. The role of emotions in critical thinking needs to be acknowledged, monitored, and self-evaluated. Critical thinking has become an important topic in education systems in many countries, and the need for self-aware, resilient, and resourceful students and employees who can think critically, flexibly, creatively, and independently is increasing.

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Transformative Pedagogy: A Twenty-First Century Perspective Towards Improving Education

Alisha Souza, Don Bosco College, India

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Abstract
Education in the twenty-first century needs to break existing boundaries and adopt a new blend of teaching to meet the evolving demands of students. The need for teachers to unlearn instructional methods that were consistently being used over the last few years and move towards perceiving not just education, but their role as well, in a different way, lies at the crux of this paper. This paper critiques the current form of teaching and learning happening in institutions and emphasizes the need for a shift in this structure, outlining methods that are more likely to be effective in the twenty-first century. The methodology used to gather information for this paper was a survey of different people associated with the education sector. It followed a qualitative and quantitative approach towards obtaining information to prove that there needs to be a transformation in the pedagogical approaches towards education in the twenty-first century. The study unearthed the necessity to cater to the diverse needs of students by making education specific to individuals rather than providing a one-size-fits-all form of instruction. A focus on individuality and skill development is essential and a shift towards a mixed method of outcome-based education coupled with choice-based learning will be beneficial to promote all-round development and make them capable of adapting to the changing world.

Keywords: Mixed Education, PROSPER Framework, Outcome-Based Education, Technology, Choice-Based Learning

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Introduction: The Evolution of Learning

When communities were nomadic and relied entirely on hunting and gathering to meet their daily needs, the process of learning for children was centred around their ability to explore the world around them. They would entertain themselves with stones, leaves, sticks, and other resources that they could access. Post the Middle Ages and the onset of feudalism, this self-exploratory lifestyle of children would take on a drastic change. With agriculture soon becoming the dominant form of survival, children were required to work in fields to contribute to feeding the family. This shift resulted in wandering communities settling down and the arrival of permanent housing structures. With these changes, the exploratory freedom children once enjoyed began to wane. They were now expected to develop knowledge about the land they lived in, the type of animals they could rear, crops that would grow – all of which would facilitate this new lifestyle that they had evolved into (Gray, 2008).

With the arrival of the Industrial Revolution in the mid-18th century, the poorer and disadvantaged children were required to work in dirty, crowded factories as labourers. Thus, their innate tendency to learn and discover things on their own, came to be replaced by the need to adhere to instructions. "A good child was an obedient child, who suppressed his or her urge to play and explore and dutifully carried out the orders of adult masters" (Gray, 2008). As industrial development gained momentum and the need for child labour began to decrease, the idea of childhood as a crucial time for learning began to circulate. Public schools surfaced, each with the idea of indoctrinating students with values that the elders of the time considered important. While some focussed on teaching the histories of the land, others believed morals and lessons of mathematics and Latin would turn them into scholars. By this time, the idea of education was considered a system of inculcating certain truths and facts into young minds. The idea of leaving children to their own devices to learn was long forgotten. Children were now taught things that the adults considered important and their intellectual prowess was determined by how well they regurgitated that matter back after a few days. This system slowly made students grow out of their inherent creativity instead of growing into it and this was where the problem began.

Education today follows the same paradigm as it did back then. Despite the incorporation of technology, the purpose that education aimed at achieving so many years ago continues to persist. It continues to train students to learn things not for the bigger purpose of creating better equipped individuals that are society-ready, but to reproduce content at the end of the teaching term, thus showing its limited progress despite the gap of time.

The Merriam- Webster Student Dictionary defines education as "knowledge, skill, and development gained from study or practice" (Webster, 2007). While education has always attempted to provide knowledge of an academic specialty, the need to foster independent learning and an enquiring spirit in students has often been side-lined. With compact syllabi and a structured system of teaching laid down, the need to think critically and creatively is not given enough emphasis.

The main purpose of education has always been to incorporate values into the lives of people and stimulate their intellect. However, the current system of education seems to be failing when it comes to catering to the needs of the twenty- first century. This paper

attempts to throw light on pedagogical transformations that can be utilised to produce better results, enabling teachers to cater specifically to the needs of individual students rather than continuing to test all students on a simplistic, unvaried scale.

Challenges of education in the twenty-first century

The needs of the twenty-first century demand that teachers move away from a system that merely inculcates knowledge towards a system that inculcates skill-based training. A report released by The World Economic Forum in 2016 stated that by 2020 "more than a third of the desired core skill sets of most occupations will be comprised of skills that are not yet considered crucial to the job today" (James, 2016). According to the report, complex problem solving and social skills needed to be given more attention to create individuals who are ready to face society. Being in 2020, this prediction is seen to carry truth in it. Keeping a uniform scale to ascertain the intelligence or potential of a child does not make sense in a world where students are exposed to so many different skills.

For a long time, education systems have been driven by a system of conformity-conformity to a prescribed syllabus, conformity in testing methods, in assessment and so on. It is now time that this approach towards learning changes. There needs to be a shift in the kind of assessment being done. A system that shuns those who are not *academically* ahead is no longer a system that makes sense. Academic excellence is no longer being seen as the main focus of education and allowing such an archaic system to persist will serve to be detrimental to the growth and development of students.

Another potent challenge that needs to be tackled is in the teaching-learning process. Right from an early age, students have access to a wide variety of information at their fingertips. Thus, the role of teachers in the twenty-first century needs to undergo an upheaval. In these constantly evolving times, teachers must transform into something greater. With technology providing students easy access to knowledge, the role of a teacher can no longer be limited to knowledge provider, but requires the adoption of a greater responsibility – which encapsulates becoming a guide, mentor, and facilitator.

Another major challenge for teachers, particularly in a country like India, is the vast number of students in a classroom which makes it difficult to utilise varied strategies to make classes more engaging due to paucity of time and the demands of an over-packed curriculum. Embracing the use of technology by moving towards a system of blended learning can help tackle this issue. Students of the twenty-first century are an exploratory generation, eager to question, challenge, and even prove their greater knowledge of the subject. The responsibility of the teacher should be to fuel the fire that drives this generation. They should avoid belittling students who do not conform to the norm that was being followed all these years. Instead, teachers should attempt to identify the skills and interests that drive today's students, as vast as they may be, and push them towards developing in that direction.

Until recently, the job market still valued good grades over skills but the world is experiencing a drastic shift from this mindset. Today, the upcoming start-up industry is openly opting for people with certain skillsets and the capability of performing, irrespective of their educational grades.

Analysing the way forward

A survey of about fifty people was conducted to ascertain what they felt about the current education system and whether it should be revamped to better meet the needs of young people. The sample included teachers, students, parents, and other working professionals from rural as well as urban areas. It employed a qualitative and quantitative approach to obtain in-depth responses to the questions posed in the questionnaire. The hypothesis was that the education system is ill-suited to meet the demands of the twenty-first century and needs to undergo a major change if it is to better prepare students for the future. The responses were varied but augmented the hypothesis and emphasized small yet impactful changes that need to be incorporated into the system.

A majority of those surveyed felt that education needs to focus more on imparting practical knowledge. Essential topics like managing money, doing taxes, dealing with people, handling stress, developing good interpersonal relationships need to be given greater importance in today's world. Respondents further opined that a regularly updated syllabus that collaborates with the requirements of the working world was essential.

It is important to note that the children of the twenty-first century are growing up in a world where very often both parents are breadwinners, single parenting is becoming more the norm than the exception and families are constantly on the move for better jobs and educational prospects. These issues of increasing individualism, forced displacement, and digitalisation affect the mental health of children and in turn, hamper the process of learning (University, 2019). Thus, it is imperative for teachers to look beyond the covers of their textbooks and understand students for who they are, helping them tackle and battle these insecurities that research indicates is becoming increasingly prevalent in twenty-first century adolescents (University, 2019). By addressing these issues from a young age, it will lead to the development of free-thinking, intelligent people who will transform into well-rounded members of society.

On being asked what education in the twenty-first century should include, many felt that research and self-learning should be given priority. Instead of merely assimilating information, developing in students the need to question or critically analyse situations and problems was prioritized. A few were of the opinion that, particularly in today's world, classroom learning needed to include the imparting of values and morals while ensuring that individuality and creativity are not stifled but given sufficient priority. This opinion holds weightage as society is far from its best, which indicates that education is not serving the purpose of creating better individuals. The need to teach values so that people become better human beings, before all else, seems to be the need of the hour.

Educationist Ken Robinson once said, "If you're not prepared to be wrong, you'll never come up with anything original" (Robinson, 2007). The fear of being wrong is dominant from the moment students enter schools because schools follow a strict 'factory line' system of grading and categorising potential. The current education system is so disruptive that it "stigmatises mistakes" (Robinson, 2007). This attitude needs to change. Students should be encouraged to speak their minds and voice their opinions without the fear of being chastised. Teachers must understand that intelligence is

diverse and creative and should not restrict but be open to the array of multiple intelligences that students possess- be it in music, art, problem-solving, etc. A recent situation in a Class 9 English language class proved this point. Students were instructed to come up with a two-minute speech on an 'artist' for a class exam. While some chose the likes of Picasso and Michelangelo, others surprisingly picked classical writers like Wordsworth and Shakespeare. When questioned, their rationale was simple – writers are artists too. They paint pictures with their words and create something beautiful from their imagination. Thus showing that while some students understood the term 'artist' as it is generally used - a person who creates paintings and sculptures- others tried to expand this term to mean "someone who creates things with great skill or imagination" (Dictionary, 2020). These are small ways in which creativity is manifested right from a young age. When this is suppressed and students are told their reasoning does not make sense or are outright chastised for not following instructions, it gives rise to fear or self-doubt that prevents future experimentation thus slowly killing that inherent spark of creativity and individuality.

This indicates that there is a need to revitalize the way in which learning has been happening over the years. When exploring the role of an educator, teachers need to take a personal interest in students to ascertain strengths and weaknesses, individual learning needs and thereafter craft a lesson plan that can be utilised to meet those differing needs. The process is not easy but by adopting technology it is certainly possible. Students possessing moderate and higher intelligence can focus on problem-solving, experimenting, and learning through pre-created tasks and assignments given to them through online resources, while the teacher can focus on the weaker students in the class who are in need of individual attention.

Classrooms need to be turned into collaborative zones where students are put into smaller groups and allowed to take charge of the learning process. In the earlier days, teachers played a central role in the learning process but the twenty-first century demands a different approach – one where classrooms are more student-centric. With the help of technology, personalizing education can become a reality. Teachers can utilise technology to varying extents to guide students in the process of acquiring knowledge. This can happen effectively if learning becomes a more proactive process.

To foster individuality and skill development, the existing mode of assessment needs to be relooked at. Utilisation of digital assessment options will enable teachers to analyse the comprehension and concept grasping capacity of students through different forms – whether it is pop-up quizzes, essays or virtual presentations – each assessment being tailored to the skills and strengths of individual students. All of these changes need to begin at the grassroots level. The current system judges a student's memory not their understanding of concepts or their skills, which is a step in the wrong direction. There is an essential need to devote more time to proactive, self-driven learning rather than assessment being the crux of the education process.

Educationist Joe Ruhl emphasizes the need for choice as an essential component of every classroom (Ruhl, 2016). Students of today have landed right in the midst of a technological boom, in a world filled with distractions but also, a world full of options. Right from receiving phones at an early age and having technology dominate so many spheres of their lives, to the availability of diverse job avenues after their education – the options are numerous. The moment choices are provided in a classroom, students

feel a sense of control. They will choose the option that they best like to work on thus making them more active in the learning process. By providing choices and conducting technology-rich activities, teachers will be able to hold the attention of students, making the process of learning more personalised to meet individual needs (West, 2013).

The PROSPER framework proposed by Noble and McGrath, which focusses on inculcating Positivity, Relationships, Outcomes, Strengths, Purpose, Engagement, and Resilience, into students is an ideal way forward. (Noble and McGrath, 2015). This model focusses on fostering positivity, developing good relationships, yielding concrete outcomes, developing strength to tackle life's hardships, having a well-defined purpose, facilitating better engagement, and developing resilience – tools that are essential for students to deal with the ever-changing world around them. If teachers are able to attend to these needs within the confines of the curriculum, it would boost student well-being which in turn, would cause education to become more purpose-oriented creating students who are well-equipped to face the changing times. Using these seven components of PROSPER within the classroom space will create a new and different learning environment – where goal-attainment is achieved through cooperative learning tasks which better prepare students for the real world (Noble and McGrath, 2015).

Once students have purpose, the process of learning will take on a new meaning. This development of purpose or an objective prior to the imparting of knowledge is also at the core of the Outcome-Based Education proposed by William Spady which is beign adopted by some institutes of higher education. It focusses on students attaining certain concrete, measurable skills by the end of their academic journey. By researching and understanding the demands of the future, teachers can create a course that is aligned with the broader objectives of the discipline or area, and will focus on developing measurable performance outcomes, that is, things that can be 'done' by the student rather than just 'learnt' thus preparing them for effective adult functioning. The proper planning and implementation of outcome-based education as conceptualised by William Spady will automatically enable students to learn the skills that prepare them for life, which is currently what education systems are criticised for not catering to.

Conclusion

To address the concerns of education in the twenty-first century, it is important to recognise that all human interaction is based on diversity thus the need to move away from a system that demands conformity. Extending education beyond the classroom is important to transform education. Technology and online learning make this possible, enabling students to access notes from home, communicate with teachers and work at a pace they are comfortable with. It also addresses the challenge of having diverse students and catering to the interests of each one. Numerous methods of constructive teaching can be applied to the classroom setting with the help of technology, however, the lack of appropriate infrastructure in educational institutions, improper internet connectivity and a packed syllabus are the limitations likely to be experienced when moving towards such a system.

Thus, the transformative pedagogy that is needed for the twenty-first century is not something new and innovative, it is merely developing a new outlook towards education and what it should seek to achieve. The methods and models to make it impactful already exist but the success lies in the implementation of an effective blend

of methods that can foster not just the academic but the holistic development of every student, irrespective of where their talent or skill lies.

By combining elements of outcome-based education and aligning it with the concepts spoken of in the PROSPER framework with equal attention paid to individual needs and choice-based learning, education will take on a newer and more meaningful dimension that is well-suited for the twenty-first century. Moreover, the use of technology will enable educators to find unique and personalised ways of getting students to contribute in class and in turn, achieve the outcomes set out for them. Utilising technology to ensure that no student feels that they are incompetent will help boost feelings of positivity, which in turn, will turn them into resilient individuals as since "people who frequently experience and express positive emotions tend to be more resilient" (Noble and McGrath, 2015).

To conclude, education in the twenty-first century needs to adopt an integrated approach to foster holistic learning which includes the proper usage of different methods that already exist. Education needs to be personalised where content is customized based on the passions, interests, and learning capacity of different children. This is undoubtedly a challenging task and would demand teachers being trained anew to understand such a system. However, the need for skilled individuals is surpassing the need for knowledgeable students in today's workforce and it is the job of educators to ensure that education achieves this outcome. The move towards positive innovation in the classroom begins with a teacher thus it is expected that teachers dedicate themselves to catering to the holistic needs of students- developing skills, values and an attitude of enquiry that will motivate students to become life-long learners. Only by doing this will we create students who are well-balanced and ready to take on the challenges of the real world, thereby transforming education.

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Contact email: alisouza94@gmail.com

A Materials Library Created by Students, for Students: A Valuable Learning Resource

Faith Nightingale, Queen Mary University of London, United Kingdom
Andrew Spowage, Queen Mary University of London, United Kingdom

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Abstract
A materials library, like other curated collections, contains valuable reference "materials". It is highly desirable for universities, especially those with strong engineering and materials science programmes like Queen Mary University of London Engineering School (QMES). Access to a materials library allows students to see, touch and experience a wide range of materials first-hand. QMES incorporates the comprehensive materials library project as part of its 2nd year Personal Development Planning module. The original project requires students to research potential materials, select one, and competitively market it to their peers, build a website about the material and finally apply appropriate techniques to prepare a sample for display in the library. In year 3 the project is expanded in another module. Students carry out characterisation experiments on their materials and expand their websites with primary test data. This affords an opportunity for students to integrate additional knowledge they have gained in other modules and to see how it might be used in in real world applications. To test the effectiveness of the project in terms of students' self-assessed skills development, and to enhance the pedagogy of the project, a survey was conducted on the original material library project and the year 3 additional developments. The results showed that skill development was high, which supported transferable and technical skills for young engineers, and factors such as delivery and support need to be considered when developing the project.

Keywords: Materials Library, Materials in Design, Materials Selection, Problem-Based Learning

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Introduction

Materials libraries are a valuable reference for engineers to truly understand materials and to provide support when selecting appropriate materials for a specific application (Akin & Pedgley, 2016). In an educational setting, a materials library provides students with the opportunity to see, touch, feel and experience the materials. As a tactile resource, a library can be used to engage all the senses, in a way that virtual or paper-based analogues simply cannot do. A materials library allows students to fully engage with the material, providing a learning opportunity which facilitates immersion and deepens appreciation of the unique character of each material.

Materials selection has components of both art and science. The science part is relatively easy for engineers to internalise. For example, if an engineer needs to select a material for a beam, (Figure 1) students can use well known equations to work out how stiff the material needs to be to support the load. However, it is much more challenging to work out how the beam "feels" and how it will be perceived by the user. These "aesthetic attributes" may be analogous to materials properties in some cases. However, they are often impossible to calculate and very challenging for engineers to visualise. Aesthetic attributes require first-hand experience. A materials library allows the students to experience the materials with their own senses, to develop an appreciation of how the material will behave and be perceived by the user.

Figure 1: Balance beam *(Pixabay, 2020)*

Universities are always looking for ways to engage the students and enhance their learning experience. This becomes increasingly important when academics recognise different learning styles. A popular approach to promote active learning and engagement is to introduce problem-based learning, (Helle, Tynjälä, & Olkinuora, 2006). Problem-based learning (PBL) is an approach that at its core fosters collaboration and communication. The materials division at Queen Mary University of London were early pioneers of PBL and have continued to refine and expand the practice (Bushfield & Peijs, 2003). Crucial aspects of PBL projects involve developing solutions to a problem, they require students to use initiative and they commonly result in an end product (Blumenfeld, Soloway, & Marx, et al., 1991). The problem should be significant in terms of grades, substantial in terms of effort and duration required. They should serve to organise and drive activities that allow exposure to a variety of educational activities.

In PBL teaching staff are involved in an advisory role and should not to provide answers / solutions as the process of working through the problem is an important part

of the learning activities. PBL also supports interdisciplinary competences as the pedagogy encourages collaboration and the flexibility, allowing touch points between modules to be built into the project. PBL enables practical application of learned knowledge into the degree programme which is a vital ingredient as graduates often cannot recall the knowledge or how to use it (Ruhanen, Axelsen & Bowles, 2020). This is especially important if the knowledge is difficult to appreciate through traditional teaching approaches. Together, the experience gained through discipline specific practice enhances capability and ultimately employability of our students. The advantages offered by PBL and the fact that QMES students are well versed in delivering projects, provided an obvious choice to use this approach to deliver the learning objectives required from the materials library component of the module.

Interdisciplinary competence is something which is highly sort after in engineering education. It is part of engineering accreditation requirements (ABET, 2019) and a distinguishing factor embraced by many leading universities. The ability to be a high functioning member of a multidisciplinary team is an essential skill and highly prised by engineering companies.

QMES students are exposed to PBL in a wide range of modules including experimental modules which consist entirely of projects, teaching modules which contain projects that support traditionally delivered content, and, modules which contain a wide range of projects delivered using flipped classroom methodologies. The projects within the PDP module are aligned with the "Project Component" model described by (Morgan, 1983), they are interdisciplinary in nature and have a real-world objective. The project integrates concepts learned in the various PDP modules but also requires students to integrate knowledge from a range of other modules. As the materials library project is linked to the students' core area of expertise and the output of the project will be used by students, it most closely aligns with the "professional motives" category defined by Heitman (1996).

Enhancing students' employability skills is a vital learning outcome of PDP. All too often undergraduate students are concerned only with their academic performance. Skills such as time management, critical thinking, research, employability and presentation skills are often undervalued by students. However, as they are highly prized by engineering companies, students need to be given the opportunity to develop them. Similarly, support for life-learning and professional practice frequently take a back seat to academic grades, but are essential for all engineers. It is also key that students can effectively communicate within their discourse community as students, but also later as engineers. Engineers are required to communicate with a variety of people including stakeholders, customers, suppliers and also other engineers globally, so an ability to code switch is important. Oral communication is so important that employers are very selective when it comes to potential engineering employees (Irdus, Salleh and Abdullah, 2011). STEM graduates are often criticised for their lack of transferable skills (Riemer, 2002), perhaps because students do not realise the value of these transferable skills to their future careers.

This work aims to address three research questions:

1. How well does the materials library project enhance the (self-evaluated) transferable skills of the student?

2. How effective is a materials library project in supporting undergraduate engineering programmes?
3. What are the main factors in developing a pedagogically sound materials library project delivered by PBL?

Materials & Methods

Participants

At QMES, the materials library project was initiated in 2019 with the inaugural second year cohort (240 students) and further developed in 2020 to better meet the academic needs of students. In the third year, the materials library project is used as a basis for a project within the materials characterisation module. The second cohort of students completing the materials library project consisted of 227 students. The main challenges with this year's delivery was associated with the Covid-19 pandemic. This meant the format of the project needed to be adapted to reflect a blended learning approach.

Course structure and design

Year 2 Materials Library Project

The year 2 materials library project runs for 26-hours. The project is divided into four parts:
1. Completion of a poster (pairs)
2. A poster competition (pairs)
3. A recruitment fair (group)
4. Building a website (group)

Table 1 shows an outline of the project schedule. The two columns on the left-hand side shows the teaching plan of in-class activities and the learning objectives. The two columns on the right-hand side shows students' out of class activities, groupings and the skills students develop at each stage of the project.

Table 1: Project schedule

In-class	Learning objectives	After class	Student grouping and skills developed
Week 1: Introductory lecture	To understand the requirements of the materials library and safety aspects of materials.	Students choose material and make contact with companies.	Pair work Skills: networking and written communication
Weeks 2, 3 and 4: Guided, independent study on posters	To understand the features of a scientific poster. To be able to write an appropriate poster literature	Students work on each section of the poster and add it to the Wiki.	Pair work Skills: academic writing

	review and abstract. To use engineering judgement to decide on poster SDS information.		
Weeks 5 and 6: Tutorials	To be able to improve work based on feedback and discussion.	Students receive feedback and make improvements to posters.	Pair work Skills: academic writing
Week 7: Poster assessment	To be able to assess other's work as a skill for a future manager/mentor.	Students prepare for the recruitment fair	Pair work Skills: interviewing skills
Week 8: Recruitment fair	To practise communication and interview skills to sell yourself.	Students hold a team project management meeting.	Group work (8) Skills: project management, teamwork
Week 9: Lecture on website design	To understand how to build webpages. To think about the importance of design and layout of webpages. To be able to use the 7 step plan during this project.	Students start website creation.	Group work (8) Skills: website design and academic writing
Week 10: Guided, independent study on project and team management	To understand how to manage a larger group of people. To be able to use a project management tool (Gantt chart) to plan a project.	Students hold team meeting to arrange tasks.	Group work (8) Skills: project management and teamwork
Weeks 11 and 12: Tutorials	To be able to improve work based on feedback and discussion.	Students receive feedback and make improvements to websites.	Group work (8) Skills: academic writing
Week 13: Website assessment	To practise oral communication and presentation skills.		Group work (8) Skills: presentation and spoken communication

Students are given the full timetable at the start of the project so they understand the expectations from the beginning. This approach combined with a student-centred delivery supports students' time management, project management and organisational skills as they are entirely responsible for completing the deliverables within the project requirements, according to the defined timeline.

The first deliverable was a poster. Pairs of students researched potential materials and selected their material, and then created a scientific style poster about it. In the poster, students needed to consider technical aspects of the material, health and safety regulations as well as applications. The second deliverable, the poster competition, is highly competitive; the choice of materials, quality of the poster and the students pitch are important elements in the competition. During the learning process, members of each pair provided support both linguistically (they are required to speak English in all sessions) and with technical knowledge, research / transferable skills competence (Ohta, 2001) to their partner.

The poster competition is peer assessed. The posters which gain the most support are the materials which progress to the next stage of the project. Students take part in the poster competition by listening in groups to presentations from each pair before asking questions. At the end of the session each student votes for their favourite posters; this makes them potentially eligible to become part of the team who will take that material to the next stage of the project. The peer evaluation process promotes learner autonomy (Yang, Badger & Yu, 2006) and builds significant buy-in from students.

The 2020's poster presentation had a total of 112 posters across the cohort, with 28 being chosen as the winning posters. In more normal times the presentation is held in a traditional face-to-face setting. This generates a high energy environment with students "selling" their concept and developing transferable skills while doing so. This year as the students were in their family homes, the event was hosted through Tencent/VooV meetings with voting taking place on WeChat. The academic team involved noted that the same energy and degree of interaction was not possible with the online approach. However, more time was available for students to listen to presentations and ask many more questions than during face-to-face delivery.

The winning 28 pairs then held a recruitment fair to select 6 other team members. This gave students the opportunity to practise "selling" themselves by outlining what they could contribute to the team. The event was designed to be reflective of an interview of the students' first engineering job. Students had the opportunity to practise the interview techniques they had learned in earlier PDP projects. The poster competition and subsequent interviews gives students additional opportunities to develop their communication and other transferable skills. A larger groups size than would be typical in QMES was selected to better reflect authentic, interdisciplinary projects. Having a larger group gave students the opportunity to work in smaller, sub-teams which would be required to deliver within the tight timeline. Sub-teams allow more students to take a leadership role. Similarly, all students were able to practise time management and working with diverse actors, an essential workplace skill.

Websites were created through QMUL's customised Moodle deployment. Students all had experience of creating individual webpages pages but had not created multiple

page website and certainly had no experience of contributing to a collective, curated database i.e. the materials library. This meant that design and layout, navigation and access were new areas that needed to be considered to fully exploit the technology. Using a tool that students were familiar with, but enhancing their skills meant that they were able to improve their technological skill set while focusing on the core engineering aspects of the project.

To ensure easy access to the websites, students created a QR code for each display in the materials library. This was linked directly to the specific website for the individual materials which allowed direct access to the websites by scanning the QR code on any mobile device. The sites can also be accessed through the QMES Materials Library landing page[1].

Guided, independent study (GIS) sessions gave information on a specific topic such as how to write an abstract or a literature review for the posters. Topics were introduced in lecture style classes followed by a question and answer session from the students and group work to put what they have learned into practice. This gave the students opportunities to clarify any points, helped the students feel supported and guided throughout the project, as well as to reinforce the learning objectives by applying the concepts.

Additionally, in both the poster and website elements of the project, students received tutorial sessions where they completed work and received feedback before the session. Tutorials helped manage time effectively by clarifying any misunderstood points and asking thoughtful, relevant questions. This helped students develop and improve their work throughout the project, which is important for learner development (Ferguson, 2011).

Throughout all of this, students complete weekly project management forms to track their progress and develop their project management skill sets. Group portfolios were also created to assist in the knowledge transfer between the group and teacher, so group progress could be tracked as well as identifying any potential problems. All of which are essential elements of project management (PMI, 2017).

Year 3 Materials Characterisation Project

The materials characterisation sub-project is a 10-hour project, consisting of three parts: writing a proposal for characterising the material, characterising the material and then adding that information to the material's existing website. The proposal contained 2 or 3 characterisation techniques, no more than a page in length. Each technique needed to include the following points:

- Briefly state the principle on which the technique works.
- How well could you identify the material? How precise and accurate is the method? Does the technique give you quantitative or qualitative information?
- Show some example data that is representative of the type of material and a description of what the data shows (due to COVID it was not possible to actually

[1] https://hub.qmplus.qmul.ac.uk/view/view.php?homepage=qmes-materials-library-project&page=qmes-materials-library-2020

characterise the materials this year so students were tasked with sourcing appropriate data from relevant journals)

All work was conducted in self-assigned groups of 5 or 6 students. Students were given the option to deviate from their original materials library group which helped groups that had not worked harmoniously or were interested in a different material to explore other avenues. The group was also required to complete project management forms and peer assessment of contributions.

Experiment design and research instruments

For each project, a survey was conducted with each year group of students. The year 2 survey consisted of 9 questions: 3 Likert scale questions, 2 multiple choice questions and 1 ordering question related to the project and its structure, how useful the project was and what skills were developed, and 3 open ended questions relating to favourite/least favourite parts of the project.

Similarly, the year 3 survey consisted of 6 questions: 3 Likert scale questions, 1 rating and 3 open-ended questions, related to the aspects of the characterisation project, favourite/least favourite parts of the project and future use of the materials library.

Results

Year 2 Materials Library Project

168 students answered this survey. Figure 2 shows that 43% of students' favourite stage of the project was working with their material, followed by 26% indicating that working on the poster was their favourite part.

Figure 2: Question 1 results- My favourite stage of the project

Students were asked to consider their improvement of skills/abilities and knowledge in question 2, figure 3. In all cases except the 'ability to sell myself', more than 73% of students agreed or strongly agreed. Improvement of written ability and improvement of research ability rated agree or strongly agree for 84.5% and 87.5% respectively. Whilst 67.9% of students agreed or strongly agreed that their ability to sell themselves had improved; this is the only factor that also received a high neutral response (28%).

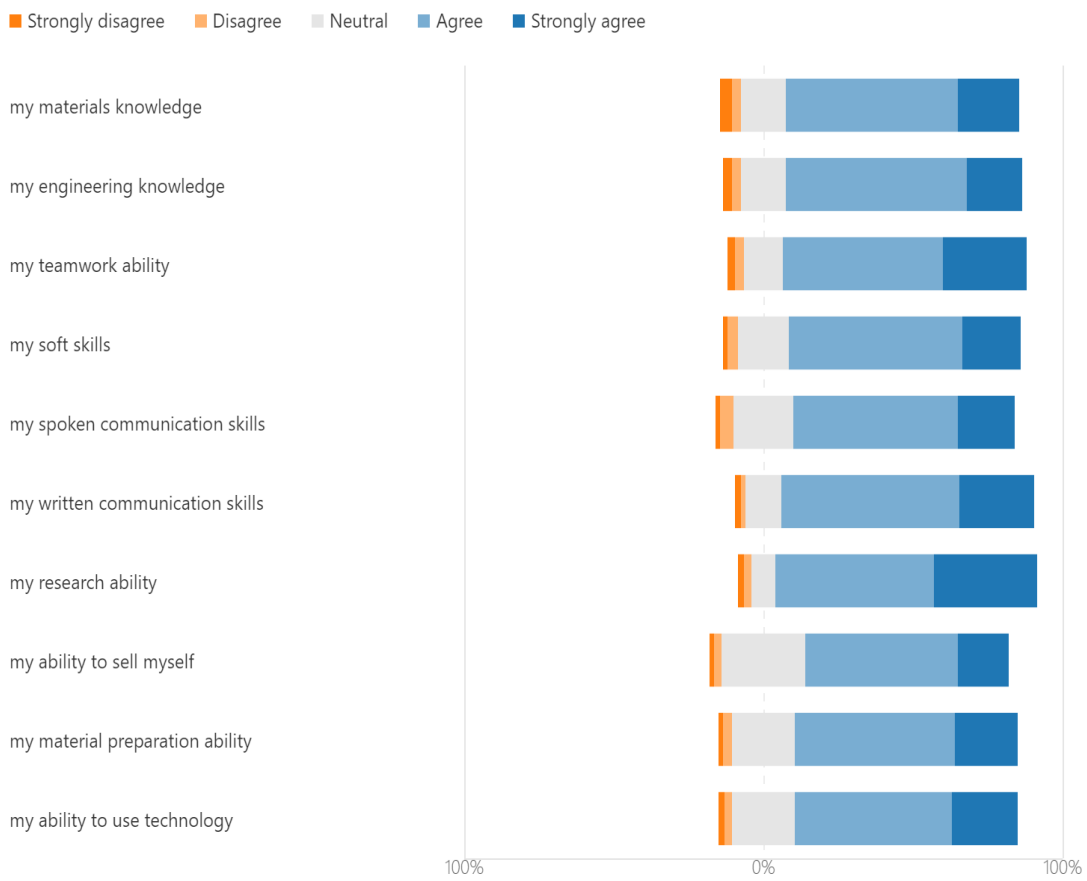

Figure 3: Question 2 results- The project has improved…

Question 3 asked students to rank their skills in order of the level of improvement during the project. Figure 4 shows that students ranked their research ability as the most improved skill, project management second, and written and spoken communication were the least improved. Teamwork ability also featured highly in first and second position and time management featured consistently throughout.

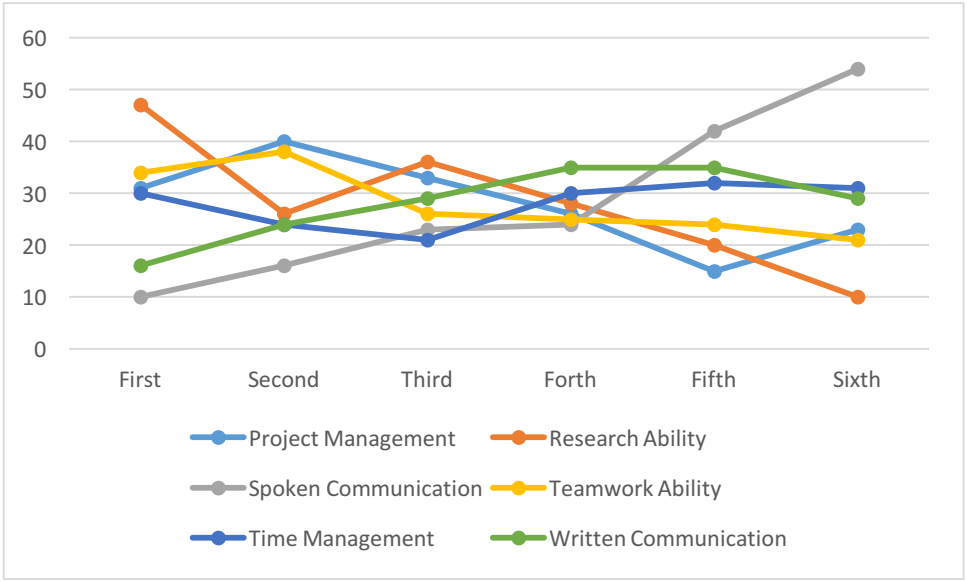

Figure 4: Question 3 results- Skills improvement order

Figure 5 shows that other than 'working in different size teams', the majority of students rated all other structural aspects of the project as either strongly agree or agree, 81.5% or higher. 73.8% of students did agree or strongly agree with working in different size teams, but over a quarter (26.2%) rated it in the lower ranges; more than any other aspect of the project structure.

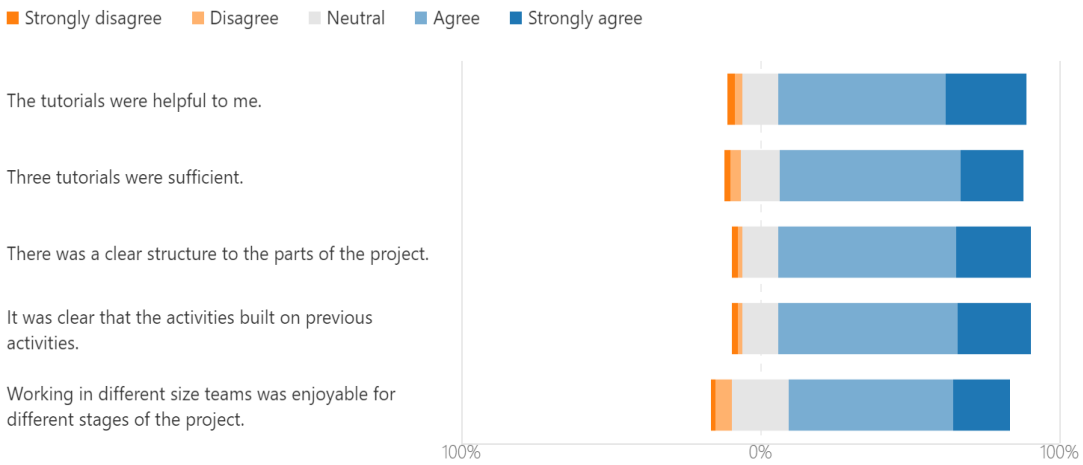

Figure 5: Question 4 results- Structure of the project

Year 3 Materials Characterisation Project

127 students answered this survey. Figure 6 shows that 78% of students agreed or strongly agreed that their development of materials knowledge had developed as a result of this project and 89% agreed or strongly agreed their engineering knowledge developed. Additionally, 71% agreed or strongly agreed that revisiting the materials library showed the students their weaknesses in the original project and 74% agreed or strongly agreed that it gave them an opportunity to improve it.

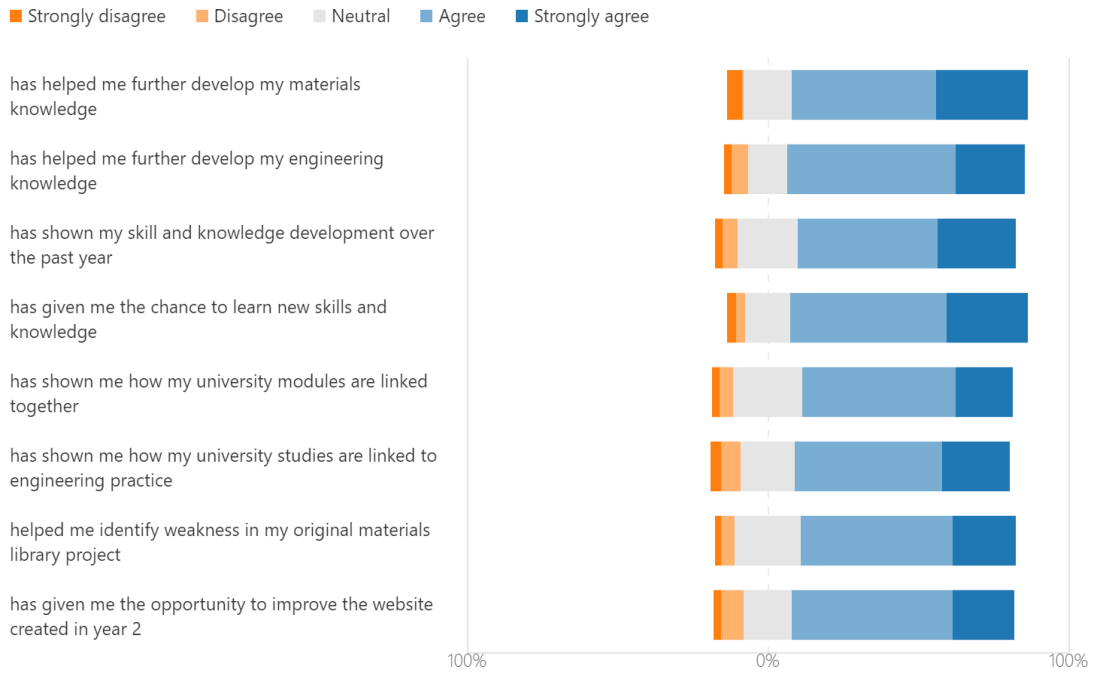

Figure 6: Question 1 results- Adding materials characterisation to the original materials library project…

From question 5, ‘tell me how you have used or plan to use the materials library project in other modules and outside QMES’, clearly shows the positive impact the materials library project has had on the students in terms of their current studies, future employment, study or in extra-curricular activities, as shown below.

- “In composite materials and metals I&II, it's a good resource to refer to information and have a practical contact”.
- “It can help me to review the knowledge without carrying a textbook”.
- “I often went to the library in QMES to touch and see the materials. Additionally, my resume is enriched by the material library. During the interview of my master degree, I also mentioned it”.
- “It will be a good way to show others what we learnt in undergraduate degree, which could be a more vivid way compared with describing those courses”.
- “I used to go to the library to see how the material look like actually and touch it. In other modules, we may need to find some materials' data, I went to the website to find useful information. Outside QMES, I will show my material webpages to other people”.
- “The knowledge and methods I learned were applied to the QMES ICTL competition, and our group won third place in the final”.

Discussion

From the results section above, the majority of the students found the year 2 materials library project useful. Students were able to improve their skills sets, figures 3 and 4, with research ability being the most improved.

Due to the multiple components in this project, an incremental approach to the completion of this project is important. By taking this approach, students are able to build on the skills they have developed in previous year’s PDP modules. It also gives them an opportunity to work with varying numbers of peers which can improve communication skills and help those students who are shy to develop a strong relationship with their partner before moving to a larger group. Chinese students in particular struggle with oral presentation skills (Davey and Higgins, 2005). They lack confidence and cultural sensitivities about ‘losing face’ often hinders their progress and can affect them in their professional lives (Cardon and Scott, 2003). The method of teach to test (Lu, Goodale and Guo, 2014) also hinders their progress as when given freedom to speak the teacher can often be met with silence due to cultural Confucianism (Sit, 2013). Therefore, giving students the opportunity to progress in communication with smaller to larger number of peers builds confidence and develops rapport within the groups.

However, from figure 4 it can be seen that both spoken and written communication were seen as skills that were the least improved. This is interesting as written and spoken communication feature heavily in this project. One reason that students may feel spoken communication had not improved as much as other skills could be that students feel they already communicate efficiently in English. Another reason could be the use of online communication in this iteration of the project. Students prefer to communicate face-to-face on group projects so may have found online communication more difficult and therefore felt their communication skills did not improve as much as other skills. Finally, it could be that students were

communicating mostly together in Mandarin. This could be because of the distance element or students reverting to Mandarin because of ease and time constraints. Further research would be needed to understand why the students feel this way and this could influence further development of the project.

It is important that students are supported through each part of the project. As the project progresses the tasks become more complex and students also have additional challenges such as working in larger groups and learning to use software in differing ways. Therefore, tutorials were provided for students, so they were able to have their questions answered and feedback explained thoroughly. Students were expected to complete certain sections of the project prior to the tutorial session. Completed work was required to be added to the group's website where the teacher could preview it and prepare feedback before the tutorial. This enabled the students to view the feedback and ask specific questions during the tutorial, meaning the tutorial was used more constructively and was therefore a more valuable resource for the students.

From figure 5 it seems that the structure of the project is sufficient for the students' needs. The project ran extremely well considering it was run online, due to the pandemic. However, one of the students least favourite aspects of this project was presenting of posters online. Informal discussions with students suggest this is due to the difficulty in the audience participation. From observations during this activity, some meeting rooms had little to no audience at some points. It was also difficult for the students to talk to people they could not see (as most students switched their cameras off). This was mostly due to the bandwidth of students in their homes.

Whilst this project can be run online, it is better to run this face-to-face as students have more opportunities to enhance their face-to-face communication skills in the poster presentation and recruitment fair. As the materials library project has been run previously and was highly structured, it was relatively easy to translate it to online delivery.

In the characterisation module students were unable to enter the labs to tests their materials. Consequently, they only gained a theoretical knowledge of the characterisation techniques rather than first-hand experience which is a significant disadvantage of online delivery.

One further point that needs developing is the students' teamwork ability. From teacher observations of this project, students still struggle to complete work in groups, especially large groups, even though they do rate this skill as being improved. This means that more teaching needs to be done on this subject. To try to address this, an additional teamwork lesson has been added to an earlier PDP course in addition to peer evaluation of the group performance to ensure students are fully responsible for themselves and their performance.

Conclusions

As the materials library project has been running for two years, there are now over 75 items on display and a second materials library display is being constructed to reflect the diverse range of materials on offer.

The materials library project and the additional characterisation aspect are valuable and enjoyable activities for students. Students developed their engineering knowledge and transferable skills as well as creating an invaluable resource for the school. This met and even exceeded the aims and objectives of the project.

Revisiting the characterisation addition to the project needs to be reviewed once face-to-face teaching is possible to enhance students' practical skill set. In their final year, students study a module which focuses on materials in design, complete final year project and a number of design related projects. The materials library acts as a valuable resource for students in all these modules. These points show that the materials library is an effective project for developing student engineers and also improves the skills of the students, which makes them more employable.

The research on this project has highlighted that the main factors in developing a pedagogically sound materials library project. These include creating tailor made learning objectives for the students, choose an appropriate approach, teamwork and reflection on the project. It is important to reflect, identify weaknesses and modify the project in order. For example, the research has indicated that the recruitment fair needs some work to fully meet the needs of the students and the students do need that face-to-face interaction of being at university provides, especially in the characterisation aspect.

Overall, the library itself acts as a legacy for the students, it provides a lasting part of their work which will stay in the school long after they have graduated. It is also a focal point for visitors to the school which enhances the image of QMES. The library also supports a number of other modules as students have free access to the library, so, for example, in the module materials in design, students need to select materials for a product, they can go to the library touch and feel the materials to better understand the aesthetic attributes and judge how suitable the material will be for their specific product.

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Contact email: f.nightingale@qmul.ac.uk, a.spowage@qmul.ac.uk

The Effect of College Service Quality on the Learners' Satisfaction at English Department of Higher Education

Sabarun, IAIN Palangka Raya, Indonesia
Hamdanah, IAIN Palangka Raya, Indonesia

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Abstract
The research was to measure the effect of college service quality on the learners' satisfaction of English Department at IAIN Palangka Raya. Quantitative method was used to survey 173 L2 learners using 35-items of self- developed questionnaire to determine the most influential factor of the college service quality. The validity and reliability were ensured. Assumption tests, such as normality, linierity, multicolinierity, heterokedasticity, autocorreltion, was also counted before analyzing data. The data were analysed using multiple linier regression, t test, F test and correlation. The finding revealed that: (a) the variables of tangible, reliability, responsiveness, assurance, empathy, gave effect simultaneously to the learners' satisfaction (F= 27.880, p= 0.000). (b) Partially, each variable gave contribution to the learners' satisfaction as follows: tangible (x1), 02.23% reliability (x2) 16.86%. responsiveness (x3) 12.88%, assurance (x4), 05.40% empathy (x5), 09.20%. (c) The most influential contributed to the satisfcation was reliability, followed by responsiveness, empathy, assurance and tangible. The total effective contribution of those variables to the learners' satisfaction was 40.50%. The rest (50.50%) was affected by other variables out of investigation. The result suggested that the college increase service quality in terms of learning facilities, teaching laboratory, language laboratory, dormitory, cleanlines, safety, giving appropriate treatment and having more empathy and understanding the learners' needs. Similar studies at higher education with broader scope and sample size was recommended.

Keywords: Learners' Satisfaction, Quality Servive, Higher Education

Introduction

Service quality is a vital part of promoting higher education. It is the highest influential instruments for university development. Improving quality service to the learners' satisfaction is vital for today's universities. They recognize the importance of service quality in serving of learning process, accrediation level, college facilities, visiting lecturers, laboratory, dormitory, research colaboration, double degree program, student exchange and other services. This is caused by the improving numbers of learners enrolling universities (Shago, 2005). Service quality is considered as of key strategic value by every organization, uncluding educational institutions (Rashid and Jusoff, 2009). Although there has been an increasing number of researches investigating quality service and learners' satisfaction in university level all over the world (Agyapong 2011; Lee & Hwan 2005; Kuo *et al*. 2009; Greiner, 2000; Knight, 2002; Mai, 2005; Deshields et al, 2005; Rashidi & Moghadam, 2014), there was still limited number of research examining quality service and the learners' satisfaction on L2 classes in Kalimantan context. Therefore, this study attempts to fill those gaps.

In case of higher education, quality of service is a vital thing motivating colleges to competition and learners are directed to assess on services provided by university (Golder, Mitra, & Mooman, 2012, p.1). Service quality is a clients' attitude and perceived of a service (Parasuraman et al., 2005). Eshghi, Roy, & Ganguli (2008, p. 121) define it as a service assessment performed by clients. Service quality is a vital thing considered by institution management. Nalini et al., (2011, p. 52) state service quality has an vital position in every business, including educational institution. Arambewela and Hall (2009) confirm the core idea of quality is the match between expectation and perception of customers. To increase quality service, the institutions should analyze the factor contributing to service quality. Parasuraman et al. (2005) argued five factors of quality service. (a) *Tangibles*. This is in accordance with the physical environment. It includes physical material, technology equipment, person and information materials. It represents the service physically. It deals with performance of physical facilities, tools, and staff performance. (b) *Reliability*. It deals with customer perceptions. It is the capability to provide to the offered service accurately. (c) *Responsiveness*, being willing to help. It deals with client perceived on the willingness of service. It is a desire of employees to assist clients and to give service. (d) *Assurance*, inspiring trust and confidence. It deals with customer perceptions. (e) *Empathy*, treating customers as individuals. It is in line with client perceived on service provider to care and give attention.

Referring to those factors, a scale named Service quality (Serqual) was initiated by (Parasuraman et al., 2005). This idea focuses on the philosophical framework that clients assess quality of service by making comparison between perception and expectation of service. In other words, quality service can be fomulated as Q (quality) equals to P (perceived) minus E (expectation) (Bennett and Barkensjo, 2005). Generally, many studies revealed that service quality is the customers' perception on quality (Parasuraman, 2000). Kilbourne et al. (2004, p.529) argued that service quality becomes potential as a reliable measurement instrument. In the present study, service quality is all services given by the institute to fullfil the learners' satisfaction. The construct of service quality is as follows:

Table 1. The construct and indicator of questionnaire on of service quality.

Tangible (x1)	Assurance (x4)
a. The class rooms are clean and tidy. b. The classes are comfort and convenient. c. The learning equipment are available in the class. d. The toilets are available and clean. e. There is a Mushalla near the class. f. There are many referrence book in the faculty library. g. Parking area are available in college. h. ATMs are available in the college. i. Sports area are available in the college. j. Internet connections are available in the college.	a. The administration staffs are polite and kindly to the learners when giving services. b. The academic supervisors handle the learners' problems. c. The counseling guidance lecturers help learners when needed. d. All assignments given are returned to the learners e. The lecturers spend the time effectively and efficiently in class. f. The sanctions are given to every learners who obey the college regulation.
Reliability (x2)	**Empathy (x5)**
a. The lecturers explain the material clearly. b. The lecurers give a question-answer session during the class c. The learning materials are given to the learners. d. The lecturers give feedback to the assignment given. e. The lecturers come on time. f. The lecturers teach the material based on their competence. g. The lecturers distribute the lesson plan and make a contract agreement with the learners at the beginning of semester program.	a. The faculty is concerned with the learners' needs. b. The tuiton fee is communicated with the learners' parents. c. The faculty monitor the learners' learning progress through the academic advisors. d. The lecturers are willingly to help the learners when having academic problems. e. The lecturers are open and cooperative to the learners f. The faculty attempts to understand the learners' interest and talent. g. The faculty attempts to understand the learners' need.
Responsiveness (x3)	**Learners' Satisfaction**
a. The faculty provides couseling guidance to the learners. b. The faculty offers scholarship the poor learners. c. The faculty gives academic aid to learners when having academic problems d. The dean and staffs gives opportunity for learners' parents to consult. e. The faculty gives assurance aid to the learners who get an accident.	a. Satisfaction on facilities and instra structure b. Satisfaction on academic and non-academic services c. Satisfaction to get information. d. Satisfaction on service assurance. e. Satisfaction to get attention specificly.

There are many researchers interesting to investaigate the service quality and learners' satisfaction. For example, Yusoff et al, (2015) classified 12 variables that influence learners' satisfaction. Then, Douglas (2006) found that physical facilities of university do not give significant effect to learners' satisfaction but it plays as key factor of learners' choice. Then, Kanan & Baker (2006) revealed that academic programs make significant effect on learners' satisfaction. Palacio, et al., (2002) revealed that college image makes an important effect on learners' satisfaction. Hassan et al (2008) found that service quality measurement had a high correlation with learners' satisfaction. Nasser et al (2008) also revealed that learners having high knowledge on university rules and regulation, tend to obtain higher satisfaction. Asaduzzaman et al (2013) found that there was a high relationship among all dimensions with learners' satisfaction. In addition, Sultan and Wong (2010) revealed that the dimensions of dependability, assurance, unusual management and syllabus gave facilititative effect on learners' satisfaction. Annamderula and Bellamkonda (2012) indicated a high effect of teaching and course content, on the students perception of service quality. Similarly, Tuan (2012) found that service quality on administrative has high correlation with student's satisfaction. Then, Andrea and Benjamin (2013) found that that students perceive accommodation as most urgent factors of college area.

The present study differs from the above studies. This study has a self-developed construct composed of five variables. In addition, this research concentrates on the influence of college's service quality to the learners' satisfaction in the context of EFL classes in Central Kalimantan province. The data analyisis also differs. The data were analysed using multiple linier regression, t test, F test and correlation. This study applied a survey research design using documentation and questionnaire as research instruments. It was an investigation of a sample to investigate the incidence and distribution of variables (Ary, Lucy, Chris, and Asghar, 2010, p.651). The documentation was used to gather the data about the learners' characteristics; and questionnaire was used to examine the learners' satisfaction toward the quality service provided by the college. The objective was to explore the influence of quality service on learners' satisfaction in university level in L2 Kalimantan learners. In the present study, the SERVQUAL model was used. Finally, the study determined, which service quality dimensions were most important to the students. The research question can be stated as follows: Do the variables of tangible (x1), reliability (x2), responsiveness (x3), assurance (x4), empathy (x5), gave effect simultaneously to the learners' satisfaction. Of the five variables, which one has the highest influence on the learners' satisfaction?

Research Framework

This study applied Parasuraman's service quality. The dimensions included in this variable are tangible (x1), reliability (x2), responsiveness (x3), assurance (x4), empathy (x5), learners' satisfaction (y). The framework of thinking as follows:

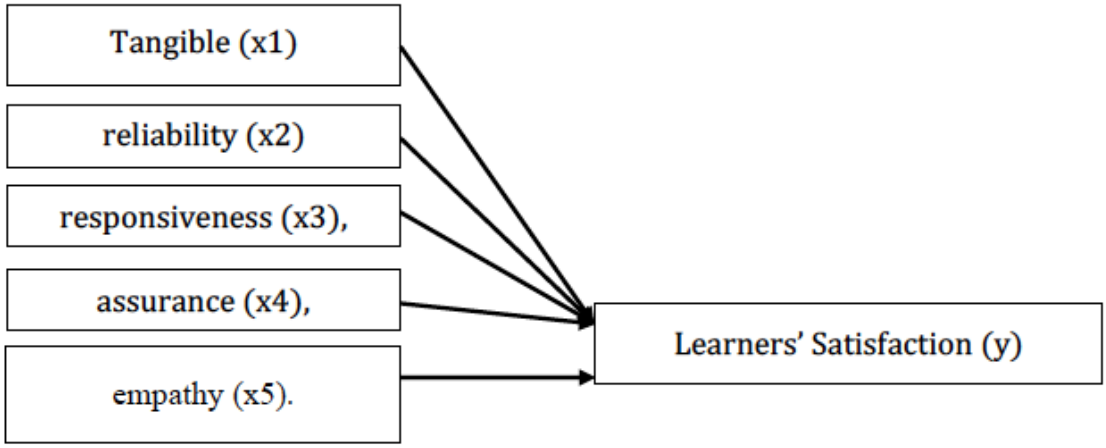

Figure 1. Framework of thinking

Participants

The samples were the L2 learners at IAIN Palangka Raya. A total number of 173 questionnaires were distributed. This number represented the population about 325 learners.

Data Collection

The self-developed questionnaire consisted of some aspects to calculate the learners' satisfaction on service quality provided by the college. This questionnaire covered 35 items represented five dimensions. To measure the learners' satisfaction, a five-point Likert scale was used. The collected data were analysed using multiple linier regression, t test, F test and correlation with the help of SPSS program. The result of Cronbach alpha was 0.84, on scale reliability indicating good internal consistency for the 35-item.

Conclusion

Before testing the hypotheses, the assumption test for multiple linier regression analysis, namely normality, linierity, multicolinierity, autocorrelation, and heterokedasticity, was ensured. The output of Kolmogorov Smirnoff indicated that the value of Asymp. Sig. (2-tailed) was 0.684. Since it was greater than 0.05, the data were in normal distribution. The output indicated that the value of Deviation from Linearity on satisfaction and (a) tangible was (0.000< 0.05; F 16. 486); (b) reliability was 0.000< 0.05; F 20.808). It was said that there were no linierity among variables. Then, the output of tolerance and VIF mutlicolineirity test indicated that the tolerance value of variables: tangible (0.954> 0.10; VIF 1.048<10.00), reliability (0.890> 0.10; VIF 1.124<10.00), responsiveness (0.870> 0.10; VIF 1.150<10.00), assurance (0.983> 0.10; VIF 1.017 <10.00), empathy (0.958> 0.10; VIF 1.044 <10.00). It was said that multicolinierity was not violated. Next, the output of heterokedasticity test using Glejser test indicated that the sigficant value of tangible (0.001< 0.05; t value 3.338), reliability (0.000< 0.05; t value 6.205), responsiveness (0.000< 0.05; t value 5.765), assurance (0.001< 0.05; t value -3.8523.338), (0.983> 0.10; VIF 1.017 <10.00), empathy (0.046< 0.05; t value 2.007). Then, the output indicated that the value of Durbin Watson was 1.894 (5; 173)> du 1.8114. it was said that autocorrelation was not vilolated.

Testing hypothesis

To respond the sixth research questions, the multiple linier regression analysis was applied. The study measured whether the five independent variables in this study gave facilitative effect simultaneously to the learners' satisfaction, as shown in Table 2.

Table 2. Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.675[a]	.455	.439	2.99077

The table showed that the *R* value of 0.675 and an *R*-square value of 0.455. The *R*-square value showed how well a model fitted the data. It showed that the five variables gave 45.50 % of college satisfaction. It meant that the relationship of both variables was statistically significant, which was also explained in Table 3 (F= 27.880, the *p* value was 0.00), as shown below.

Table 3. Result of Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1246.913	5	249.383	27.880	.000[a]
	Residual	1493.769	167	8.945		
	Total	2740.682	172			

Partially, The significant efect of each variable on the learners' satisfaction was explained below:

a. The tangible variable gives facilitative effect on the learners' satisfaction.

The output indicated that the t value of Tangible was higher than t table (3.338> 1.973) and p-value< 0.05 (0.001<0.05). It meant that ho stating that there was no significant efect of tangible variable on the learners' satisfaction was rejected; and ha stating that there was a significant efect of tangible variable on the learners' satisfaction was accepted. It meant that at the signicant level of 0.5%, the tangible variable gave facilitative effect to the learners' satisfaction (see Table 4 for more detail).

Table 4. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	27.792	9.481		2.931	.004
	Tangible (X1)	.177	.053	.195	3.338	.001
	Reliability (X2	.330	.053	.376	6.205	.000
	Responsiveness (X3)	.277	.048	.353	5.765	.000
	Assurance (X4)	-.191	.050	-.222	-3.852	.000
	Empathy (X5)	.093	.046	.117	2.007	.046

b. The reliability variable gives facilitative effect on the learners' satisfaction.

The output indicated that the t value of Reliability was higher than t table (6.205> 1.973) and p-value< 0.05 (0.000<0.05). It meant that ho stating that there was no significant efect of Reliability variable on the learners' satisfaction was rejected; and ha stating that there was a significant efect of Reliability variable on the learners' satisfaction was accepted. It meant that at the signicant level of 0.5%, reliability variable gave facilitative effect to the learners' satisfaction as shown in Table 4.

c. The Responsiveness variable gives facilitative effect on the learners' satisfaction.

The output indicated that the t value of Responsiveness was higher than t table (5.765> 1.973) and p-value< 0.05 (0.000<0.05). It meant that ho stating that there was no significant efect of Responsiveness variable on the learners' satisfaction was rejected; and ha stating that there was a significant efect of Responsiveness variable on the learners' satisfaction was accepted. It meant that at the signicant level of 0.5%, responsiveness variable gave facilitative effect to the learners' satisfaction (see Table 4 for more detail).

d. The Assurance variable gives facilitative effect on the learners' satisfaction.

The output indicated that the t value of Assurance was higher than t table (3.852> 1.973) and p-value< 0.05 (0.000<0.05). It meant that ho stating that there was no significant efect of Assurance variable on the learners' satisfaction was rejected; and ha stating that there was a significant efect of Assurance variable on the learners' satisfaction was accepted. It meant that at the signicant level of 0.5%, Assurance variable gave facilitative effect to the learners' satisfaction (see Table 4 for more detail).

e. The Empathy variable gives facilitative effect on the learners' satisfaction.

The output indicated that the t value of Empathy was higher than t table (2.007> 1.973) and p-value< 0.05 (0.046<0.050). It meant that ho stating that there was no significant efect of Empathy variable on the learners' satisfaction was rejected; and ha stating that there was a significant efect of Empathy variable on the learners' satisfaction was accepted. It meant that at the signicant level of 0.5%, Empathy variable gave facilitative effect to the learners' satisfaction (see Table 4 for more detail).

f. There is no interaction effect among variables of Tangible (X1), Reliability (X2), Responsiveness (X3), Assurance (X4), and Empathy (X5) on the learners' satisfaction.

The output of Anova Table indicated that the F value was higher than F table (27.880 > 2.27) and p-value< 0.05 (0.000<0.050). It meant that ho stating that there was no interaction effect among variables on the learners' satisfaction was rejected; and ha stating that there was an interaction effect among variables on the learners' satisfaction was accepted (see Table 2 for more detail). The table showed the value of determinant coefficient or the influence of Empathy (X5), Assurance (X4), Tangible (X1), Responsiveness (X3), Reliability (X2) correlated simultaneously to the learners'

satisfaction (See Table 9 for detail). The R square was 0.455 or 45.50%. It ,meant that Empathy (X5), Assurance (X4), Tangible (X1), Responsiveness (X3), Reliability (X2) gave effect simultaneously to the learners' satisfaction as 45.50%. The rest (50.50%) was influenced by other variables out of the study. To see the contribution of each variable, it was explained in Table 5.

Table 5. Table summary

Variable	Regression coefficient	Coefficient correlation	R squre	Contribution of each variable
Constant	27.792			
Tangible (x1)	0.177	0.126	0.455	02.23%
Reliability (x2)	0.330	0.511		16.86%
Responsiveness (x3)	0.277	0.465		12.88%
Assurance (x4)	-0.191	-0,283		05.40%
Empathy (x5)	0.093	0.99		09.20%
				46.57%

A regression analyses was performed to measure the effect of the five SERVQUAL dimensions to the learners' satisfaction. The summary table (Table 10) showed that reliablity and responsiveness were the most predictors of learners' satisfaction. The output showed that the effective contribution of each variable was Tangible (x1) 02.23%, Reliability (x2) 16.86%, Responsiveness (x3) 12.88%, Assurance (x4) 05.40%, and Empathy (x5) 09.20% on the learners' satisfaction. Therefore, it was said that reliability was the highest variable to give effect on the learners' satisfaction about 16.86%. The total effective contribution was 45.50%. It was concluded that overall service quality gave facilitative effect to the learners' satisfaction. The regression coefficient was 0.675 and overall service quality gave 45.50% of learners' satisfaction. In addition, F- value for the relationship between service quality and learners' satisfaction was ($p < 0.000$).

Discussion

The findings confirmed that: (a) the variables of tangible, reliability, assurance, resopnsiveness, and empathy gave effect simultaneously to the learners' satisfaction ($F= 27.880$, $p= 0.000$) at the 5% siginificant level. (b) Partially, each variable gave contribution to the learners' satisfaction as follows: tangible (x1), 02.23% reliability (x2) 16.86%. responsiveness (x3) 12.88%, assurance (x4), 05.40% empathy (x5), 09.20%. (c) The most influential contributed to the satisfcation was reliability, followed by responsiveness, empathy, assurance and tangible. The finding was in accordance with Mai (2015), Douglas et al. (2006), and Gibson (2005). The finding was in accordance with that by Mariani et al. (2015) Hanssen and Solvoll (2015), Nasser et al. (2008), and Kusumandari (2006). The finding was also in accordance with Hassan et al (2008), Sabarun (2020), Asaduzzaman et al (2013), and Sultan and Wong (2010). In contrast, the finding was not in accordance with Zeithaml *et al.* (2012).

Recommendation

The study measured the learners' satisfaction on quality service provided by IAIN Palangka Raya. The dimensions of the learners' satisfaction were tangible, assurance, responsiveness, reliability, and empathy. The finding confirmed that the learners were satisfied by the college services. This finding could be a consideration to identify areas of strength and weakness of quality service provided by the college. The finding related to the learners' satisfaction could also help college leaders in providing service to the learners. Despite the fact that the findings contributed to knowledge, the study had some restrictions. There were four limitations to this study. First, the sample was small and limited to only 173 L2 learners majoring English Education Study Program. This limitation must be considered when generalizing the finding. Therefore, the future researcher was recommended to have more sample size. Second, the questionnaire of the study (SERVQUAL) includes only perception scale not involving expectation one. The future researchers should consider the expectation and perception sections. Other researchers were advisable to conduct the similar studies in other colleges to validate this findings. The further researches with wider samples would be useful to validate this findings. Third, the study focused only on service quality. For future rsearchers, there might be other factors influencing learners' satisfaction such as gender, cultural difference among learners, and other research model to have depth insights. Fourth, as this study only used the service quality model, there were other variables such as, learning atmosphere, curriculum design, acrreditation, international cooperation and so forth that were not included in the study.

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Contact email: sabarunwhs@gmail.com

Cognitive Representation of Social Identity of Collectivist and Individualistic Oriented Primary School Students

Alla Gudzovskaya, Institute for Research on Social Phenomena, Russia
Michail Goryachev, Institute for Research on Social Phenomena, Russia

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Abstract
Collectivistic and individualistic cognitive orientations are considered as a result of the influence of the factors that led to their development on the one hand, and, on the other hand, as a mechanism of their carriers' perception and understanding of the world. The objective of the empirical study was to identify the cognitive representation of identification features of primary school children who have a collectivistic (CO) or individualistic (IO) orientation.The study involved 54 examined Russian children aged 9-10 years, 63.0% of them were identified with a collectivistic orientation, the rest ones – with an IO (individualistic orientation). To assess identification features a content analysis of the narrative "I am a person" was used. IO children use a significantly greater number of words in the narrative. The value is based on a greater frequency of verb forms, indications of desires and preferences. The category of evaluation is used by 90% of the IO group, and 29.4% by the CO group. The data are consistent with the studies on emphasizing differences in individualistic cultures and on smoothing contradictions in collectivistic ones.The use of components of social identity in the narratives – family, age, friends, territory – occurs approximately at the same rate in both groups (64.7% of CO, 60% of IO). Significant differences were noted in the "I am a person" identity (63.6%, 36.4%). Such level of in-group requires a shaped ability to generalize in social space and can be considered as a sign of a higher level of social identity development.

Keywords: Identity, Collectivistic, Individualistic Orientation, In-Group, Primary School Children, Social Identity

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1. Introduction

Ideas about the structure of identity are based on the distinction between a psychological sense of continuity (synonyms: "I", selfity, ego-identity), a set of individual personality traits (personal or personal identity) and a set of social roles that a person learns when becoming a member of certain social groups (social identity).

With the development of cognitive psychology, identity begins to be seen as a result of self-reflection, as a cognitive representation of self-categorization (Tajfel et al., 1971). Self-categorization is understood through the perception of one's own belonging to a significant category of the social world. The content structure of social identity is formed as a result of categorization as the cognitive grouping of oneself with a certain class of identical objects and allows people to navigate in the social world, distinguishing between members of an ingroup and outgroup (Turner, 2010; Twuyver et al., 1995). Social identity is defined as "that part of an individual's self-esteem that results from an individual's awareness of belonging to one (or more) social group, as well as an emotional attitude towards that belonging" (Tajfel et al., 1971).

The tendency of a person to focus on their own interests or the interests of an ingroup is defined by the concepts of "individualism"and " collectivism". In individualism, the level of personal identity dominates; in collectivism, the leading components in the identity configuration are its social components. The criterion of individualism by G. Hofstede (1980), the creator of the typology of cultural dimensions, is included in the list of six main criteria for evaluating cultures along with distancing from power, masculinity, avoidance of uncertainty, strategic thinking, and the assumption of freedom (Hofstede, 1980). Individualism is expressed in the attraction to personal goals, to the protection of private interests, in interpersonal relationships that are almost free from obligations to act together, in the awareness of oneself as a separate subject (Hofstede, 1980). In addition, individualism manifests itself in the fact that rights are valued above duties, life is built with an emphasis on personal autonomy and self-realization, as well as the foundation of one's identity on personal achievements.

Collectivism is opposite to individualistic orientation-on cohesion, on unity, on awareness of group subjectivity, the experience of a sense of "we", on responsibility for maintaining group norms, achieving group goals. Individualistic / collectivistic cognitive orientation is manifested in ways of solving mental, creative and behavioral problems (Markus et al., 1991).

Collectivistic and individualistic cognitive orientations are considered, on the one hand, as a result of the influence of factors caused their development, and on the other hand, as a mechanism for perception and understanding of the world by their owner (Nisbett, 2001). A. P. Fiske, S. Kitayama, H. R. Markus, R. E. Nisbett, and G. Hofstede discover relationships between styles of cognitive processes and features of social categorization in different cultures. Thus, Westerners who live in the "culture of independence" are individualistically oriented (personal identity prevails over social identity). In Asia, with its "culture of interdependence", the inhabitants are collectivistically oriented and have a predominant social identity (Fiske et al., 1998).

In individualistic cultures the selfity is defined as an independent unit that can survive outside the group (Schwartz, 1990).

In alternative cultures the selfity is defined in terms of group membership, social identity is more important than personal identity (Triandis, 1994). In their empirical study K. K. Dion, K. L. Dion found differences in the manifestations of romantic love and the importance of emotional intimacy in marriage, depending on collectivism / individualism. In individualistic societies (Canada and the USA), romantic love is more often as the basis for marriage, in contrast to countries with collectivist societies (China, India and Japan) (Dion et al., 1993). According to them, in individualistic countries, psychological closeness in marriage is more important for family satisfaction and personal well-being. However, although individualism encourages the appreciation of romantic love, certain aspects of individualism at the psychological level make the development of intimacy problematic (Dion et al., 1993).

The correlation of the number of people with collectivistic / individualistic orientations is a distinctive feature of a particular culture (Norenzayan et al., 2007). For example, for modern Americans being an individualist means being an American (Oyserman et al., 2002).

A meta-analysis of research of the impact of collectivism / individualism on self-esteem, well-being, the nature of cognitive processes, the value of personal independence and a sense of duty to one's group, conducted in 2002 by D. Oyserman, H. M. Coon, and M. Kemmelmeier, allowed them identify several patterns that were sub-damaged by different authors. (Oyserman et al., 2002). As for self-esteem, individualism means that: (a) creating and maintaining a positive self-awareness is a basic human effort; (b) well-being, personal success, and having many unique or distinctive personal views and opinions are valuable (Oyserman, 2002; Triandis, 1994); (c) abstract traits (opposed to social, situational descriptors) are central to self-determination (Fiske et al., 1998).

The basic element of collectivism is the assumption that groups connect and mutually oblige individuals. According to S. H. Schwartz, collectivist societies are characterized by diffuse and mutual obligations and expectations based on attributed statuses (Schwartz, 1990). In these societies, there are social units with a common destiny, shared goals, and shared values; the personal is simply a component of the social (Triandis, 1994). Collectivism as a social way of life is focused on one's own groups, which may include families, clans, ethnic, religious or other groups (Oyserman, 2002). A collectivist society is a diverse structure that unites culturally separate focuses of different types and levels of reference groups (Triandis, 1994). Thus, collectivism can refer to a broader range of values, attitudes and behaviors than individualism. Collectivism as a personal trait implies that (a) group membership is a central aspect of identity (Hofstede, 1980; Markus et al., 1991) and (b) valuable personal qualities reflect the goals of collectivism, such as making sacrifices for the common good and maintaining harmonic relationships with loved people (Markus et al., 1991; Triandis, 1994; Oyserman, 2002). As for well-being and emotional expression, collectivism implies that life satisfaction comes from successfully fulfilling of social roles and obligations and avoiding failure in these areas (Markus et al., 1991). The relations corresponding to collectivism imply that the boundaries between internal and external groups are stable, relatively impenetrable and

important; intra-group exchanges are based on the principles of equality or even generosity (Triandis, 1994).

To what extent are the cognitive orientations of collectivism/individualism represented at the age of 9-10? Are there differences in the identity characteristics of children with different orientation? The aim of the empirical study was to identify the identification features of younger students who make collectivistic or individualistic choices.

2. Methodology

Method

The Definition of cognitive self-esteem by A.V. Zakharov (subtest "Individualization") method was used to identify cognitive collectivistic / individualistic orientation. The subtest allows identify the child's preference to be similar to others (collectivistic orientation, CO) or different from others (to be unique) (individualistic orientation, IO). Diagnostics is performed individually. According to the instructions, in the "Individualization" subtest, the child is asked to consider a drawing with two rows of figures (Fig. 1.).

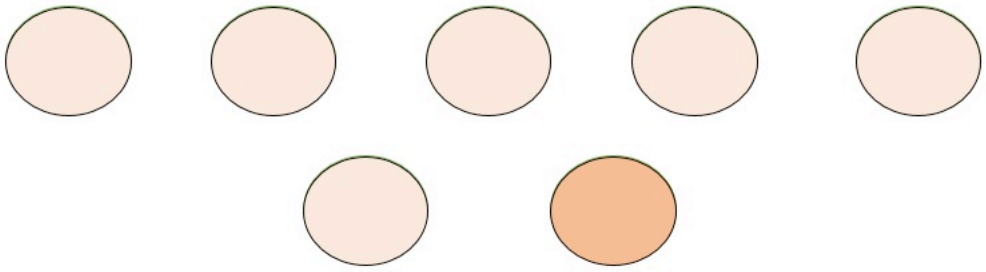

Figure 1: Methodology form

Each child was given a picture of circles. He/she was asked to imagine being one of the lower circles and choose which one he/she was – left or right? The left circle represented an actual desire to be like others (CO). The right circle represented an actual desire to be different from others, unique (IO).

To diagnose identification features, the content analysis of the narrative story "*I am a human*" was used. (2) The child is asked to think and write what the expression "I am human" means to him. The time and volume of the text are not limited. The task was completed in groups of 5-7 people. More than 60 categories were developed for content analysis, and combined into 14 types.

Category type examples:

- *activity* (actions, interests, abilities, etc.)
- *uniqueness* (personal, communicative and intellectual qualities, behavioral characteristics, knowledge, individuality)
- *social identity* (group membership) membership in different groups - close and wide

In addition, a large number of words in the essay indicates the proximity of the topic for the author and its thoughtfulness (Turusheva, 2014).

Sample

The study involved 54 students of the 3d grade of a secondary school. They are – 32 boys and 22 girls. The average age is MX = 9.3±0.54.

3. Results

Almost two-thirds (62.9%) of the surveyed students preferred a figure similar to the rest, which indicates a focus on inclusion in the group, collectivistic orientation (CO). 37.1% of third – graders preferred a shaded figure that differs from the rest-individualistic orientation (IO). The same trend is observed in gender subgroups. Figure 2 presents data on the preferences of boys and girls.

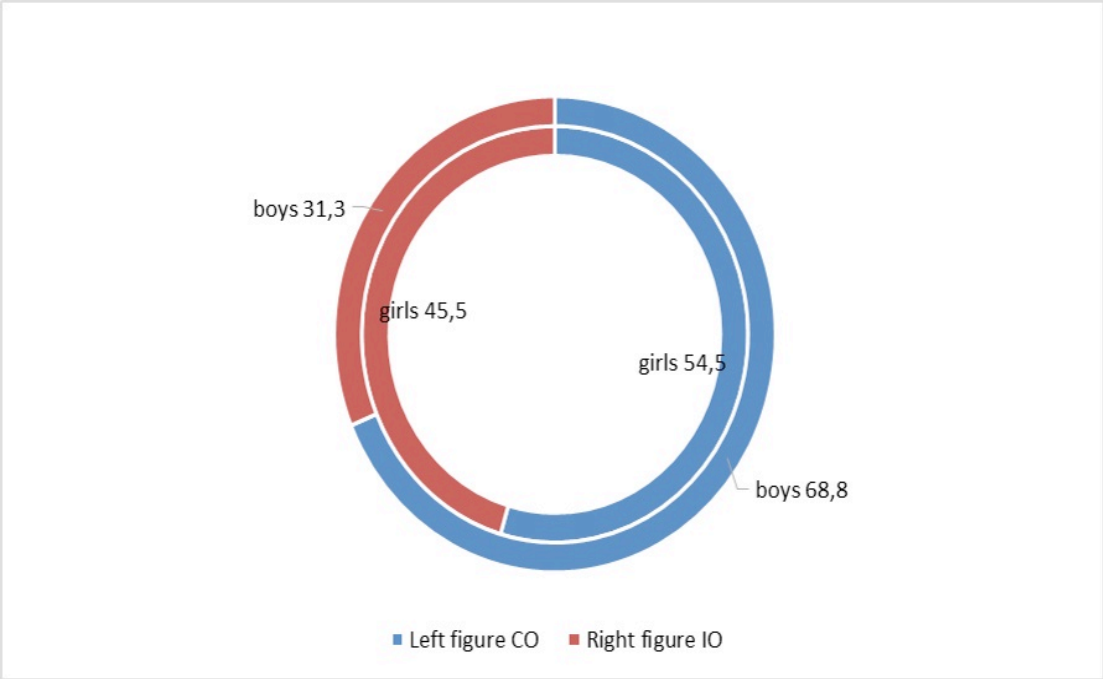

Figure 2: Effect of gender on preference of the shape

Both girls and boys in most cases prefer the left figure, symbolizing the current desire to be similar to the group. Boys are more collectivist oriented (more than 14.3%) than girls.

The average volume of narrative texts was MX = 30.1±16.9 words. The volume consists of a greater frequency of verb forms of words that reflect the "Active Self" in personal identity (I will go to the English lesson today), desires (I want a cat), preferences (I really like to go in for gymnastics). The predominance of verbs in speech in stories about yourself, mentioning specific actions and desires is more typical for children aged 6-8 years. Along with growing up, they are replaced by more generalized characteristics (I go to school) (Burns, 1982).

Further analysis of the results is carried out in a comparative way. We considered the identification features of collectivistic and individualistic oriented schoolchildren

(table 1-2). In the IO group, narrative stories have a significantly larger volume (student's t-test). Individualistically oriented people talk about themselves more fully and verbally.

Certain categories are used by children from different experimental groups in approximately the same way. For example, verb forms that reflect the "Active Self" in identity (IO 6,1, CO 4,8); personal identity reflected in desires and preferences (IO 0,8, CO 0,5).

Parameter, average number	**Collectivistically Oriented**		**Individualistically Oriented**		P-value **Student's t-test**
	M*x*	σ	**M*x***	σ	
Words in the text:	25,5	10,1	37,7	14,4	0,017
- Verbal forms	4,8	2,9	6,1	2,5	0,187
- Desires and preferences	0,5	0,8	0,8	1,1	0,555
- Assessment of others	0,3	0,4	1,6	0,8	0,000

Table 1. The parameters of narrative stories in IO and CO groups

The "Assessment of others" parameter differs significantly in groups. Individualistically oriented students give ratings to others (people, phenomena) more often than 5 times than collectivistically oriented students. The evaluation category was used by 90% of IO children.

Third of 90% of IO children used the assessment category (*I play football well. The Emirates is a very beautiful country.*) Only 29,4% of CO schoolchildren use the rating category. These data are consistent with research by R. E. Nisbett, K. Ping, I. Choi, and A. Norenzayan on emphasizing differences in individualistic cultures and smoothing out contradictions in collectivistic ones (2001).

We also consider the features of social identity in a comparative way (see Table 2). The category Social identity was mentioned almost equally in both subgroups (64.7% CO, 60% IO). Spontaneously named components of social identity in essays - family, age group, circle of friends, territorial group. The presence of a large number of identity groups can be a criterion for successful socialization (Martsinkovskaya, 2012).

Parameter, average number	Collectivistically Oriented	Individualistically Oriented	P-value χ2 test,
Social identity	64,7	60,0	0,466
Human identity	63,6	36,4	< 0,001
Other people, a person in general	82,4	40,0	< 0,001
Educational sphere	23,5	30,0	0,263

Table 2. Percentage of people using social identity categories in IO and CO groups

Significant differences were noted in self-identification with the "I am a person" community (63.6% KO, 36.4% IO). This level of the group requires a developed ability to generalize in the social space, which is a sign of a higher development of social identity. According to J. C. Turner, the level of universal identity is the highest, along with the group components of identity and personal identity (Turner, 1985).

Experimental groups differ significantly in the number of people who mentioned other people in their narrative stories, such as teachers, classmates, friends or people "in general". The data obtained coincide with studies conducted on adults by D. Oyserman, H. M. Coon, and M. Kemmelmeier. Self-image in collectivist cultures includes more group-related elements and an emphasis on values that promote well-being within the group. Individualistic cultures emphasize values that promote personal goals, uniqueness and personal control. (Oyserman et al., 2002).

4. Conclusion

CO and IO of children aged 9-10 is related to their identification characteristics. CO and IO have their own advantages and limitations in the development of children's personality.

Psychological and pedagogical assistance in the socialization of children should include two directions: actualization of the desire to have something similar to other representatives of their in-groups; actualization of the desire to appreciate their own uniqueness, to develop personal identity. The social identity "I am a human “ includes these two directions.

The connection of collectivistic and individualistic cognitive orientations with the peculiarities of social and personal identity in childhood, at the age of 9-10 years is revealed.

The diagnostic technique of choosing the same or different figure based on an implicit desire for similarity or difference from others reflects some identification features in primary school age.

Social identity and the category "person" is relevant for the cognitive representation of the world around collectivistically oriented children.

Children's age allows set tasks for planning psychological and pedagogical assistance for children's social development. Collectivistic and individualistic orientations have their own advantages and limitations in the development of the child's personality.

Psychological and pedagogical assistance to the socialization of children should include two directions: actualization of the desire to pay attention to the similarity with other representatives of their group; actualization of the desire to appreciate their own uniqueness, to develop the uniqueness of the individual. The universal identity "I am a person" includes these two directions and can become a leading direction in the socialization of children.

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Contact email: aag_1@rambler.ru

Teaching (and Learning) in the Time of Epidemics: Reflection on Humanities Teaching in Higher Education

Amy Lee, Hong Kong Baptist University, Hong Kong

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Abstract
During the global Covid-19 situation, there was a general shutdown of daily operations, including education. In Hong Kong, which was among the first locations to be hit by the epidemic, face to face teaching stopped early in February 2020, which was the beginning of the second semester of the academic year. The higher education sector was the first to respond to the situation by shifting to online teaching immediately, and finally extending to the end of the semester. The sudden shift to the eLearning mode posed a lot of challenges to both teaching and learning, including feasibility and effectiveness. This presentation is a sharing of my professional practice in Hong Kong higher education during this second half of the academic year 2019-2020. Although it was generally felt that the humanities subjects encountered fewer challenges shifting to the eLearning mode, the outcomes of this semester was a strong reminder to us to review the current practice in teaching and learning, and to rethink how to engage with the new generation of learners and new circumstances. It is hoped that the presentation can share some observations about the challenges of e-learning, and facilitate some new thinking about how to conduct eLearning in higher education, more specifically relevant to the Hong Kong's unique cultural environment.

Keywords: eLearning Feasibility, Humanities Teaching and Learning, Challenges to in-Class Interaction, International Exchange, Alternative Modes

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Introduction

What I am to share in this presentation is a reflection upon an on-going situation in the higher education sector globally, the disruption of face-to-face teaching and learning, and various responses to this disruption. My location is Hong Kong, which shares similar inconveniences in many aspects of daily life such as restricted services both public and private, and the social distancing required for public health purposes. There are other factors which make Hong Kong unique in its experience of covid-19, including the months of social unrest that started in June 2019, and the subsequent feelings of vulnerability and isolation many young people felt since then. At the time of my writing this paper, Hong Kong had more than 6000 confirmed cases of covid-19 and over 100 deaths,[1] people had been wearing masks for prevention everyday for months, and social distancing policy had been in place for more than 10 months too. Although public services and private business sectors are generally operating, daily life does not look at all normal. Many of the usual entertainment and leisure activities that citizens enjoy are either closed or restricted in opening hours and size of attendance. Restaurants, a place for socializing while also providing daily sustenance, had been hit hard by different phases of Social Gathering Ban issued by the government – at the moment it is restricted to only 2-people gatherings and meals.[2]

Daily life continues, of course, in what some people referred to as the "new normal" way. In higher education, our new normal takes the form of e-learning occupying centre stage, with mixed-mode teaching and learning either as a transitional or compensatory measure before full face-to-face teaching and learning can be safely adopted again. In Hong Kong, eLearning was fully used in the universities to replace face-to-face teaching since early February 2020 because of the outbreak of covid-19. At the beginning of the new academic year in early September 2020, we were still fully using the eLearning mode, and only at the end of September did my university announced the adaptation of a mixed-mode teaching and learning. The more than 5-months eLearning experience had inspired us educators to reflect a lot about the way we used to teach, the way we designed assessment, and also the way we communicate with our students. This paper, although made at a time when many parts of the world are still in the throes of covid-19, is meant to be a reflective sharing of practice, in the hope that some positive thoughts can at least come out of the global pandemic.

Once Upon a Time, though Not That Long Ago

Hong Kong's experience of covid-19 has its own unique story, and to understand the approach and development of measures being used in higher education during this period, one has to look back a few more months to the time before the outbreak. In

[1] At the time of the ACE conference, which was end of October 2020, the total number of confirmed cases in Hong Kong was just over 5000. By the time this paper was revised for the proceedings, it was the beginning of December, and the 4th wave of covid-19 attach in Hong Kong. The number of confirmed cases had risen to over 6000. The numbers were announced by the Centre for Health Number of cases according to Centre for Health Protection (CHP) of the Hong Kong Special Administrative Region (HKSAR) Government.

[2] At different stages of the 10-month long epidemic, the HKSAR government had announced different measures in response to the seriousness of the covid-19 condition, and its impact on daily practices. Social distancing, banning large crowd gatherings, and work-from-home arrangements had been practiced.

mid-June the protest against the Extradition Bill[3] became increasingly forceful, and finally escalated to the point when roads in some areas were blocked and normal transportation was simply impossible. When the academic year 2019-2020 started in September, there were already talks of possible class boycott, and the University advised us to be as accommodating as possible when students could not make it to the classes. We began the first semester seeing most students in the classroom, but we also made audio recordings of the lectures and shared them on the eLearning platform for those who could not make it to the classes for various reasons. Disruptions to various aspects of life continued and escalated. Finally on 12 November 2019, our university announced the suspension of all face-to-face teaching and learning, and shifted to eLearning immediately until further notice. Students were asked not to come to campus, although staff who could travel were still allowed to work on campus. With that announcement, the semester concluded in eLearning in the final 3 weeks, the final examination was suspended and replaced by alternative forms of e-assessment. I did not even have a chance to say goodbye to my students, before a few of them left Hong Kong hurriedly back to their home countries.

Stepping into year 2020, different parts of the world had been thrown into confusion one after another with the outbreak of covid-19. Our second semester started on 13 January 2020 (until 28 May 2020), and two weeks later on 26 January 2020 we celebrated the Lunar New Year, followed by a week-long holiday. Just before the resumption of class after the holiday, the University announced the suspension of face-to-face classes on campus, until further notice. The rest of the story, as we all know, is still on-going. In Hong Kong, February to May were months of complete lockdown in the sense that WFH was the official mode,[4] schools across all levels were closed, even public examinations were postponed or cancelled,[5] and the street was so quiet that it was like a dream. Beginning in June, life resumed a quasi-normal appearance as we had maintained low number of cases during the months-long strict measures of containment. Early July saw a sudden surge of cases scattered over a number of districts in Hong Kong – our Centre for Health Protection announced officially that this was the most dangerous time since the beginning of the outbreak half a year ago – and this third-wave of outbreak lasted until the middle of August.[6] Universities started their academic year as usual in early September 2020, but the teaching and learning mode was fully online for most programmes. The mixed mode

[3] Beginning in June 2019, there had been an Anti-Extradition Bill movement in HK. Protestors' action escalated to major disruptions of road traffic, and damages to some buildings. The scale of the disruption was such that for a period of time schools and universities were closed, and special arrangements for work had to be arranged with some employees. The protestors' action continued into the last months of 2019.

[4] Work-from-home was practiced in most public sectors to avoid gathering of crowds and to lower the risk of infection. In our University, the administrative units also practiced WFH, and seeing that the alternative mode of working and learning might have an impact on the progress, the second semester was extended for 4 weeks for academic programmes to complete the intended learning in alternative ways.

[5] The Hong Kong Diploma of Secondary Education (HKDSE) which was the annual public examination for university entrance, had been postponed for three weeks because the risk of infection was still high during the original schedule.

[6] Towards the middle of June, the daily confirmed cases had shown a decline, and the government announced a loosening of anti-infectious measures at the end of June. At the beginning of July there was a sudden upsurge of daily cases, which many people regarded as the direct result of the release of preventive measures.

teaching finally continued until the end of the semester in early December 2020 although there was a surge in number of confirmed cases – the 4th wave.

Looking back, teaching Humanities in an extended semester

Looking back, our experience of eLearning (replacing face-to-face classes) went through several stages. In mid-November when the university suddenly announced the suspension of face-to-face teaching, many of us were unprepared. One of the most commonly used methods then by academic colleagues was adding voice recordings to the PowerPoint slides we used, and put the PowerPoint with voice recording onto our eLearning platform Moodle. I remembered colleagues sharing tips of how best to present the lectures which are normally 2 hours long in our university. For those of us using PowerPoint with voice recordings, there was no real-time interaction with our students. We could only inform them that all the lectures were there, and invite them to ask questions by sending us emails, or make an appointment for real time interaction over the phone or other social media. The first phase of eLearning at the end of the first semester came about too suddenly for us to re-design the learning experience according to the situation. Even the end-of-semester final examination could not take place as usual, and we had to design an alternative assessment method – for us Humanities teachers, doing assessment online meant asking the students to submit a paper to the eLearning platform within a certain period.

The three weeks went by quickly, with us doing our best to cope with the situation, at the same time hoping that the social conditions would allow for a gradual return to normal so that teaching and learning in the second semester could be conducted in the way we were used to. As it turned out, we did start the semester normally, only to be hit by the outbreak of covid-19. This time when the university announced that online teaching and learning was to be fully implemented right after the Lunar New Year holiday, we were more prepared psychologically as well as availability of tools were concerned. The Zoom platform quickly became the choice of many colleagues, and in-house training workshops were organized to prepare everyone for this move to the virtual teaching and learning space completely. In hindsight, I think that the earlier experience of sudden movement to eLearning had become a rehearsal of some kind. We were still grappling with the features of Zoom at the beginning, but after the hurried implementation in the previous semester, we knew the most essential features to learn, and how to monitor not just teaching but also students' expectations, which was a very important component of the learning experience.

Virtual Teaching and Learning: Humanities via Zoom

When the second time our university suspended face-to-face teaching, it was beginning of February 2020. We had just completed two weeks of teaching – the first two weeks were the "add/drop period" when students could still decide to remain in a course they had already registered, or drop that and add another one that they found more appealing in their first two weeks of "course-shopping". In that sense, the basic preparation for the semester had been done, for all the course information and assessment requirements and so on were already explained and the class should be relatively stable after that. I thought that the only problem would be adjusting teaching material and in-class exercise given that students were no longer sharing the same physical space where I talked.

Very soon, however, I encountered the first problem in relation to the travel ban in many countries due to covid-19 outbreak. Every semester we have students going on exchange – joining a university overseas for one semester or a year – but due to travel restrictions and safety issues they could not start their journey in the foreseeable future. In order to ensure that they would still be able to graduate as originally planned, they were encouraged to cancel their exchange registration and take courses here at their home university together with the rest of the students.[7] Thus I had a number of students from various disciplines joining my course, which was a senior level major required course with loads of reading materials, in the third and even fourth week of the semester. These students had never met me, and had never taken any course from our department, their main reason for joining was simply that the course title sounds general and inclusive enough to look creditable on their transcript. Certainly I had had out-of-discipline students taking my courses in the past, but the lateness of their joining, and the circumstances of their "choice" made it very difficult for me to feel connected to everyone in my class in the way that I used to feel when I shared the same space with them.

The second difficulty had to do with the wifi connection, which was essential if classes were to be conducted according to the scheduled timeslots. At the time, most of our non-local students had already gone home, and the smoothness of their wifi connection varied. Some of our non-local students had a hard time getting connected, and maintaining a stable connection through the duration of the classes which were two hours normally. Some colleagues mentioned that it was impossible to show a video clip in the middle of the lesson, either the sound and the image did not match, or the video came out in a staccato sequence with distorted sound. (Actually a colleague who taught interpretation said it was almost impossible to teach it via Zoom, but it was not my own experience.) Many students who managed to logon at the scheduled time were reluctant to switch on the camera, for probably their domestic setting was not ideal for individual members to engage in academic interaction while the rest of the family were going about their daily business. For us the teachers too, the ideal setting to conduct Zoom classes was our own office, with all the materials handy, and the relatively stable University wifi network. Despite the government's encouragement that staff members should work from home, not everyone of us could do that and still maintain a reasonable level of effectiveness.

In a time such as this, clear and accurate communication, together with some flexibility, is the most important approach to overcoming those difficulties mentioned. Non-local students who had already gone home could still attend my classes via Zoom, and local students who were stranded and had to cancel their overseas exchange had to rely on the Moodle platform for getting course materials and information. Although we were advised to follow the original schedule to conduct classes via Zoom, I proposed to my students that I would pre-record all the lectures every week, and put the recording on Moodle two days in advance of the schedule. During the pre-scheduled lecture time, I would open the Zoom meeting room for tutorial discussion instead, and students were invited to ask any questions they had about the content of the pre-recorded lecture, or the reference materials. This

[7] Students intending to go on exchange had to make their application in December every year, no matter whether they were going for one or two semesters. Those due to fly to their host university for the spring semester had already made their preparations in 2018 December, and not being able to go had completely unsettled their course planning, and in some cases graduation.

arrangement ensured that everyone could access the full content materials, including the non-local students, and that they had a chance to talk to me if they had questions. From the results of the assignments, and the final take home examination, I believed that it was an arrangement that maintained the quality of teaching and learning. Students welcomed this too, as they did not need to worry about turning on or not their cameras.

Having pre-recorded materials put on Moodle also helped to alleviate possible problems with wifi connection. In my course I had a number of films to be shown – instead of showing clips during the lecture, I found online sources for students so that they could see the movie in their own time before referring to the lectures. To mimic the real-time in-class interaction as much as possible, I broke up the 2-hour lecture into 20-minute sections, each one around one topic/focus. Therefore, instead of one recording of a 2-hour lecture, I made 5 or 6 recordings each around one topic, but all related to the main title of the lecture. It was similar to my lecture arrangement because during face-to-face interactions, I had in-class activities every 20 minutes or so to maintain student interest and attention. I believed it would be very difficult to ask any student today to sit at home and listen to a pre-recorded lecture for 120 minutes. Having short sections helped them grasp the focus of each section, and also made it easier for them to ask questions during the scheduled Zoom tutorials. In the end-of-semester teaching evaluation, students mentioned this as something most helpful to their learning despite the fact that almost the entire semester was eLearning.

The assessment was perhaps the most surprising aspect (for me) of the learning in this unusual semester. Normally I had three in-class quizzes, which contained direct short questions to test whether students had read the assigned text before coming to the lectures. Often half of the students came to the lectures without reading the materials and failed these simple quizzes of facts. Because of the arrangement of having pre-recorded lectures put on Moodle ahead of the actual schedule, I found that students actually read the materials before accessing the quizzes that I put online, and completed them satisfactorily on time. Since the entire purpose of the quizzes was to make sure that they prepared for class and read the materials, this online mode of teaching actually achieved one of the intended learning outcomes better than the face-to-face teaching mode. The group oral presentation, which was another standard assignment, had to be revised also because students no longer made the presentation in the same space. I asked them to prepare a detailed PowerPoint presentation with explanatory notes, to replace the oral delivery. Again, from the work delivered over the weeks, this teaching and learning mode actually encouraged the students to perform better, for various reasons.

The two biggest pieces of assignment were the individual Term Paper and the Final Examination, which was usually a real-time event in the examination hall. Asking students to submit their own term paper via Turnitin at Moodle was not very different from the usual practice, and I was careful to give instructions about the topics and content, so that it was not easy to final ready-made essays online. The overall performance of the students in the term paper had shown no significant difference from that of previous years. The only compromise I made was the final examination – instead of giving them a choice, I set compulsory questions and required the students to submit their work strictly within the timeframe I set. Most of the students submitted on time and again the overall performance did not show major difference from that of

the previous years. Having compulsory questions in the examination had never been my practice, but to reduce the possibility of plagiarism I wished to contain the topic areas, especially when students were given more time than the usual 2-hour written examination they attend. This was not an ideal replacement, but it served the purpose of assessing students' learning about those specific topics I included. Overall I found that acceptable.

Conclusion: And then …

At the time when this paper was written, we were in the throes of the 4th wave of the outbreak, and the semester ended in mixed-mode teaching, which is also the reason the ACE conference was held entirely online. International travel is still restricted, and because of that in our university we had to ensure that overseas students could continue their learning. Local students are welcomed to enter the campus again, we conduct our teaching in the classrooms which are all equipped with audio-visual recording facilities while non-local students or those who still do not feel safe enough to return to campus can access the lecture via Zoom at the same time. For the time being, we manage as best we can, although there are challenges about facing two different audiences (one sharing the same physical space, and one on the other end of the internet) at the same time. This mixed-mode interaction and related issues will be the subject of another discussion that should take place sometime later as the covid-19 situation develops and hopefully resolves in time.

What I have shared in this paper is a reflection mainly on how higher education in Hong Kong (with my own experience as an example) responded to the outbreak of covid-19 in the early months of 2020. Daily life in our city had been disrupted for months previous to the pandemic attack, and the psychological and emotional conditions of young people (in fact of all people) were still to be calmed and healed. Social distancing had meant reducing contact to an absolute minimum, which in many cases had deprived us of sources of emotional support such as our friends and even professionals. From my position as a teacher in higher education in Hong Kong, this experience has encouraged me to rethink not only the academic side of my professional duties, such as how to convert my face-to-face teaching into a learning experience that works in virtual reality, or to design assessment tools that can evaluate how much students have learned via this new experience. Right from the beginning of the covid-19 outbreak, when we could not meet our students on campus, the first question had to do with taking care of their feelings – how to ensure that they stay emotionally calm and psychologically healthy enough to maintain good communication with us. It is only when such a mutually trusting relationship has been established right at the beginning that we can work together to create the most suitable and reliable experience through such unusual experience.

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Contact email: amylee@hkbu.edu.hk

Emergent Curriculum Practice in Malaysian Kindergarten

Masayu Dzainudin, Sultan Idris Education University, Malaysia
Faridah Yunus, National University of Malaysia, Malaysia
Hamidah Yamat, National University of Malaysia, Malaysia
Iylia Dayana Shamsudin, Sultan Idris Education University, Malaysia

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Abstract
The development of children's learning is stimulated through a learning environment that gives them the opportunity to explore. This article discusses the improvement of children's learning process as it shifts from academic-oriented to emergent form of learning. Improvements also include changes into the use of textbooks and materials as child learning aids. Action research is applied to gain insights that help stimulate the development of children's learning without drastically affecting the learning environment. Naturalistic observation is the main source of data for analyzing. Every observation of children is recorded in the researcher's observation notes. Children's journal books are also used in analyzing the outcomes of children enhancement before, during and after the improvement of their learning process. The findings are reported with narrative and visual analysis in the analysis table. The findings show that improvements in the learning process of children gave them the opportunity to create and explore their learning more meaningfully in terms of active involvement, social interaction, self-confidence and the ability to voice the ideas and, opinions, all of which showed marked improvements.

Keywords: Emergent Curriculum, Project Work, Early Years

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Introduction

The initial learning experience is cumulative, and curriculum delivered during the first seven years of life should help integrate a child's holistic development domains (Bredekamp & Copple, 1997). Bredekamp's (2014) brain studies show that, early childhood learning experiences between 0 and 72 months are important for the growth of their holistic development. Fun teaching activities, creating challenges, promoting responsibilities, diversifying ideas, and providing feedback can enhance the level of learning of children in terms of cognitive, physical, emotional, and social development (Bandura, 1997; Roger, 2011). Thus, early education is an opportunity for children to become active and to develop creative and critical thinking in exploring their learning environment (Mendoza & Katz, 2013).

Bredekamp (2014) also notes that the key to the effectiveness of Early Childhood Education is based on a practiced approach to teaching and learning of children. The learning environment is also important in the development of children's learning especially the environment that enables active and positive interaction and gives children the opportunity to explore spontaneous learning (Hedges, 2011). A study by Li (2012) suggests the project work which is learning activity in the project approach help children learn to understand their role and be independent during the learning process. In addition, Li also stated that children can explore and build knowledge when they seek information to meet the needs of learning. Besides, project work is a designed to guide children experience experiences and heighten the senses through events and phenomena in their own environment (Katz, 1993; Katz & Chad, 2000; Mendoza & Katz, 2013).

In addition, the process of learning through project work can shape children's skills in terms of cognitive aspects of analysis, synthesis, and evaluation. Activities involving projects as proposed by Katz & Chard (2000) include collecting information from direct observations, interviews with related experts, experiments on topics of interest to projects, collecting artefacts and visual presentation and verbal reports based on as a results of the study. Through such activities, children can apply their investigative skills, record, and report on the results of their learning or 'research'. Indirectly children are actively involved in the process of learning through real phenomena in their own environment. In fact, the emergent process also happens spontaneously.

The emergent curriculum is a curriculum based on the growing interest of children to explore their early learning environment (McLachlan, Fleer, & Edwards, 2013; Nxumalo, Vintimilla, & Nelson, 2018; Sunday & Conley, 2020). Throughout the emergent learning process, active involvement and the interest of children are encouraged compared with academically oriented approaches. Boyer & Ruth (2006) states that teaching has the 'emergent' nature that results through interaction with individuals, tools, and reflections, where it acts as a topic and learning resource. Schwartz & Copeland (2010) describes the concept of emergent curriculum as two curriculum modules with an equality of curriculum goals. The difference between each curriculum lies on the theoretical view on the development of early childhood learning that determines the designs of a program. The skill-based, action-based and child-centered curriculum approaches, haves a common goal (Goffin & Wilson, 2001), namely driving the interest of the children themselves for the development of their learning progress (Schwartz & Copeland, 2010).

The action-based curriculum module covers the development of socio-emotional, cognitive, and physical development of children. The strength of this approach is to fostering children's learning through their own efforts (Schwartz & Copeland 2010). Some action-based learning standards are outlined by Schwartz & Copeland (2010). Among them is that when children choose their own interests, they gain knowledge and improve their skills. Similarly, the knowledge of children and the use of academic skills can be extended through a set of interrelated activities. A typical program of this curriculum module is Reggio Emilia's early childhood program and the Project Approach (Edwards, Gandini, & Forman, 1993; Katz & Chard, 2000).

In this regard, the purpose of this study is to enhance the development of children's holistic learning through emergent curriculum in a private kindergarten situated in Bangi, Malaysia. In the early stage of the study, field kindergartens practiced academic-oriented teaching and learning processes. This emphasizes the use of textbooks and written exercises as the primary learning method of children. Thus, in this study, emergent curriculum is used as in practice to reduce the gap between of existing teaching and learning processes with those that have incorporated recent improved and innovative approaches. Therefore, the objectives are 1) observing the existing practices (interaction, teaching and learning, aids); and 2) introduce project work in teaching and learning.

Methods

This study employed an action research to obtain findings that are opened for modifications and improvements to achieve the objectives of the study. Four phases of the action cycle are adopted based on recommendation by MacNaughton & Hughes (2009). The four phases as follows:

Phase 1 - Understanding the learning process of children

Naturalistic observation is conducted in the kindergarten to understand the process of teaching and learning of children and to see the child's response to the academic orientation practiced before performing improvements. Furthermore, naturalistic observations form the basis of this study in making improvements according to the suitability of the development of children's learning without highlighting the changes that taking place. Children are the subject of a major study, so their emotions and behaviors on changing learning processes need to be minimized in order for emotional, mental, and social stability to be balanced in alignment with the implementation of the changes made.

Phase 2 – Planning the improvements of learning process for children

To change from academic-oriented to emergent, project work is seen as appropriate learning process for children. The emphasis on the use of textbooks and workbooks is also gradually reduced, in favor of hands-on experience.

Phase 3 - Implementation of changes

The implementation of emergent processes for children's learning practice lasted for six (6) months. Starting from January and ending in June 2016. Throughout the improvement of learning process, the topic of project work gradually developed, and emerged based on children's interest. The emergence of new topics is either from the planned topic by the teacher or the children's direct exploration of the learning environment or spontaneously through peers and teacher interaction. Particularly, children's self-confidence in expressing ideas and views on learning process is considered to form harmonious emergent processes.

Phase 4 – Reflection on intervention

Reflection helps in deepening understanding of the improvement of children's learning process. Researcher observation notes and children's journal books are critically reflected. To identify any improvements needed to enhance children's holistic learning development. The reflection notes are then used to analyze the finding of the study.

Participants

The children involved in the study were 5 years old, consisting of three boys and three girls, all had different backgrounds. These children were labelled as C1, C2, C3, C4, C5 and C6 to simplify the individual observation of changes in their learning progress. Three boys (C1, C2, and C3) were children who had followed the process of teaching and learning in the kindergarten since they were three years old. A girl (C4) had been studying in the kindergarten since the age of four. Meanwhile, another girl (C5) had been studying at another kindergarten before enrolling in the current kindergarten. Before enrolling to the current kindergarten in 2016, one girl (C6) was under the care of family members at home and had never followed any form of formal early education.

Analysis procedures

Naturalistic observation was the main procedure of this study. Observation notes are sources of raw data recorded in writing. Children's journal books are also used as references to be observing the learning changes that they had developed individually. The data obtained is then reported in the form of table analysis (Table 1).

Ethics

Parents' consent had been requested to respect the rights of the guardians of the children. The consent letter was given before starting the first observation. All six parents had given their consent on behalf of their children to be observed for the purposes of this study. The children also were notified that their learning activities will be observed throughout this study.

Conclusion

The action research process is in the form of a cycle. Each phase is constantly overlapping to seek a change in the socio-cultural context of the study which can influence the research participants to change. The implementation of each phase is also repeated, but the findings of this study are discussed in phases so that the progress of the changes on children's learning development can be seen in sequence. Table 1 summarizes the whole process of naturalistic observations whereby emergent processes were observed during the period of the study.

Phase 1 - Understanding the learning process of children

In the beginning of naturalistic observation, children were seen using workbooks continuously. All children were only following instructions from the teacher about the learning that needs to be done in the workbooks. At the beginning of the first minute of the learning process, children were observed as being focused. A few minutes later, children (C1 and C2) began to show movements like standing up and teasing their peers (C3). One child (C6) also looked at the empty workbook, without moving her hands to write, neither did she nor shows any interest in doing so. There were also children (C4 and C5) who did not know how to write and needed the teacher's help. In the first month of observation, hands-on activities were rarely practiced.

Phase 2 – Planning the improvements of learning process for children

The planning for improvement is based on the observations and reflection in phase 1. The learning process and children's learning development were considered when planning for improvement. Children's involvement, interest and dispositions towards their own learning were also taken into consideration. Hence, project work was chosen as learning activity for children. The idea of project work is used as it encompasses the four learning goals of the Project Approach (Katz & Chard, 2000). The four learning goals are knowledge, skills, dispositions, and feelings. Each of these goals is intertwined in connecting the holistic development of children's learning. Besides, the focus goals are also integrated between the academic (indirectly) and practical (hands-on experience) practices. Thus, the project work is appropriate for improving or changing the practice of the kindergarten from academic oriented to emergent.

Phase 3 - Implementation of change (Observe child reactions towards learning process changes)

In the first month, textbooks and workbooks were still used as the main learning process by children. Gradually academic- oriented practice was minimized in the second month, when project work kicks into place. The learning aids also improved, from workbooks to hands-on experiences through nature exploration, physical objects, and field trips. The active involvement of children in learning exploration appears to occur throughout the process of improvement. Children were also seen excited to explore the topic of project work for the whole learning session, generating various and unexpected questions and answers. Among the topics were, ants, worms, banana trees, soil, and wild grass. The topic started with an ant, then the children

moved on to a new topic, to which they found connectivity with the previous topic. This showed the development of emergent process in children's learning.

Phase 4 – Reflection on intervention

The children provided positive responses and active involvement throughout the implementation of the emergent learning process. They were also able to express their opinions to understand the topic of the project work rather than before the improvement. In fact, some (C1, C2 and C4) demonstrated self-reliance and self-esteem during project work activities. However, there were still some children who needed time to adapt to the emergent learning process especially children C3, C5 and C6, who merely followed other peers as well as waiting for directions for the next learning process. However, the changes and enhancement of children's attitudes and interests towards their learning process were flourishing much better than before the emergent implementation. However, there is still room for improvements that need to be done to empower children's holistic learning development.

Phases	Objective of observation	Learning activity	Children's reaction	Reflection	Analysis
1	Identify children's learning process	Write and count using textbooks and workbooks	Following teacher's instruction without question	The children are not given the opportunity to explore their own learning	Workbooks discourage children's learning interest
			Waiting for teacher's instruction for next activity	Encourage child-centered activities to stimulate learning progress	Child-centered activities need to be practiced shaping holistic children's learning
			Losing focus on preparing exercises in the workbook	The children's attention span of academic activity declines rapidly	The learning process needs to be hands-on
			Making noise and playing with peers, until they were told by the teacher to complete the given workbook activity	Rigid learning activities, making the children always look for opportunities to escape from doing works	Learning activities need to attract children's interest and encourage exploration and investigation
2	Identify children's learning interests	Project work - ants	Excited to see that ants live in bottles	True examples can appeal to children to respond positively	Nature's resources are teaching aids that stimulate the formation of children's learning

					processes
			Start searching for ants in the classroom environment	Children are given the opportunity to explore learning	Positive learning environment is important to support emergent processes
			Tracked the path of the ants, and asked questions about habitat of ants	Lots of questions and curiosity of children, harmonize their learning process	Children's curiosity makes the learning process more meaningful and interesting
			Asked teacher's permission to explore about ants	The opportunity for children to plan their learning topics is supported by teachers	Children's interests can be an interesting learning topic and enhance their concentration during the learning process
3	Looking at the child's response to the emergent learning process	Project work - ants	Voluntarily telling stories about ants found outside the kindergarten	Encourage children to begin their learning process	Encouragement and support, empowering children's interest to continue exploring their learning
		Kindergarten playground	Looked for ants, found three different types of ants - red ants, small ants, and big ants	Emergent processes occur when children identify various types of ant	The emergent process occurs spontaneously, as children explore a new discovery
		Project work - types of ants	Comparing the types of ants found by peers	Sharing results with peers can improve the social development – child's interaction and curiosity	The development of learning occurs spontaneously, in integrated and holistic manner
			Asked fellow peers about the food eaten by	Interaction between peers led to emergent	Emergent learning process occurs

		ants	processes and new learning topics which the children developed without consciously doing so	in every interaction, exploration, and search of information by the child himself

Phase	Objective of observation	Before the change	During the change
4	Changes in the learning process of the children are taking place	The use of workbooks is emphasized as a learning process for the children The opportunity for the children to express ideas and opinions is limited The children only follow the topic of learning set by the teacher A learning topic for a given learning time	Use of workbooks is reduced and the children are more interested in learning The children are more active and confident in suggesting their own learning process The children have the freedom to form their learning topics based on their dispositions and interests Hands-on activity gives the children the opportunity to explore as many learning topics as they wanted to

Table 1. Summary of naturalistic observations on child's responses during the improvement of the learning process from academic orientation to emergent according to the phase of action research

Discussion

The focus was the implementation of emergent learning processes, driving children to plan and explore their own learning although at first, the children did not say explicitly that they wanted to explore in detail. However, children's curiosity of many questions led them to explorative learning, exploration without they themselves realizing it. In addition, children could work together with their peers in harmony through the process of discussion and investigation. Emergent process also happened when children brainstormed their ideas among themselves as well as when performing their own observation towards their learning environment.

Children's interest and active involvement towards their own learning process also increased. The change result from the implementation of emergent teaching and learning processes, which is not rigid in determining the teaching process and learning outcomes. In fact, the process of teaching and learning experienced by children is the result of their learning achievements, rather than the emphasis of giving grades A, B or C that determines the ability and excellence of children's learning development. Most important is children's disposition to explore during their learning, that will determine the excellence of their holistic learning progress.

Based on the findings of naturalistic observations, the improvement of teaching and learning process from academic-oriented to emergent could stimulate children's

interest to learn. Researchers are convinced that with the ongoing implementation of the emergent learning process in this kindergarten, children's intellectual and social dispositions can be enhanced. Besides, holistic development also can be enriched without emphasizing on academic oriented methods solely. The development of holistic learning is not a skill that can be achieved in a short time. Through the appropriate practice of project work towards the improvement of children's learning of this study, researchers believe that these children can achieve a better level of holistic learning progression as they grow older.

Summary

Early Childhood Education is a foundation to any level of education. Therefore, the teaching and learning process should encourage and stimulate the active involvement of children. In the early stages of education, children need to be exposed to knowledge that includes exploration, investigation, inquiry, and explanation skills. The findings show that exposure to all these skills can be learned through the emergent teaching and learning process. An opportunity for children to be actively involved in planning, developing, and creating their own uniqueness of learning process is thereby made available. The improvement made in the kindergarten is also an attempt to change the general perception in which children must learn to read, write, and calculate using textbooks and workbooks solely. However, these skills and abilities can be trained easily through emergent learning processes such as exploration, investigation, and hands-on experiences. Thus, the process of emergent teaching and learning is seen to be enhancing to the stimulation and development of children's learning as a whole.

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Contact email: masayu@fpm.upsi.edu.my

A Study to Investigation the Role of Universities to Promote the Entrepreneurial Culture in Pakistan

Huma Kausar, International Islamic University Islamabad, Pakistan
Anjum Naz, University of the Punjab, Pakistan

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Abstract
Higher educational institutes are playing an effective role to encourage entrepreneurial activities by developing entrepreneurial attitudes and capabilities among students. The purpose of the current study was to identify the role of universities to promote the entrepreneurial culture among students. A quantitative inquiry was planned to understand the roles and responsibilities of universities to enable the students to be entrepreneurs. Survey technique was used to collect the data. Purposive sampling technique was applied to draw the sample from the targeted population i.e. final semester students of Master and Bs (Hons) programs from the faculties of management sciences and social sciences of Sargodha University. A questionnaire was developed and distributed among 300 participants of the survey. Data was coded and analyzed by using statistical techniques e.g. frequencies, mean, and standard deviation were applied to analyze the descriptive data while the Pearson correlation test was applied to calculate the inter-factors relationship. It was found that there is an insignificant relationship between the role of University and students' attitudes to embrace entrepreneurship, whereas a moderate positive correlation was found between the content of management and students' entrepreneurial intentions. Keeping in view the findings of the study, researcher suggested that there is a dire need that universities should pay more intention to conduct entrepreneurial activities to develop the entrepreneurial attitude to start new ventures. Further, it was suggested that universities should teach entrepreneurship as a separate subject in non-business sciences to develop entrepreneurial attitudes and capabilities among their students to encourage the entrepreneurial culture in Pakistan.

Keywords: Entrepreneurship, Entrepreneurial Activities, Entrepreneurial Attitudes, Entrepreneurial Capabilities, Entrepreneurial Culture, Students, Universities

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Introduction

The new trends of globalization and the emergence of a knowledge-based economy have forced attention towards entrepreneurship. Many studies argue that entrepreneurship improves economic growth through productivity and economic competitiveness with advanced technology and economic liberalization (Drucker, 1985; Acs, 2006. Progressively, entrepreneurship emerged as one of the most widespread research realms in the academic world to study the contribution and significance of entrepreneurship (Lee & Chang et al. 2005). More researches on entrepreneurship are mainly focused at higher education level. Entrepreneurship courses are also attracted (at higher education level) colleges and universities (Brown, 1999). Entrepreneurship has the potential to generate employment opportunities through starting up new ventures; utilization of the available resources to increase the economy and national GDP, this initiative makes it possible to overcome the reliance on social welfare programs (Acs, 2006). Hence education plays a vital role in the development of entrepreneurial culture and equips students with advanced skills and an adaptive mindset to embrace entrepreneurship. Education and entrepreneurial success probably depended on undetected variables such as the ability of oversight which leads to unfair approximations of revenues. Thus, many universities and colleges around the world are responded to fulfill this demand by offering entrepreneurial courses to promote entrepreneurship as a professional career (Postigo & Tamborini, 2002). The ‘‘major purpose of entrepreneurship education at higher education level is to develop entrepreneurial capabilities and mindsets among students’’ and it is suggested to emerge entrepreneurship additional fully into university curricula (European Commission, 2008).

Literature Review

Volkmann (2009) reported that universities also play an important role in hitching endowments of students, graduates, and researchers. Universities can be seen as scientific & technical invention engines and major contributors to transmuting technological development and invention into innovation. University is considered as a social innovation system when entrepreneurship education involved in such system as the result it produces more capable entrepreneurs, not just creates job opportunities for individuals but also reinforces and facilitate to birth and development of businesses as social mechanisms (Petridou, Sarri, & Kyrgidou, 2009). It has recognized and accredited that higher education is needed to equip the graduates better. However, a broad range of skills is required to fulfill this requirement, while it is considered that self-employment is increasing among university graduates. Also, graduates are creating job opportunities in the market (Carey & Naudin, 2006).

Utmost researches are focused on entrepreneurship at graduation level (Raposo, Ferreira, Paco, & Rodrigues, 2008; Sanchez, 2013) as well at secondary school level (Paco, Ferreira, Rodrigues, & Dinis, 2008; Rodrigues, Dinis, Paco, Raposo, & Ferreira, 2011). The economic development of a country is connected with productivity; several studies have argued that entrepreneurship improves economic growth through productivity. Therefore, entrepreneurship education is pivotal for the development of entrepreneurial skills, mindsets, and behaviors. At the university level, the promotion of entrepreneurship is a useful and valuable career prospect for graduates. Also, it has a positive impact on students’ attitudes towards entrepreneurship by giving

entrepreneurship education (Galloway & Brown, 2002). Apart from this, universities as an entrepreneurial nucleus play an important role in connecting students, researchers, business enterprises, and other stakeholders.

The main objectives of entrepreneurship education are 1) to change student's behaviors and intentions, in like manners, 2) to enable them to understand the concept of entrepreneurship. Furthermore, it encourages students to become entrepreneurial and to become entrepreneurs, as the result it pursues the formation of new business enterprises, also creates new job opportunities in the market (Fayolle & Gailly, 2005). In the same manner, entrepreneurship education also plays a major role to develop entrepreneurial traits among students (Jesselyn & Mitchell, 2006).

Entrepreneurship education educates the students about drawbacks and risks to keep the crises away from them, as they can alleviate the feelings of trepidation of disappointment of potential entrepreneurs, while the courses of entrepreneurship in universities can prepare the individuals with a tremendous commitment to be entrepreneur i.e. by starting a new business enterprise. Entrepreneurship as a phenomenon enables students to make a complete understanding of it and without any doubt turn out to be more skillful partners at any level in entrepreneurship i.e. employees, investors, and managers, or entrepreneurs (Maranville, 1992).

In numerous parts of the world, entrepreneurship has engaged to discover scholarly authenticity. So, entrepreneurship should not only be seen as a part of Business Management or part of an interdisciplinary field, it ought to be standing separately as a subject. Thus, the university should need to nurture the individuals as active entrepreneurs by giving them assignments, by arranging entrepreneurs gathering, external lectures, and workshops. In this way, instructors should also ready to modify the mindsets of students who can successfully show their business aptitudes and create imaginative reasoning in their research work. Likewise, it would be great and well to have visitor teachers and visitor speakers to offer a measure of association with entrepreneurial specialists, while this isn't generally enough yet. The content of the course should have a focus on the skills and knowledge which an entrepreneur will need to succeed (Zeng & Honig, 2016). The support of higher education institutions towards entrepreneurship creates an environmental awareness about entrepreneurship and its aspects. In this new century, business is evolving, and learning to engage the individuals in society with long-lasting earning (Drucker, 1995). Besides, entrepreneurship helps society to become self-managing and provides huge potential, in the same way, it also furnishes people with career choices (Scott, 2003). Thus, it amplifies the capabilities among individuals and empowers them with a feeling of interest and inspiration, whereas they ought to wind up alarm and mindful about opportunities, whereas teaching should encourage students' attitudes towards entrepreneurship (Kirzner, 2009).

Most importantly, Universities ought to be viewed as spots to promote entrepreneurial activities and attitudes amongst students and academics with cooperation. The workplace and group-based work is increasing the new arrays of the work organizations which showing up with low levels of management and monitoring, multi-testing, not multi-schooling, and a more noteworthy requirement for effective communication skills (Probert, 1999).

It has been considered that entrepreneurial culture improves by entrepreneurship education. It's again highlighted the necessities of entrepreneurial culture to promote Small Medium Enterprises (SMEs), such as beliefs, values, attitudes, and behavioral norms (Gibbs & Lyapunov, 1996). According to Deci and Ryan (2000), ''the abler you are, the more willing you are''. At present, an entrepreneurial culture is necessary to be sure of the success of entrepreneurship. Blokker and Dallago (2012) exposed that entrepreneurship develops entrepreneurial behavior among youth, especially university students, thus it is more important to focus on entrepreneurship education and instructional methodologies to encourage just in time learning and learning by doing. Mugione (2011) as chief of entrepreneurship advisor at United Nations Conference on Trade and Development, has emphasized that students can become entrepreneurial even in their study field those are enrolled in other programs or courses, so at the university level entrepreneurship education should not be limited to only business schools' individuals.

Accordingly, it is not only mean to promote youth's entrepreneurship through entrepreneurship education but to train youth with entrepreneurial attitude and skills at the same time (Schoof, 2006). Entrepreneurship education is a way to promote entrepreneurial culture. Entrepreneurial culture can be achieved by several factors. While enterprise culture also delivers advantages in society, even beyond the business activity (Liikanen, 2004). Indeed, the qualities of an individual, i.e. innovation, creativity, and inventiveness are relevant to entrepreneurship and can be useful for everyone in their everyday life and work activities. Ngosiane (2010) discovered during his work to promote an entrepreneurial culture in Kenya, according to him, entrepreneurial culture can be promoted through the formation of clubs in universities to support entrepreneurial activities.

A country where the majority of citizens are youth and raises their own business as a career, such a nation has strong belief to establish an enterprise or earn money rather than the employment of wage (Gibb & Li, 2003). In the modern world, the uses of entrepreneurial and innovative thinking are inescapable in organizations. Whereas organizations' development and survival depend on the innovation, creativity, and capacity of human resource and management, the birth and death of organizations also rely on vision, knowledge, and their organizers' capabilities (kazemi, Rasekh, & Navid, 2016). Kirzner (2009) stated that entrepreneurship is an awareness of the invisible profitable opportunities.

Learning and innovation are essential for organizations that are trying to survive and achieve efficiency. Numerous organizations are progressively searching for inventive and entrepreneurial ways to improve their viability, effectiveness, and adaptability. In such a manner, entrepreneurship is quickly turning into a decision of organizations, especially for substantial organizations (Hagh et al., 2013). Entrepreneurial development is one of the apparatuses of economic development by reinforcing and creating a suitable environment for its advancement, particularly in developing countries like Pakistan.

Pakistan has extreme disregard in many areas of entrepreneurship education for instance communication and marketing. Government has the meddling part in deters innovation, marketing, and risk-taking (Haque, 2007). In any case, the substance of entrepreneurship is an outsider for the faculty and syllabuses. Approximately there is

the nonappearance of any entrepreneurial instructional faculty in Pakistan. In Pakistan, there are 128-degree awarding institutes and universities; of which seventy (70) are public universities and fifty-eight (58) are private universities (HEC). Though, just a few of them offer courses of entrepreneurship in their postgraduate and undergraduate degree programs, for instance, Lahore University of Management Sciences (LUMS), Institute of Business Administration (IBA), and Islamia College University. In this baffling circumstance, it is respecting that the Higher Education Commission (HEC) of Pakistan has understood the noteworthiness of entrepreneurial education with the changing worldwide financial patterns and has begun taking steps forward in such a manner. Inside the university frameworks to promote entrepreneurship and innovation, HEC has propelled a noteworthy program which included the introduction of entrepreneurship and innovation, changes in curricula, technology hatcheries, and the establishment of technology parks. Also, HEC is giving access to funding and delicate advances to new ventures (Rehman, 2006). Nevertheless, a reasonable concurrence on the idea of entrepreneurship education is required for its compatibility, whereas the issue of curricula and faculty improvement should be tended to with more concern (Khan, 2008).

Universities are also facing an alarming situation to support the entrepreneurial culture. Studies have discovered some barriers that disturb the development of entrepreneurial culture in universities, which incorporate into collegiate, proficient, and bureaucratic nature of universities (Hay, 2003). Zaharia and Gibert (2005) A university can't be entrepreneurial easily from the creation of modern structures; it must be changed in society to change its concept of the university mission. The entrepreneurial transfer procedure is long and different from one university to the next. It is affected by economic development, traditional and cultural elements, and legal structures.

Statement of the Problem: Higher education system produces a large number of graduates every year whereas unemployment is increasing because our economy is not in a position to engage the pass-out graduates or provide them job opportunities. So, the numbers of graduates are more than the number of jobs in the market. This study addresses to stress on the need to promote entrepreneurial culture among students and higher educational institutes to create job opportunities rather than to seek job opportunities. This study aims to investigate the role of Education to promote Entrepreneurial culture among students who are studying management as a major subject at the higher education level at University of Sargodha. This study is an endeavor to find out the connection and correlation between educational institutes and subjects taught in it which could be responsible for the emerging culture.

Objective of the Study: The current study was intended to identify the role of universities to promote the entrepreneurial culture among students at higher level of education.

Key Research Questions: The following two research questions examine the universities' role in perspective to encourage entrepreneurial intentions among students at higher level of education.

Q1. To what extent Universities are playing their role to promote entrepreneurial activities among students.

H1 **"**There is no significant relationship between the role of universities and entrepreneurial activities to promote the entrepreneurial culture**"**

Q2. Does there exist concerns between students' entrepreneurial intentions and the content of management as a subject taught at BS and Master level in universities?

H2 " There is no significant relationship between entrepreneurial intentions of students and the content of management as a subject which is taught at BS and Master level"

Research Methodology

Research Design: The nature of the study was descriptive. A quantitative inquiry was planned to understand the roles and responsibilities of universities to enable the students to be entrepreneurs. Survey is a basic strategy of engaging the quantitative research approach thus survey technique was applied to collect the data from the participants.

Participants: The target population of the study was all those students who have enrolled in the BS Hons and Master programs under the faculties of social sciences and management & administrative sciences of Sargodha University. And all the students who were enrolled in the final semester of BS Hones and Master programs of the above-mentioned faculties' departments at the time of data collection to examine the universities' role in the contribution to encourage entrepreneurial culture were considered accessible population of the study. Further, the study was delimited to those departments where management had been taught as a major subject and the content related to business management and entrepreneurship in one or more than one course taught to the faculties of social sciences and management and administrative sciences. Departments were selected keeping in view the context of the study i.e., department of education, department of social work, and department of sociology were selected from social science, while the department of economics, department of commerce, department of business and administration were selected from management and administrative sciences as well.

Sampling Technique: Keeping in view the context of the study purposive sampling technique was applied to draw the sample from the population. It is a type of non-random sampling. The purposive sampling technique is also called judgmental sampling because its sample is selected keeping in view objectives of the study and the characteristics of the population. It is stated that the researcher decides what information needs to know and sets to find individuals who can and are willing to provide the required data through the purity of knowledge and experience (Bernard, 2002; Lewis & Sheppard, 2006).

Initially, no specific sample size was decided. Master and B.s final semester students of six selected departments were requested to participate in the researcher. While the questionnaire was given only to those students who showed their willingness to participate in the study. In this way, the researcher got 300 volunteers who agreed to participate in the research and gave their responses on research tool.

Research Instrument: The research method in this research was survey method, thus the main data collection tool was a questionnaire. A self-developed questionnaire was applied as a research tool to collect data from participants. The questionnaire was based

on three factors such as entrepreneurial capacities, attitude, the role of Universities to be an entrepreneur, which included eighteen (18) closed-ended questions to explore the answers of the respondents. A seven-point Likert scale (strongly disagree to strongly agree) was used to measure eighteen (18) questions related to entrepreneurial capacities, the attitude of students towards entrepreneurship, and the role of the University to promote entrepreneurial culture among students. The number of questions falling under each factor varies, depending on how many questions were required to sightsee one factor. Questionnaire was validated by discussion with supervisor, getting expert opinion, and pilot testing.

Data collection and Analysis: After taking the permission from the concerned departments, questionnaire was distributed among volunteers who were willing to fill the questionnaire survey to investigate the role of universities to promote entrepreneurial culture in Pakistan. Required guidelines were given to the participants and a total of 300 questionnaires were filled from both faculties. Afterward, data were analyzed by using SPSS which is a statistical program for data analysis. Data was coded and analyzed by using statistical techniques e.g. frequencies, mean, and standard deviation was applied to analyze the descriptive data while Pearson correlation test was applied to calculate the inter-factors relationship.

Table 1: Correlation between educational program and students' entrepreneurial capacities

Variables	N	R	P-value
Program Capacities	300	0.063	0.278

Table 1 shows that Pearson correlation the value of (r) is .063, which depicts that insignificant relationship was found between educational programs where management is taught as a major subject or the content related to entrepreneurship and business administration and entrepreneurial capacities (confidence, resourcefulness, opportunity recognition, innovativeness, creativity, competence, Delegation, Risk taking, Self-motivated, Leadership, Ability to resolve crises, Communication skills, Networking and Practical approach) of students' at university level and this value is insignificant with p value i.e. 0.27 while n= 300.

Table 2: Correlation between educational program and students' attitude towardsentrepreneurship

Variables	N	R	P-value
Program Students attitude	300	-.015	.792

Table 2 shows that Pearson correlation the value of (r) is -.015, which depicts that insignificant relationship was found between the educational programs and university students' attitude towards entrepreneurship after completing their graduation and this value is insignificant with p-value i.e. .792 while n= 300.

Table 3: Correlation between educational programs and the role of University to promote entrepreneurial culture

Variables	N	R	P-value
Program University role	300	-.091	.117

Table 3 shows that Pearson correlation the value of (r) is -. 091, which depicts that insignificant relationship was found between the educational programs and the role of university to promote the entrepreneurial culture among students at higher education level and this value is insignificant with p-value i.e. .117 while n= 300.

Table 4: Correlation between the role of University and students' attitudes

Variables	N	R	P-value
University role Students' attitude	300	.403	.000

Table 4 shows that Pearson correlation the value of (r) is .403, which depicts that there was a moderate positive relationship between the university role and students' attitudes to be entrepreneurs after completion of their studies and correlation was statistically significant with p-value i.e. .000 while n= 300.

Findings and Discussion

- The first research question was ''To what extent Universities are playing their role to promote the entrepreneurial activities among students at higher education level''. It was explored through the two factors named ''the university role to promote entrepreneurial culture and the students' attitude''. The null hypothesis is rejected based on results:

H1. **"**There is no significant relationship between the role of universities and entrepreneurial activities to promote the entrepreneurial culture**".** Insignificant relationship (r = -. 091, sig. =.117) was found between the role of University and entrepreneurial activities to promote the entrepreneurial culture among students. Whereas, a moderate positive relationship (r = .403, sig. = .000) was found between the university role and students' attitudes to be entrepreneurs after completion of their studies. Moreover, universities also provide a platform for networking new business people. On these occasions, potential entrepreneurs meet stockholders who enable them to pitch their thoughts. Moreover, universities help their students to get to private budgetary openings. Universities utilized entrepreneurial thoughts and make connection to the ventures and universities play a role to nurture the facilities with entrepreneurial thoughts to staff and students. This incorporates the arrangement of preparing, access to financing, mentoring, instructing, IT services, research and development services, research centers, and sponsored premises (Byrnes, Peas, Blacker, Jackson, & Dwyer, 2010). Entrepreneurship education has been a priority in universities (Kuratko, 2005; Busenitz West, Shepherd, Nelson Chandler, & Zacharakis,

2003; Hannon, 2006; Heinonen & Poikkijoki, 2006; Klein and Bullock, 2006; Matlay, 2008; Matlay, Martiz, Jones, & Shwetzer, 2015). Moreover, formal university education prepares students for the tough market game (Robinson & Sexton, 1994).

- The second question was ‘‘Does there exist concerns between students’ entrepreneurial intentions and the content of management as a subject taught at BS and Master level in universities”

H2 " There is no significant relationship between entrepreneurial intentions of students and the content of management as a subject taught at BS and Master level" It was discovered through inter factors correlation between educational programs and entrepreneurial capacities as well as the correlation between educational programs and students’ entrepreneurial intentions. The null hypothesis is rejected based on results: Results of data indicated that the insignificant correlation (r= .063, p= .278) was found between “educational programs” and “students’ entrepreneurial capacities” to be future entrepreneurs those were studying the content of management and entrepreneurship or business at the higher educational level. The result of other factors also depicts similar findings as to the insignificant relationship () between the “educational programs” and the “students’ attitudes” those were studying the management and content related to business or entrepreneurship. It is contradictory that an academic entrepreneurship program can be introduced as any instructive program or process used to create entrepreneurial states of mind, skills, and capabilities with a specific end goal to develop the necessary capacities to start new ventures (Fayolle, Gailly, & Lassas, 2006). This is also evident by one of the action mainstays of the European Commission’s Entrepreneurship 2020 Action Plan is entrepreneurial education and training for business creation and development. Either they establish an enterprise or not, those youngsters who got entrepreneurship education to enhance their basic skills, attitudes, and business knowledge that incorporate taking decisions, risk-taking, initiative-taking, creativity, teamwork, and a sense of responsibility. Such entrepreneurial capacities empower entrepreneurs to put their thoughts into reality and expand their employability (EC, 2013). Othman, Hamzah, Zahari, and Amri (2015) found a moderate relationship between entrepreneurship education and entrepreneurial spirit by individuals' internal locus of control (Othman et al., 2015). Apart from this, Bakotic & Kruzic (2010) discovered that 67% of entrepreneurship students have strong entrepreneurial intentions towards entrepreneurship. Whereas, entrepreneurship programs significantly increase individuals’ intentions toward entrepreneurship by motivating them to choose entrepreneurship as a career (Wilson, Kickul, & Marlino, 2007). A study was conducted at the faculty of Economics, University of Split on the entrepreneurial source of motivation and aspiration towards entrepreneurship on a sample of first and final year graduate students. The results of this study revealed that few students who had previous entrepreneurial experience showed a very positive (1.88%) and a positive (2.68%) attitude toward entrepreneurship.

Conclusion

Knowledge-based economy has forced attention towards entrepreneurship. Most of the studies on entrepreneurship are mainly focused at higher education level, whereas the content of entrepreneurship is also attracted at higher education level in colleges and universities. Entrepreneurship courses develop entrepreneurial capabilities and attitudes among students to select entrepreneurship as a career choice. Although, higher

educational institutions have the responsibility to provide skills, training, and opportunities to students through education to encourage students' entrepreneurial spirit and prepare them to start new business ventures or invent something beneficial for the world. Findings of the study showed that universities are required to play a more active role to promote entrepreneurial culture. However, there is still a need to pay more intentions on the curriculum to develop the entrepreneurial capacities among students and institutes' role to support the entrepreneurial activities. So, there is also a need to take some serious decisions to encourage students through practical entrepreneurial activities, such as there is no lake of talent among students but it is needed to promote this culture through the support of higher education system, educational policies, entrepreneurial courses, and students loan schemes. Likewise, there is also a need to pay attention to teaching methods that support students' innovative skills and attitudes which make them proficient entrepreneurs.

Recommendations

Keeping in view the major findings and conclusion of the study the researcher has suggested that there is a dire need to encourage entrepreneurial culture among students to meet the new trends of globalization and the emergence of a knowledge-based economy. So, universities should pay more intention to conduct entrepreneurial activities i.e. career awareness seminars, entrepreneurial training programs, and internship opportunities across the campus to develop the entrepreneurial skills, and attitudes among students at higher level of education. Universities should teach "Entrepreneurship" as a separate subject at the graduate level to develop entrepreneurial attitudes and capabilities among their students to start new ventures. Additionally, "Entrepreneurship" should also introduce as a subject in non-business sciences to encourage the entrepreneurial culture in Pakistan.

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Contact email: humachudri@yahoo.com

University Speaking Assessment as Collaborative and Self-Reflective Skill Development

James Herbach, University of Shizuoka, Japan
Kinsella Valies, University of Shizuoka, Japan

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Abstract
The impetus of this research is deeply rooted within the immediate needs of students at the University of Shizuoka and their future professional goals, as suggested by student comments gathered from previous Language and Communication Research Center workshops and course evaluations. The aim of this action research is to improve confidence and communicative ability by implementing classroom-based speaking assessment tools that provide students with opportunities for ongoing speaking advancements and feedback. Research questions are: 1) To what extent can speaking assessments help students better express themselves in English? 2) To what extent can teaching towards this assessment help improve self-efficacy and confidence in students' ability? 3)To what extent can the speaking assessment tool aid in advancing students' critical thinking skills? This study took a mixed method approach where data from both student grades and survey results were collected and analyzed. Results showed that student confidence in their ability to express themselves in English increased significantly. The median grade differential between finals and midterms was approximately 6%. Future research will focus on the design and implementation of similar speaking assessment tools for first graders across all departments.

Keywords: EFL, Speaking, Assessment, University, Japan

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Introduction

The motivation for this project emerged from the recent interest in the idea of supporting the speaking skills of learners in the field of English language education as well as from the management of the Language and Communication Research Center (LCRC) at the University of Shizuoka. As Reinbold (2017) states, "in the current world, many non-native speakers are using English as a tool for communication (p.246). Reading comprehension and essay writing skills have traditionally been assessed so as to provide both students and instructors with concrete data showing students' learning progress. The objective of this project was to, first, afford students and instructors with tangible evidence of speaking development on three specific categories of skills and abilities and, second, evaluate speaking assessment tools created inside the department. Both objectives support students who in the future may be faced with authentic situations in which they may have to interact with non-Japanese speakers and express themselves effectively. The three categories which were targeted for this project included Reading a text aloud, Describing a picture and Giving an opinion.

The decision to target the three aforementioned speaking categories was based upon the large class sizes involved, up to 35 students per class, as well as the amount of time required to assess students' speaking abilities in a face-to-face environment. In order to provide results of speaking progress both a mid-term and a final speaking test were scheduled. The project initially targeted one group of second year pharmacy students which four members of the LCRC all taught during the same day and period. Focusing on this particular group of students provided instructors with the opportunity to assess each other's classes so as to remain as objective in the assessment process as possible.

Along with the rational for initiating this project, the methodology, the steps to production and the implementation of the assessments are also addressed. In addition, the results of the assessments, the limitations of the project and future implementations are further investigated. As the project is now an ongoing element in the LCRC curriculum, many additional revisions have been and continue to be made.

The research questions that guided our investigation were:
1) To what extent can speaking assessments help students better express themselves in English?
2) To what extent can teaching towards this assessment help improve self-efficacy and confidence in students' ability?
3) To what extent can the speaking assessment tool aid in advancing students' critical thinking?

Methodology

The researchers probed tertiary foreign language students of English regarding their experiences taking an English Communication course and interpreted forthcoming answers making connections to the RQs that guide this study.

The paradigm at the base of this study is an interpretivist one. Additionally, this study was both classroom-based and collaborative as all the data was collected by Language and Communication Research Center's (LCRC) instructors teaching in classrooms and

working together to create and implement assessment tools and distribute the surveys to the participants.

The methodology supporting the project is both quantitative and qualitative in nature. Students' test scores were compiled to provide quantitative results of their speaking abilities, while pre- and post-assessment surveys were implemented to offer qualitative results for both the overall course satisfaction of students and the speaking assessment in particular.

Participants

Based on the similar scheduling of both day and time for English Communication classes, one group of second year pharmacy students were targeted for the project. Four native members of the LCRC all taught one class of approximately 29 to 35 students representing a total of 146 participants. All of the classes used the Lecture Ready textbooks; however, students had been divided into two groups based on their TOEIC test scores the previous semester. The participants starting scores ranged between 500-600 points. The equivalent CEFR level was between A1 and A2, in other words, they can express themselves "in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters (Council of Europe, 2001,p. 74)." As a result, two of the groups were assigned with the Lecture Ready 1 textbook while the others used Lecture Ready 2. Clear and concise instructions were drafted for all three sections of the assessment and all members of the LCRC distributed the information to their students in an attempt to ensure consistency. Practice and preparation of students towards the assessments, however, were left to the discretion of the individual department members.

Steps to Production

Timeline

The impetus for the project was initiated by Dr. Atsushi Fujimori and was originally presented to the LCRC members approximately two weeks before the beginning of the semester. The target group was second-year pharmacy students who met once a week during a 15-week semester. Planning meetings began immediately in order to create a clear goal and an outline for the project's implementation. The three target areas of the assessment, reading a text aloud, describing a picture and giving an opinion were finalized. This was in part due to the fortuitous occurrence of professor Valies having previously used these categories for implementation in some of her classes. The categories have been inspired by their use in the TOEIC test, however they have been modified and revised so as to fit the semester schedule and the level of the students at the University of Shizuoka.

In addition, a rubric was drafted to provide students with specific details for what they would be required to achieve in each of the five scoring levels for all three sections of the assessment. Students would then be given a result out of a possible 15 total points. The rubric was also translated into Japanese. Copies of both the English and Japanese versions were then printed double-sided and distributed to students at the beginning of

the semester. In addition, the testing instructions were handed out at this time to all participants.

One result of the compacted timeline was that once the semester started, all of the materials for both the mid-term and final assessments had to be created in between preparing for and teaching classes. This led to a redefinition of the criteria for materials creation after the mid-term and before the implementation of the final assessment. Subsequently, some of the project limitations appeared at this time, and although addressed, will be illustrated in more detail later.

Step 1

Materials for the three target categories were created and evaluated by the four participating instructors. Each member collected six examples of texts, pictures and opinion questions. Materials were discussed during meetings and a selection was made as to which items would be used for midterms and finals on the one hand, and which would be used for in-class practice on the other. Material selection guidelines required instructors to match materials to themes found in the class textbook they used. As the speaking assessments took the shape of individual student-instructor interviews, previous students might have the opportunity to pass on information to the following test-takers. To mitigate this circumstance, six assessment packets were made for each assessment moment for the instructors to cycle through during the test period.

For the final speaking test instructors proctored each other's groups in a bid for impartiality. This added both a level of anxiety and motivation for students as they could not count on their usual teacher's familiarity with their mannerisms and word-use to make themselves understood. As a result, participants had to really attempt to express themselves clearly and succinctly.

Assessment Examples

The speaking assessments were initially designed to be implemented in a face to face environment. According to Qian, (2009), "such a test is believed to offer a much better test validity because, in a properly designed oral test in the direct testing mode, every effort is supposed to be made for the tasks to be as authentic as possible (p.115). As a result, all of the materials were printed on paper and laminated so that students could be presented with hard copies during their individually scheduled testing sessions. In addition, each instructor was provided with six different versions of each of the three parts of the assessments. In an attempt to prevent students from sharing details of the assessment materials with their classmates, a different version of the assessment materials was used after approximately five students were tested.

The printed and laminated assessment materials all included the same instructions in both English and Japanese to ensure that all students could clearly understand which skills and abilities they were being assessed on. The following are examples of part I and III of the assessments.

Part I (Read a Text Aloud)　文章の音読

In this part of the test, you will read the text aloud. You will have 45 seconds to prepare. Then you will have 45 seconds to read the text aloud.

このテストでは、下の文章を声に出して読んでもらいます。まず 45 秒間で黙読し準備をしてください。その後、45 秒間で声に出して読み上げてください。

Mass media refers to the distribution of impersonal information to a wide audience, such as what happens via television, newspapers, radio, and the Internet. With the average person spending over four hours a day in front of the TV, and children averaging even more screen time, media greatly influences social norms. People learn about objects of the material culture, like new technology and transportation options, as well as the nonmaterial culture. For example, what is true, what is important, and what is expected.

Part III (Express an Opinion)　考えを述べる

In this part of the test, you will give your opinion about a specific topic read by the instructor. Be sure to say as much as you can in the time allowed. You will have 15 seconds to prepare. Then you will have 60 seconds to speak.

このテストは、講師が読んだある話題について意見を述べてもらうものです。時間内にできるだけ多くのことを言うようにしてください。スピーチの前に 15 秒間で準備をしてください。その後、60 秒間でスピーチをしてください。

1. Do you think that the government should add a 10% tax on all fast-food restaurants to pay for national health costs?

Grading system

All students in the four separate second year pharmacy classes were evaluated using the same grading system. Both the mid-term and the final speaking tests were assigned a value of 20% of the final grade, composing a total value of 40% of the class grades for students' speaking abilities. Additional assessment included comprehension quizzes at 20%, weekly writing journals at 20% as well as out of class assignments and participation which were both valued at 10% respectively. The following table (1) illustrates the breakdown of grades for the class.

Assignments	% of Final Grade
Mid-term Speaking Test	20%
Comprehension Quiz	20%
Out of Class Assignment	10%
Final Exam Speaking Test	20%
Weekly Writing Journal	20%
Participation	10%
Total	**100%**

Table 1: Course grade breakdown

Rubric

Each section of the test required the students to attain a certain number of speaking goals to be awarded maximum points. This was done supplying the instructors with a bilingual English-Japanese grading rubric. It was modified for implementation and has been under continuous review resulting in several rewrites since its first implementation. Most adjustments were made to facilitate fairness and give students clearer insight into what aspects of their speaking they can work on to improve proficiency. It is a 15-point rubric (see appendix A), distributed to students as a double-sided handout. Each category is rated up to five points. Students were expected to range between 3-4 with 3 being the average. Students were assessed by their peers during in class practice as well as their instructors using the same rubric.

Step 2

In-class instructions were focused on the upcoming mid-term and final assessments and required students to produce specific types of speech acts. Information was given both in oral and written format. Class handouts described the test format providing some instructions for the test day.

Both the mid-term and the final speaking tests were proctored using the instructors' offices to afford students with privacy during the assessment process. All students were given a testing schedule which divided the entire assessment slate into 30-minute blocks. The result was to limit the number of students waiting to be assessed outside of instructors' offices to four at any one time. In addition, each instructor examined a colleague's class which were comprised of a different level of students in an attempt to retain objectivity in the assessment process.

Both the midterm and the final were scheduled on the same days and the same class periods for all four groups. The assessment schedule required the use of two class

periods as well as three lunch periods in order to accommodate the larger class sizes. Some additional time was also deemed necessary in the case of emergency absences. The result was that four classes out of a 15-class semester were needed for the implementation of both the mid-term and final speaking tests.

Clear and concise testing instructions were drafted and distributed to all students across the four second year pharmacy classes. In addition, the assessment schedules along with a detailed description of the testing environment were handed out to each student about 2 weeks in advance of the assessment dates.

Implementation

Instructors worked autonomously in class to practice and prepare students for the speaking assessments. However, all four instructors used the textbooks to target the three specific parts of the text to support students' knowledge and abilities and to maximize their individual results on the assessments. In order to implement the assessments, instructors used voice recorders and timers to collect data for the project.

Through the use of group work and task-based activities targeting the three categories of the speaking assessments, students were able to receive feedback from both their instructors as well as their classmates as to their knowledge and abilities while practicing in class. In addition, subsequent to the mid-term speaking test students were given their scores on a printed copy of the test rubric. The combination of in-class feedback and the mid-term speaking assessment feedback afforded students the opportunity to target areas in need of improvement for the final speaking test.

Instructors met post mid-term assessment to discuss the implementation of the assessment as well as the results for their respective classes. One outcome of these discussions was that all instructors agreed to clarify and modify the rubric in order to provide students with a more detailed range for their performances on the test. It was also agreed that the statements for the giving your opinion section of the assessment be trimmed down to a one sentence explanation. Revisions were then undertaken to modify and revise materials for the final speaking test. The use of the number of class periods necessary for the implementation of the speaking assessments and the ensuing loss of class instruction time was also a concern for all instructors.

Limitations

This study focused on the creation and implementation of speaking assessment materials to help students improve their speaking skills, increase their confidence and help them to think more critically. As for implementation of the assessments the team of instructors came across differences in grading between instructors. It was concluded that norming was required. Future norming endeavors would take the shape of having a secondary instructor evaluate group recordings of speaking tests.

Inconsistencies in text materials and instructions were found; instructions and materials printed on opposite sides, including Japanese instructions. These elements were corrected for the final assessment. Consistency in the presentation of materials also

became a concern. This concern was addressed by standardizing text-font, text-size, text-spacing, single-side / double-sided printing, paper-type.

The Describe a Picture-section also required standardization and guidelines were added for selecting photos. Important aspects to look for in an image were thought to be the amount of details in the background, ability to infer the environment, the minimum number of people in the photo, the amount of details regarding the people's appearance and actions.

One of the project limitations discovered post mid-term assessment was the quality of photos used for the describing a picture category of the test. After closer inspection and discussion, it was agreed that some of the photo examples did not provide students with enough detail to be able to describe logically and accurately. The concern was that students might unfairly receive a lower grade on this criterion of the assessment if asked to describe an inferior photo. One example is as follows;

Figure 1: Poor example

Figure 2: Good example

Students were asked to provide details of the photos in a logical order, ensuring that anyone who could not see the photo would be able to clearly understand the images through the words and phrases spoken by the students. Students were moreover instructed to provide details of each photo using three steps which included: describe the location/setting/place, describe the people/physical dimensions/clothing and describe their actions using verbs+ing.

Additionally, the test section related to critical thinking, Giving your Opinion, turned out to give students the most trouble during the midterm. Many were unable to answer the question because they either did not understand it and/or did not have enough thinking time. Instructors believed that this problem was caused by the length of the Opinion question. The questions were simplified so that students had enough time to read and understand the question and then consider their answers.

<u>An example phrase from the midterm:</u>

> 4. It is important to be mindful of gender-biased marketing laws, which are rightly getting stricter worldwide. As a result, do you think that all public services, such as train cars should be provided in a gender-neutral manner. Give reasons for your opinion.

A renegotiated phrase from the final:

2. Do you think that the health benefits of organic foods are worth the extra cost?

The *Do you think…?*-format proved easier to understand and yielded better results. Students seemed less stressed and fewer students ended up with a could-not-answer score of 1 on the rubric. In addition, instructors changed the timing parameters from 15 seconds thinking time to 30 seconds thinking time.

Conclusion

This project saw many beneficial additions to classroom work and adjustments to the assessment materials. Students who were part of this development reacted positively to the speaking test.

Results: Mid-term vs. Final

After the data from both the mid-term and final speaking assessments were collected and calculated it was clear that there was an improvement on students' total scores post final test. Nevertheless, some anomalies also became apparent. For the lower level group, the scores for the reading a text aloud category dropped slightly between the mid-term and the final tests. One factor resulting in this drop may have been the instructors increased familiarity with the assessment and the rubric culminating in a stricter assessment of each student. Another factor may have been that students were more focused on the describing a picture and giving an opinion sections of the test as they required more critical thinking processes.

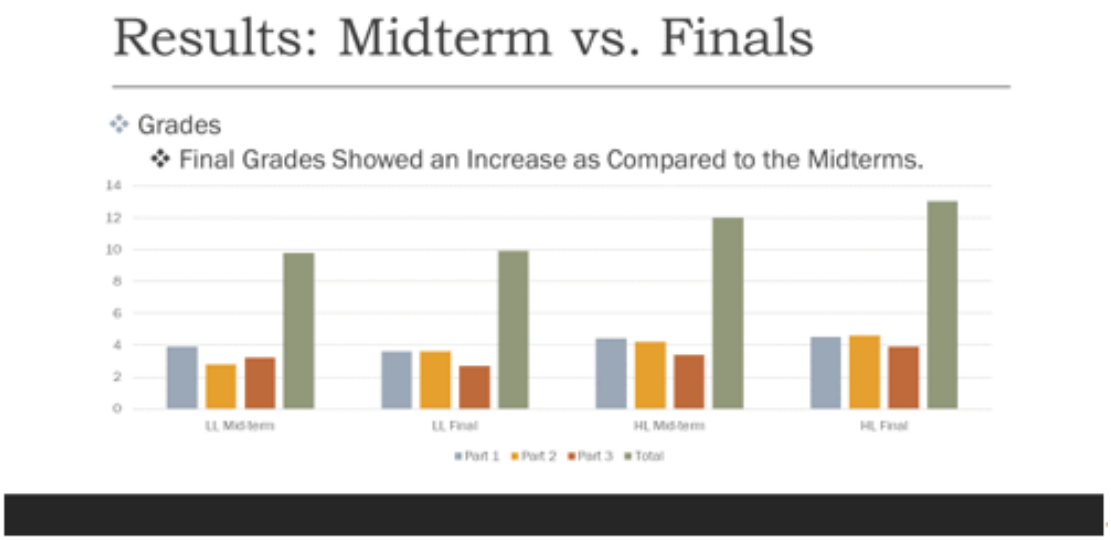

Figure 3: Grades Midterm vs. Final assessment

Results: Pre- and Post-course surveys

The findings show an increase in perceived value of speaking skills, and perceived opportunities to speak in class as well as confidence. The perceived value of speaking

skills increased by 7%. Student perception of the opportunities to speak English in-class went up by 10.2%. In addition, the most valued assessment section throughout the year was Giving your Opinion. One could conclude that students appreciate the chance to do targeted speaking practice and share their opinions and ideas (in English).

Insights into student confidence in-class were gleaned from the questions: "How would you rate your English-speaking ability?" and "How difficult is it to express yourself in English in class?" There was a 13.9% increase in student confidence in their ability to speak English. There was a total increase of 4.2% in student confidence in the ability to express themselves. In comparing the pre- and post-course responses one can observe that students who thought it *very difficult* decreased by 0.4%, *difficult* decreased by 4.2 %, *Somewhat difficult* increased by 2.9%. One could conclude that many just had not had a chance to practice targeted speaking in-class before and that they would assume that it was difficult. Having tried it, some found it was not as daunting, while others found their skills to be less than hoped for at this stage (See figures 4 and 5).

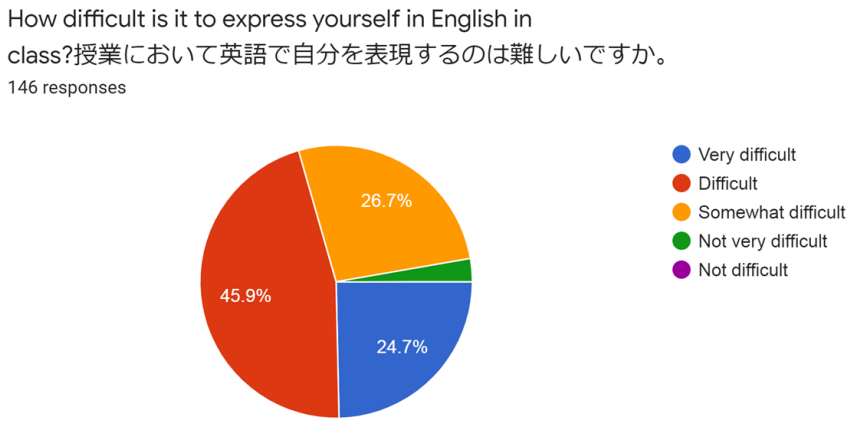

Figure 4: Pre-course survey- Difficulty expressing oneself in English.

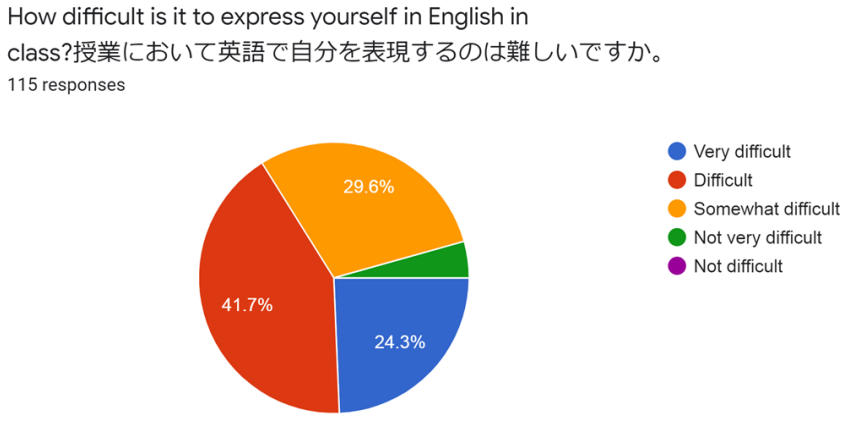

Figure 5: Post-course survey- Difficulty expressing oneself in English.

Discussion

Through the initiative of the instructors and the support of the LCRC the desire to implement a speaking assessment and ensure the equality of testing across all aspects of language learning has been successfully administered. This classroom-based project in its quantitative approach delivered positive outcomes through the acquisition of student scores on both a mid-term and a final speaking test. In addition, student survey responses were compiled which in a qualitative manner provided conclusive results in reference to student course satisfaction and an improved confidence in their speaking abilities.

Subsequent to the collection of all data, the calculation of student scores and the evaluation of student surveys the results of the project both answered and supported the original research questions. As to the question, to what extent can speaking assessments help students better express themselves in English, the data showed that students' total scores for the assessments improved from the mid-term test to the final exam by a value of 13% on average. In answer to the question, to what extend can teaching towards the assessment help students to improve their self-efficacy and confidence in their speaking abilities, the survey results detailed a 13.9% increase in their confidence levels. In addition, addressing the question of, to what extent can the speaking assessment tool aid in advancing students critical thinking skills, responses indicated that the most valued aspect of the assessment was the, Giving Your Opinion section of the test.

Future Implementations

This study is part of an ongoing speaking project in development within the LCRC curriculum. Future changes to second year materials include the removal of all proper nouns and slang in reading texts and opinion questions. With the next collegiate year in mind, there is a plan to expand the project to include the creation of speaking assessment tools for all first-year students across all departments. This time the assessment tools would be produced so that they could be implemented by any instructor using any textbook. As a result of the addition of first years to the project, the difficulty level of the second years materials would have to be adjusted to reflect student level progression from the previous year. Criteria in the rubric may require further adjustment as well to reflect additional speaking goals.

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Appendix A

	1	2	3	4	5
Reading Aloud	Speaks in isolated words. Consistent mispronunciation makes reading incomprehensible.	Speaks in broken phrases. Katakana English impedes understanding.	Katakana English doesn't impede understanding. Mispronunciations are frequent. Student is mostly monotone.	Speaks at sentence-level. Maintains rhythm. Some hesitation between sentences.	Clear speech, rhythm is optimal. There is little if any hesitation.
Describe a picture	Describes unimportant details w/o logical order. 7+grammar /vocab. mistakes.	Describes 1-2 aspects in logical order. 5-6 grammar/ vocab.mistakes.	Describes 3 aspects in logical order. 3-4 grammar/vocab. mistakes.	Describes 4 aspects in logical order incl. adj./v./prep. Mentions locations, persons.	Describes 5+ aspects in logical order incl. adj./v./prep. Mentions locations, persons.
Give your opinion	Unable to give an opinion/opinion is irrelevant to the question/answer is incoherent.	Gives relevant, coherent opinion. Uses text vocabulary.	Gives opinion, 1 reason, no examples. Uses text vocabulary.	Gives opinion, 2 reasons or 1 example. Uses text vocabulary.	Gives opinion, 3 reasons, 1-2 examples. Uses text vocabulary.
TOTAL					**/15**

Appendix B

	1	2	3	4	5
Reading Aloud	・単語で話す ・音読は発音の誤りが多く理解できない	・誤ったフレーズで話す ・カタカナ英語のため理解しにくい	・カタカナ英語だが理解はできる ・時々発音の誤りがある ・音読が主に単調である	・文レベルで話すことができリズムも維持できる。 ・文章間で少しためらうことがある	・明確なスピーチ、リズミカルに話す ・ためらいはほとんどない
Describe a picture	・論理的な順序で説明できない ・文法/語彙の誤り７以上	・論理的な順序で特徴を１～２点程度説明できる ・文法/語彙の誤り５～６程度	・論理的な順序で特徴を３点程度説明できる ・文法/語彙の誤り３～４程度	・形容詞・動詞・前置詞を使い、場所や人物について論理的な順序で４点程度説明できる	・形容詞・動詞・前置詞を使い、場所や人物について論理的な順序で５点以上説明できる
Give your opinion	・自分の意見を伝えることが出来ない ・質問に対する意見が不適切、答えがちぐはぐである	・適切な意見を分かりやすく伝える ・テキストで学んだ語彙を使うことが出来る	・自分の意見を理由付けで伝えることが出来る ・テキストで学んだ語彙を使うことが出来る	・自分の意見を理由や例を挙げて伝えることが出来る。 ・テキストで学んだ語彙を使うことが出来る	・自分の意見を複数の理由や例を挙げて伝えることが出来る。・テキストで学んだ語彙を使うことが出来る
TOTAL					**/15**

Understanding the Role of Mary in the Catechetical Documents Issued in the Philippines

Andrew Joseph S. Chanco, University of Santo Tomas, Philippines

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Abstract
The Blessed Virgin Mary plays a vital role in the history of salvation. She was chosen to become the Mother of God and given by Christ to become the Mother of All. The Church in the Philippines is called *Pueblo Amante de Maria*, which means people in love with Mary. It is one of the characteristics of the Christian Faith of the Filipino people, wherein their approach to Christ is through and with Mary. Mary becomes the central inspiring force in bringing about a deeper evangelization for the people to preserve and have a fuller maturity in the faith. This paper seeks to look at Mary's place in the Catechetical Documents issued by the Catholic Church in the Philippines. In presenting the said theme, the following topics are discussed: first, Mary in Catechesis by having a general outlook on her role and mission; second, the Catechetical situation in the Philippines by looking into its context; and third, the place of Mary in the Philippine Catechetical documents by presenting her as the Inspirational Model that must be emulated especially by the Filipino people.

Keywords: Mary, Catechesis, Philippines

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Introduction

In the course of the history of salvation, a woman plays a vital role in fulfilling the promise of sending forth the Messiah that was revealed after the fall of man. The name of the woman was Mary. She was chosen to become the Mother of God as revealed to her at the Annunciation (Luke 1: 26-38). This was made possible through her consent and cooperation with the plan of God. Mary continued to journey with her Son's work and reached its peak at the foot of the Cross (John 19: 25-27), where she was given by Jesus to humanity to become the Mother of All.

The Church in the Philippines has a special bond with the Mother of God. It was even called *Pueblo Amante de Maria* – a nation in love with Mary due to the numerous invocations, titles, and devotions that pertain to her by the Filipino people. Stripping off her regal titles and adornments, what remains is the personal and collective devotion of the Filipino people through which they ask the intercession of the Blessed Virgin Mary, especially in their approach to her Son, Jesus, as described by the Catechism for Filipino Catholics (1997) which is "through and with" her. This approach became a vehicle for catechesis, "initiating the hearers into the fullness of Christian life"(Congregation for the Clergy, 1997, 18). The Blessed Virgin Mary is called the "compendium of catechesis. She is the living catechism" (Carberry, 1997), for the faith of the faithful became incarnate through her, which is Jesus Christ.

This paper seeks to look at the place of Mary in the Catechetical documents issued by the Catholic Church in the Philippines. In presenting the said theme, the following topics are discussed: first, the Place of Mary in Catechesis by having a general outlook on her role and mission; second, the Catechetical situation in the Philippines by looking into its context; and third, the place of Mary in the Philippine Catechetical documents by examining and presenting her as the Inspirational Model who must be emulated by the Filipino people leading them to a fuller maturity in the faith.

The Place of Mary in Catechesis

Jesus Christ was sent by the Father to proclaim the Good News to the people by inviting all to conversion and faith. From Him, the task was entrusted to the apostles through which the essential mission of the Church and the reason for her existence is to evangelize. As the primary motive of evangelization is the "love of Christ for the eternal salvation of all." (Congregation for the Doctrine of the Faith, 2007, 8) To evangelize "does not mean simply to teach a doctrine, but to proclaim Jesus Christ by one's words and actions, that is, to make oneself an instrument of his presence and action in the world." (Congregation for the Doctrine of the Faith, 2007, 2). In fulfilling the task, under the "ministry of the word" (John Paul II, 1979, 27) of proclaiming the good news is catechesis, which "matures initial conversion to make it into a living, explicit and fruitful confession of faith" (Congregation for the Clergy, 1997, 82). The primary and essential object of catechesis is the "mystery of Christ" (Congregation for the Clergy, 1997, 41), revealing the person of Jesus because everything that must be taught should be about Him.

The Blessed Virgin Mary plays a vital role in catechesis. She unites and mirrors within herself the central truths of the faith (Vatican II, 1964, 65). As the first formulas of faith would mention that "Jesus is acknowledged as the Son of God and

Son of Mary." (John Paul II, 1998, 1) As the goal of catechesis is to know and develop an intimate relationship with Jesus, who is her Son, it will be useful to look up to the person who has raised the Son of God, who is then her mother, Mary. The mystery of Christ is unveiled with the Incarnation. The Second Person of the Blessed Trinity took up the human form and lived with us as a fellow human. This was made possible through the cooperation and consent of Mary to become the Mother of God through which also opens up the door of faith for her. After a long expectation of the promise, the fullness of time had come that God sends forth His Son into the world. The plan was enfolded at Annunciation. The angel revealed that she was chosen by God to become the Mother of His Son, and through her cooperation, this became possible. When she knew that her relative, Elizabeth, was pregnant, she went in haste to where she was staying to take care of her. At their meeting, she was acclaimed by Elizabeth, at the prompting of the Spirit as "the mother of my Lord." Hence the Church confesses that Mary is truly the "Mother of God" (*Theotokos*).

During the start of the public ministry of Jesus, Mary makes notable appearances. At the wedding feast at Cana, she was moved with pity for the newlywed couple and asked for the intercession of her Son to help them. Her role as the Mother of God did not stop there but fortified it, mostly when she was at the foot of the Cross when she was entrusted to John and became the Mother of All. The Blessed Virgin Mary is intimately united with the Church as she continuously intercedes for her beloved children. Radiating from Christ as the Catechism of the Catholic Church (1992) 487 would mention that "what the Catholic faith believes about Mary is based on what it believes about Christ, and what it teaches about Mary illumines, in turn, its faith in Christ." The teachings of the Church on the Blessed Virgin Mary draw its source from the Sacred Scriptures, which is always in relation with Jesus.

The Blessed Virgin Mary remains an "important priority for Catechesis" (Baumbach, 2017). She is seen in the light of being the Mother of God and the Church.

The Catechetical Situation in the Philippines

In the estimated Catholic population in the year 2020, according to the Global Catholic Population, there were about 85,470,000 Filipinos who are Catholic, which makes 81% of the total population. This number made the Philippines third among the world with the largest number of Catholic members and the only predominantly Christian nation in Asia.

The Second Plenary Council of the Philippines was conveyed to examine the coming of the 500th year anniversary since the arrival of Christianity in the country, if the faith that was planted in the Philippine shore makes any difference in the life of the people and the nation, especially with the many things that are happening around. The quantity of Catholics in the Philippines affects the catechetical activity through which also other aspects of society are involved, namely: economic, political, educational, and religious landscapes. This then calls for a contextualized catechesis for the Filipinos that would make the message and its resources adaptable to the needs of the people. This would also mean that the Gospel message must be preached in the language understood by the people (Catholic Bishops Conference of the Philippines, 1992).

Catechesis to become systematic (Legaspi, 1982), must be a program that has a definitive goal, it should focus on the essentials of the faith, and it is a means to introduce and develop the whole Christian life of the faithful. The specific goals of catechesis in the Philippines are: to help people understand more fully the faith because many are ignorant of God's word and it is the right of the people to know the Word of God; to educate and catechize the people about the basic principles of morality; to develop the ability to pray and participate actively in the Church's liturgy; to create a sense of personal belonging to the Church, and to educate the catechize in translating the faith in their everyday lives.

One of the fruits of reflection of the Second Plenary Council was the primary priority on the Integral Faith Formation of the Filipino people. The importance given during the 1991 convocation was once again emphasized in the Pastoral Letter issued by the Catholic Bishops Conference of the Philippines (2013), mentioning that one of the realities that are faced by the Filipino people is the weakening of the faith, which needs to be renewed to have an encounter with a person who is Jesus Christ.

The principal purpose of this is mentioned in the Pastoral Letter issued by the Catholic Bishops Conference of the Philippines (2012) which is to “gradually introduce the baptized person to “the knowledge of the mystery of salvation, become ever more aware of the gift of Faith they have received, and that they learn in addition how to worship God the Father in spirit and truth (cf. John 4:23) especially in the liturgical action, and be conformed in their personal lives according to the new man created in justice and holiness of truth (Eph. 4:22-24); also that they develop into perfect manhood, to the mature measure of the fullness of Christ (cf. Eph. 4:13) and strive for the growth of the Mystical Body; moreover, that aware of their calling, they learn not only how to bear witness to the hope that is in them (cf. Peter 3:15) but also how to help in the Christian formation of the world that takes place when natural powers viewed in the full consideration of man redeemed by Christ contribute to the good of the whole society.” (Vatican II, 1965,2)

The Blessed Virgin Mary in the Philippine Catechetical Documents

The Church in the Philippines has issued 3 Catechetical documents that complement each other, used as a reference for contextualized catechesis. The Catechism for Filipino Catholics (CFC), which is the "National Catechism for the Philippines" (Catholic Bishops Conference of the Philippines, 1997, 1), the Acts and Decrees of the Second Plenary Council of the Philippines which provides the specific catechetical situation in the Philippines and points of renewal especially in terms of integral faith formation, and the National Catechetical Directory for the Philippines which foster within the Philippine context the universal catechetical goals and methodologies in presenting the faith. The twofold role of Mary is as Mother and Model, as mentioned by Pope John Paul II (1987, 2), which is emphasized in the Magisterial Documents, is close to the hearts of the Filipino people.

Mary co-journeys with her beloved Filipinos from the time it was discovered in 1521 through the Spanish Christian evangelization. Every epoch of Philippine history, she was already there present: As early as 1571, the image of Nuestra Señora de Guia was found and venerated by early Filipinos to the surprised of Spanish people. She is also venerated as Nuestra Señora del Santísimo Rosario de La Naval de Manila back to

1593, which commemorates the miraculous victory of the Spanish fleet against the Dutch Protestant invasion in 1646 through the power of the Rosary. The same victory took place over the peaceful rallying of the people to end the term of a dictator in 1986. The millions of Filipinos at EDSA were not looking out for appearances of Our Lady because they believed she was already with them. They brought her with them and enthroned her in the many altars that sprouted along the length of the highway and in every other nook and cranny. (Villegas, 2008). Like a mother who takes care of his/her children, Mary in every era of Filipino history, whether it is in times of trouble and need, of darkness and loss of hope, whenever we prayed to her, she always came to be with us and raise us up (Catholic Bishops Conference (Catholic Bishops Conference of the Philippines, 2013). Filipinos call Mary as *Ang Mahal na Birhen* (Catholic Bishops Conference on the Philippines, 1975, 53). This is the title by which Filipinos very often address Mary. The Filipino tradition has nuanced this title with all the reverence paid to Mary as Mother of God and all the childlike trust with which we can call her our own Mother.

The Catechism for Filipino Catholics has pointed out some Filipino traits, which are an inculturated presentation of the faith of the Filipino Catholic today. This is greatly influenced by the deep devotion to the Blessed Virgin Mary, especially through various Marian devotions and pious exercises related to her. The different forms of devotions and pious exercises become vehicles in educating the faith of every follower of Christ. The following were the five characteristics that lead the Filipino believer to Jesus with Mary.

First, Filipinos are family-oriented (Catholic Bishops Conference of the Philippines, 1997, 34). They give importance to every member of the family. This even includes those members that are part of the extended family. It is, in the same way, the attitude towards Jesus and her mother, Mary, Filipinos call Jesus as brother and Mary as Mother. Second, Filipinos are meal-oriented (Catholic Bishops Conference of the Philippines, 1997, 37). They give importance to celebrations, which are a form of thanksgiving and an opportunity to bond together as family and friends. The organization of fiestas, as called in the Philippines, falls during May, which is a Marian month. An expression of the people's gratitude to the Mother of God for her intercession to God. Third, Filipinos are kundiman-oriented (Catholic Bishops Conference of the Philippines, 1997, 39). They have a positive attitude in accepting suffering, which is an expression of love. Filipinos can relate this with the various titles of our Lady as Mater Dolorosa and Perpetual Help, which are invoked in times of sorrow and distress; fourth, Filipinos are Bayani-oriented (Catholic Bishops Conference of the Philippines, 1997, 41). They tend to look up to someone who can defend those who are weak and oppressed. This relates to Mary as a liberator that would free the people from the hands of their enemies as she brought and proclaimed the good news in her womb, the Messiah; and Fifth, Filipinos are spirit-oriented (Catholic Bishops Conference of the Philippines, 1997, 43). They have a deep belief in the supernatural. Mary is venerated as the woman whom the Holy Spirit overshadowed and conceived Jesus in her womb without sexual relations with a man.

The devotion to Mary is intertwined with Christ and the mystery of Incarnation and Redemption (Catholic Bishops Conference of the Philippines, 1975, 72). The faith of Filipino Catholics is described as Marian in character, for it is already embedded in the life and culture of the people. This is evident with the various manifestations of

popular piety towards the Mother of God not only in churches, the liturgical celebration of her feast but even to the religious calendars that bear the picture of our Lady, in the most humble nipa huts or the slums of the cities, to her picture in public vehicles, buses or jeepneys. Grottoes dedicated to the Immaculate Conception under the invocation of Our Lady of Lourdes which are found in private gardens or various public places, along the roads or in corners of modest dwellings (Catholic Bishops Conference of the Philippines, 1975, 14). Also, almost all our favorite pilgrimage places all over the country are Marian shrines and sanctuaries." (Villegas, 2008) The popular religiosity of the people becomes a vehicle in growing deeper in the faith. The recitation of the Rosary, together with Angelus, is the core of Filipino devotion to Mary (Catholic Bishops Conference of the Philippines, 1997, 1546). Also, the novena to Our Lady of Perpetual Help. Through the various devotion to the Blessed Virgin Mary, it helped the Filipinos to remain Catholic.

In the National Catechetical Directory for the Philippines, Mary was called the Model of Faith. A faith that draws back to the Annunciation to her, being chosen as the Mother of God. Her response was complete cooperation with the plan of God, which opened herself to the promptings of the Holy Spirit. Every Christian is called to become a missionary. In realizing the vision of the Church in the Philippines to become a missionary community of disciples, it turns its gaze to Mary, who is the Model of Discipleship as presented in the Acts and Decrees of the Second Plenary Council of the Philippines. Learning from her it may lead the Filipino people towards the right way to personal and social transformation.

Mary is fully and truly human (Catholic Bishops Conference of the Philippines, 1997, 525). Everyone can relate to the experiences that occurred in her life, and we can learn from those occasions. When the angel announced that she would be the mother of God, she was puzzled about what was revealed to her, yet because of her faith, she holds unto what was revealed to her. She is also a woman who discovers the joy of the company of other people when she visited her relative Elizabeth. She is also able to relate to "realities of ordinary, daily living; in family crises; in moments of uncertainties and inability to understand; and in times of distress, worry, anguish and suffering" (Episcopal Commission on Catholic Education, 2017, 204) when her Son was lost for three days in the Temple. The same was the experience when she saw her Son carrying the cross on his shoulders and crucified on the cross. She is someone who can identify the concerns of the people in the same way also are the people. A faith that liberates, which fosters the value of spiritual joy as Mary pronounced in her Magnificat (Catholic Bishops Conference of the Philippines, 1997, 140). The virtues exemplified by Mary are imitated by the people, especially in uplifting the state of the poor. Mary was honored because of her virtues in following Christ (Catholic Bishops Conference of the Philippines, 1997, 738). She is like a mirror that reflects the mighty works of God (Congregation for Catholic Education, 1988, 22). A mirror of contemporary men and women that aspires for the betterment of humanity.

As a fruit of contemplation on the Mother of God, it should lead the people to give justice to those that are oppressed, be charitable, especially in assisting the needy, an active witness to the love of God in the hearts of the people (Paul VI, 1974, 37). Devotion to Mary shows itself in works, and the works which we needed in the Philippines today are the works of justice and freedom from oppression (Catholic Bishops Conference of the Philippines, 1975, 96).

Lumen Gentium 65 encapsulates that Catechesis aims that in "Mary unites in her person and re-echoes the most important doctrines of the faith." For example, her divine maternity has always been the touchstone of an authentic understanding of the Incarnation: her Immaculate Conception helps us to see more clearly the gratuity and the power of God's redemptive love; her Assumption clarifies the teaching of the Church on eschatology by giving us hope that the ultimate victory of Jesus over death will be shared by our own bodies. (Carberry, 1997) The devotion of the Filipino people to Mary safeguards the faith and leads to a deeper and fuller evangelization of the people (Evangelization in Asia Today, 1974).

Conclusion

In communicating the tenets of faith, the Blessed Virgin Mary plays an important role, especially in the discussion of the mystery of Incarnation and in the work of Redemption brought by Jesus Christ. It becomes an avenue for her to become the Mother of God and the Mother of All people. The Catechetical activity in the Philippines is greatly influenced by the different aspects of society through which the gift of faith received by the Filipino people, whether it is social, economic, political, or educational dimensions. Amidst this, one of the distinct characteristics that remain is the Marian character of the faith of the Filipinos. The Filipino approach is to Jesus through Mary, invoking the intercession of our Lady in presenting our prayers to her Son, Jesus. In the Philippine Catechetical Documents, Mary is characterized as a Mother of the Filipino people who takes care and journeys with her children. She is also a Model of Faith as Christ calls everyone to Discipleship. A model that is worthy of being emulated, especially the virtue of faith that she has exemplified and as a disciple that learns from her master. The Blessed Virgin Mary is venerated as the "realization of faith" (Congregation for the Clergy, 1997, 80). Every Filipino faithful can draw inspiration from Mary by following her attitude, "In her heart, more than in any other, faith in the risen Christ acquired its most complete and authentic aspect, that of joy." (John Paul II, 1998, 5) The veneration to the Mother of God is a way to imitate what she had achieved while still here on earth and as she is in heaven guiding her children (Catholic Bishops Conference of the Philippines, 1975, 98). As a response to the invitation of following the example of the Blessed Virgin Mary, every Filipino faithful is called to fully and responsibly accept the will of God and lead one to become charitable and be of service to other people (cf. Catholic Bishops Conference of the Philippines, 1975, 91). Mary is a mother and teacher of the spiritual life (Paul VI, 1974, 21).

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Contact email: aschanco@ust.edu.ph

Exposure Therapy as an Intervention for Social Anxiety Disorder: A Case Study of a College Student

Josephine Indah Setyawati, Universitas Indonesia, Indonesia
Adhityawarman Menaldi, Universitas Indonesia, Indonesia

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Abstract
Social anxiety disorder or SAD is defined as intense fear or anxiety of one or more social situations where one might behave embarrassingly or be observed and be negatively evaluated by others. This clinical case study examines a 21-year-old college student, "Deasy", who presents symptoms of SAD based on the DSM-5, including avoidance and excessive anxiety of social situations, difficulties in daily social functions, fear of being in crowds, and excessive anxiety to interact with others. The in vivo exposure therapy was given to the subject, she directly facing her feared situations to attack her anxiety toward five social situations. This therapy also included various relaxation exercises and mantra reciting exercises to help her feel more ready to confront her fears. During the exposure therapy, she gradually confronted fear-inducing social stimuli from the least to most feared. Nine sessions conducted for this case, including a pre-treatment session, five sessions of exposure, a wrap-up session, and a follow-up after two weeks. Deasy was given a pre-post assessment using the Social Phobia Inventory to see the differences in the anxiety level before and after the treatment. Results of the research show that the level of anxiety for every five feared-social situations is decreased, and the SPIN score goes from 49 or categorized as "severe" to 38, categorized as "moderate". This result shows that exposure therapy, along with the relaxation exercise, was effective to decrease the level of social anxiety and reduce the symptoms of social anxiety.

Keywords: Exposure Therapy, Intervention, Social Anxiety Disorder

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Introduction

Social anxiety disorder is a type of intense, persistent, and unrealistic fear of social situations involving strangers (Kring, Johnson, Davison, & Neale, 2014). SAD is currently the third most prevalent mental disorder following substance use and depression (Yuniardi, 2019). Based on the DSM-V, this disorder is marked by an individual's anxiety or fear towards one or more social situations whereby an individual is exposed and is likely to be observed by other people (American Psychiatric Association, 2013). The DSM-V suggests that this disorder's main feature is fear or excessive worry in social environments that may elicit observations or negative evaluations from other people in the same environment (Spence & Rapee, 2016). As a consequence of focusing their attention to signs related to other people's negative evaluation, an individual with social anxiety disorder tends to avoid situations where they might receive evaluations by other people or be humiliated in public (Kampmann, Emmelkamp, & Morina, 2018). Situations that these individuals fear, among others, are public speaking, speaking in meetings, meeting new people, and speaking to authority figures (Kring et al., 2014).

Many SAD symptoms cause individual distress and also affect daily life (Dryman, Gardner, Weeks, & Heimberg, 2016). Individuals with SAD may also experience reductions in quality of life and various significant limitations or hindrances in many areas of living, including working and socializing (Wittchen, Fuetsch, Sonntag, Müller, & Liebowitz, 1999). Compared to people without SAD symptoms, individuals with SAD may also experience barriers in friendly relations and dating, barriers in social functioning, and tend to enjoy being single (Dryman et al., 2016). SAD also happened to many college students in Indonesia. This disorder can be a barrier for them to study. Individuals with SAD are easier to feel incapable when getting feedback. With this anxiety, a student may have no courage to do a presentation because they are afraid to be judged negatively. This anxiety also can be a barrier for them to speak up their opinion because they are worry to looked foolish. This anxiety even can lead college students to be dropped out because they don‘t do their task as they are worried too much with people‘s judgment about them.

Interventions given to individuals with SAD are usually aimed at minimizing symptoms that reduce an individual's quality of life (Dryman et al.,2016). Many forms of evidence-based psychological interventions are available to reduce social anxiety symptoms, such as cognitive therapy, social skills training, relaxation, and a combination of these therapies (Acarturk, Cuijpers, van Straten, & de Graaf, 2009). One intervention that is frequently applied and has shown to significantly reduce anxiety levels among individuals with social anxiety is exposure. Exposure is a technique that serves as a key component in various anxiety therapies (Olatunji, Cisler, & Deacon, 2010). It is an intervention that requires an individual to enter and withstand fear-inducing situations that trigger distress, whereby feared stimuli are confronted until anxiety levels subside (Rodebaugh, Holaway, & Heimberg, 2004; Kampmann et al., 2016). Such feared stimuli may be in the form of a moving object such as a balloon or insect; static objects such as knives and toilets; situational fears such as darkness; cognition such as sex; or physiological states such as a rapid heartbeat (Abramowitz, 2013).

Exposure begins with creating a hierarchy or ranking of fear-inducing situations that individuals usually avoid, with the last hierarchy (most anxiety-provoking situation) marking the last exposure (Rodebaugh et al., 2004). Exposure techniques require individuals are left to withstand anxiety-inducing social situations for certain amounts of time, with an aim to habituate the individual to the situation, therefore reducing the individual's anxiety levels. This exposure intervention can be delivered in two ways, the first being in vivo, and the second being imaginary exposure. For in vivo exposure, individuals directly deal with anxiety-inducing situations and are given the opportunity to confront actual feared stimuli, whereas imaginary exposure requires individuals to visualize feared situations (Olatunji et al., 2010). A study conducted by Bouchard et al. (2017) for clients with SAD demonstrated no differences in the effectiveness between the two exposure techniques. Both are adequately effective in lowering SAD symptoms, when assessed with behavioral measures and measures related to fear of social situations, fear of negative evaluations, and depressive mood.

Pilling et al. (in Chesham, Malouff, & Schutte, 2018) also asserted that CBT is usually a first-line therapy for individuals with social anxiety, consisting of exposure, cognitive restructuring, social skills training, and relaxation training. However, exposure is usually the key method for the treatment of social anxiety itself. Other than this, exposure therapy is considered equally as effective as other cognitive therapies or CBT for individuals with SAD (Kampmann, Emmelkamp, & Morina, 2019). Considering the structure and elements of this method as well as its sound evidence-base, the exposure technique is considered appropriate for Deasy's case.

As case studies on the use and effectiveness of exposure for social anxiety disorders in Indonesia is limited, this study's objective was to provide an account on the mechanisms of change of a client who has suffered from a longstanding disorder. A qualitative description of the sessions is provided, with data collected from the counselor's session notes, assessment results, and supervision notes.

Case Introduction: Deasy

The subject in this research is "Deasy", a 21-years-old female. She is of Sundanese ethnicity and resides in Bogor, West Java, and currently a student at a university in Depok, West Java. Prior to consulting, Deasy experienced weight loss, loss of appetite, and loss of interest in various activities. After further assessment, Deasy revealed anxiety in dealing with daily social situations, in which she experienced tremors, loss of words, a rapid heartbeat, and difficulty breathing. She experienced these symptoms across various situations, such as in classrooms and public areas, primarily ones that are novel for her. In the classroom, she had no courage in expressing her opinion in large forums, was nervous when she had to present in front of the class, and worried that she might receive poor judgment from other people. At campus, she did not have many friends and felt anxious when she has to meet new people in her environment. Outside the campus, Deasy also felt anxious if she had to communicate with other people, such as passing by a group of people. Deasy also felt uncomfortable to begin communicating with other people in public, such as shopping centers, stations, and other public spaces. Deasy always assumed that other people around her, especially by new people in her environment, view her as a 'weird' person.

The design of this research is a pre-post single-subject design. Prior to the intervention, Deasy was assessed for a proper diagnosis and to justify that the intervention would be appropriate in addressing her symptoms. The diagnostic assessment consisted of a clinical interview with a DSM-5 basis, the Social Phobia Inventory (SPIN), and projection tests that showed indications of social anxiety disorder. Based on the DSM-5-based clinical interview, her condition met all the diagnostic criteria. As a tool that measures the severity of social phobia or Social Anxiety Disorder (SAD) (Antony, Coons, McCabe, Ashbaugh, & Swinson, 2006), the counselor's diagnosis was substantiated after the SPIN test generated results – a score of 49 was classified as a severe disorder. The entailing aspects were fear of authoritative figures, fear of criticism, avoidance of activities in which Deasy would be the center of attention, avoidance of speech, avoidance of criticism, fear of performing in activities that draw people's attention, and fear of looking "foolish" in front of others. The changes of anxiety are monitored before the session, during the session (anxiety level being self-measured twice for each specific social situations, before and after the session), and after the treatment (Table 3). The changes The intervention was preceded with an informed consent signed by Deasy. In planning and executing the intervention, Deasy's safety and well-being were reassured. The intervention was supervised by the co-author, a certified clinical psychologist, Adhityawarman Menaldi, M.Psi., Psikolog.

Session	Activity
Pre-Treatment	- Initial counseling session. - Motivational interviewing.
Session 1	- Preparation session. - Set five situations for exposure session with the subject. - Preparing the subject with safety net and various relaxation techniques, such as diaphragm-breathing and progressive muscle relaxation therapy (PMR). - Pre-treatment assessment.
Session 2 – 6	- In vivo exposure sessions toward five situations. - Self-assessment to measure subject‘s level of anxiety in each situation, before and after treatment.
Wrap-Up Session	- Post-treatment assessment. - Having a discussion with the subject of her lesson-learned during sessions. - Making a “what-to-do” list to help the subject decide what to do if her anxiety level increases again in the future. - Termination session.
Follow-Up Session	This session is conducted after two weeks of termination. The subject would be asked about her progress and how she deals with her anxiety by herself.

Table 1. Session Plan

The Intervention: Exposure

The intervention given to Deasy was exposure, a therapeutic technique in behavior modification. During exposure, Deasy is directly confronted with a real-life situation that was a source of her anxiety, until Deasy eventually was habituated to the situation and could invalidate her anxiety. The anxiety-inducing situation was paired with a relaxation technique trained in prior sessions. In early exposure stages, Deasy was required to list 5 social situations she usually becomes anxious over, then asked to rank each situation, ranking from most to least manageable sources of anxiety. From the list’s ranks, Deasy would then deal with each situation starting from the easiest to the hardest situation. The exposure intervention was given for seven sessions that included a wrap-up session to self-rate the anxiety level and its reductions in each social situation.

Pretreatment Process

Before the intervention with exposure therapy began, an initial counseling session was provided to raise and strengthen Deasy’s motivation to change for six sessions. During these initial six sessions, Deasy was also given a CBT approach by discussing

thought recording and learning to counter negative thoughts that Deasy had in various social anxiety-inducing situations. She was also given relaxation training through progressive muscle relaxation and diaphragm breathing relaxation that can immediately be applied when her anxiety appears. The counselor also attempted to provide an in vivo systematic desensitization intervention, but with no success as imagining anxiety-inducing social situations overwhelmed her.

Session I

In this first session, Deasy exercised diaphragm-breathing relaxation that could be immediately applied each time by physical reactions occur, such as shaking and feeling weak in each social situation she encountered. This session also included preparation by creating a mantra that Deasy could recite to reinforce herself. The mantra was "it is alright; people could be wrong." Deasy then created a list of social situations that were sources of her anxiety and ranked them, starting from most to least manageable. From each situation, she was asked to make an anxiety scale and the targeted reductions in each scale. Together with the counselor a 'safety net' was established – things Deasy could do as a code to the counselor that a situation was becoming too overwhelming for her to deal with, so that the counselor can approach her and terminate the exposure (Table 3).

The following is a list of situations Deasy's anxiety is rooted in, ranked from most to least manageable, including her anxiety ratings within a 10-point scale:

Situations	Scale of Anxiety	
	Pre Treatment	Target Post Treatment
Push a pedestrian crossing button at Universitas Indonesia (UI) station	6	0
Asking a location to a stranger	6	4
Sit alone in the cafeteria	8	1
Get on and off the yellow bus alone at UI bus stop	8	2
Presentation	10	4

Table 2. Scale of Anxiety for Five Feared-Situations

Safety Net
Draw deep breaths 8 times and exhale 10 times
Look towards the counselor
Call the counselor to be approached

Table 3. Safety Net

Session II

In the second session, the exposure exercise started from the most manageable situation with an anxiety rating of 6, which was pressing a pedestrian crossing button in front of the UI station. For this situation, Deasy aimed at reducing her anxiety to 0. Prior to the exposure, Deasy was asked to think of the possible events that might happen when she pushes the button, as a justification point on whether the possible

events actually happened or not. Deasy began the session with a breathing exercise and progressive relaxation to compose her self.

Following this, the counselor accompanied Deasy to push the crossing button. Deasy was asked to pay attention to her surroundings and justify whether everyone around her was staring at her when she pushes the button. At first, Deasy declined to push the button, and the counselor gave her time to calm down. Deasy exercised relaxation and repeated the mantra as a reinforcement. This session took 2 attempts at pushing the button; the first attempt with the counselor by her side, and the second attempt with the counselor standing half a meter away from Deasy. After the second attempt, Deasy felt overwhelmed and the session was terminated.

After this session ended, a short evaluation was done and Deasy was asked to evaluate her anxiety on a scale after both attempts. After the first attempt, her anxiety was reduced to 5 and at the second attempt, reduced to 4. Deasy expressed how she did not tremble as much during the second attempt after she observed her surroundings, there were only 1 or 2 people looking at her, and they did not say anything to confirm that Deasy appeared "weird".

Session III

In the third session, exposure for the next most manageable situation was done, which was asking a location to a stranger. Communicating with other people was also a social situation that hindered and provoked Deasy's anxiety – for this situation, her anxiety over being judged as "foolish" for asking questions. She was also worried that she might not ask clearly and cause a person to misunderstand. Prior to the exposure, Deasy was asked to recite the mantra, exercise progressive relaxation, and think of what she could do if her fears do occur. The exposure was then done gradually. First, the counselor accompanied Deasy to approach a security guard to ask about a building's location and observe the person's reaction. After seeing that the response of the person she inquired was acceptable and that Deasy was fine after she had asked, her anxiety rating was reduced to 2.

In the next attempt, Deasy was asked to approach two people who were sitting together to ask for a location. Deasy was anxious at first, with her palms starting to sweat, and was hesitant as she thought one of them seemed to not want to be bothered. However, after Deasy drew deep breaths and recited the mantra repeatedly, she then made the inquiry. After succeeding, Deasy expressed that her anxiety rating further reduced to 1.

The final step for this session was to approach a few people who were gathering to also ask for a location. For this stage, the counselor stood next from a one-meter distance from her. Deasy 'blanked out' for a moment before she made the inquiry and became anxious for hesitating to ask. The counselor observed Deasy's facial expression turn into a panic state, however, she took a deep breath and repeated her inquiry. In this stage, Deasy demonstrated progress and did not give the counselor any code for help despite briefly having difficulty inquiring. Following this, an evaluation was done and Deasy asserted that her anxiety rating increased to 2, but her body did not react with a tremble, she had the courage to look a person in the eye when speaking, and was no longer sweating.

Session IV

In the fourth session, Deasy was faced with the next moderately manageable situation, which was sitting in the cafeteria alone. Deasy rated her anxiety scale at 8 as she felt very uneasy when other people looked at her. Sitting in the cafeteria alone was a strange thing for her and she felt that other people would also see her as 'weird', in fear of looking stiff or confused. The session took 2 attempts. The counselor sat with Deasy in the first attempt and asked Deasy to observe her surroundings, to justify whether everyone around her was in fact look toward Deasy's table. The first attempt took 10 minutes. The counselor instructed Deasy to sit still, to just observe her surroundings.

At first, Deasy appeared very anxious. She kept on playing with the ring on her finger and looked downwards without observing her surroundings. The counselor then instructed Deasy to take a deep breath and recite the mantra to reinforce herself. After Deasy appeared calmer, she was able to look at her surroundings. The first attempt ended after Deasy told the counselor she wished to stop. An evaluation was done, and Deasy stated how her concerns were invalid, seeing that every person in the cafeteria was preoccupied. After this attempt, Deasy's anxiety rating dropped to 6.

A second attempt was done with the counselor observing Deasy from a 2-meter distance. Deasy appeared uneasy, with her feet tapping the floor, and continuously fidgeting with her ring. She also appeared to observe her surroundings and then observed the greenery beside the cafeteria. After 10 minutes, the counselor approached Deasy for an evaluation. From this evaluation, Deasy expressed that after the counselor left her to sit alone, her body trembled, palms were wet from sweat, and felt like crying. She then drew a deep breath and focused on reciting the mantra. After calming down, she looked around, and when she saw two people looking towards her, she trembled again, then distracted her view to the greenery next to the cafeteria. This was discussed with the counselor. After discussing the alternative conditions as to what people could be thinking when they look towards her, she concluded that it is possible they may just be looking around as well, just like she was, and it did not infer negative thoughts about her. After the evaluation, Deasy rated that her anxiety was reduced to 4.

Session V

In the fifth session, the exposure was confronting Deasy's anxiety over getting on and off the yellow bus at a bus stop near campus grounds with only her (no other passenger) getting on or off. She was anxious over the thought of other people seeing her as 'weird' for getting on and off the yellow bus alone. Similar to previous sessions, Deasy exercised progressive relaxation to ease down and relax during the exposure. Her anxiety rating for this situation was at 8. This session took two attempts, in which a specific timeframe was selected whereby not many students were using the bus on campus.

In the first attempt, the counselor accompanied Deasy to get on the bus from one of the bus stops, to get off at the next two stops. In this first attempt, Deasy only looked downwards during the ride, and repeatedly asked the counselor, "Do we look weird for doing this?" In this first attempt, Deasy reported that her anxiety did not reduce at

all. Prior to the second attempt, the counselor instructed Deasy to take a deep breath, exercise relaxation, and continuously recite the mantra. After Deasy felt more prepared, she and the counselor got back on the bus. This time, the counselor asked her to observe her surroundings and prove whether there was anybody paying attention to her while she got on the bus. After two bust stops, Deasy and the counselor got off the bus and made an evaluation. Deasy reported that her anxiety was unjustified, as nobody appeared to observe Deasy while she got on or off the bus. Following this, Deasy was asked to give her anxiety scale a rating, which had dropped to 6.

The exposure ended with a reflection from her experience in completing this fifth session. Beyond the session setting, apparently Deasy tried to get on the campus bus by herself, then made a report to the counselor and rated her anxiety lowered to 4 during this self-attempt. According to Deasy, getting on the busy alone was not a threat that needs to be avoided, although her trembling bodily reacting still occurred while getting on or off the bus.

Session VI

The exposure for this session was Deasy confronting a situation that provoked the strongest anxiety, which was presented in front of strangers. Deasy briefly wished to back out and not do the presentation, although she had prepared the materials for over a week. Deasy was also momentarily unable to be contacted by the counselor. However, she eventually showed up for the session and discussed her anxiety with the counselor. Throughout the session before presenting, Deasy cried and expressed how unprepared she was. She was concerned about being judged poorly by the audience. She was also worried that the way she presents will make the audience misunderstand or consider her 'foolish', or that her speech would be unclear and thus confuse her audience. However, after discussing her anxiety with the counselor and a motivational interview, Deasy eventually agreed to carry out this last exposure.

Before the exposure, Deasy was instructed to exercise diaphragm-breathing relaxation and progressive muscle relaxation continued with rehearsing her presentation material in front of the counselor. When Deasy was ready, the counselor asked a colleague who was pre-arranged as an audience to pay attention and listen to Deasy's presentation, which lasted for approximately 5 minutes.

Throughout the presentation, Deasy exhibited many signs of progress. She no longer played with the ring on her finger as she usually does and did not look at the counselor when she misspoke during the presentation. When she did misspeak, Deasy was able to smile to the viewers, took a moment to breathe, and repeat her presentation. After the presentation, Deasy took the initiative to ask for feedback from the audience without the counselor's instruction.

After feedbacks were given and the audience exited the room, an evaluation was made. Deasy stated how she felt proud of herself for overcoming her greatest anxiety-inducing obstacle. Following this, the counselor asked Deasy to rate her anxiety scale, and it was lowered to 4, meeting the targeted anxiety scale reduction.

Wrap-Up Session

An evaluation of all five exposure sessions was made. This session also discussed the things Deasy could have done if her anxiety re-emerges beyond the treatment setting. In this session, Deasy's anxiety-provoking beliefs were identified, which were, "I am not good, I am wrong, I am stupid". Of these beliefs, the session also discussed new beliefs and a new belief was generated - "I am stronger than I think", which will be applied after the end of the session. The counselor also asked Deasy to reflect on all completed sessions and the progress she has experienced.

Follow-Up Session

Follow-up was done two months after the intervention. Deasy kept communicating with the counselor for up to two months after the intervention was completed. Based on the follow-up record, Deasy reported that she was already able to manage her anxiety in asking for information to strangers without fear of judgment. The follow-up also indicated that Deasy occasionally still feels anxious when she has to deal with other people. However, Deasy was more aware of the signs of her anxiety's emergence and attempts to manage them by reciting her mantras. For two months after the intervention, Deasy still exercised breathing techniques that she deemed was effective in helping her anxiety.

Result

For a case of social anxiety disorder, the exposure intervention appeared to be effective in reducing Deasy's anxiety level toward daily social situations. Based on the wrap-up session that also included a discussion on Deasy's efforts beyond the clinical setting, it was reported that Deasy had the courage to push a pedestrian crossing button in front of a station, ask a security guard for directions, and make a phone call to a government official. Of five situations, her anxiety level for sitting in a cafeteria and doing a presentation was reduced to the expected level. Based on the SPIN-INA test, the result shows that the score of anxiety was decreased from "severe anxiety" (40-50) to "moderate anxiety" (30-40) after the treatment as seen in Table 4.

The decrease level of anxiety in exposure therapy can be explained with emotional processing theory (EPT). This theory explained that when an individual confronts a feared stimulus during exposure, it will activate a fear structure. During exposure sessions, the activation of the fear structure will be integrated with information that is incompatible with it, resulting in the development of a new non-feared structure as a replacement, and fear reduction which represents a change in cognitions (Abramowitz, 2013). For Deasy's case, this model of learning also happened. Deasy was habituated with her feared stimuli, which was a basis for corrective learning (Abramowitz, 2013). When she was exposed to her feared stimuli, she activated her fear structure, and this process integrated with information which very different from her previous beliefs, and this process developed a new non-feared structure of her feared social situations. Decreasing of Deasy's anxiety level was in line with the EPT model since she found that her feared stimuli were not that dangerous, she changed her cognitions, so her fear toward those situations was reduced.

Psychological Measure	Pre-treatment Scores	Post-treatment Scores
Self Measure about Situations	**Scale of Anxiety**	
1. Pushing the pesestrian crossing at UI Station	6	2
2. Asking a location to a stranger	6	4
3. Sitting alone in the cafeteria	8	2
4. Getting on and off the yellow bus at UI bus stop alone	8	4
5. Doing a presentation	10	4
SPIN-INA Score	49	38

Table 4. Pre-treatment Scores and Post-treatment Scores

In Deasy's case, her lack of disclosure toward her closest environment regarding the issues she has in dealing with social situations may have served as a complicating factor that affected the intervention's outcomes. Deasy's lack of disclosure may have also caused her surroundings to not help Deasy develop. Her closest environment was her family in particular. The minimum awareness of her own condition may have also caused her to further avoid social situations. Deasy also reported that her family was unaware of her avoidance from the environment, including her extended family, as she was concerned about being seen as 'weird' or would receive negative judgments from her family. This in fact caused her family to reprimand Deasy when she declined to attend a large family gathering. This type of criticism could have exacerbated Deasy's anxiety and further reinforce her self-blame in various situations.

Conclusion

Exposures for anxiety disorders are known to help reduce an individual's anxiety levels in dealing with trigger situations, and this case was reported strategically for its clarity and simplicity in justifying the efficacy of exposure therapy and the rapidity of treatment. Specifically, for Deasy's social anxiety disorder, the intervention using exposure was considered effective in helping Deasy lower her anxiety. It was known that her anxiety manifested because of her avoidance of such situations, therefore she was unable to directly experience or justify whether the situation was safe for her. This finding is in line with previous research findings that exposure therapy, even in a one-session of in vivo exposure, also proven significantly to reduce social anxiety. (Knutsson, Nilsson, Eriksson, & Jarild, 2020; Scheurich, Beidel, & Vanryckeghem, 2019). Through exposure, individuals with SAD may become habituated to a social situation and learned to justify the irrationality of their fears. Through exposure, clients may also learn through exposure to the steps they can take when their fears do occur. Especially for this case, exposure therapy was combined with relaxation techniques and a safety net planner. Observations toward Deasy during the session, safety net planner, and relaxation exercises helped to prepare herself to encounter the exposure session, because when the subjects are learned how to relax, for example relax their muscles deeply, they learn to banish thoughts, feelings, and bodily sensations of anxiety (Conrad & Roth, 2007). Although this kind of therapy has to be adjusted differently to each client, exposure therapy is worth applying, especially in a school or college contexts like Deasy's case. Besides, it is widely accepted that case

studies cannot be generalized because this case is very specific. The intervention given to the subject was a very specific custom-made adjusted to Deasy‘s condition. Therefore, further research using this method and procedure needed to be applied to similar demographics or symptomatology to strengthen the result of this research.

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Contact email: josephine.indah81@ui.ac.id
a.menaldi@ui.ac.id

Teachers' Characteristics, Teacher Burnout and Motivation to Leave

Sukritta Preechawong, King Mongkut's University of Technology Thonburi, Thailand
Anusit Anmanatrakul, King Mongkut's University of Technology Thonburi, Thailand
Pichet Pinit, King Mongkut's University of Technology Thonburi, Thailand
Ravinder Koul, Pennsylvania State University, United States

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Abstract
A lack of teachers especially vocational field is one of the most important problem of Thai education. The report from the Office of Vocational Education Commission 2019 revealed that Public vocational institutions lack teachers around 18,846 persons. There are many factors affects to teachers' retention such as welfare, stability, job position and burnout. This research aimed to study the variables correlate motivation to leave of vocational teachers such as teachers' characteristics (age, gender, position) and teacher burnout. Questionnaire used in this study including 3 parts; 22 items of Burnout Inventory in teachers adopted from Maslasch's (1981), 3 items of motivation to leave adopted from Skaalvik (2011) and teacher demographic such as age, gender, position. In this study, data were collected by 424 vocational teachers (from 10 provinces in metropolitan, north, northeast, east and south of Thailand. The results showed that position of teacher and burnout (emotional exhaustion, depersonalization and personal accomplishment) were correlated with motivation to leave while age and gender were not. Moreover, age of teachers correlated with emotional exhaustion and depersonalization whilst teachers' position correlated only depersonalization. It was recommended that Ministry of Education should consider about policy for teachers in each position which got different welfare and should support early career teachers to retain in their profession.

Keywords: Teachers' Characteristics, Teacher Burnout, Motivation to Leave

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Introduction

Vocational teachers are an important force in Thailand now which are facing a problem of teacher shortage of many rates. From the report of Vocational Education Commission 2019 showed that Public vocational institutions lack teachers around 18,846 persons. This is partly due to the retired teachers and other reasons for the lack of teachers for example teachers mismatched the field of teaching or under qualified, problems with heavy workload make teachers want to quit their profession, lack of support from colleagues and administrators or position and welfare disparities. When we aimed to focus on in-service teachers why they want to leave profession or change their career. Burnout is one important factor that might cause this issue. As Brunsting et.al (2014) said the outcomes of burnout associated with teacher attrition, teacher health issues, and negative student outcomes. Some studies showed that teacher with burnout affects to personal health, education systems and environments. Teachers who feel higher levels of burnout report to be more stressed, less effective in teaching and classroom management, less connected to their students and dissatisfied with their work. (Aloe et al., 2014, Brouwers and Tomic, 2000). In addition, they study about factor that might be cause of burnout which are cortisol levels due to age, gender, and time of awaking, higher morning cortisol levels in students could be significantly predicted from higher burnout levels in classroom teachers as well (Oberle and Reichl, 2016). From the reason of the above, it shows how important to investigate teacher burnout especially in Thailand which face the problem about lack of teachers and burnout might be cause of this issue.

In context of vocational teachers in Thailand who work for government college, they have a hierarchy which separate position of teachers into three types which are government officer, employee of government and temporary officer. The other two types which are employee of government teachers and temporary officer teachers have got difference welfare and support while doing the same duties as government officer teacher. So, this study aimed to investigate the variables correlate motivation to leave profession of vocational teachers such as teachers' characteristics (age, gender, position) and teacher burnout. This research may help the administrators and Ministry of Education to look back and consider about the significant of teachers' development and how to retain teachers by support their emotional issues.

Literature Review

Burnout

Burnout concept was begun in the early 1970's via the ideas of Herbert Freudenberger in New York and Christina Maslach and Ayala Pines in California. Burnout is used to describe a stress-related syndrome. The definition of burnout is defined by Maslach and Jackson (1981) conceptualized burnout as composed of three distinct factors: emotional exhaustion described as loss of energy, depletion, impairment and fatigue, depersonalization is a negative change in attitudes and responses toward others, and lack of feeling of accomplishment dimension lends negative responses to personal

accomplishments typified by depression, low morale, interpersonal withdrawal, reduce performance.

Teacher burnout is the feeling of dissatisfied with responsibilities of teaching. Teacher burnout can lead to uninspired to keep going in profession and emotional drain (Bessman et.al, 2018). Burnout is one of symptom that effect to teacher profession.

Motivation to leave profession

In 2016, the data was collected from 523 Norwegian teachers in senior high school. It reported that two main routes to teachers' motivation to leave the profession were 1) time pressure via emotional stress and exhaustion to motivation to quit and 2) lack of supervisory support and trust, low student motivation and value conflicts via lower self-efficacy and lower engagement to intention to quit (Skaalvik & Skaalvik,2016). For other reasons why teachers left teaching profession, the study reported that 160 Australian primary and secondary teachers with lower job satisfaction demonstrated a strong intention to leave the teaching profession (Arnup and Bowles,2016).

Teacher burnout and motivation to leave teaching profession

For the study about teacher burnout and intention to quit profession, there was report from 112 Australian teachers working in their first or second academic year. There is a correlation between serious intentions to leave the teaching profession and burnout levels reported by teachers who are at the beginning of their teaching careers (Goddard and Goddard, 2006). Moreover, In the study of Leung and Lee (2006) reported that 379 teachers which provided data on the associations among social support, burnout, and intention to quit. Results confirmed by using Structure Equation Model that the three components of burnout demonstrated differently on intention to quit, with emotional exhaustion as the dominant factor, while the other two components exerted no effect. A study in academic comprising of lecturers in Turkey indicated that there are positive and significant relationships between emotional exhaustion, depersonalization and intention to leave, there is no significant relationship between personal accomplishment and intention to leave (Altunoğlu and Sarpkaya,2012).

Research question

1) What are the variables that correlate to motivation to leave of vocational teachers such as teachers' characteristics (age, gender, position) and teacher burnout?

Methodology

The population size of this study were 29,915 teachers in vocational college. The data were collected 424 vocational teachers in Thailand. The participants included both male 204 (48.1%) and female 220 (51.9%) vocational teachers. The ages of the teachers ranged from 23 to 60 years and the mean age of the participants was 38.3 years. 25.9% of the teachers were in the age less than 30 years (n = 110). 38.7% of the teachers were between

31 and 40 years of age (n = 164). 19.8% were between the age range of 41 to 49 years (n = 84) and 15.6% were between the age range of 51 to 60 years (n = 66). The data was collected from teachers in 5 areas; 30.4% from metropolitan area including Bangkok (n = 129), 21.2% from north area (n = 90), 25.2% from northeast area (n = 107), 11.6% from east area (n = 49) and 11.6% from south area (n = 49). There were three positions of teachers shown in this study; 48.3% from government officer (n = 205), 17.7% from employee of government (n = 75), 34% from temporary officer (n = 144).

Questionnaire used in this study including 3 parts; 22 items of Burnout Inventory in teachers adopted from Maslasch's (1981) translated into Thai version which divided into 3 constructs which were emotional exhaustion e.g. "I feel emotionally drained from my work.", depersonalization e.g. "I feel I treat some students as if they were impersonal objects.", personal accomplishment e.g. "I can easily understand how my students feel about things". All questions had 7 scales (0 = Never 1 = A few times a year or less 2 = Once a month or less 3 = A few times a month 4 = Once a week 5 = A few times a week 6 = Every day). For emotional exhaustion and depersonalization, high mean scores correspond to higher degrees of burnout. In contrast to another subscale, lower mean scores on personal accomplishment correspond to a higher degree of burnout.

Table1. Response Categories for Emotional Exhaustion, Depersonalization and Personal Accomplishment on the Maslach Burnout Inventory – Educators' Survey

Response Category	Emotional Exhaustion	Depersonalization	Personal Accomplishment
High	27 and over	13 and over	1-31
Moderate	17 - 26	7-12	32-38
Low	0-16	0-6	39 and over

For motivation to leave profession, there were 3 items adopted from Skaalvik (2011) with 5 scales (5 = Strongly agree 4 = Agree 3 = Unsure 2 = Disagree 1 = Strongly disagree) e.g. "I often think of leaving the teacher profession". And the last part were teacher demographic such as age, gender, position. For mean, standard deviation and Cronbach Alpha have shown in table 2.

Table 2. Items and reliability coefficients (Cronbach's alpha)

	Item	**Cronbach Alpha**
Emotional Exhaustion	9	0.94
Depersonalization	5	0.87
Personal accomplishment	8	0.86
Attention to leave profession	3	0.87

Results

Table 3. Mean score and standard deviation of variables (Emotional Exhaustion, Depersonalization, Personal accomplishment and motivation to leave profession)

		Emotional Exhaustion		Depersonalization		Personal Accomplishment		Motivation to leave profession	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Gender	Male	18.03	0.25	6.63	0.24	38.44	0.47	2.32	1.14
	Female	17.41	0.45	5.21	0.21	39.94	0.47	2.39	1.16
Age	< 30 years	19.79	0.36	6.44	0.24	38.09	0.44	2.41	1.17
	31 - 40 years	18.33	0.39	6.95	0.23	39.79	0.56	2.50	1.17
	41 - 50 years	14.61	0.23	4.54	0.26	38.69	0.45	2.17	1.12
	> 50 years	16.65	0.44	4.07	0.26	40.33	0.37	2.20	1.10
Position	Government officer	17.86	0.44	4.45	0.22	39.85	0.43	2.20	1.08
	Employee of government	18.77	0.20	8.13	0.20	37.52	0.62	2.65	1.23
	Temporary officer	16.90	0.33	6.78	0.29	39.19	0.46	2.44	1.17

Note. The numerical values for the personal accomplishment subscale are reversed. A score of less than 32 on the personal accomplishment sub-scale indicates a high degree of personal accomplishment.

From table 3 shows the differences level of perception about subscales in burnout between gender, age and position. In terms of gender, it shows that emotional exhaustion in male is slightly higher than female (mean = 18.03, SD = 0.25/ mean 17.41, SD = 0.45). Depersonalization in male is higher than female (mean = 6.63, SD = 0.24/ mean = 5.21, SD = 0.21). For reduced personal accomplishment, male is higher than female (mean = 38.44, SD = 0.47/ mean = 39.94, SD = 0.47). It indicates that both male and female got emotional exhaustion in moderate level but depersonalization and reduced personal accomplishment in low level. intention to leave profession in female is slightly higher than male (mean = 2.39, SD = 1.16/ mean = 2.32, SD = 1.14). In terms of age, high score of emotional exhaustion is age under 30 years old (mean = 19.79, SD = 0.36) and age of 31-40 years old (mean = 18.33, SD = 0.39). It demonstrates that these 2 ranges of age are in moderate level of emotional exhaustion. It corresponds to depersonalization that both age group of under 30 and 31- 40 years old are in high score (mean = 6.44, SD = 0.24/ mean = 6.95, SD = 0.23) when compare with other two groups of age but it is still in low level. For reduced personal accomplishment, it shows the age under 30 years old is in high level. Besides, age of 31- 40 years old shows the highest score of intention to leave the profession (mean = 2.50, SD = 1.17). In terms of position, the result indicates that employee of government had the highest score in every aspects in burnout (emotional exhaustion mean = 18.77, SD = 0.20/ depersonalization mean = 8.13, SD = 0.20 and reduced personal accomplishment mean = 37.52, SD = 0.52). All aspects are in moderate level of burnout. Moreover, the employee of government shows the highest score in motivation to leave profession as well (mean = 2.65, SD = 1.23).

Table 4. Pearson's correlation coefficients of any variables

	Gender	Age	Position	Emotional Exhaustion	Depersonalization	Personal accomplishment	Motivation to leave profession
Gender	1	-.075	.118*	.022	.093	-.086	.030
Age		1	-.579**	-.105*	-.127**	.061	-.089
Position			1	-.027	.146**	-.040	.103*
Emotional Exhaustion				1	.666**	-.043	.387**
Depersonalization					1	-.140**	.441**
Personal accomplishment						1	-.326**
Motivation to leave profession							1
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

From table 4 Correlation coefficient between age and emotional exhaustion shows negative correlations at the significant of 0.01 meanwhile age and depersonalization shows negative correlation at the significant of 0.05. It corresponds to table 3 shows that when age of participants increased, emotional exhaustion and depersonalization got lower scores. In terms of position, it shows positive correlation with depersonalization at the significant level of 0.05 and motivation to leave profession at 0.01. For subscales of burnout in this study show that emotional exhaustion and depersonalization had positive correlation with intention to leave profession at the significant level of 0.05. Besides, personal accomplishment demonstrates negative correlation with intention to leave profession at the significant level of 0.05.

Conclusions

This research aimed to study the variables that correlate motivation to leave in vocational teachers such as teachers' characteristics and teacher burnout. The results reported that correlation coefficient between age and emotional exhaustion shows negative correlations at the significant of 0.01 meanwhile age and depersonalization shows negative correlation at the significant of 0.05. It means when the age of teachers increased, emotional exhaustion and depersonalization decreased. It assumed that when teachers were in higher age, they had more maturity and can cope their stress or situation that effected to their emotion. This study did not correspond to the result of Bayani et.al. (2013) that teachers had level of emotional exhaustion and depersonalization in differences age and it did not show the same direction. In terms of position, it correlated to depersonalization and motivation to leave profession. It can assume that position of vocational teachers in Thailand effects to their feeling of negative change in attitudes and responses toward others. When we see in table 4, it showed that the position of employee of government had the highest score of depersonalization and motivation to leave profession. It mentioned that the administrators or government should focus on this position which got the differences allowance and support. Followed by position of temporary officer which had the lowest allowance when compare with other two positions. In addition, the results reported that emotional exhaustion and depersonalization had positive correlation with intention to leave profession. Besides, personal accomplishment demonstrates negative correlation with intention to leave profession. It did not correspond to the study of Altunoğlu and Sarpkaya (2012) that there are positive and significant relationships

between emotional exhaustion, depersonalization and intention to leave, there is no significant relationship between personal accomplishment and intention to leave.

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Performing Arts: Assessment of Learning in Grade 7 Mathematics

Ruth M. Revilla, Bicol University Graduate School, Philippines
Jocelyn F. Goyena, Bicol University, Philippines

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Abstract

This descriptive-developmental study determined the effect of performing arts as an assessment in Grade 7 Mathematics in the academic achievement of the Grade 7 students at Bicol University College of Education Integrated Laboratory School, the school year 2019-2020. It focused on the developed lessons with performing arts as assessment, performing arts presented by the students during the assessment of the lessons, mathematical concepts evident in the performing arts performed by the students, and the effect of the developed lessons on students' conceptual understanding, 21st century skills, and motivation in learning mathematics. The researcher employed a pre-experimental research design particularly a pretest-posttest design. Both qualitative and quantitative methods were utilized in analyzing the results in the lesson implementation. The qualitative data were obtained from the students' journals and teachers remarks on the observation sheets. In the quantitative method, data were obtained from the juror's evaluation on the developed lessons in Grade 7 Mathematics with performing arts as an assessment, and the pretest and posttest scores of the students. The results revealed that students' conceptual understanding, 21st century skills, and motivation in learning mathematics were enhanced and improved. Based in the teacher-observers, the students participated actively in the class discussions and performed well during the assessment of the lesson. With these, the students' 21st century skills such as communication, collaboration critical thinking, and creativity were developed and enhanced through performing arts in the assessment of the lessons for Grade 7 Mathematics.

Keywords: Assessment, Performing Arts, Conceptual Understanding, 21st Century Skills, Motivation in Learning

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Introduction

To be mindful on how the students learn best and to satisfy the needs of diverse students has always been a great challenge to every educator. New teaching strategies and approaches are used by the teachers to make teaching-learning effective. Also, changes in the way teachers conduct classroom assessment is seen as one of the methods to meet present's curriculum goals. In the changes brought about by the K to 12 Curriculum, classroom assessment is emphasized as an integral part of curriculum implementation. Relatively new assessment concepts and strategies such as the alternative assessment or performance-based assessment are given much weight in the K-12 grading system. Performance-based assessment measures students' ability to apply the skills and knowledge learned from a unit or units of study and challenges the students to use their higher order thinking skills to create a product or complete a process (Chun, 2010). Thus, it enables students to demonstrate specific skills and competencies by performing or producing something and it also rates students' learning process.

On the implementation of performance-based assessments, the teachers are required to plan a performance task. Performance tasks are any learning activity or assessment that asks students to perform and/or demonstrate their knowledge, understanding and proficiency (McTighe, 2015). Students do not passively receives\s concepts and knowledge, but also actively apply and demonstrate learning. Students yield a tangible product and/or performance that serve as evidence of their learning. Students have more of an ability to create and share learning with others. Everybody should understand that in the process of sharing others through assessment, a ton of learning happens (Couros, 2018). Students can show their learning through different mediums in the process. Students can create a podcast so you can hear how they speak languages. They can also make videos of themselves showing how to solve different mathematics problems, etc. When teachers limit students to all doing test or project, learning is restricted through the assessment process. This study focused on assessment of learning to measure students' ability to apply the skills and knowledge learned from a unit or units of study and utilize performing arts to demonstrate these learnings.

In the pedagogical process, having a new variation in teaching and assessing students' learning in Math is a necessity especially when addressing the needs of varied students. Students differ in their profile, interests, learning styles, cognitive and affective development, and abilities. Having diverse learners inside a classroom is not a new scenario in the country. However, the problems involved in it are yet to be solved. Learning styles and preferences were not given attention; thus, learning becomes difficult and ineffective. According to the theory of Howard Gardner's multiple intelligence, all people have different kinds of intelligences. Gardner (1983) theorizes that people do not have just an intellectual capacity but have many kinds of intelligence including visual-spatial, linguistic-verbal, logical-mathematical, bodily kinesthetic, musical, interpersonal, intrapersonal, and naturalistic intelligences (Cherry, 2018). Students have their own strengths, and to maximize learning, teaching and assessment should be focused on the strengths of the students. Thus, this study focused on students' performance showcasing their skills and talents in assessing their learning.

In this study, the focus is on the assessment of learning in mathematics using performing arts. Elver (2014) performing arts provide a creative escape for children, introducing them to the imaginative worlds of theatre, music and dance. Exposure to the performing arts at an early age provides fond memories that children will cherish for a lifetime. More importantly, an introduction to the performing arts initiates the development of invaluable life skills in children. Performing arts can have a great effect on students' performance in mathematics. Students performed to demonstrate their knowledge, understanding and proficiency of the lesson that has been discussed through their abilities and interests. Performing arts include performing music, dance, and drama and the skills in these performing arts are mostly common to students. This can be of great advantage to use performance-based assessment and use performing arts as a mean to assess students' learning.

Performing arts is said to be one of the certain disciplines in which performance tasks are routinely used. A performance task is any learning activity or assessment that asks students to perform to demonstrate their knowledge, understanding and proficiency. Performance tasks yield a tangible product and/or performance that serve as evidence of learning. Performance task presents a situation that calls for learners to apply their learning in context. Since performance tasks establish authentic contexts that reflect genuine applications of knowledge, students are often motivated and engaged in meaningful learning (McTighe, 2015). When used as assessment, performance tasks enable teachers to gauge student understanding and proficiency with complex processes (e.g., research, problem-solving, and writing/creating), not just measure discrete knowledge. They are well suited to linking content knowledge with the 21st century skills such as critical thinking, creativity, collaboration, and communication. And that is why this study implements performing arts as performance task in the assessment - to improve learning the concepts, develop 21st century skills, motivate students and impact their overall achievement.

The study was conducted at Bicol University College of Education Integrated Laboratory School. The institution offers a complete set of programs starting from elementary, junior, and senior high school. In the high school department, there are a maximum of two regular sections per grade level. Each section contains an average of 30 students. Although the school is known for providing quality education, it cannot be denied that some students are academically challenged, especially in Mathematics. Since the subjects of this study were Grade 7 students, there was no guarantee that they grasped and understood basic mathematical concepts in elementary which are very essential to learning higher mathematics. Teachers in the said school utilize different strategies to teach the students, and some of those are through singing, acting, dancing, etc. That is why this study took the opportunity to include and use this as assessment since these types of techniques are introduced to students because it is used in instruction. Through this, not only students' performance in math will improve, but also their talents and skills will be enhanced.

Research Methods

This study employed a descriptive-developmental research method to describe the development of the lessons with performing arts as assessment and determine its effect on students' learning. Pre-experimental research design was used by the researcher in this study. This design contains a single group which is often studied but

no comparison between an equivalent non-treatment group is made. This study also required a pretest and posttest design that measures the dependent variable once before and after the intervention was implemented. The design was used in order to evaluate the effect of the lessons using performing arts as assessment on students' conceptual understanding, 21st century skills, and motivation in learning mathematics. The respondents in this study were given a test prior and after the implementation of the developed lessons. The change between the scores of the students in the two tests was attributed to the effect of the lessons with performing arts as assessment in grade 7 mathematics.

This study utilized both quantitative and qualitative methods in the analysis of the data. The researcher gathered the quantitative data using results from the pretest and posttest and from the juror's evaluation of the developed lessons with performing arts as assessment. The qualitative data were gathered from the students' performing arts presented during the assessment of the lesson, teacher-observers' remarks, and students' responses in their journals.

Results and Discussion

There were twelve (12) lesson plans developed for Integers and Rational Numbers based on the competencies included in the Curriculum Guide. The learning competencies include : (1) representing the absolute value of a number on a umber line as the distance of a number from 0, (2) performing the fundamental operations on integers, (3) illustrating the different properties of operations in the set of integers, (4) expressing rational numbers from fraction form to decimal form and vice versa, (5) arranging rational numbers on a number line, and (6) performs operations on rational numbers.

The lessons developed utilized a performance-based assessment which enables the student to demonstrate the knowledge, skills, and/or material that they have learned. This type of assessment measures how well a student can apply or use what he or she knows, often in real-world situations. Research has shown that performance-based assessment provides a means to assess higher-order thinking skills and helps teachers in supporting students to develop a deeper understanding of content. Because performance-based assessment requires students to demonstrate their knowledge and skills with the concepts that they have learned, this assessment requires them to create a product or response, or to perform a specific set of tasks.

The developed lessons with performing arts as an assessment focused on how the students would learn the concepts and at the same time develop performances or outputs through performing arts by working as a group. Lessons developed were incorporated with a guided-inquiry approach, cooperative learning, and experiential learning strategy to give the students the opportunity to learn effectively and work cooperatively with their groups. All the lessons that were developed give the students the chance to conduct group discussions, brainstorming, and sharing of ideas as the students accomplish the activities and create performing arts that demonstrate mathematical concepts that have learned.

Table 1 presents the summary of the developed lessons with performing arts as assessment. The table presents the topics of the twelve lessons developed. The

learning competencies which are to be achieved by the students are also given together with the performance tasks that need to be accomplished in each competency. The performing arts which includes music, dance, and drama performances which are expected to be created and presented after each lesson is also projected in the table. This presents the possible outputs and presentations of the music, dance, and drama group during the assessment of the lesson.

Table 1. Summary Table of the Lessons with Performing Arts as Assessment

<table>
<tr><th rowspan="2">Lesson/ Topic</th><th rowspan="2">Learning Competency</th><th rowspan="2">Performance Task</th><th colspan="3">Performing Arts</th></tr>
<tr><th>Music</th><th>Dance</th><th>Drama</th></tr>
<tr><td>Absolute Value of a Number</td><td>The learner represents the absolute value of a number on a number line as the distance of a number from 0.</td><td>Students present performing arts to demonstrate learning on the absolute value of a number.</td><td rowspan="11">Students are expected to present song/s that convey the mathematical concepts involved in the lessons. They are expected to compose lyrics and may adopt tunes of their favorite songs, nursery rhymes, or any music of their choice in which they are comfortable with. Or can also arrange and create their own tune for their song.</td><td rowspan="11">Students are expected to present dance choreography that represents mathematical concepts involved in the lessons. They may create or adopt dance steps that can represent the concepts and may use any music for the tempo and beat of their dance.</td><td rowspan="11">Students are expected to present drama/plays that show the mathematical concepts involved in the lessons. They are free to choose their own topic or theme for their plays as long as it is suitable and acceptable for their age and the audiences’.</td></tr>
<tr><td>Addition of Integers</td><td rowspan="4">The learner performs fundamental operations on integers</td><td rowspan="4">Students present performing arts to demonstrate learning on the fundamental operations on integers.</td></tr>
<tr><td>Subtraction of Integers</td></tr>
<tr><td>Multiplication of Integers</td></tr>
<tr><td>Division of Integers</td></tr>
<tr><td>Properties of Operations on the Set of Integers</td><td>The learner illustrates the different properties of operations on the set of integers.</td><td>Students present performing arts to demonstrate learning on the properties of operations on integers.</td></tr>
<tr><td>Conversion of Rational Numbers</td><td>The learner expresses rational numbers from fraction form to decimal form and vice versa.</td><td>Students present performing arts to demonstrate learning on the conversion of rational numbers.</td></tr>
<tr><td>Rational Numbers on a Number Line</td><td>The learner arranges rational numbers on a number line.</td><td>Students present performing arts to demonstrate learning on rational numbers on a number line.</td></tr>
<tr><td>Addition of Rational Numbers</td><td rowspan="4">The learner performs operations on rational numbers.</td><td rowspan="4">Students present performing arts to demonstrate learning on the operations on rational numbers.</td></tr>
<tr><td>Subtraction of Rational Numbers</td></tr>
<tr><td>Multiplication of Rational Numbers</td></tr>
<tr><td>Division of Rational Numbers</td></tr>
</table>

During the assessment of the lesson, the students are expected to perform and present performing arts in which mathematics concepts are evident. In the lessons, the students are tasked to present performing arts – music, dance, and drama to demonstrate learning in each of the lesson. Students identified their skill and group through the performing arts inventory. The inventory is divided into three sections. Section one describes skills and interests for music, section two – drama, and section three – dance. The instrument has sentences and descriptions that will be rated by students as to how often it is applied to them. Students will rate 4 if it always applies to them, 3 – sometimes applies to them, 2 – seldom applies to them, and 1 – never applies to them. The section that has the highest score will determine students' skill and group. Twelve students belonged to the music group, eight students belonged to the drama group, and ten students belonged to the dance group. Throughout the twelve lessons, the groupings of the students are fixed and steadied

Table 2 presents the summary of the performing arts created the students during the assessment of the lesson. In each lesson, music, dance, and drama group performed songs, dance, and plays demonstrating what they have learned in the discussions. The groups were given enough time to discuss what to perform and how to put the concepts into performance. While creating performances, students developed skills in communication, collaboration, critical thinking, and creativity. On the first lessons, and performances, students encountered different challenges as they are adjusting to a different method implemented in mathematics. But as they go through it, they put greater effort and enjoyed it.

Table 2. Summary of the Performing Arts Presented by the Students

Lesson/Topic	Performing Arts		
	Music	Dance	Drama
1. Absolute Value of a Number	The students presented two songs in the tune of *Christmas in our Hearts* and *Mary had a Little Lamb,* containing the definition, concepts, and methods to find the absolute value of a number.	The students performed dance steps and a chant presenting some example of integers and their absolute values.	The students had a role playing of a teacher and the students inside the classroom discussing the absolute value of a number
2. Addition of Integers	The students presented two songs in the tune of *If you're Happy and you Know it* and *Row Row Row your Boat,* presenting the steps and rules in adding integers.	The students performed a song in the tune of *Sway* and dance along with it. The song presents the steps and rules in adding integers.	The students performed a scene of a mother who asked her son to buy salt and fish sauce and promised to give him the change. The performance demonstrates the application of adding integers in real life scenarios.
3. Subtraction of Integers	The students presented two songs in the tune of *Ang mga Ibon na Lumilipad,* presenting the Copy-Change-Change Rule, and *Row Row Row your Boat,* presenting the number line method.	The students performed a song in the tune of *Attention* and dance along with it. The song presents the two methods of subtracting integers and include some reminders and encouragement to learn the lesson better.	The students performed a play of two siblings who visited their grandpa in the hospital and were asked to buy medicine for their grandpa. The performance demonstrates the application of subtracting integers in real life scenarios.
4. Multiplication of Integers	The students performed a song in the tune of *Mary had a Little Lamb,* presenting the rules in multiplying integers.	The students presented a song in the tune of *Treat you Better,* presenting the rules in multiplying integers.	The students played a scene of a group of friends who went to a funfair to unwind after the examination. They applied multiplication of integers to compute for the payment of the tickets.
5. Division of Integers	The students presented two songs in the tune of *Stand by me* and *Twinkle Twinkle Little Star,* presenting the rules in dividing integers.	The students presented a song in the tune of *Itsy-Bitsy Spider,* presenting the rules in dividing integers.	The students performed a skit play of a family who went to theme park to bond and enjoy. The performance includes the application of division of integers in real life and some comical lines that added humor to their performance.
6. Properties of the Operations on Integers	The students performed a song in the tune of *What Makes you Beautiful,* presenting the six properties of the operations on integers and their descriptions.	The students presented a song in the tune of *Say you won't let go,* presenting the six properties of the operations on integers and their descriptions.	The students presented a dialogue/conversation among the six properties of the operations on integers. The description of each of the properties was related to different types of love.
7. Conversion of Rational Numbers	The students presented a song in the tune of *Jingle Bell Rock*, presenting the steps in converting decimal into fraction and vice versa.	The students presented a song in the tune of *Row Row Row your Boat*, presenting the steps in converting fraction to decimal form and vice versa.	The students performed a play of a mother and daughter who went to the market to buy meat. The performance demonstrates the application of the conversion of rational numbers in real life scenarios.
8. Rational Numbers on the	The students performed a song in the tune of *The Alphabet Song,*	The students presented a song in the tune of *London Bridge,* presenting the	The students had a role playing of a teacher and the students inside the classroom

Number line	presenting the steps in plotting and arranging rational numbers on number line.	steps in plotting and arranging rational numbers on number line.	discussing how to plot and arrange rational numbers on the number line.
9&10. Addition and Subtraction of Rational Numbers	The students presented a song in the tune of *The Alphabet Song,* presenting the steps in adding and subtracting rational numbers, particularly fractions.	The students performed a song in the tune of *Ako ay may Lobo,* presenting the steps in adding and subtracting rational numbers, particularly decimal numbers.	The students performed a play of a household preparing for the fiesta. The performance demonstrates the application of addition and subtraction of rational numbers in real life.
11. Multiplication of Rational Numbers	The students presented a sing in the tune of *Leron Leron SInta,* presenting the steps in multiplying rational numbers: fractions and decimals.	The students performed a sing in the tune of *Baba Black Sheep,* presenting the steps in multiplying rational numbers: fractions.	The students performed a play about the preparation of a class for their Christmas party. Application of multiplication on rational numbers was demonstrated in the performance.
12. Division of Rational Nmbers	The students performed a sing in the tune of *BINGO,* presenting the steps in dividing fractions.	The students presented a song in the tune of *Fly Fly Fly the Butterfly,* presenting the steps in dividing fractions.	The students performed a play about a group of friends who roam around the mall and applied the division of rational numbers to divide the cake evenly and the total cost equally among them.

Since performance task asks students to perform and/or demonstrate their knowledge, understanding and proficiency - creating outputs and tangible products and/or performances served as evidence of students' learning. The discussion above and the table presented, clearly show that students successfully created performing arts during the assessment of the lesson to demonstrate their learnings in mathematics. Students learned not only the concepts in mathematics but also enhanced their skills in music, dance, and drama.

Students demonstrated their learning in Mathematics through performing music, dance, and drama presentations. To charge whether they learned the concepts, mathematical concepts must be evident in their performances, thus must be relevant to the lessons.

Table 4 presents the summary of the mathematical concepts evident in the performing arts created by the students. Students demonstrated the mathematical concepts which they have learned in lessons in the form of songs, dance, and plays. Performing arts, being used as an assessment, and is placed on the evaluation part of the lesson, must satisfy the objectives of the lesson. The performances and outputs created by the students satisfy the objectives and demonstrated mathematical concepts which are needed to achieve the competencies. Students include the steps and procedures in each competency which was presented correctly and coherently. Students also included the rules on the fundamental operations on integers and rational numbers, meaning, they really grasp the concepts. Students also include some examples and demonstrations that show how they really understood the lessons. And lastly, students were able to create performances that show scenarios in real life wherein these mathematical concepts are perceived to be useful. Having these evidence, it clearly shows that the performing arts created by the students, correctly demonstrates the mathematical concepts learned by the students.

Table 3. Summary of the Mathematical Concepts Evident in the Performing Arts Created by the Students

Lesson/Topic	Music	Dance	Drama
1. Absolute Value of a Number	The definition of absolute value of a number and the methods in finding the absolute value were presented in the lyrics of the song performed by the group.	Key terms about integers and sample of integers and their absolute value were presented in the lyrics of the chant and demonstrated in the dance steps performed by the group.	The definition of integers and the absolute value of a number were presented in the play performed by the group.
2. Addition of Integers	The steps/procedure and the rules in adding integers with the same and different signs were presented in the lyrics of the song performed by the group.	The steps/procedure and the rules in adding integers that are both positive, both negative, and have different signs were presented in the lyrics of the song performed by the group.	The steps/procedure and the rules in adding integers with the same and different signs and the application of adding integers in real-life were presented in the play performed by the group.

3. Subtraction of Integers	The steps/procedure in subtracting integers using the number line and the copy-change-change rule were presented in the lyrics of the song performed by the group.	The steps/procedure in subtracting integers using the number line and the copy-change-change rule were presented in the lyrics of the song performed by the group.	The steps/procedure in subtracting integers using the copy-change-change rule and the application of subtracting integers in real-life were presented in the play performed by the group.
4. Multiplication of Integers	The rules in multiplying integers with the same and different signs were presented in the lyrics of the song performed by the group.	The rules in multiplying integers with the same and different signs were presented in the lyrics of the song performed by the group.	The rules in multiplying integers with the same and different signs and the application of multiplying integers in real-life were presented in the play performed by the group.
5. Division of Integers	The rules in dividing integers with the same and different signs were presented in the lyrics of the song performed by the group.	The rules in dividing integers with the same and different signs were presented in the lyrics of the song performed by the group.	The rules in dividing integers with the same and different signs and the application of dividing integers in real-life were presented in the play performed by the group.
6. Properties of the Operations on Integers	The properties of the operations on integers: closure, commutative, associative, distributive, inverse and identity property were presented in the lyrics of the song performed by the group.	The properties of the operations on integers: closure, commutative, associative, distributive, inverse and identity property were presented in the lyrics of the song performed by the group.	The properties of the operations on integers: closure, commutative, associative, distributive, inverse and identity property were presented in the play performed by the group.
7. Conversion of Rational Numbers	The steps/procedure in converting rational numbers from fraction to decimal form and vice versa were presented in the lyrics of the song performed by the group.	The steps/procedure in converting rational numbers from fraction to decimal form and vice versa were presented in the lyrics of the song performed by the group.	The steps/procedure in converting rational numbers from fraction to decimal form and vice versa and its application in real-life were presented in the play performed by the group.
8. Rational Number on the Number line	The steps/procedure in plotting and arranging rational numbers: fraction and decimals on the number line were presented in the lyrics of the song performed by the group.	The steps/procedure in plotting and arranging rational numbers: fraction and decimals on the number line were presented in the lyrics of the song performed by the group.	The steps/procedure in plotting and arranging rational numbers on the number line and example and demonstration of plotting and arranging them on a number line were presented in the play performed by the group.
9&10. Addition and Subtraction of Rational Numbers	The steps/procedure in adding and subtracting similar and dissimilar fractions were presented in the lyrics of the song performed by the group.	The steps/procedure in adding and subtracting decimal numbers were presented in the lyrics of the song performed by the group.	The steps/procedure in adding and subtracting rational numbers and its application in real-life were presented in the play performed by the group.
11. Multiplication of Rational Numbers	The steps/procedure in multiplying fractions and decimal numbers were presented in the lyrics of the song performed by the group.	The steps/procedure in multiplying fractions were presented in the lyrics of the song performed by the group.	The steps/procedure in multiplying rational numbers and its application in real-life were presented in the play performed by the group.
12. Division of Rational Numbers	The steps/procedure in dividing fractions were presented in the lyrics of the song performed by the group.	The steps/procedure in dividing fractions were presented in the lyrics of the song performed by the group.	The steps/procedure in dividing rational numbers and its application in real-life were presented in the play performed by the group.

Students correctly demonstrated mathematical concepts on the twelve lessons developed in their performances. From the analysis of the concepts and the results of the scoring rubric on the outputs and performances of the students, it can be concluded that students understood and learned the concepts during the implementation of the developed lessons using performing arts as assessment.

The effects of the Performing Arts to the students in terms of conceptual understanding was assessed using the researcher-made test. The test was a multiple-choice type test with a total of 50 items. The table of specifications follows the revised Bloom's Taxonomy of Cognitive Domain.

Table 4 presents the statistical data gathered from the pretest posttest results of the group. Mean, mean gain, standard deviation and t-test for paired observations were the statistical treatment used. The individual competency was also presented to show the areas in which the conceptual understanding of the students shows progress or no improvement at all. The performance level was also included for comparison purposes.

Table 4. Conceptual Understanding Results Summary Statistics

Learning Competency	Mean of the Pretest	Performance Level		Mean of the Posttest	Performance Level	
		%	Descriptive Equivalence		%	Descriptive Equivalence
Represents the absolute value of a number on a number line as the distance of a number from 0.	1.33	66.67	Near Mastery	1.53	76.67	Mastery
Performs fundamental operations on integers	6.77	48.33	Low Mastery	11.03	78.81	Mastery
Illustrate the different properties of operations on the set of integers.	1.87	31.11	Low Mastery	3.8	63.33	Near Mastery
Expresses rational numbers from fraction form to decimal form and vice versa.	1.53	38.33	Low Mastery	3.33	83.33	Near Full Mastery
Arranges rational numbers on a number line.	1.43	35.83	Low Mastery	2.57	64.17	Near Mastery
Performs operations on rational numbers.	6.83	34.17	Low Mastery	12.7	63.5	Near Mastery
Mean	19.77	42.41	Low Mastery	34.97	71.63	Near Mastery
Standard Deviation	7.94			9.26		
Mean Gain	+15.2					
p-value	0.00					
Significance	Significant (α=0.05)					

Table 4 shows that there was a significant difference between the students' pretest and posttest scores ($p < 0.05$). This means that the students' performance in the posttest was better than their performance in the pretest. In addition, the scores of the group become more varied after the implementation period. The mean scores of the group have increased from 19.77 to 34. 97 (+15.2). It was evident that the mean scores of the students in the posttest were higher than the mean scores in the pretest. The result implies that the students' conceptual understanding in mathematics 7 has improved through Performing Arts.

The performance level of the group has also increased from 42.41% (low mastery) to 71.635 (near mastery). The students gained the highest performance level on the competency under expressing rational numbers from fraction form to decimal form and vice versa. The pretest is only 38.33% which was interpreted as "Low Mastery" and the posttest is 83.33% which was interpreted as "Near Full Mastery". This shows that the implementation of the developed lessons with performing arts as assessment, the students developed a greater understanding on this competency.

Overall, the results suggest that the students' conceptual understanding was enhanced. The students learned the different concepts on Integers and Rational numbers. The result implies that performing arts as an assessment of learning helped the students gain knowledge in the twelve lessons.

For the effect of the developed lessons on students' 21st century skills and motivation in learning mathematics, qualitative data were utilized in this study. Students' journal entries and responses in the questionnaires, and teacher-observers' remarks were the sources of these data. 21st century skills are the skills that the students need in order to succeed in today's fast-changing world. Educators and workforce experts alike often warn that our children need improved 21st century skills. Without these skills, they will not be able to successfully participate in the global economy. They will not be

adequately prepared for college and work. This is also known as the four C's (4C's) namely: communication, collaboration, critical thinking, and creativity. These skills are crucial for deep and effective learning that enables the students to thrive at present and in the future.

In this study, the effect of the performing arts to students' communication skills was assessed and identified through their responses on their journals. By reading and analyzing their responses, there are seven (7) major effects of the performing arts identified. Performing arts affected communication skills of the students in terms of (1) Friendliness, (2) Confidence, (3) Patience, (4) Listening, (5) Open-mindedness, (6) Critical thinking, and (7) Teamwork. Collaboration, according to the journal entries, improved students' relationships. It helped in clearing up misunderstanding and helped them to develop trust. It also taught them to understand and respect differences in capabilities, weakness, and views. Data from students' journals and teachers' observations were also used to identify the effect of performing arts in the critical thinking skill of the students. Most students responded that performing arts enhanced their thinking skills and intelligence. It helped them in being aware of what is happening and to think faster and efficient. Teachers said that performing arts led students to developing their skills such as higher level of concentration, more in-depth analytical abilities, and improved thought processing. These, being demonstrated by the students, confirmed that performing arts developed students' critical thinking skill. On the effect on creativity, performing arts caused student to think deeper and to be creative. Students learned to solve problems creatively, to thinks outside the box, and to try something that they have not tried before. It also helped them finding and learning new skills like creating songs, dance, and drama plays.

Qualitative data were also used to identify the effects of performing arts to students' motivation in learning mathematics. Students responded that performing arts, made them excited in learning the lessons. They also had fun in creating and presenting performances that they love to do. It also helped them to understand the lesson easier and be motivated to study and learn more. They also included that their performances helped them to retain information because they presented what they have learned from their own understanding of the lesson.

The overall findings of this study on the effects of the developed lessons using performing arts as assessment, in the students' conceptual understanding, 21st century skills, and the motivation in learning mathematics suggest that the intervention enhanced their academic performance under each criterion. The impact of the developed lessons has been proven as an aid to reckon with in the context of teaching mathematics.

Conclusion

Twelve (12) lessons under Competency 5 (Absolute Value of a Number), Competency 6 (Fundamental Operations on Integers), Competency 7 (Properties of Operations on the Set of Integers), Competency 8 (Conversion of Rational Numbers), Competency 9 (Rational Numbers on the Number Line), and Competency 10 (Fundamental Operations on Rational Numbers) of the K to 12 Curriculum Guide for Grade 7 Mathematics were developed. The implementation of performing arts enhanced students' music, dance, and drama skills. Students understood and learned

the concepts during class discussions and successfully demonstrated these concepts through performing arts. And the developed lessons in Grade 7 Mathematics was effective in developing and enhancing students' conceptual understanding, communication skills, collaborative skills, critical thinking skills, creative skills, and motivation in learning.

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Contact email: ruth.revilla@bicol-u.edu.ph

Embracing Differences through Dialogue and Engaged Learning

Maria Guajardo, Soka University, Japan
Mandeep Taneja, Soka University, Japan
Swati Vohra, Soka University, Japan

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Abstract
This paper presents the elements of an engaged learning experience, with the aim of embracing differences through a pedagogical lens that uses dialogue as a process and content. A qualitative exploratory case study was conducted that included a structured dialogue methodology. Class dynamics and engagement from an online classroom of 30 Japanese and international students represented a microcosm of society. The structured dialogue included three-key participants – the professor, a graduate student, and a facilitator. The key findings revealed a four-stage Embracing Differences Change Model based on the themes of conformity, vulnerability, exploration, and learning. Eight actions for embracing difference are presented based on the key elements of sharing, listening, personalizing, and creating.

Keywords: Engaged Learning, Dialogue, Humanism, Critical Inquiry

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Introduction

The year 2020 forced dramatic changes across society, and within higher education. The impact of the pandemic posed acute and long-term effects, reaching across a broad section of society, including work, family, and school. The personal impact on loss and restrictions changed how young adults are experiencing major developmental milestones such as graduations, job hunting, and relationships; all contributing to a difficult transition into adulthood (Powell, 2020). The impact is also changing how students experience higher education. With the threat of a pandemic caused by Covid-19, universities in Japan quickly shifted to emergency remote learning in April, the start of a new academic year. Japanese students, engaged in study abroad, returned to Japan, and international students who returned to their home countries took classes remotely, along with domestic Japanese classmates, via Zoom. The challenges of adjusting to online instruction were compounded by separation from friends, and a disconnect from participation in a living and learning community on campus.

Simultaneously, social activism in the United States encapsulated by the Black Lives Matter movement revealed deep schisms in the historical and current discrimination and institutional racism against Blacks, Indigenous, and People of Color (BIPOC). The pandemic and social movement for justice brought to the forefront an opportunity to address the human divisions that exist in society, locally and globally, within the arena of higher education. The value of creating an inclusive and equitable environment on university campuses has been recognized, although credible and authentic change has been slow in taking hold (Pasquerella, 2016). Therefore, at the intersection of the pandemic and the social justice movement, the challenge was to create an engaged learning experience for university students attending classes online, where assumptions could be juxtaposed against new ways of thinking about the 'other.'

This paper presents an exploratory case study of a teaching and learning experience based on a model of engaged learning, focused on fostering dialogue as a pedagogical strategy of transformation with the aim of embracing differences. The literature review presents the theoretical model of praxis and humanism as a lens for creating a context to engage differences. The case study is presented from the perspective of three key participants, engaged in a dialogic model of analysis. Findings present a model capturing the process of engagement, along with eight actions for embracing differences.

Literature Review

How can the learning experience embrace a process of transformation? To reach this outcome, it becomes necessary to turn to educational pedagogies centered on praxis and humanism (Burger, 2019; Freire, 1998; Palmer, 1998; Torres, 2014). Freire (1973) espoused the importance of the purpose of education, moving from a transactional banking model where students are blank slates waiting to be filled with teacher's information; to a praxis pedagogy where students and educators are both transformed through the impact on one another. Based on the key ideas of freedom, democracy, and critical participation (Gadotti & Torres, 2014), Freire's pedagogy directly responds to his question, "for what reasons do I practice education" (1998, p. 46)? In this study, this defining question is then coupled with the caveat, how can this

experience be created when emergency online teaching is the mode of delivery, as opposed to face-to-face teaching?

Freire's educational pedagogy is aimed at social change, explicitly recognizing that education is not neutral, and thus, scholarship and activism are deeply connected in purpose. He also describes the persona of the educator. For Freire, "critical intellectuals should live passionately their own ideas, building spaces of deliberation and tolerance in their quest for knowledge and empowerment. They love what they do, and they love those with whom they interact" (Torres, 2014, p. 113). To create spaces of deliberation, building a community of trust allows for questions to emerge (Burger, 2019; Palmer, 1998). Palmer shared, "The courage to teach is the courage to keep one's heart open in those very moments when the heart is asked to hold more than it is able so that [you] can be woven into the fabric of community..." (p. 11). Like Freire and Parker, Wiesel's goal of teaching is to humanize, and he shared with his students, "Whatever you learn, remember: the learning must make you more, not less, human." (Burger, 2019, p. 26)

When an educational pedagogy centers on praxis and humanism, the work of embracing differences necessitates creating a learning space of deliberation, that connects head and heart. An exchange between students and the professor that fosters new ways of thinking of the other, with a goal of expanding one's perspective. Burger (n.d.) shared, "When we examine our assumptions and ask difficult questions about our beliefs and behaviors, when we practice humility, we can avoid the traps of demonizing others, which so many of us seem to fall into" (p. 2). Palmer's definition of the 'other' involves appreciation, recognizing that a stranger has much to teach us (2005). To advance in embracing differences, Palmer states that there is a, "need to become discerning and doubtful about stereotypes" (p. 21).

Based on Freire's belief that students develop a critical awareness of the world based on the concrete experience of their everyday lives, the development of critical awareness serves to transform the learning experience (Guajardo, in press). Thus, the process of knowing is relational, and engaging in dialogue is a pathway for learning. The work of personalizing current events, and the history of discrimination, is necessary in order to forge a connection to social change. The awareness and skills needed to relate to the 'other' calls for this educational engagement to be relevant to the students' lives. The importance of relevance counteracts the concept of subtractive schooling, and requires validating racial, ethnic, linguistic, and cultural realities and ways of knowing (Caldwell, 2004; Valenzuela, 2017).

Guajardo (in press) shares, "In the classroom, the process of dialogue can be used to engage students to become curious about the world, about issues, and to connect with themselves and others; to begin to form [a] bridge." Dialogue as a pedagogical strategy is more than conversation. Freire viewed dialogue as transformational, not as an act of verbal ping pong. Rather, dialogue was a pathway for learning that involved reflection (Freire, 1973). Teaching students how to engage in dialogue is an intentional strategy, along with how to practice listening, engage in reflection, and learning how to share. Through this process of dialogue, students learn how to be authentic. This authenticity leads to strengthened relationships that emerge from dialogues where there is sustained, constructive tension. Palmer states that the work necessitates "hold[ing] perhaps the most subtle and yet most difficult tension of all:

the tension between reality and possibility...standing in the tragic gap, the gap between our knowledge of what is and our knowledge of what might be" (2005, p. 27). In the work of embracing differences, we are reaching to move beyond realities and toward possibilities.

With the goal of creating an engaged learning experience to address embracing differences through dialogue, three research questions were posed for this exploratory case study.

Research Questions

1. What elements of an engaged learning experience lead to embracing differences?
2. How can one challenge assumptions about self and the other?
3. What is the role of dialogue as a process and as content?

Methodology

Thirty Japanese and international students - undergraduates, graduates, and alumni from 12 countries engaged in a 14-week course. The formation of small groups, called Tribes, were consistent groupings of 4-6 students that remained intact for six weeks. Tribes engaged in small group discussions 1-2 times per class and worked on joint projects. Content themes in the course, including democracy, dialogue, community, creativity, power, and freedom were the base upon which to build new, and innovative perspectives related to differences in culture, beliefs, values, and language.

This exploratory case study relied on three key informants: the professor, a graduate student assistant, and a facilitator. Their roles are shared in the key informant perspective below and presented in first person. Initially, weekly reflections on the class process, class dynamics, and challenges, revealed insights related to the impact of creating an experience for engaged learning. At the completion of the course, a dialogic process (Bradley, 2017) between two dialogue partners, or key informants, guided by a facilitator, captured the process of transformation and engaged learning that was experienced in the course.

The dialogue partners and the facilitator, individually, and then collectively, identified pedagogical elements that surfaced through the course experience. These elements were summarized as engaged learning, reflection, developing agency, critical inquiry, and the strengthening of relationships. These elements served as the basis for the development of questions that would be utilized in a 2 and ½ hour structured dialogue, intended to explore the process of change that had occurred in the course. The dialogue partners were the professor and the student assistant, with a designated facilitator. The structured dialogue was recorded and transcribed. The content was analyzed for themes and process of change.

Key Informants' Perspectives

Swati Vohra – Facilitator

As a participant of the Democracy and Dialogue course that began under unprecedented circumstances, I did not anticipate the impact experienced in the face of an online format where Zoom became a space for experiential learning. Class assignments had a newfound meaning and value - reading to reflect personally, sharing to connect, listening to understand, and learning to practice. Earnestness of pre-class preparation through weekly reflection assignments allowed personal engagement with the content, and this was reflected in class contributions. In class, the engagement extended to other students, especially within the tribe discussions. I self-identified as a facilitator within my tribe, creating a space that included everyone's voices and at the same time as a bridge, desiring to connect to others. The inner transformation sparked curiosity to retrace and unpack the different phases of engagement within the class. For me, inquiry emerged in wanting to understand the cognizance of one's agency, help in embracing differences, the role of critical inquiry and the balance between identities of self and others in tribes. I considered myself a class student/participant first, and my role as a facilitator for the structured dialogue benefitted highly as a result. Overall, it added greater depth and meaning to the dialogic process.

Mandeep Taneja - Dialogue Partner/Student Assistant

It was fortuitous to be both a student and a student assistant through the course. The opportunity allowed me to participate with the students, be part of a tribe, and engage in collaborative creative activities. Additionally, while supporting technically, I interacted with the Professor before and after the class. I had a sneak preview of class structure and assignments' objectives before the class began and reflected on the learnings and experience from multiple perspectives at the conclusion of each class. Thus, I was present in the evolving dynamics, both as a class participant and as a student assistant, learning and reflecting on how the class was structured. These multiple perspectives contributed to our structured dialogue and our learnings contributed to the engaged-learning model.

Maria Guajardo - Dialogue Partner/Professor

The prospect of teaching online was daunting and challenged every fiber in my body. As I stumbled through the initial classes I understood that the fundamental building blocks of my teaching needed to be translated into a synchronous teaching experience of engaged learning. My passion for social justice connected deeply with my belief that students needed to connect to their personal, cultural narrative, and then reach across to their classmate on the computer screen - the question was how to create this experience.

Conclusions

Main Findings

Four themes emerged from an analysis of the dialogue; themes that described the stages of change observed and experienced in the class. The four stages were Conformity, Vulnerability, Exploration, and Learning. Transitioning from one stage to the next involved one of three agents of change: trust, deep dive, and respect for self and others. Students began the class in the conformity stage. Then, through the class experience that included a dialogue process, students moved to a stage of vulnerability, then exploration, and then the final stage of learning. As students transitioned through the stages, the agents of change were evident and appeared to allow for the transition from one stage to the next. The structure of this change model is presented in Figure 1.

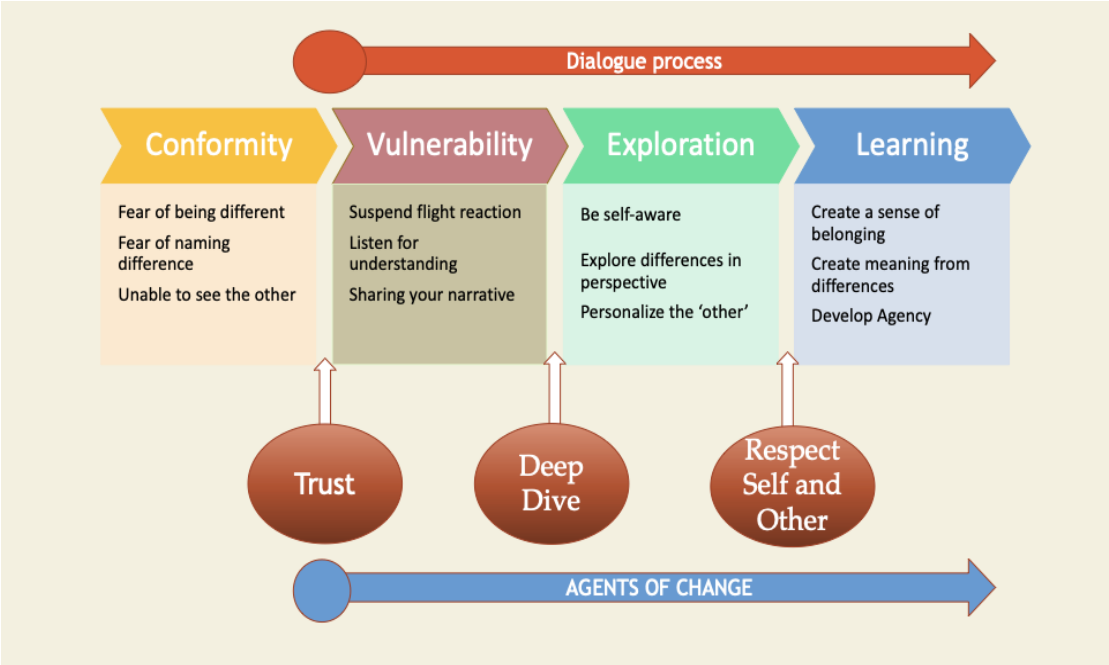

Figure 1: Stages of Embracing Differences Change Model

1. Conformity Stage. The first stage in the process of embracing differences begins with a pull towards conformity. This stage reflects a desire to conform, to not verbally express or name differences between individuals. It is an avoidance or inability to see the differences in the 'other.' Conformity becomes a challenge in embracing diversity, where there is a fear of the unknown, and a fear of being vulnerable.

Discussion on controversial topics featured differences among classmates, and a pathway for embracing differences emerged. Creating a learning space for critical thinking was encouraged through questions that were posed in pre-class assignments, often tapping into a student's lived experience. In the structured dialogue Guajardo shared, "My challenge was to form questions that would allow students to connect to their own experience. I want to hear students' voices sharing who they are and what matters to them." Students were empowered to ask questions. To encourage curiosity in class, students were reminded that there were no right or wrong answers. Guajardo posed the question, "When you don't feel cornered to answer correctly, can a sense of

curiosity be developed?" To move from the Conformity stage to the stage of Vulnerability, students needed to develop trust. Trust was identified as a change agent.

Change Agent - Trust

Swati Vohra – Facilitator

Trust for me first showed up in my tribe where one of us took the lead to share our personal reflections/experiences in relation to the class readings. The catalyst to this was observing a professor who led and exemplified the way. Listening to others intimate narratives alleviated one's adherence to standards of guardedness. I wasn't the only one who challenged through the seclusion of 'being different/socially non-confirmative.' An implicit trust was built through such exchanges that permeated the class, making me secure, and opening a path that allowed me to discover myself. The class was a perfect example of a nurturing field where ideas, creativity and co-creation flourished. Sharing happened as a genuine desire to reflect, connect with others, and develop mutually without vying for a position. It was for the first time that I experienced and recognized vulnerability as power which was embodied by both, the students as much as by the professor. This, however, wouldn't have happened if the discussion themes were placed at a safe distance from us.

In one of our tribe discussions, we were reflecting on the theme of 'exclusion' looking through our past experiences. The stories grew personal with each sharing, until the last member in my tribe, who, as she narrated her story of exclusion, broke down leaving all of us pensive.

This class is where I have experienced unconditional trust, shared laughter, worries, anxieties, tears without a fear of judgement. One of the most empowering realizations has been to own who 'I am' with all my flaws and my power.

2. Vulnerability Stage. In the second stage in the process of embracing differences, as the dialogue process allows for trust to develop, individuals allow themselves to experience vulnerability. This involves suspending one's flight reaction and learning to share one's narrative. Dialogue exercises required students to listen for understanding, not to formulate a response; and to learn how to share their own narrative. Through the class dialogue exercise conducted in dyads, students had an opportunity to share their narrative, to be seen by the other. Personalizing the dialogue allowed students to both be vulnerable and to develop trust with their classmates.

One underlying assumption of the teaching and learning modeled in the class was that learning should not be competitive. Team assignments reflected community collaboration. The virtual classroom was a learning laboratory that made it safe to see individual differences. Without stripping students of their individual strengths, the goal was to reflect a global community and create connections that were not based on competition, but a community built on the strengths of the individual and the collective. Guajardo shared, "The strength of diversity comes from being able to say who you are, being able to share your personal narrative [because] everyone has a narrative." To move from the stage of Vulnerability to the third stage of Exploration, students needed to go deep in reflection to connect with their own narrative. By doing

this deep dive into self-awareness, allowed students to then explore the differences between themselves and others.

Change Agent - Deep Dive

Mandeep Taneja - Dialogue Partner/Student Assistant

The final assignment as a tribe was to dialogue on a controversial topic presenting both sides of the argument, motivating an experience exemplifying the transition between the stages of Vulnerability and Exploration. As the topic had to be chosen by students themselves, there were discussions on a wide array of issues. In my tribe, we started by discussing euthanasia and nuclear weapons; however, either side of the argument was acceptable. The change emerged when we discussed topics personal to us, like animal consumption versus environmental crises, and connected with being vegetarian or non-vegetarian. We had both perspectives present in our tribes, and the dialogue led to cross-examining our opinions. For example, while India was presumed a vegetarian country, I was not. Another tribemate had chosen to be vegan due to environmental reasons. This dialogue experience led us to explore each other's personalities and then do a deep dive into examining our diverse opinions on a seemingly simple topic impacted by culture, personal experience, and education.

Maria Guajardo - Dialogue Partner/Professor

At the beginning of class I explained to my students that my job is to teach in a way that allows them to connect head and heart. When content and knowledge find a way to their personal interests and experience, I know that the relevance of the learning experience will sustain their interest. This provides the students an opening to go deeper within the experience of learning. Posing questions prior to class are intended to challenge students to connect to the material in a personal way, asking them to voice their opinions on broad topics connected to ethics, power, and racism. While at the same time I am asking them to think about other questions such as, how does culture shape the way you view the world? I also recognize that this deep dive creates an opening to connect to the memories and emotions connected to time and space.

3. Exploration Stage. The third stage in the process of embracing differences is exploration. This stage entails self-awareness, exploring differences in perspective, and personalizing the 'other.' At the root of embracing differences is an understanding of the collective identity versus the individual identity. Within tribes, students were intentionally presented with opportunities to define their individual identity, and then also asked to form and define a group identity. The balance between 'We' and 'I' demonstrated the idea of a global community that is defined by both. The Ubuntu saying, *I am because we are, and we are because I am*, was introduced to underscore the need for self-definition and the concept of interdependence. The professor's role was to consciously role model, encourage, and nurture the value of "I" and "We" through student engagement and class structure. To move from the Exploration stage to the fourth stage, Learning, students needed to embody respect for themselves and for others.

Change Agent - Respect self and others

Swati Vohra – Facilitator

There was an unparalleled depth to the journey of self-exploration and awareness throughout the course. It brought to light my internalization of other's interpretation of my identity as a complex being with a negative connotation. It weighed on me and I wrested through, trying to reject aspects of self. The process of dialogue and reflection – what has shaped me, my beliefs and my worldview revealed an intricate interconnection of culture, values, experiences, and encounters. The understanding that every perspective had a story and we needed to delve deeper, began to make me comfortable and respect myself. It was not merely an intellectual understanding, however, a living reality experienced through the class. Because everyone has their journey, it was also present for others in my tribe.

Noticeable differences emerged among the students within my tribe as we conducted a dialogue on, "Should women join the workforce post maternity?" The topic for dialogue was personally close to all the tribe members and everyone had their own perspectives that made some of us uncomfortable. However, since it was a dialogue and not a debate to win, each participant was committed to go deeper into understanding, to learn about the source of those perspectives without attempting to force a change. The culmination of our dialogue resulted in one student, who had initially voiced strong opposition, acknowledging that the process had made her more open to having the difficult dialogue with others and understanding their story. We appreciated the roles each of us played, making us more aware, open, and willing to engage in an exchange with differences. As I was able to value and respect my own journey, I could do the same for others.

4. Learning. The fourth stage in the process of embracing differences, Learning, is shaped by a sense of belonging, creating meaning from differences, and developing agency. Personalizing the work within the tribes and in class, working collaboratively in tribes, and feeling safe in sharing one's narrative and learning about differences through the other's narrative, allowed students to make meaning of the 'other.' The absence of fear allowed for learning to occur. Through a process of self-exploration, students delved deeper into understanding themselves, their assumptions, and their new learnings about others. Taneja shared, "I am curious now to learn…I have a desire and a hope…I want to go through this experience again to confirm a new side of my life and my emotions." Through the process of developing agency students began to create meaning on how they are influenced by the past and present. As Guajardo shared, "If we can know and understand how our place in space defines and shapes us…I then emerge in a space where I can love and care [about the other]."

Role of Dialogue

Mandeep Taneja - Dialogue Partner/Student Assistant

The role of dialogue starts with creating the desire to identify, observe, understand, and learn amongst the students. We began by looking at differences as a source of conflict and then moved on to celebrate these differences as the source of learning. Teaching reading skills and developing the desire to read are identified as unique

critical elements for a student's growth (Beers & Aliteracy, 1998). Similarly, the class themes and the process of critical inquiry were like *teaching to read*, however the role of dialogue was to develop the *desire to read*, the willingness to embrace the differences that exist.

The learning is not limited to another person or situational learning but extends to self-learning, through reflection and corresponding action in that minuscule society created in the classroom and within tribes. Through the engaged learning model, we were able to identify that the transition from *conformity* to *vulnerability* guided the early stages of the dialogue process.

Implications

This four-stage Embracing Differences Change Model is a process that can be introduced to enhance engaged learning through dialogue. Engaged learning is a transformational experience where students courageously step into their vulnerability, to connect to and deepen their understanding of themselves, in order to then approach the other. This process of discovery allowed students to make meaning of the process and their experience of the 'other.' Through dialogue that was intentional in deepening critical inquiry and heightening self-awareness, students engaged in experiences that allowed them to co-create with others.

The platform of emergency online teaching, while introducing challenges, did not disable or impede the transformational work experienced by students. As a result, the emergence of a model, facilitated by the change agents of trust, deep dive, and respect, offers promise and possibilities to the work of teaching and learning. The pedagogies of praxis and humanism create a learning context of possibility. To summarize, the engaged learning experience for embracing differences through dialogue is captured in eight action steps.

Eight Actions for Embracing Differences

Share

1. It begins by connecting to your own personal story. Everyone has a personal narrative that matters. A narrative that makes meaning of who we are and what matters to us.

2. There is value in sharing your story. Trust that in sharing your cultural narrative the first step is being taken towards your own openness to connecting to someone else.

Listen

3. Listen to others with the intention of understanding. Listen to understand and learn. This does not mean that one must agree with what is being shared. That is not the purpose of listening. The goal is to 'see' the other.

4. Listen to differences with the intention of learning. Setting one's intention can either open or close the learning pathway. This learning is aided by curiosity. Learn to be curious about the other.

Personalize

5. Personalize the experience of embracing differences by heightening the relevance of the connection. To remain distant and aloof closes the pathway to connection and knowing.

6. Find relevance in the experience. Strive to find connections at the physical, emotional, and spiritual level. This is aided by connecting head and heart.

Create

7. Create meaning in the experience of embracing differences and allow for transformation to guide the process. Remember that true dialogue is transformational, therefore anticipate change.

8. Create a sense of belonging by allowing connections of the heart. The differences we are seeking to embrace are those features that make us human. When we allow ourselves to see the other, we are in fact allowing our heart to be open and allowing our humanness to guide us.

Limitations

First, the limitations of qualitative research methodology are bounded by the subjectivity of the participants, both the dialogue partners and the facilitator. To address this limitation, all three co-researchers (dialogue partners and facilitator) engaged in exploratory discussions, seeking agreement in the naming of the pedagogical elements, as well as the dialogue questions. As research participants we sought member checks of the content, the questions, the process, and the model. The process of dialogic inquiry utilized in this study necessitated an interdependent relationship between the three researchers. To allow for validation of the emerging concepts, process, and model, the three co-researchers allowed for independent work and then sought checks and balances through collaborative exchanges.

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Contact email: maria.guajardo.phd@gmail.com

Study on Computer-Adaptive Testing: Proposal of a Scaffolding Tool

Hirotaka Azuma, Tokyo Denki University, Japan
Hironobu Takenouchi, Tokyo Denki University, Japan
Tatsuyuki Takano, Kanto Gakuin University, Japan
Osamu Miyakawa, Tokyo Denki University, Japan
Takashi Kohama, Tokyo Denki University, Japan

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Abstract
A multiple-choice method is one of the major methods in Classical Testing Theory used at university, in certification exams and so on. This method enables faculty to score a test easily while requiring a certain amount of quizzes to estimate examinees' abilities with a certain accuracy. This also requires time to answer for examinees and time to create quizzes for faculty. Then it can be considered to adopt CAT, Computer-Adaptive Testing. CAT is another testing theory that reduces the number of quizzes to theoretically half compared to the existing multiple-choice method while keeping the accuracy of estimating examinees' abilities almost the same; however, it is necessary for each quiz to have its own difficulty. In this study, a programming exercise tool with a scaffolding method is going to be suggested aiming at generating quizzes with various difficulties automatically. A scaffolding method is a method that helps examinees to solve problems by providing some hints gradually. By using this tool, what elements are associated with reduction in difficulty can be examined, and they will be used to a quiz generation. Students will be required to answer half the number of quizzes and faculty will need to create much less ones than before. This tool also supports beginners to avoid bias in a difficulty distribution by providing very basic quizzes so that the beginners will be encouraged to brush up their skills and more detailed classification will be acquired.

Keywords: Computer-Adaptive Testing, Item Response Theory, Scaffolding

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Introduction

At university and in certification exams, there are a lot of testing methods to estimate examinees' abilities. One of the most popular ones is a multiple choice. A multiple choice provides some options for an examinee and let him/her to choose one of them. By using this method, it is easy for faculty to score a test. But to estimate examinees' abilities correctly, it is necessary to create a lot of quizzes in a single test. That means this method takes a long time for examinees to answer and also for faculty to create quizzes. Since these reasons, it can be thought to adopt a CAT.

CAT stands for Computer-Adaptive Testing. CAT is one of the computer-based testing methods. By adopting CAT, both faculty and examinees can enjoy the fruit of its traits. First, quizzes given to examinees vary according to individuals. Second, the number of quizzes also varies. Because of these reasons, CAT can contribute to preventing cheatings and decreasing the time to answer quizzes theoretically to half compared to the multiple choice. But examinees cannot go back to the previous quizzes since CAT decides which quiz should be next based on the examinee's answer to the previous one. And most importantly, each quiz in a test must have its own difficulty beforehand. Thus before using CAT, a lot of quizzes are necessary, the difficulties of which are well distributed.

Our study has gone through a plenty of experiments to calculate the difficulty of a quiz and to create a hard one by using some source code metrics or calculating coefficients. And some of them have been found to be related to the difficulty. But nothing can prove that it is truly effective. Because of these, this study's way has been changed slightly. This study's hypothesis is that if some hints are given, the difficulty of a quiz goes down to a certain degree, in other words, hints make a quiz easier. Thus quizzes with various difficulties will be gained.

Since minute changes to the difficulty of a quiz are hoped to be obtained, a scaffolding method has been introduced. A scaffolding method is a method to support examinees to achieve their goals that they cannot solve by themselves alone. This study proposes a tool that gives hints gradually.

Related Studies

Wood says the roles of instructions including "scaffolding" are getting attentions, limiting the options, keeping motivations, highlighting points, managing frustrations, and doing demonstrations (Wood, 1976). Getting attentions is to orient an examinee's attention towards a task to let him/her concentrate on it. Limiting the options is for reducing the options so that an examinee can focus only on necessary things. Keeping motivations is to maintain an examinee's motivation on a task for his/her stable concentration. Highlighting points means showing some points are related to each other to give further information to an examinee. Managing frustrations is for avoiding an examinee's strong dependence on an instructor. Lastly, doing demonstrations means showing an ideal result or way to solve and let an examinee do in the same way.

Collins says "scaffolding" is included in classical apprentice system (Collins, 1991). In classical apprentice system, trainees (in this case, examinees) used to observe what

their instructors do, and to try to learn. But today, modern apprentice system has been changing that instructors support their trainees to achieve some tasks. And their helps gradually decrease as the trainees are getting skilled.

Stone says “scaffolding” can be divided into four steps: Firstly, orienting an examinee’s attention to a task where the difficulty of it is a little bit harder compared to the examinee’s ability. Secondly, deciding how helps are necessary for an examinee to solve a problem. Thirdly, instructors should use various ways of helps according to a task. Lastly, supports should be decreased as an examinee gets skilled (Stone, 1998).

Ueno proposes a system that uses a scaffolding method for programming learners (Ueno, 2015). Ueno suggests that the learning effect becomes the highest when a hint that enables an examinee to answer it correctly almost fifty percent is given.

A Scaffolding Tool

In this study, a scaffolding tool provides a platform where examinees can train their programming skills. This tool gives a quiz, then gives the next one that is chosen to fit with the examinee’s ability adaptively based on his/her answer to the previous one. More concretely, this tool constructs of GUI and background functionality showing a source code to solve, left time to answer, statement texts to make sure how to answer the quiz, an answer column to type in, and further information.

In order to estimate an examinee’s ability and a quiz’s difficulty, this tool uses IRT to achieve them. IRT stands for Item Response Theory. In IRT, it is assumed that each examinee has his/her own ability that is hidden and independent from each other. IRT can calculate an item (in this case, a quiz)’s difficulty independently from statistical population, and also calculate an examinee’s ability as well. IRT provides three models to estimate. In this study, two-parameter model that uses an examinee’s ability, an item’s difficulty and discrimination factor has been adopted. This theory is used for various ways such as analysis (Nakashima, 2017) and assessment (Tsutsumi, 2018).

This tool also provides some hints to implement a scaffolding method. Steps of the hints are: Step1, no hints are given. The tool gives only a source code and statements. Step2, trace information is given. This means the tool highlights a line for each step of execution to show which line works at each time. Step3, trace and variables information are given. In addition to the step2, it shows variables’ information so that an examinee can know what each variable contains. Step4, trace, variable and standard output information. In addition to the step3, it shows what outputs will be shown in a console except last one.

This scaffolding tool runs as a following flow. It shows a source code and statements to let an examinee to solve with no hints. When the examinee answers the quiz correctly, the next quiz that is a little bit harder will be shown. When answering wrongly and not the all hints are given, the next hint will be provided. When answering wrongly and all the hints are already given, the next quiz that is a little bit easier will be shown. When the fluctuation of estimating the examinee’s ability converges, the test ends.

The GUI of this tool is shown in Figure 1. The largest area is for showing a source code. Under the source code area, there are the statement area and the answer column. The button written as “Send” is to send the answer when the examinee pushes this. On the right-hand side, there are an area to show left time to answer, hint status and a trace button (but the last two are hidden because the test has not begun yet), the variable-information area and the standard output area. An examinee can choose a test file selecting “Open” (it’s hidden in this figure) menu item in the “File” item in the menu bar on the upper area and can change the language in the “Settings” item.

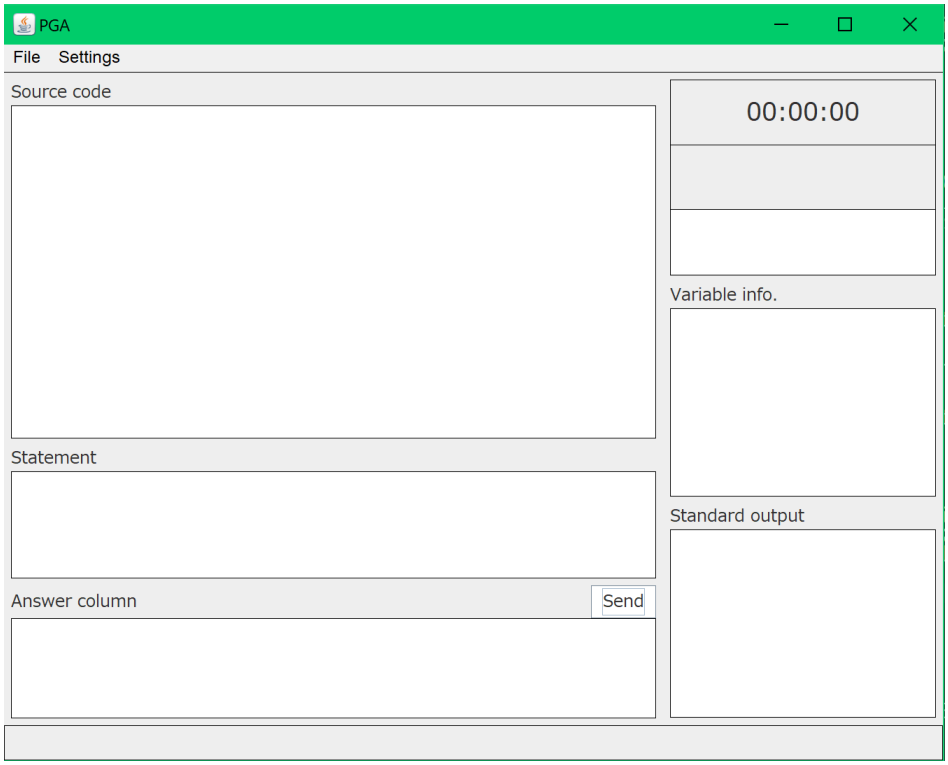

Figure 1: GUI of the scaffolding tool

When the test begins, each area works as shown in Figure 2. The source code is being shown with leading numbers. The statements are also shown. And the left time begins ticking. The hint status indicates what hints are available saying “No hints.” The trace button also activates (but in this case, it is disabled and saying “No hints given” since there are no hints available).

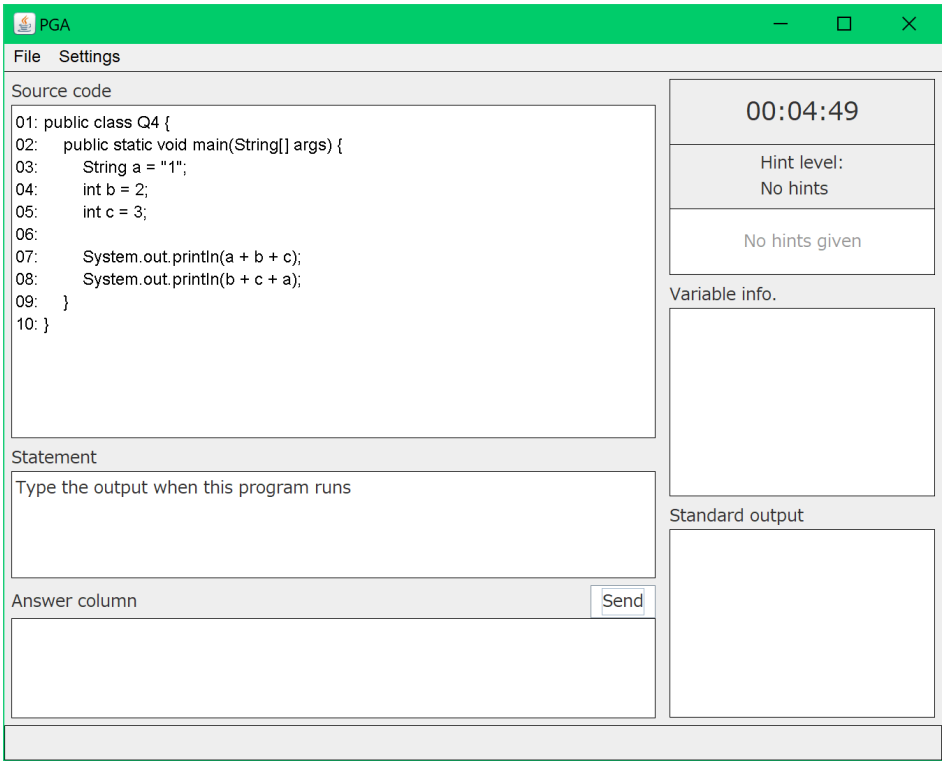

Figure 2: GUI when the test has begun

Each examinee is required to answer the correct output in console when a program with the source code runs. This is a reason why this study chooses two-parameter model in IRT since three-parameter model needs guessing information (this is mostly used in such as a multiple choice quiz) while this type of answers (free description) gives very low probability for examinees to answer it correctly when he/her type in by guessing.

After an examinee answered wrongly, the tool updates its hints. The trace information hint provides a highlighted line. The examinee can proceed the line by pushing the trace button that says “Click here to the next line” line by line. Regardless of the repetition, branching and method calls, the whole executions will be shown. GUI of this case is shown in Figure 3.

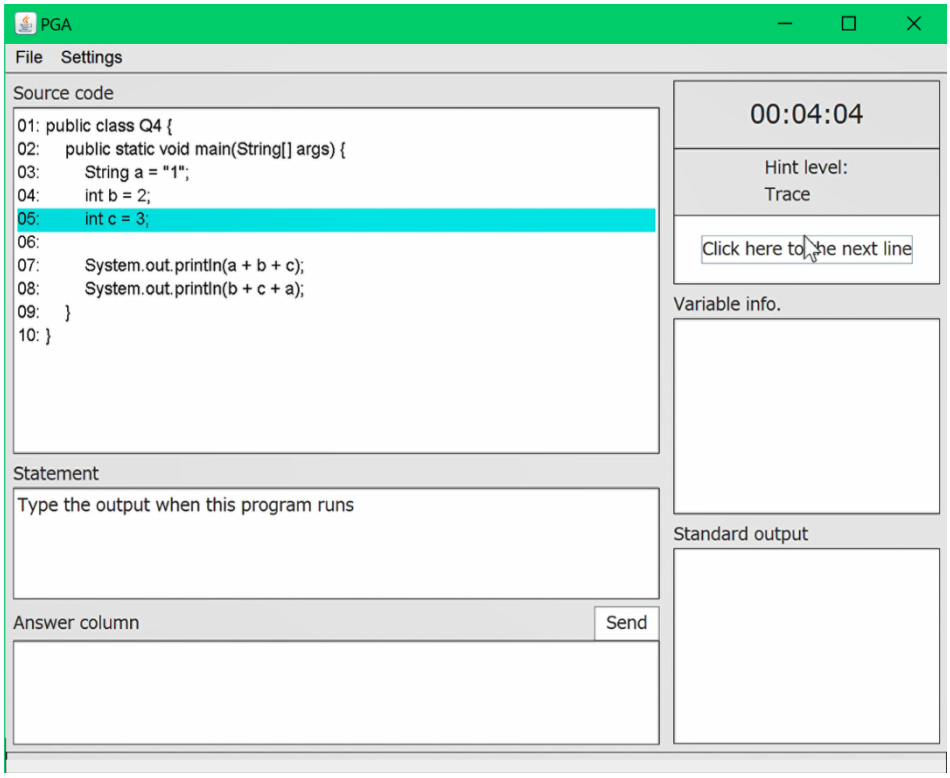

Figure 3: GUI when the trace information is given

When an examinee answers it wrongly even after the first hint was given, the tool updates its hints again as shown in Figure 4.

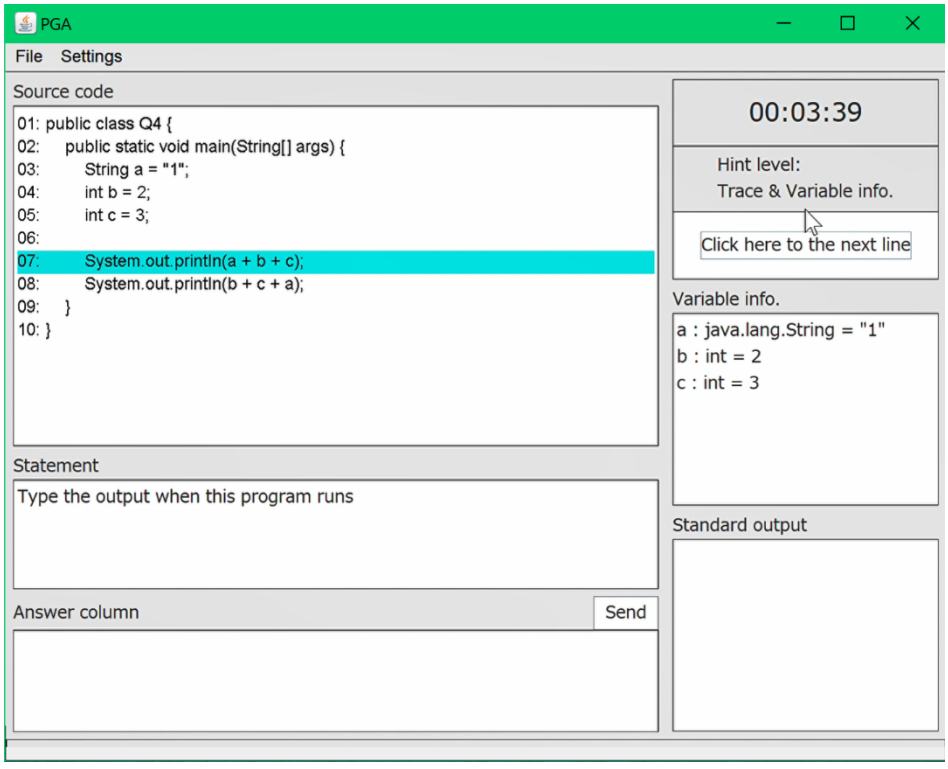

Figure 4: GUI when the variable information is given

In this step, variables information is provided with the types and values contained in them until theline executed at that time. Even if the line is in another method, it shows correct information showing only variables available at that time.

When an examinee reaches the last step of hints, the standard output information is given to see as shown in Figure 5. Thus the examinee can know which line shows what output in console. But the last output line is not be shown because the whole outputs are the quiz's answer themselves. If the source code contains only a single line to show output, the standard output area gives no information. This is the last step of the hints. So when the examinee answers it wrongly even if all the hints were provided, the tool provides the next, a little bit easier quiz.

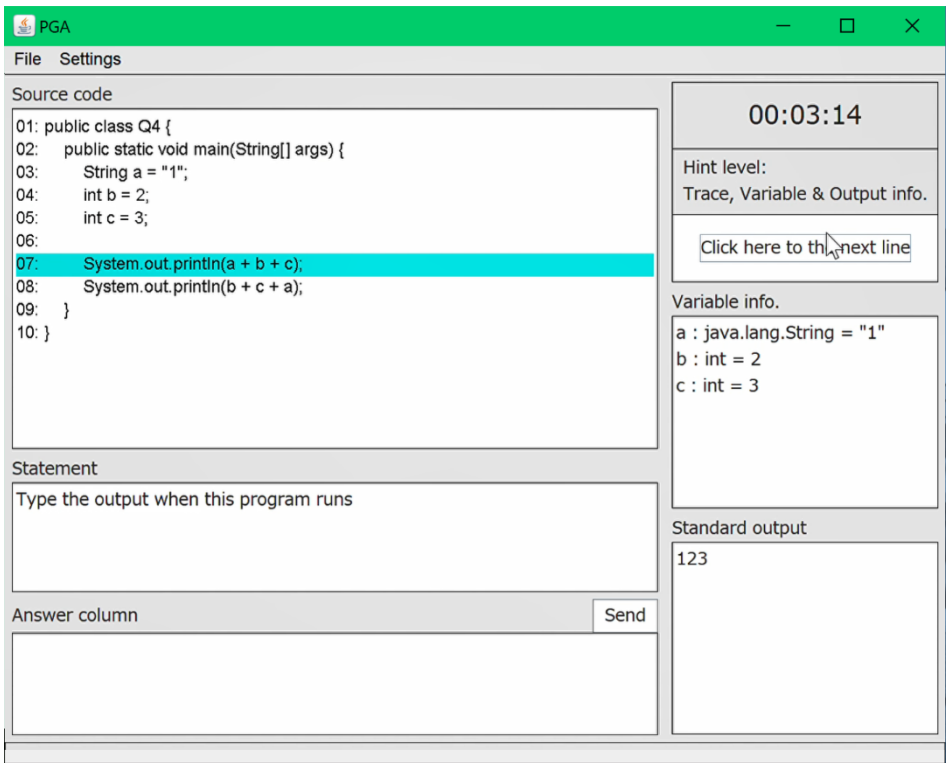

Figure 5: GUI when the standard output information is given

Through these gradual hints, the tool estimates an examinee's ability and the difficulty of a quiz to show the next one adaptively.

Additional Tool for True Beginners

This study assumes that true beginners may not solve easiest quizzes that their instructors prepare. This is actually an important factor to avoid because their answers may cause raising the average of the difficulty of each quiz.

To prevent this problem, an additional tool is provided in this study. This additional one provides quizzes that mainly consist of very basic knowledge.

This additional tool is implemented as Web service. The UI of the tool is shown in Figure 6.

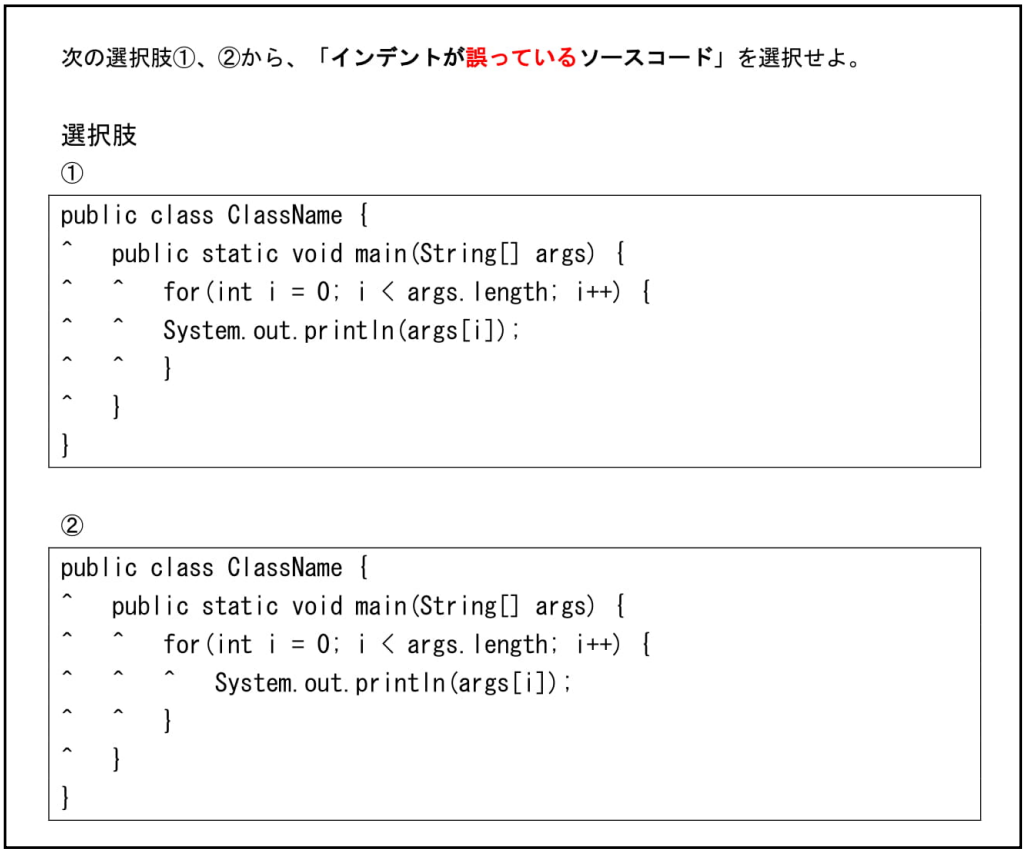

Figure 6: UI of the additional tool

The statement on the top says “Choose the source code that contains wrong indentation from 1 and 2 below.” Proper indentation is of grave importance, but the scaffolding tool assumes that all the examinees have already known it. Thus this additional tool supports the basics.

Another example of the additional tool is shown in Figure 7. The statement says “Choose the source code where grayed areas indicate the type of parameters from 1 and 2 below.” Ability to decide which is a type of parameter is also a very important factor.

次の選択肢①、②から、「**網掛け部分**が**仮引数の型**であるソースコード」を選択せよ。

選択肢

①

```
public class ClassName {
    public static void main(String[] args) {
    }
    public static String getExamInformation(int score) {
        return "";
    }
}
```

②

```
public class ClassName {
    public static void main(String[] args) {
    }
    public static String getExamInformation(int score) {
        return "";
    }
}
```

Figure 7: Another example of the additional tool

Conclusion

A scaffolding-included tool for programming learners is introduced to obtain quizzes with various difficulties. This study aims for gathering variety of quizzes automatically, and for being part of functionality in CAT system.

This study focuses on not only a source code itself but also other pieces of information such as statements and hints. Our past experiments tried to create a difficult source code without any other factors. But this study considers a quiz, which contains various factors, so that an easier one can be generated by providing some hints.

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Contact email: 19JKM02@ms.dendai.ac.jp

Exclusion of Persons with Impairment: Role of Language Vocabulary

Mansi Pandey, National Institute of Educational Planning and Administration, India

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Abstract
The aim of this research was to examine the role of language in the lives of persons with impairment and how meanings get attached to words that make it discriminatory against a certain section of the society. The paper questions routinization and normalization of the insulting words used for persons with impairment. The objective of the research was to study the evolutionary change in disability vocabulary and to explore the exclusion of persons with impairment through language. The research highlights various themes such as normalization and acceptance of words like 'cripple', 'freak' and 'abnormal' etc. in our everyday vocabulary, the dichotomy between 'normal' and the 'other/deviant' and differences between the terms handicap, disabled and impairment. It highlights the importance of the social model of disability in creating an inclusive environment. Mixed method approach (sequential explanatory) was chosen for this research. Semi-structured in-depth interviews were conducted and a questionnaire was circulated to record data. The findings revealed that the meanings of these words have not emerged in a vacuum and it is important to then trace their origin and understand the context in which they were used. The participants suggested that the best way to approach a person with impairment is to simply ask what they would be comfortable in while referring to them and that would only help in breaking the rigid segregations that have existed not just in physical spaces but also in our vocabulary, language, culture and mind.

Keywords: Impairment, Disability, Handicap, Inclusive Education, Normative, Segregation, Integration, Inclusion, Stigmas, Stereotypes, Labels, Socialization

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Introduction

Whenever a car bumps into another on a busy road, the first phrase that one gets to hear generally is "Are you blind?" or "Are you deaf". This phrase that is so loosely used gets unnoticed and is never critically analyzed. What one can observe here is how someone's impairment is being used to denote another individual's dumbness or ignorance and this negative connotation attached to various impairments has become "Normalized "or "Routinized".

An individual's ideas and thoughts find expression through the powerful tool of words and language. A meaning that gets attached to any word heavily impacts and influences the attitudes formed toward the subjects of discussion. All the words and concepts which are used to describe persons with impairment have their own histories and implications for them, giving validity to the assertion that language is constitutive of social practices and culture. Language possesses the power to transform economic, political and social practices but its power flow spreads out in uneven currents. The way we use our language in everyday lives impact our thinking and how we interact with others in our society. There are various social institutions such as family, school, religion etc. which shape the way in which individuals use language in their daily lives.

This paper throws lights on the various terminologies (including derogatory terms) used for persons with impairment and how the various social institutions play a role in shaping them. It helps us to "de-normalize" various derogatory and insulting terms that are used for persons with impairment. A conscious choice has been made in the paper to use the terminology 'Impairment' which refers to the temporary or permanent loss or abnormality of psychological, physiological or anatomical structure or function as per World Health Organization. However, it also important to distinguish it from two terminologies such as 'Disability' which refers to functional limitation with regard to special activity and 'Handicap' which refers to disadvantage in filling a role in life relative to a peer group.

This topic was chosen out of concern for the increasing normalization and usage of insulting terms for persons with impairment. "Persons with impairment" are not a homogenous category and there are vast differences amongst them as well which results to variation in the use of "derogatory" and "insulting" words against them. This paper will help enhance understanding of the terms 'Impairment, Handicap and Disability' and the various negative connotations attached to it with their origins and how they impact the lives of persons with impairment. Hence, the aim of this paper is to examine the role of language in the lives of persons with impairment and how meanings get attached to words that make it discriminatory against a certain section of the society.

Thus, the **research objectives** of the study are:

- To study the evolutionary change in vocabulary used for persons with impairment.
- To explore the inclusion/exclusion of Persons with Impairment through language.
- To understand the role of social institutions and processes in the stigmatization of persons with impairment.

To understand the objectives of the study, the following **research questions** were explored:

- What are the derogatory /insulting terms used to discriminate against persons with impairment?
- How has the vocabulary used for persons with impairment evolved with the changing meanings of various terminologies?
- What role does socialization play in establishing such stigmas and stereotypes in the society?

Impairment, Disability and Handicap

Terminologies used in our society are inscribed in language and culture. It is important to understand how meanings get attached to words and what is the root cause of discriminatory terms used for persons with impairment.

The World Health Organization defines Impairment as any loss or abnormality of psychological, physiological, or anatomical structure or function. Disability is defined as any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being and Handicap as a disadvantage for a given individual, resulting from an impairment or a disability, that limits or prevents the fulfilment of a role that is normal. Although these definitions have been provided to distinguish between the terminologies, they are still interchangeably used. However, before these definitions gained ground, there were other terminologies and often with derogatory connotations used for addressing persons with impairment.

Historically, words like “infirmity” and “affliction “as well as phenomenon like poverty, ugliness, weakness and sickness have been associated with persons with impairment and continues even till date. Words having supernatural connotations like “monstrosity” or ones likes “Deformity” representing a detachment from godliness and entrance into physical and moral ugliness have also been attached to persons with impairment. Since the nineteenth century, discourses on medicines, law and statistics started linking persons with impairment and their lives as firmly connected to words such as “deviance”, “abnormality” and “disorder” (Davis, 1995). Human bodies have always been compared and measured against the idealized standards of what a perfect individual should look and behave like, hence the modern conception of “normalcy” that has been formed and against which Persons with Impairment are measured against has emerged from this ideology (Davis, 1995). It is also important to analyze the origin of the various negative connotations given to terminologies used for persons with impairment. These terminologies do not emerge in a vacuum, they are a result of the beliefs, practices, interactions, values, attitudes and culture of a society and its social structures and institutions.

Language- A Reflection of Social Interaction and Culture

Any kind of linguistic utterance or expression can be understood as the product of the relation between a “linguistic market” and a “linguistic habitus.” The language that an individual uses originate from their accumulated linguistic resources leading to attaching meanings to words that meet the demands of a social field or market that is their audience/listeners (Bourdieu,1991). Hence every linguistic interaction, however

personal or insignificant can be traced to the social structure out of which it emerges and helps to reproduce (Bourdieu, 1991). Language can also be understood as one which represents, manifests, and symbolizes power (Bourdieu, 1991). The choice of words used by both persons with impairment and non-impaired are clearly guided by their social structure and culture (Bourdieu, 1991).

Similar notions on the intersection of culture and language are given by Anthropologist Bronislaw Malinowski who argues that “language and culture are indivisible; our language is our culture and how we use it reflects on our culture”. Throughout history, culture has played a major role in dismissing and discarding those seen as different from the “normative”.

To get a better understanding of how these negative terminologies used for persons with impairment get accepted by the society, it is essential to examine the concept of performativity of language. Social reality does not emerge in a vacuum, instead gets continuously created through the use of language, gesture, and various kinds of symbolic social sign. A speech act gets its meaning only with reference to the existing and accepted norm, code and contract which gets repeated through its performance/pronouncement (Butler, 1997). By using words with predefined meanings, our reality is thus socially constructed and by citing the conventions and ideologies of the social world around us endlessly, we contribute to the reproduction of that very reality. Speaking can thus be seen as a performative act where we "incorporate" that reality by enacting it with our bodies (Butler, 1997). The hegemony of heteronormative standards maintains their power by our continual repetition of what is considered as the “normative” and “dominant” in the most mundane of daily activities (the way we walk, talk, gesticulate, etc.) (Butler, 1997). Thus, the continuance of the discriminatory words against persons with impairment contributes in the maintenance of the oppressive status quo where the most personal acts are regularly scripted by hegemonic social conventions and ideologies (Butler, 1997).

Bronislaw Malinowski also suggested that “language and culture are indivisible, our language is our culture and how we use it reflects on our culture (G.W Hyatt, 2005). Through history, culture through its norms, rules, law and language has dismissed, discounted, and discarded those seen as different.These labels degrade individuals by focusing on their differences or incapability, rather than on the individuals themselves, they link individuals to stereotypes, and often trump other indicators of identity. Until recently, the prevalent model of disability had been the medical model in which the impaired person is seen as the problem, a social model of disability language is thus seen as one which would bring with its language of equality and inclusion. The social model of disability has also helped in the movement towards building inclusive environment and changing perspectives of the society when looking at persons with impairment.

Defining ‘Inclusion’

A shift was seen from the Medical Model of Disability to a Social Model with the Disability Discrimination Act (DDA) 1995. The Medical Model emphasized that is the individual who is the problem and it is their “impairment” that is the cause for their exclusion from the society and the negative associations attached with the Persons with Impairment. However, the Social Model recognized that it is the lack of

facilities in the surrounding and infrastructure, insensitive attitudes, culture and values of the society as well as the process of socialization which needs improvement. Society must be aware of their responsibility of creating an inclusive environment.

Figure 1: Medical Model of Disability

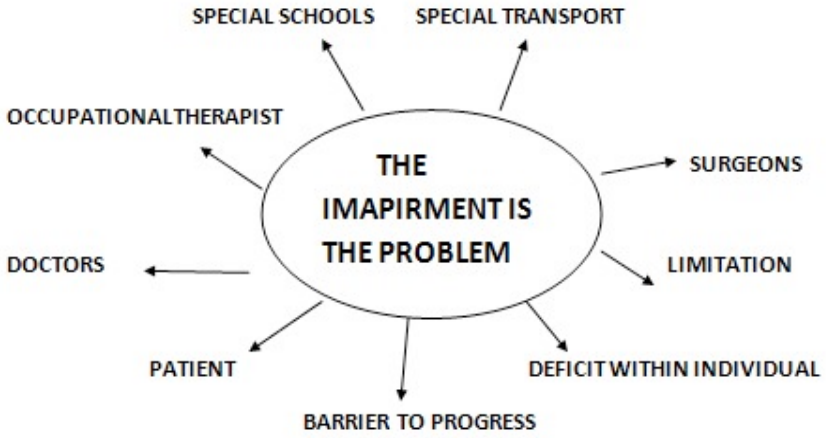
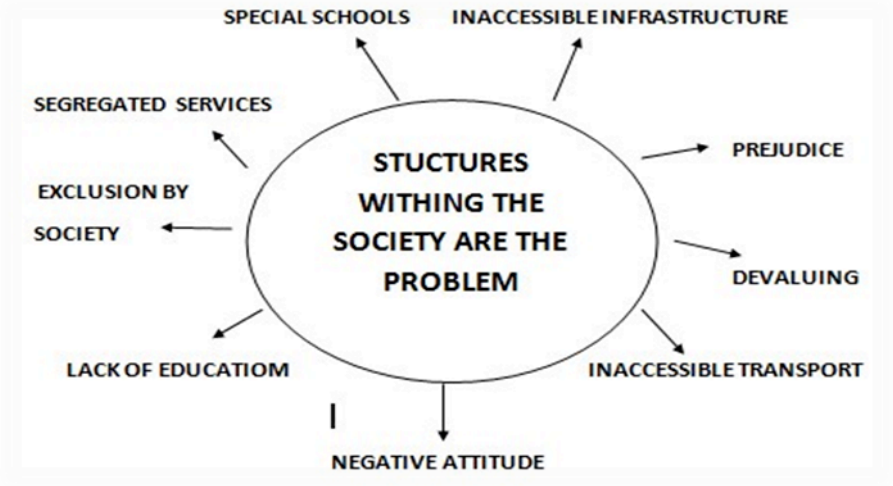


Figure 2: Social Model of Disability



The social model also influenced greatly the schooling system for children with impairment. Before Inclusion, as a movement gained momentum, it was believed that segregated special education supported by the medical model of disability was ideal for children with impairments. As people with impairments showed their dissatisfaction and anger with segregated education, issues of equality of access and educational opportunity gained impetus. Integration soon replaced the Segregation Model however; it was realized that it was also not a complete attempt for attaining full inclusion of all students. However, Inclusive model of education encouraged the society to be aware of their responsibility of creating an inclusive environment in which everyone can live. Starting from making changes in the physical environment, for example ramps for wheelchair users to the need for changing negative attitudes

about Persons with Impairment so that they are not discriminated against, the inclusive model based on social model of disability promoted it all.

In the backdrop of such developments, 'Inclusive Education' as a movement started to gain momentum with the United Nations Salamanca Statement which was signed by 92 member countries and came into existence (1994). The Statement debated that "Regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all."

In India, various policies and reports have attempted to define inclusive education. The recent Rights of Persons with Impairment Act, 2016 (RPWD) defined inclusive education as "a system of education wherein students with and without disability learn together and the system of teaching and learning is suitably adapted to meet the learning needs of different types of students with disabilities".

Even though a universal definition of 'Inclusive Education' has not been established, the ideas of equity and accessibility have been the underlying themes of all interpretations. They all emphasize that children with or without impairments have the same rights to educational opportunities. However, one also needs to observe the barriers of the successful inclusion of children with impairment, one of which is the attitude and language used in the society for them which leads to labels and stigmas. Here, it becomes essential to analyze the role school as a social institution.

An institution such as a school is not just a physical space but can be conceptualized as a shared system of meaning (Skrtic 1991). It plays an important role in the development of students as well as the society, however it can also become a source of exclusion by failing to promote equal participation, access and also by the use of labels and stigmas for children with impairment.

Methodology

To overcome the limitations of a single design, mixed method approach (sequential explanatory) was chosen for this research. The research involved collection and analysis of quantitative data followed by a collection and analysis of qualitative data.

Interview

Semi-structured in-depth interviews were selected to carry out this research study. In choosing the sample of participants the researcher used a convenience sampling method. The researcher chose to interview 20 individuals aged between 20-35 years.

Questionnaire

Questionnaires are a good way to get quick results at a low cost and can produce reliable, quantitative results if the right questions are asked. In choosing the participants of this survey, snowball sampling method was selected. A total of 70 responses were recorded and the age selection was restricted between 20-50.

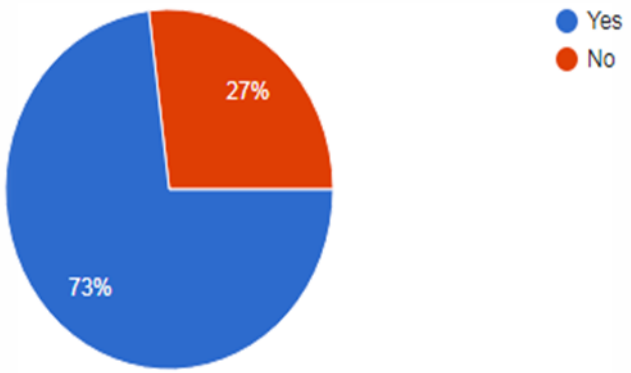
Findings and Analysis

Role of Vocabulary in Enforcing Social Domination

Through the responses to the survey, a list of derogatory names used commonly for Persons with Impairment came out, some of them being Apahij, Autistic Person, Abhanga, Andha, Behera ,Retarded ,Psycho , Divyangjan, Dumb, Mand Buddhi, Crippled, Lame , Dwarf and Apang etc Disability discourse and its intersection with language can then be seen as a vocabulary which is created to maintain certain forms of social domination as Foucault elaborates in his book, Madness and Civilization.

Similarly, terminologies with negative connotations such as “cripple”, “retard”, “spastic”, “handicapped” is one aspect of knowledge that contributes to the social construction of disability and these terms create stigmas around Persons with Impairment which are then seen as acceptable because being labeled as one of these terms’ means being labeled as “Different’ and the “Deviant other”.

Figure 3: Percentage of people considering “feeble” and “dumb” as derogatory



In the figure 3 we observe the responses to the question ‘if people considered words like “feeble”, “weak” and “dumb” as derogatory and insulting, although 46 out of 65 people acknowledged them as derogatory and discriminatory, there were around 17 people who considered these terms as normal and common. Since these terminologies have become extremely normalized in our society and culture, there is no space left to even question their usage which clearly discriminates against a significant section of the population.

These terminologies are not just single words used to address a section of the society but express very strong ideas about what is desirable and undesirable in a particular culture. The words "disabled", "cripple", "spastic", "invalid", "weak" and "abnormal" manage to evoke very intense, very negative images. However, one need to observe the framework within which these words are embedded, the sentences that are formulated and the discourses which inform their use and their possibilities, which bring us to intimate connection that lies between language and power. If one hears the word "disability” for instance, it conjures up a certain kind of image as it mediates between the recipient of the word and the larger discourse within which disability is framed. This discourse includes certain sites like media representation, medical

models, sociological discourse, education syllabus and political programs that contribute in the vocabulary and knowledge creation/dissemination about Persons with Impairment. Therefore, it is essential to understand not only how language functions symbolically, but also how these symbols are tied, through discourse, to systems of power.

All social practices have meanings attached to them and these meanings have the power to shape and influence our conduct and activities, hence all practices can then see to be having a discursive aspect. Discourses can then be observed as production of knowledge through language and they cannot be seen as separate from each other as each plays a major role in the operation of the other.

What has been examined is how labels stigmatize but what needs to be paid attention to is how discourses also silence. Discourse have silenced Persons with Impairment in various ways as it rejects personal tragedy narratives and identifies impairment as part of human experience to be valued on its own terms. It leaves them with no language with which to express themselves, it invalidates their narratives and, therefore, their subjective realities, and it renders them invisible. Discourse, in creating the space for subject formation by marking the boundaries of exclusion instead creates a "silent majority" who has no way of telling their stories and articulating their subjecthood or lack of it. In some cases, it also creates a ‘culture of silence’ which has been discussed by Paulo Freire where a negative, passive and self-image is instilled onto the oppressed such as persons with impairment.

Stigmas and Stereotypes

Stigma as a form of negative stereotyping has a way of neutralizing positive qualities and undermining the identity of stigmatized individuals. This kind of social categorization has also been described by one sociologist as a "discordance with personal attributes". Thus, many stigmatized people are not expected to be intelligent, attractive, or upper class (Coleman 1997: 221 222). This stigmatization becomes more apparent with the usage of certain discriminatory and insulting terms for Persons with Impairment as they propagate the creation of stereotypical identities. In this way key words, such as "cripple”, “disabled", "handicapped" are attached to a set of images which, regardless of whether they describe the person in question are assumed to do so because they are associated with persons with impairment in general.

One of the interview participants was quoted as saying “*It is very common for people in my surrounding be it friends, relatives and even neighbors to show sympathy to my parents for my condition and also discouraging them from letting me go to school or pursue higher education, go on vacations and wanting to go out for an event or simply a movie. There have been all kinds of judgments and stereotypes formed around what am I capable of doing and what all should i not even be thinking about doing”.*

Stereotypes become very powerful political tools in their concise and incisive ability to subjectify as it emanates from and contributes to the process of normalization through the construction of binary oppositions. For the norm is also represented by a "stereotypical" image of an active, independent, achievement-oriented worker who is usually male, wealthy, non-disabled and heterosexual. Through this negative

stereotyping, persons with impairment cannot avoid becoming the 'Other' and they become representative of what not to be. Stereotyping, in other words, is part of the maintenance of the social and symbolic order as it sets up a symbolic frontier between the 'normal' and the 'deviant', the 'normal' and the 'pathological,' the 'acceptable' and the 'unacceptable', what 'belongs' and what does not or is 'Other', between 'insiders' and 'outsiders', Us and Them. It facilitates the 'binding' or bonding together of all of those who are 'normal' into one 'imagined community'; and it sends into symbolic exile all of them- 'the Others' who are in some way different or 'beyond the pale' (Hall 1997: 258).These stigmas have an adverse effect on the self-esteem and confidence of Persons with Impairment making it extremely hard for them to come out of it.The experience of persons with impairment is thus far more often of exclusion and, segregation and prejudice than it is of integration and welcome.

What Role Does Socialization Play?

Socialization is the process and the result of the inclusion of an individual in social relations [Nikitin, 1998]. However, socialization is a multidirectional process. Socialization takes place both as the process of integration of an individual in the social system (T. Parsons, R. Merton), and as a self-actualization process of "self-identity", self-actualization of one's potentialities and abilities as the process of overcoming the environmental influences that hinder self-development and self-assertion of a concrete personality (A. Maslow, C. Rogers).

In one of the interviews, a participant narrated how during her school education there was always a gap and awkwardness that existed between the other students and her as they were uncomfortable in approaching her. She explained how students around her had been brought up in able-bodied ghettos and if one sees a body that varies from one's own nation of the "normal body "then it is considered as "abnormal" and "pathological".

Language then becomes a double-edged sword as it can play a role of both easing out the process of socialization for both Persons with Impairment and the rest of the population or make it even more difficult by not being able to use the right and appropriate kind of words to address Persons with Impairment. Since majority of the individuals haven't been socialized in being comfortable with Persons with Impairment around them, they tend to make a lot of assumptions like Persons with Impairment cannot speak for themselves.

Is Formation of New Vocabulary the Solution?

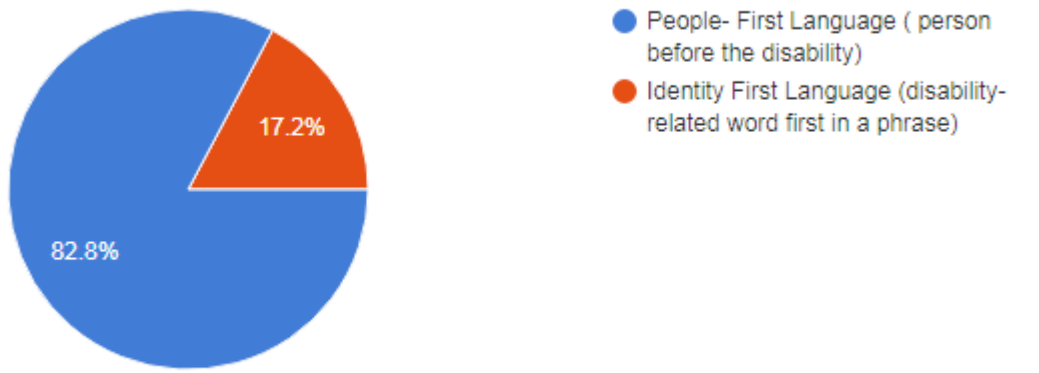
While interviewing, one of the participants showed discontent with the new terminology for Persons with Impairment - "Divyang" (bodies are possessed by divine power or divya shakti). She was quoted as saying *"Mere change of terminology is not going to bring about any change in the manner in which people with disabilities are treated. Invoking divinity will in no way lessen the stigma and discrimination that Persons with Impairment have been historically subjected to and continue to encounter in their daily lives. Disability is not a divine gift. And the use of phrases like 'divyang' in no way ensures de-stigmatization or an end to discrimination on grounds of disability".* What one examines is how exclusion and

marginalization cannot be addressed by using patronizing terms like ‘divyang’. On the contrary, they will only invoke sympathy and underline that charity is what counts.

While closely examining the new terminologies used for Persons with Impairment, it has proven to be largely ineffectual as a strategy for resistance as it sometimes actually serves to mask some of the more deeply oppressive realities that frame disabled people's lives (Marks, 1999). The adoption of terms such as "special needs" for the resources required by Persons with Impairment to function independently, and "self-advocate" for people who have intellectual impairments can conceal the very real problems faced by Persons with Impairment by suggesting that they are enjoying equity in society. But, whether politically correct language derives from well-meaning attempts to reverse discrimination or from those who wish to conceal oppressive ideologies, the important thing to recognize here is that an elementary semiotic approach is doomed to failure because the introduction of simple labels on their own cannot dismantle deeply rooted discrimination. What is also wrong with many of the new words which have been developed to describe Persons with Impairment is that they have not been chosen by Persons with Impairment themselves and are not seen by them to reflect their identities or political desires. Words such as "physically challenged," "able disabled," "handicapped”," "special people/children," "differently abled," and "people with differing abilities" are all attempts to raise the status of Persons with Impairment by providing more positive sounding labels but they have been rejected by Persons with Impairment as undesirable.

All of these adjectives used as abstract nouns contribute to the process of stigmatization by reinforcing the tendency to "see" Persons with Impairment only in terms of those disabilities. These labels rivet attention on what is usually the most visible or apparent characteristic of the person. They obscure all other characteristics behind that one and swallow up the social identity of the individual within that restrictive category (Dajani, 2001: 198 199). They are rarely used by activists who are impaired and scholars. Although they may be considered well-meaning attempts to inflate the value of people with disabilities, they convey the boosterism and do-gooder mentality endemic to the paternalistic agencies that control many disabled people's lives' (Linton, 1998:14). These euphemisms have the effect of depoliticizing our own terminology and devaluing our own view of ourselves as Persons with Impairment (Gilson, Tusler and Gill, 1997). These attempts of formulating new terminologies have been seen as rehabilitation moves or efforts but they have not been very successful because they place responsibility for change on the individual when the problem is in fact a social one. What needs to be questioned then are the words and phrases which are used to describe persons with impairment, to unearth the concepts which inform the meaning that they carry and to reshape and restructure the culture and orientation of social institutions such as schools, family, workspaces to become more inclusive.

Figure 4: Preference on People First or Identity First Language.



In figure 4 we examine that in the survey, 82.8% of the participants preferred People-First Language while addressing Persons with Impairment while there were 17.2% of the participants who advocated for Identity First Language. Whereas interviews with Persons with Impairment gave mixed responses as some preferred People-First Language and others preferred Identity First Language. Those who advocated the former believed that this is one such category of terminologies that can foster positive attitudes about Persons with Impairment and lead to major improvements in communicating with and about people with impairment. People-First Language emphasizes the person, not the impairment. By placing the person first, the impairment is no longer the primary, defining characteristic of an individual, but one of several aspects of the whole person. People-First Language is an objective way of acknowledging, communicating, and reporting on impairments. It eliminates generalizations and stereotypes, by focusing on the person rather than the impairment.

Conclusion

The findings of the research are relevant to the wider study of the role of language in exclusion and inclusion of Persons with Impairment and its implication on them. The research examines the evolution of terms to contextualize how the negative connotations were attached to them. The formation and culmination of such negative meanings and connotations of terminologies used for Persons with Impairment are then found in the society, within its culture and the process of socialization and conditioning of individuals. Because most individuals are brought up in "able-bodied" ghettos, the bodies that do not confirm to their version of the "normal" are labeled as "different" and "abnormal". The use of such words is not just discriminatory but also have stigmas and stereotypes attached to them that highly affect the lives of Persons with Impairment as it makes them feel that they are not a part of the society and lowers their self-esteem and confidence. The meanings of these words have not emerged in a vacuum and it is important to then trace their origin and understand the context in which they were used. Only when one identifies the origin of such words can one refute its usage in the present context. Individuals might not even know where and for what did a terminology emerge but increasingly use the actual conditions of Persons with Impairment as derogatory terms or to define "abnormality" or "defect" in any kind of situation. Starting from bickering on the roads, scholarly

literatures to even school curriculum and textbooks, the various conditions that Persons with Impairment have has been used to define the “restrictive” and “limiting” aspects of the society, not acknowledging the role that it is not the individual but the society that makes Persons with Impairment’ activities restrictive and limited. It is the lack of infrastructure, lack of sensitivity and awareness on how to appropriately address Persons with Impairment, social conditioning to not accept anything that deviates from our ideals of “normative” and then forming prejudices and excluding them from being part of the society is what makes them the “others”.

The question that then emerges from all these findings and analysis is what is then the appropriate way to address Persons with Impairment? What vocabulary is the most suitable? While there is no fixed universal answer to this, however the society and its structures must start becoming more inclusive in their approach. The participants of the research suggested that the best approach is to approach a person with disability and simply ask what they would be comfortable in while referring to them and that would only help in breaking the rigid segregations that have existed not just in physical spaces but also in our vocabulary, language, culture and mind.

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International Student Migration: Pre-COVID Educational Paths of Chinese Undergraduate Students at Emory University

Hong Li, Emory University, United States
Levin Arnsperger, Emory University, United States
Michael Cerny, Hertford College, United Kingdom

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Abstract
According to the Open Doors report published by the Institute of International Education (IIE), over 372,000 students from the People's Republic of China were enrolled at a U.S. college or university in the 2019-2020 academic year (IIE, 2020). Often employing a 'push-pull' model of international student migration, prior academic research has sought to identify the primary factors which motivate Chinese students' desire to receive an overseas education. However, the recent deterioration in U.S.-China relations, along with the COVID-19 pandemic, are expected to both alter and depress international patterns of Chinese student migration. Combining two datasets collected at Emory University in the past three years, our study investigates the pre-COVID educational paths of Chinese students from high school to American colleges and their motivations for pursuing undergraduate education in the U.S. Drawing from 190 survey responses and 15 interviews of Chinese students, our study highlights how Chinese students navigate the complex application process and identifies the key factors influencing students' decisions, particularly with regards to the political and economic status quo of the United States and China, parent-student aspirations, and the perceived value of higher education in the U.S. At the end of the paper, we will discuss another set of 20 recent interviews with Chinese students at Emory, which provided insights into challenges and concerns of the students during COVID-19; these insights in turn prompt reflection of future patterns of international student migration.

Keywords: Overseas Education, International Students, Chinese Students in the U.S.

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Introduction

A long-established phenomenon dating back to Chinese imperial period, international student exchange from China to the United States can be traced to 1854 with the graduation of Yung Wing from Yale University. Although hundreds of Chinese would be educated in the United States in subsequent decades, student exchange would decline to near zero by Mao Zedong's death in 1976 (Yan & Berlinger, 2016). It was not until 1978, more than a century after Yung Wing's graduation 1854, that Chinese enrollment at United States universities would begin to accelerate to the levels that characterize American higher education today (Lampton et al., 1986; Yan & Berlinger, 2016).

Rising sharply following Deng Xiaoping's 1978 agreement with the Carter administration to conduct student exchanges with the United States, the number of Chinese students in American higher education soared to approximately 20,000 by 1988 (Yan & Berlinger, 2016). By 2008, this number had quintupled to more than 98,000 and continued to rise across the following decade to over 372,000 in 2019/2020 (IIE, 2020). China has been the largest source of international students in the U.S. in the last 10 years. However, the recent deterioration in U.S.-China relations, along with the COVID-19 pandemic, are expected to both alter and depress international patterns of Chinese student migration. In fact, Fall 2020 enrollment of international students in the U.S. dropped by 43% (IIE, 2020).

Recent studies about the motivations of Chinese students' decision to pursue education abroad have revealed important insights into the factors that influence their decision, including high levels of competition for university entrance in their home country due to overpopulation (Bodycott & Lai, 2012, p. 254), recommendations by peers and relatives, and the ability to work in the host country (Mazzarol, Soutar, & Thein, 2001). Drawing from 190 surveys and 15 interviews of Chinese students at Emory University, our two interconnected studies investigate the pre-COVID educational paths of Chinese students from high school to American colleges and their motivations for pursuing undergraduate education in the U.S. The data collected from 2018 to 2020 reveals important social, political, and academic factors Chinese students consider when choosing their schools and majors, with regards to the political and economic status quo of the United States and China, parent-student aspirations, and the perceived value of an overseas education. Furthermore, based on recent, separate interviews with over 20 Chinese students at Emory, we will discuss the challenges and concerns of Chinese students studying in the U.S. during COVID-19 that provide insights into how online learning might shape future patterns of international student migration.

Our Studies

1. Background of Our Studies

Emory University is a private research university located in Atlanta, Georgia. In recent years, enrollment of international undergraduate students has been steadily increasing. According to data released by Emory's Office of Undergraduate Admissions, in Fall 2019 international students hailed from 105 countries, and they made up 22.7% of the total undergraduate student body. Among them, 1,196 (46.3%) were from Mainland China.

Why did the Chinese students decide to pursue their undergraduate education in the U.S.? What factors did they consider in their decision making process? How did they prepare for this journey? To answer the questions, we conducted two sets of surveys and interviewed 15 Chinese students. The first survey ("Study 1") described in this paper investigates Chinese students' motivations to study in the U.S. and factors influencing their choices of schools. The second set and the interviews ("Study 2" here, though actually conducted earlier) focus on Chinese students' experiences preparing their applications, completing high school, and starting college in the U.S. The two projects thus illuminate how Chinese students navigate the spaces and roads leading to a transnational career. Students endeavor to understand the opportunities and challenges in both the U.S. and the Chinese educational systems, and once they decide to move abroad, they seek support from their families, teachers, and consultants to succeed in entering American colleges.

2. Literature Review

Deep academic research has sought to identify the primary factors which motivate Chinese students' desire to receive an overseas education. Often analyzed within a 'push-pull' model of international student migration, these studies assess a variety of influential socioeconomic, political, and outcome-based factors (Mazzarol & Soutar, 2002; Chen, 2018; Fang & Wang, 2014; Lee, 2017; Lo et al., 2019). For example, McMahon (1992) investigates what might 'push' students from their home countries, such as a low degree of home-country prosperity or government emphasis on foreign educational attainment, and what might 'pull' students to other countries, such as a higher degree of economic prosperity or cultural linkages (Mazzarol & Soutar, 2002). In their highly influential study, Mazzarol, Kemp, and Savery (1997) employ a 'push-pull' model to identify six primary motivational factors behind the decision by Mainland Chinese, Taiwanese, Indian, and Indonesian students to pursue overseas education. These include the reputation of the host country, personal recommendations from parents, relatives, and friends, issues related to cost, such as the ability to find part time work, the local environment, geographic proximity to the host country, and social links to the host country, such as resident contacts (Mazzarol, Kemp, & Savery, 1997; Mazzarol & Soutar, 2002). These macrolevel factors, along with a host of other institutional factors identified by Mazzarol and Soutar (2002), have inspired significant application of the 'push-pull' model in the context of international student migration (Fang & Wang, 2014). Although the 'push-pull' model has helped scholars unpack what factors might influence the decision-making of students as they choose to study abroad, the model has notable limitations. For example, Wen and Hu (2019), along with many others, write that the focus of the 'push-pull' model on macrolevel social and economic factors tends to overlook important microlevel motivations, such as those associated with socioeconomic status, gender, age, and personal aspiration (Wen & Hu, 2019; Fang & Wang, 2014). Additionally, Chen (2017) notes that the model does not clearly account for differences between destination countries, such as how varying immigration policies may alter student calculations about post-graduation employment. Most pertinent to this study, the model grants little insight into who drives the consideration of these factors during the study abroad decision-making process. Regarding the process of student decision-making, Mazzarol and Soutar (2002) identify three distinct stages during which 'push' and 'pull factors are evaluated. During the first stage, 'push' factors motivate a student to look outside the country for education. In the second stage, 'pull' factors increase the relative attractiveness of a particular country compared to

another. During the final stage, a student selects an institution of higher education based off factors like the reputation for quality, market profile, and the university alumni base (Mazzarol, 1998). However, Mazzarol and Soutar's (2002) evidence of a layered decision-making process, which seems to require careful cost-benefit analysis, offers an interesting question about the suitability of the 'push-pull' model in the context of Chinese student mobility.

In the context of the previous research, our Study 1 seeks to identify the complex macrolevel and microlevel factors about studying abroad that Chinese students evaluate in making the decision, examine their perspectives about the American and Chinese higher education systems, and pinpoint the concerns they have about studying/living in the U.S.

Study 2 owes a great deal to the scholarship of Vanessa Fong, Anni Kajanus, Steven Fraiberg, Xiqiao Wang, Xiaoye You, and many others, who have explored the experiences of young Chinese women and men seeking or realizing their dream of studying abroad. Some of these scholars completed case studies on Chinese students, tracing their personal journeys: discussing their decisions, their academic and professional achievements, and the prejudices they encounter. Fong (2011) and Kajanus (2015), for instance, interviewed hundreds of individuals in Dalian and Beijing over the course of several years. Fong addresses the quest for "world citizenship" or "flexible citizenship" of these transnational students; Kajanus talks about the economic, political, and cultural factors that affect the migration flows. Fraiberg, Wang, and You (2017) explore the lives of Chinese international students at the University Michigan, presenting the resources, communication channels, and communities that they draw on for support. Similar to Zamel, Spack, and their contributors (2004), Fraiberg et al. also discuss in their book, *Inventing the World Grant University*, how English language learners (ELLs) approach academic writing assignments in classes across the curriculum. There are of course hundreds of articles and books on teaching and tutoring ELLs at universities, occasionally with a focus on the interests and needs of students from China. Few people though, with a couple of exceptions (e.g. Yang, 2016), have examined the support Chinese students receive as they prepare for American college and as they work on applications, and there is little research on the challenging path from Chinese high schools to American colleges.

Based on the two studies, we propose that the decision by a Chinese student to receive undergraduate education overseas is complex, intrafamilial, and one that entails significant parental involvement, the assistance of often-expensive consultants and agencies, and extensive evaluation of the U.S. and Chinese educational systems.

3. Methods

Two studies (Study 1 and Study 2) were conducted over the span of two years between 2018 and 2020. Study 1 was a survey of Chinese students' motivations to study in the U.S. The survey, shared with students in Spring 2020, included 34 questions in the formats of filling in blanks, multiple choice, ranking of importance, and short essays. Questions were divided into the following sections: demographic information of students and parents, parental and student role in making the decision to study in the U.S., factors influencing the decision and their choice of schools, their evaluation of the U.S. and Chinese educational systems, and finally their concerns about studying and

living in the U.S. We received 56 partial/complete responses from Chinese international students at Emory University. At the time of completing the survey, they were pursuing a wide range of majors in the humanities, social sciences, and natural sciences, including business, math, economics, biology, psychology, art history, and music, and most of them came from so-called tier 1 and tier 2 cities in China (South China Morning Post, 2016).

Study 2 employed a mixed-methods approach with 136 completed surveys and 15 interviews of Chinese undergraduate students at Emory about their experiences preparing their applications, completing high school, and starting college in the U.S. (most enrolled in 2016 or 2017). Students were asked in the survey if they would be available for a follow-up interview, and a number of the respondents were open to discussing their journeys in some detail, with the semi-structured interviews lasting between 25-35 minutes. A writing tutor, herself originally from Qingdao, China, assisted in transcribing the interviews. A few excerpts from the interviews are shared below. In the future, the goal for us will be to code and more closely analyze these interviews, but also to talk to and survey additional students; interviews will likely be structured going forward to allow for better comparisons. Especially as we have collected some data and can present initial findings (discussed in this paper), it will arguably be sensible to conduct such structured interviews to facilitate more meaningful comparisons between students and refine our conclusions - and reflect on our research questions. After all, to quote Noam Chomsky (2002), "Maybe in doing research you only understand what you were doing LATER ... first you do it and later, if you are lucky, you understand what you were trying to do and these questions become sort of clarified through time."

4. Findings of Study 1

With regard to the decision for a Chinese student to pursue undergraduate education in the U.S., 55% of the participants reported that their parents first proposed the possibility; however, more than 65% of the students indicated that they themselves made the final decision. This demonstrates a collective decision-making process, in which parents played a guiding role while students exerted individual autonomy. On average, the possibility was first raised when students were 15 years old. This is the age Chinese children are typically finishing junior high and starting senior high school. Our results reveal that the possibility of attending college in the U.S. has a deciding effect on the types of high school students attended. Over 65% of the students attended international high schools in China that provide choices for international curriculum models, English as a language of instruction, and AP/IB courses, while a small number of them came to the U.S. to receive their high school education. Nearly 90% of the students did not participate in Gaokao, the Chinese college entrance examination.

When comparing the suitability of attending university in the U.S. vs. in China, we asked students to consider several aspects of the higher education systems in China and in the U.S., including academics, instructional methodology, expenses, social life, and career prospects for the time after graduation. Among the most important characteristics of the U.S. higher education system considered and valued by the participants were the possibility to choose academic paths/majors (100%), the relatively small teacher-student ratios (100%), the experience of studying abroad, and universities' academic reputation (both at 95.83%). In contrast, only 33% of the students considered the

prospect of immigrating to the U.S. when deciding to study in the U.S., and the only prevalent factor for considering attending college in China was expenses (95.83%).

In terms of academic training in specialized fields and personal development, participants also overwhelmingly favored universities in the U.S. compared to China. Higher education in the U.S. was perceived as more suitable because it not only promises a higher quality of academic training in their chosen fields (87.5%), but also enables students to develop translingual and transcultural competencies (95.83%), dialectical and critical thinking skills (95.83%), and interpersonal communicative skills (83.33%).

Participating students also ranked the relative importance of factors that they considered when choosing universities in the U.S. Importance was placed on academic rigor (91.66%), career prospective ((87.5%), crime rate and safety (87.5%), gaining English proficiency (79.16%) and cultural connection (62.5%).

Since the survey was conducted during the spring semester 2020, when COVID-19 was spreading in the U.S. and when U.S.-China relations were worsening, a majority of the students expressed concerns about their personal safety, racial discrimination, and interference in their education by the U.S. government, which includes the possibility of not being able to obtain a visa or of not being able to return to the U.S. from China, or an increasing difficulty to obtain an Optional Practical Training work authorization or work visa.

5. Findings of Study 2

A significant number of students that responded to the survey for Study 2 attended traditional public Chinese schools, but as Figure 1 shows, many of them also chose to go to boarding schools in the U.S. or attend international schools in China, as they and their parents decided early in their educational career, usually in middle school, to study abroad. Most of the students in this survey, and at Emory more generally, are from the large cities in northern, eastern, and southern China, especially Beijing, Shanghai, Nanjing, and Shenzhen.

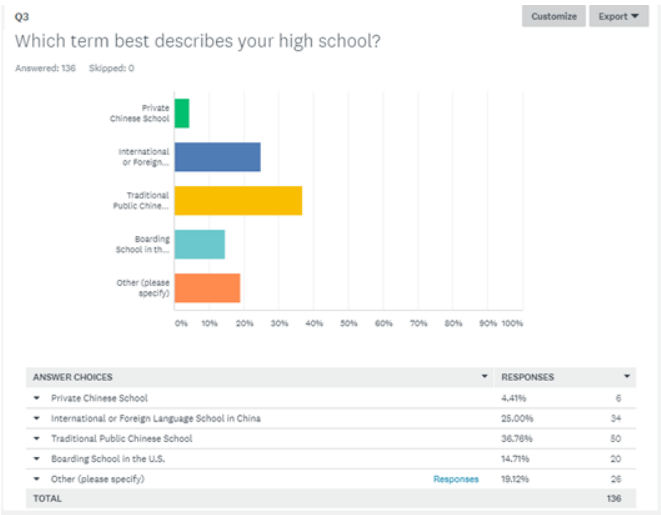

Figure 1: Which term best describes your high school? (Q3)

ANSWER CHOICES	RESPONSES	
For better employment opportunities in China (after graduation).	44.70%	59
To experience a different culture.	87.88%	116
To improve my English language skills.	43.94%	58
Because I would like to work in the U.S. after graduation.	31.06%	41
Because my parents urged me to go abroad.	19.70%	26
Because I didn't want to take the Gaokao.	30.30%	40
Because of family immigration.	2.27%	3
Because of friends in the U.S.	3.03%	4
Because my Gaokao results would not have allowed me to attend a top tier university in China.	12.12%	16
Total Respondents: 132		

Comments (18)

Figure 2: Why did you decide to study abroad? (Q6)

Similar to the Study 1 respondents, the Chinese students that completed the 2018 survey for Study 2 made the decision to pursue an education abroad for a variety of reasons, including to grow personally and to gain an advantage on the job market (see Figure 2). As mentioned earlier, Among the key reasons mentioned was also the "escape" from the Gaokao or the fear that the Gaokao scores might not suffice for a top-tier university. Strikingly, the desire to work in the U.S. after graduation was listed by a third of the respondents.

Most students relied on several resources, primarily outside consultants/agencies, teachers, and in-schools counselors (Figure 3). Another question asked about the support provided by the agencies, which ranged from evaluating the applicant's strengths and weaknesses, informing the applicant about extracurricular activities (including volunteer opportunities and competitions), all the way to determining a schedule for the student and reminding them of deadlines.

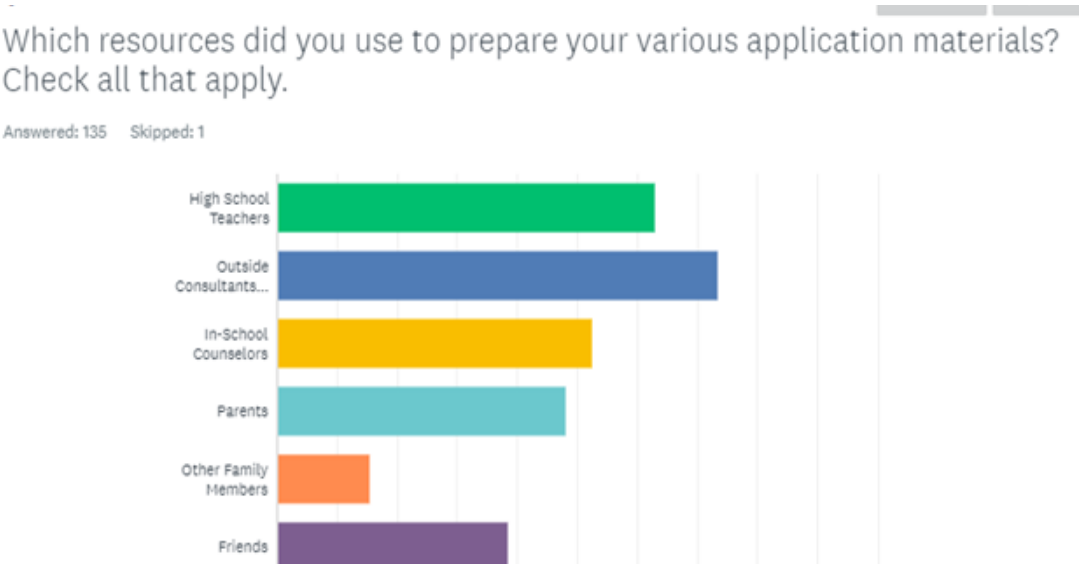

Figure 3: Which resources did you use to prepare your various application materials? (Q6)

While each of the students contacted for Study 2 followed a distinct path, the optional written comments left on the survey but also of course the interviews revealed commonalities and both complicated and clarified the data. One clear finding was many

students' dependency (coupled occasionally with skepticism) on agencies or consultants that operate outside of the school. These agencies frequently hire native speakers of English, with college or graduate degrees, to attract and then support students. One student wrote in response to a survey question: "They [agencies] helped me navigate the application process and offered me useful advice for preparing for TOEFL and SAT tests. Since I was from a traditional Chinese high school, and the education systems of U.S. and China are quite different, it's important to have someone experienced in applying for US universities to ask for advice." Another student explained: "The advice I get from the outside consultant is to make up my mind to apply to both Universities and Liberal Arts Colleges, and choosing majors I like rather than what my parents liked." And another recalled in a representative statement that the consultant "assists [*sic*] me on the college selection process, helps me stay organized throughout the application process, and proofreads my application essay." The agencies, charging typically thousands of dollars for guiding their clients, permit students to understand - and succeed in - the challenging, complex college application process. Multiple interviewees explicitly called out some agencies for providing improper assistance and controlling the application completely, though almost all students said that they had only *heard* about such practices: "It's really convenient because it is the fact that many chn families are not familiar with American educational system and application process, so it is good to have those agencies to lead them through all the process, but it's definitely not healthy that those essays are written by the agencies." (JH, personal communication, May 3, 2018). This statement reflects the conflicted attitude seen among at least some Chinese students towards the agencies that assist individuals unfamiliar with the U.S. system.

On another level, the experiences of many interviewees and respondents also reflect the imbalance or disparity of available resources each individual can access, based on hometown, attended school, and family. Whether a student successfully navigates the application process, is obviously not only related to someone's motivation and academic skills, but also to the resources. These resources inside and outside a school, as well as the advice given to Chinese students and the strategies they use to study for exams and revise essays have arguably an impact on their college preparedness, including their approach to college writing.

We do not have the space here to adequately address such inequalities and disparities - which certainly prevent students from attending their school of choice - but it is worth noting that we as instructors and administrators can help students tap into the knowledge and skills students (those who did manage to enroll in colleges abroad) may have gained throughout the application process. After all, as they apply for college, students have to navigate many different tasks, social interactions, and processes, and they also have to consider (consciously or not) rhetorical concepts such as audience, genre, argument, and organization. It would be valuable to assist students in reflecting on these concepts, for instance, and on their many newly developed skills and knowledge, and to facilitate the transfer of learning when they arrive in college classes.

Conclusions

1. Key Take-Aways

Our findings shed light on a few important issues related to Chinese students' decision to study abroad in the U.S.

First, they clearly articulated their preference for pursuing higher education in the U.S. based on their perception of the U.S. educational system. As the data indicates, this preference is largely motivated by the academic reputation and rigor of U.S. universities as well as their desires to gain diverse scholarly, social, and cultural experiences. Although career prospects are important, immigrating to the U.S. is not a major consideration. This finding coincides with the growing homeward trend of internationally educated Chinese graduates and is indicative of a shift in their perspective. In recent years "between 70 to 80 percent of students and graduates come back to China; the ratio of departees to returnees has now nearly flattened to one-to-one (1.28 to 1, to be precise)" (McCarthy, 2017). Sissi Chen, an international education specialist working with Chinese high schoolers preparing for college in the U.S., was quoted as saying, "More and more people are having this idea to explore the world, they are not thinking, 'I just want to go to America and never come back.' That's not the mentality anymore. … They want to open another door to see a bigger world and get an educational advantage" (McCarthy, 2017). In the survey for Study 1, nearly all participating students (95.83%) expressed that gaining an internationalized perspective through the experience of studying abroad is an important consideration.

Second, the data reveals an overwhelming discontent with the higher education system in China, except in terms of cost of attendance. Having had the experience of attending elementary and middle schools in China, these students experienced the rigidity of an exam-oriented education system. Avoiding the extremely competitive Gaokao and even the Zhongkao, the high school entrance exam, was mentioned by students as a reason to seek education abroad. When interviewed for Study 2, one student said: "I know that Gaokao is even more competitive and crucial than Zhongkao, so I think I should find another way to escape from this." (JH, personal communication, May 3, 2018). One student wrote in response to the Study 2 survey, referring to his resistance to Chinese education, and his decision to go abroad: "Because the same amount of effort can get me into a better school (in terms of international ranking)." Research has also shown that the emphasis on testing can potentially "stifle a student's imagination, creativity, a sense of self, qualities crucial for a child's ultimate success in and out of the classroom" (Kirkpatrick and Zang, 2011, p. 36). Their discontent with the Chinese education system is clearly a "push" factor in their decision to study in the U.S., particularly in regard to their appreciation for the academic rigor and reputation of universities in the U.S.

Lastly, Chinese students are increasingly concerned about their safety, racial tensions in the U.S., and the impact of Sino-U.S. relations on their education. As one student explained, "Even though there are policies restricting racial discrimination in American society today, as a Chinese male international student, I personally still have certain concerns about American society's overall racial discrimination against Asia. This is because racial discrimination may negatively impact our education, employment, and life at critical times. Apart from racial discrimination, the deterioration of Sino-US

political relations in recent years has also made me more worried about the hatred American people have towards the Chinese people. As an international student at the forefront of exchanges and cooperation between the two countries, I sincerely hope that China-US political relations will develop steadily to promote further cultural and academic exchanges and cooperation between the two countries" (J. Fan, personal communication, September 24, 2020). This statement is quite significant in the context of COVID-19 and the shift to online learning in 2020. Many Chinese international students at Emory were not able to return/come to the U.S. in the fall semester of 2020. One student told us in an email, "My parents are extremely worried about my health and security situation in the US due to the increasingly dangerous Covid-19 situation..., as well as the worsening US-China relationship. They played a very important role in making this decision [of not returning to Emory], but I'm the one who finalized it" (J. Fan, personal communication, September 24, 2020).

All these findings provide preliminary support for the application of the 'push-pull' model in studies of motivational factors for Chinese students to consider studying abroad. Consistent with the findings of Mazzarol, Kemp, and Savery (1997), parents recommending this step is one of the primary "push" factors. Other important "push" factors center around various aspects of higher education in the U.S., such as academic reputation, rigor, quality of training, teacher-student ratio, and the possibility to choose majors. Finally, the potential for greater development of critical thinking skills, transcultural and translingual competencies, and communicative skills are also highly valued.

Mazzarol, Kemp, and Savery (1997) identified social links to the host country, such as resident contacts, as one of the six motivational factors. In our studies, however, social contacts were not a major "pull" factor. 75% of the respondents reported that social contacts, such as having family members or friends in the U.S., are "not important" or "not considered."

The "pull" factors identified in our studies are at the macro level, including crime rate and racial tensions in American society, the deterioration of Sino-U.S. relations, and the tightening of U.S. policies towards international students. In the post-COVID era, will these "pull" factors eventually outweigh the "push" factors and result in a decline of Chinese students in U.S. universities? This is a relevant question that remains to be answered.

2. Limitations and Future Directions

Our studies only generated responses from a relatively small number of Chinese students at Emory University and therefore cannot be considered representative of Chinese international student bodies at other universities across the U.S. While we believe that the two studies demonstrate the pre-COVID educational pathways of international students at Emory, we are aware that the factors Chinese students and their families consider when making decisions about studying abroad will likely change in a post-COVID environment. The shift to learning online, the ongoing pandemic in the U.S., the uncertainty surrounding U.S. policy towards international education, and the deterioration of Sino-U.S. relations will undoubtedly alter the post-COVID educational pathways for Chinese students.

In Spring 2020, we contacted Chinese international students about their experiences of taking classes online in order to better understand their challenges and identify solutions. Their answers offered a glimpse into the extraordinary situations of Chinese students. In addition to challenges posed by the 12-hour time difference and the 14-day mandatory quarantine period in Chinese hotels, Chinese students were also wary of discussing sensitive topics related to Chinese politics and society due to China's internet censorship and surveillance and Zoom's flawed security standard (Lee, 2020). They also experienced difficulty conducting research and assessing resources within China's great firewall. Students we spoke with in the spring overwhelmingly expressed the desire to return to campus in the fall semester of 2020. However, most of the students we spoke to were unable or unwilling to return to the U.S., as the pandemic continued to affect the country. How will this alter Chinese students' educational pathways in regard to the possibility of studying abroad? A recent survey of over 100 Chinese agencies specializing in preparing students for education abroad reported that the epidemic had caused 40% - 60% of Chinese students experienced interference from U.S. authorities in their visa application and country entry and exit process; 66% of the agencies forecast a decline in students going abroad this year as a result (BOSSA and COSSA, 2020).

To understand the sustainable impact of COVID-19 on Chinese students' willingness to study abroad, we plan to streamline the two studies into one survey, focusing on identifying post-COVID push and pull factors. We will seek responses from current Chinese students in the U.S. and prospective high school students in China. Additionally, we hope to conduct interviews either in person or online to elicit extended narratives about their decision-making process. By cross-examining the qualitative and quantitative data in pre- and post-COVID contexts, we hope to identify the shifts and trends in their educational pathways.

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Contact Email: hli01@emory.edu
larnspe@emory.edu

Effectiveness of Using Smartphone Instant Messaging (IM) App for Academic Discussion in an Undergraduate Chemistry Course

Mei Xuan Tan, Singapore University of Technology and Design, Singapore
Eng Ying Bong, Singapore University of Technology and Design, Singapore

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Abstract
In this study, the effectiveness of using a smartphone instant messaging (IM) app (WhatsApp) for academic discussion for a first year half-credit Chemistry course in SUTD was examined. Academic discussion during and after instructional teaching is an integral part of learning. However, only 32% of the student participants had used online platform, such as Piazza and forums in Learning Management System (LMS), for after-class academic discussion with their instructors and peers. At the end of this study, over 83% of the participants felt that WhatsApp was a more effective platform compared to other online forum. The study also looked at the challenges of using WhatsApp for academic discussion and its effect on face-to-face interaction between instructors and students. In conclusion, the use of IM platform for academic discussion was desirable for the students, but it should not be the only channel as face-to-face consultation and online forum for lengthy discussion are still important for after-class learning of students.

Keywords: Pedagogical Tools, Student Engagement, Academic Discussion, Smartphone App, Instant Messaging, Undergraduate

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Introduction

Academic discussion during and after instructional teaching is an integral part of learning. Such discussion between the instructor and student or peer-to-peer discussion can be in several different forms. It could be face-to-face discussion, via email, use of online discussion forum or instant messaging (IM) platform such as WhatsApp (Bere, 2012).

Many universities and education institutes have taken advantage of the easy accessibility of smartphones and convenience of smartphone apps to enhance their teaching (Jimoyiannis *et al*, 2013). Smartphones apps can be used in addition to traditional classroom or lecture teaching for sharing of information, files and discussion (Barhoumi, 2015; Ally & Prieto-Blázquez, 2014). In a study by Gon and Rawekar, they found that the learning outcomes of mobile-learning (or m-learning) through text, photos, audio and small video clips via WhatsApp is as effective as traditional instruction through lectures (Gon & Rawekar, 2017). In addition, students attributed their heavy use of WhatsApp to its ease of use, speed, real-time communication, sharing media content (e.g. images, videos etc.) and low cost (Ahad & Lim, 2014).

The use of smartphones has become ubiquitous and most university students in Singapore possess a smartphone (Tan & Teo, 2015). Smartphones have increasingly become part of our lives and students who own smartphones spend a considerable amount of time on their smartphone devices (Lin, Chiang, & Qiang, 2015). When teaching the Chemistry courses of Freshmore (Year 1) in SUTD, we noticed lower activity in online forums for academic discussions. These include forum features in Learning Management Systems (LMS) and specialised online forums used by instructors for their course. We attribute the lower activity in online forums to being a more formal platform, being less accessible and requiring login info on web browser. We seek to find a frequently accessed and less formal platform for academic discussion with the students. Instant Messaging (IM) apps are popular amongst smartphone users. The most widely used IM app in Singapore during the period of this research is WhatsApp, with 70% of the Singapore population being users (Hootsuite, 2018). The use of WhatsApp in education does not require special infrastructure as students own the hardware (i.e., smartphones) and they can download the software (i.e., WhatsApp) for free. In this study, we examine the effectiveness of using WhatsApp for academic discussion for a first year half-credit Chemistry course that runs over 6 weeks during the Term.

Methods

Use of WhatsApp

The Chemistry course is a core module for first year students. About 450 students enroll in the course each year. This study was run over two years with two different batches of students. Participation in the study was voluntary and were recruited within the first week of the term. They signed a consent form and given a choice to remain anonymous by removing their WhatsApp profile photo and profile name during the activity. Participants provided their contact details and were added to a WhatsApp group that is managed by the course instructors. For the study, the number of

participants for each run was capped at 50. The study was announced at the start of the term, and students sign up on a voluntary basis. A total of 15 students volunteered in the first year of this study and 24 students volunteered in the second year. The activity of the WhatsApp group was monitored by two instructors, who are also the moderators of the group chat. The instructors responded to questions and encouraged discussion amongst the students. Students could respond to any discussion or the instructor could also prompt answers from specific students by replying to specific message in WhatsApp. Practice questions in the form of files and images were also shared via WhatsApp by the instructors to encourage and motivate active discussion among the students. Solutions to the practice questions were released at the end of the discussion. The additional practice questions are supplementary; students could choose not to study the materials if they felt they were familiar with the topics. This platform is not only limited to academic discussion, but also extended to any form of administration of the course such as homework due date and course announcements.

Survey

At the end of the course, the students participated in an online survey to evaluate their experience of using WhatsApp for academic discussion. There are a total of 26 questions. The survey has a total of four sections with regards to the use of WhatsApp for academic discussion: 1) Familiarity with WhatsApp, 2) Effectiveness of using WhatsApp for discussion, 3) Challenges and 4) Overall Experience. There are five questions related to the familiarity of the students on the use of WhatsApp. These questions include asking for their frequency of usage prior to this study, previous use of WhatsApp in education setting and their preference of the type of discussion forum. Ten questions, including one open-ended feedback question, were asked to evaluate the effectiveness of using WhatsApp as a discussion forum. The questions include asking participants if the group chat and use of multimedia (photos, files, hyperlinks) helped them in better understanding of the concepts and clarifying the questions asked. They also had to evaluate if this platform has encouraged or hindered face-to-face interaction with their instructors during and after class. In the section of Challenges, students are asked if their participation in this study affected the time spent on mobile devices and whether it has distracted them during lesson time. Other challenges being evaluated include whether participants have difficulty referring back to a previous discussion and whether they find some discussion irrelevant to them. Lastly, for overall experience, five questions including an open-ended question were asked to evaluate the overall effectiveness of using WhatsApp as a discussion forum, whether they have actively participated during the study and whether they would recommend this form of discussion forum to other courses and their peers.

Results and Analysis

Familiarity with WhatsApp

Based on the survey results, all the participants have installed and used WhatsApp on their smartphones prior to the study. Over 85% of the participants use WhatsApp frequently, more than 8 times a day or every 1 to 2 hours. 23% of the participants have previously used IM platform for academic discussion between instructors and students; 50% have used IM platform for relaying course information, but not for

academic discussion; while the remaining 27% have not used IM group chat with their instructors before. (Figure 1a)

32% of the participants have used other online platform, such as Piazza and forums in LMS, for after-class academic discussion with their instructors and peers. This is a low percentage considering that some courses use such online platform as their main forum amongst instructors and students. 83% of the participants felt that WhatsApp is a more effective platform compared to other online forum. (Figure 1b)

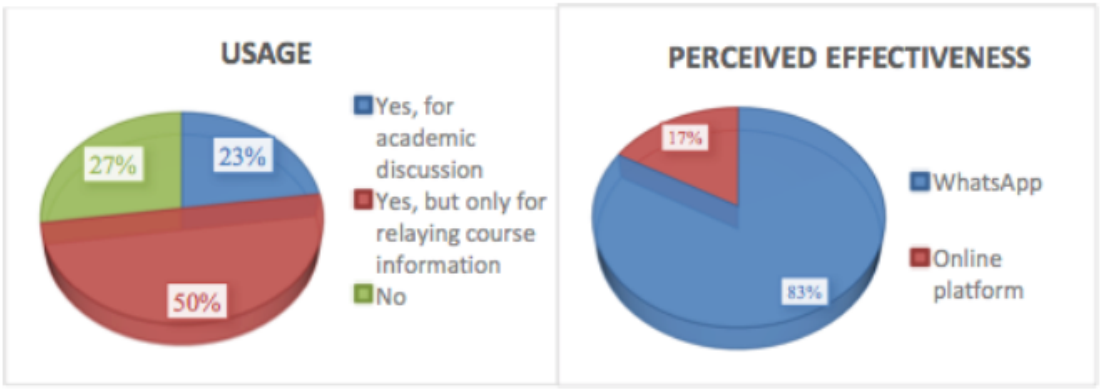

Figure 1. Responses of participants in survey: (a) Section 1 on Familiarity with WhatsApp, Question 3: "Have you previously used WhatsApp or other smartphone instant messaging platform for academic purposes between faculty/ teachers and students?" (b) Section 2 on effectiveness of using WhatsApp for academic discussion, Question 5: "Which of the following platform do you feel is more effective as an educational tool for after-class academic discussion?"

Effectiveness of Using WhatsApp for Discussion

The main purpose of using an IM platform for academic discussion is to encourage after-class discussion amongst the students. 59% of the participants agreed that after-class discussion on WhatsApp has helped them better understand certain concepts taught in class. 31% were neutral about this and 10% disagreed. 37% of the participants agreed that WhatsApp group chat has facilitated them to ask more questions or participate in more discussion than without the group chat. 55% were neutral, which indicated that the use of WhatsApp did not change the frequency of their participation throughout the course.

Previous studies have found that the use of IM has increased the face-to-face interactions between instructors and students in a lecture-based course (Cifeuentes & Lents, 2010). To find out if the WhatsApp group chat has affected how the students interacted face-to-face with their instructors, participants were posed two survey questions. The first question (Question 9) asked if their participation in WhatsApp has encouraged them to approach their instructors for face-to-face interaction. 18% disagreed while 27% agreed or strongly agreed that they were encouraged to approach their instructors. A second question (Question 10) asked if after-class academic discussion on WhatsApp has reduced the frequency of face-to-face interaction that they could have with their instructors. Interestingly, a total of 36% strongly disagree or disagreed with this, 27% were neutral and 36% agreed or strongly agreed with having reduced frequency of face-to-face interaction with their instructors. This result

is an interesting aspect of this study. 27% of the students agreed that the use of WhatsApp as a discussion forum has encouraged them to approach their instructors during or after class. 55% of students answered neutral. This can be interpreted that the use of WhatsApp has not affected the frequent (or lack of) face-to-face interaction with their instructors. The 18% who disagreed found that they were not encouraged to approach the instructors with the use of WhatsApp. A second question, similar but phrased differently from the first, was asked to evaluate the aspect of face-to-face interaction with instructors. 36% disagreed that the use of WhatsApp had reduced the frequency of face-to-face interaction. This could imply that the frequency remained the same or might have increased. A similar portion of 36% who agreed to a decrease in face-to-face interaction have either asked the questions in WhatsApp or had their questions answered by a query from another student in the group chat. These outcomes suggest that the use of technology aids and complements face-to-face interaction between instructors and students.

Figure 2. Responses of participants in Section 2 on Effectiveness of Using WhatsApp for Discussion of survey: (a) Question 9: "After-class academic discussion on WhatsApp has directly or indirectly encouraged me to approach my instructors for face-to-face interaction." (b) Question 10: "After-class academic discussion on WhatsApp has reduced the frequency of face-to-face interaction that I could have with my instructors."

Challenges

There were some challenges with using WhatsApp as a platform for academic discussion. The main challenge was the messaging layout, which was not designed for Question & Answer format. Despite having a search function in WhatsApp, 45% of participants agreed that they find it hard to refer back to a previous discussion in the WhatsApp group chat, while 32% were neutral regarding this. 23% did not find it difficult to refer back to a previous topic. At the start of the study, instructors were concerned about students' privacy issues. However, we found that a vast majority of participants were comfortable (24% strongly agreed, 62% agreed and remaining 14% neutral) with revealing their identity or contact number in the WhatsApp group chat. Regarding the relevance of discussion, 64% did not find the discussion topics irrelevant. 13% were neutral, while 23% agree that most of the discussion was irrelevant. 77% disagreed that WhatsApp discussion caused distraction during lesson time, while 14% were neutral and 9% found it distracting.

Overall Experience

The overall experience from the participants were positive. Most students found themselves actively participating in the discussion, with about 23% of students not actively participating. (Figure 3a) A majority of participants indicated that they would recommend the use of WhatsApp as an academic discussion platform for other courses. (Figure 3b)

On the overall effectiveness, 27% strongly agreed that WhatsApp group discussion was effective for academic discussion, 50% agreed to this, 18% were neutral and 5% disagreed. (Figure 4)

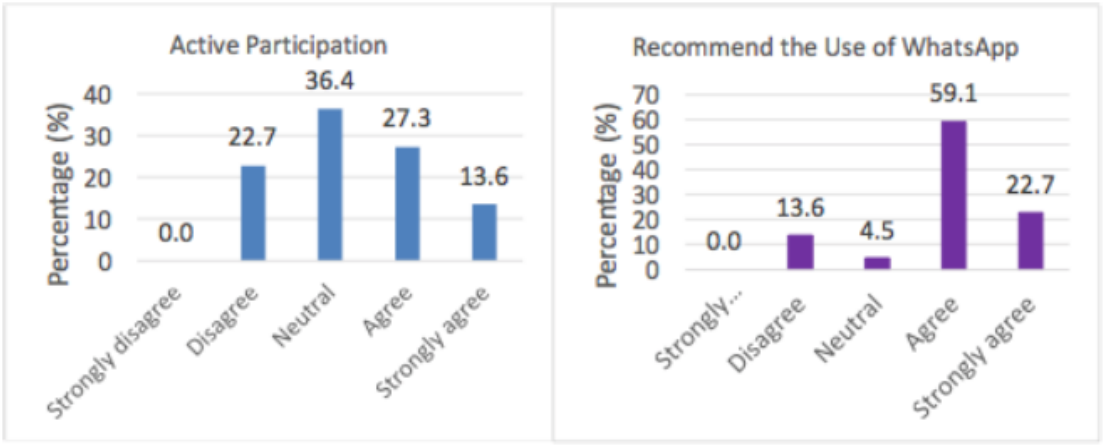

Figure 3. Responses of participants in Section 4 on Overall Experience of survey: (a) Question 23: "I would recommend the use of cohort-based WhatsApp in SUTD for other subjects." (b) Question 24: "I actively participate in the after-class academic discussion on WhatsApp."

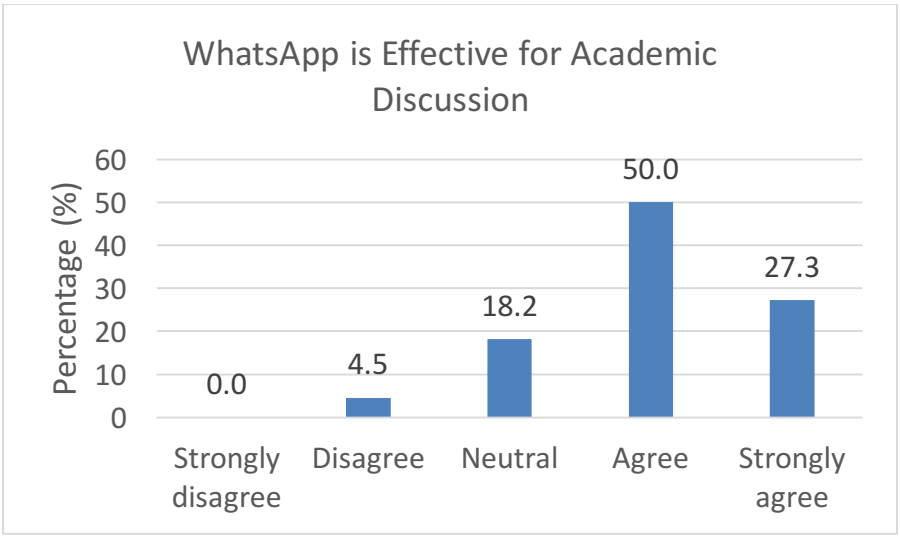

Figure 4. Responses of participants in Section 4 on Overall Experience of survey. Question 22: "I find the use of WhatsApp effective for academic discussions."

Discussion

An Informal and Effective Channel for Academic Discussion

From this study, we found that using IM platform for academic discussion provided an informal channel for students to clarify theoretical concepts. This format of discussion is also easily accessible via their smartphone. There is an added advantage to use an app that is already installed and in frequent use by the students, as studies (Tan & Teo, 2015) have found that not all students would install a new app for academic discussion unless it is compulsory to do so. Besides academic discussion, the IM platform is also used by students to check course related information with the instructors and their peers. Practice questions in the form of files and images were also shared through WhatsApp to initiate engagement and discussion among students. Additionally, the advantage of IM platform using smartphone was that users could easily take a snap shot of written work/solutions and shared it through WhatsApp. It was a convenient alternative compared to typing out the solutions using keyboard.

Some of the downsides of using IM platform would be getting spammed with messages and sometimes the discussion may not be relevant to all students. Although there is a search function in the app, participants had to scroll through long messages, and instructors were not able to group or classify queries into specific topics unlike in discussion forums. There were certain cases where a student expected an instant reply to their queries or found the reply of an instructor to be slow, although the participants had been informed in the beginning that replies from instructors are expected within a day. We also found that the discussion in IM platform tends to be more concise; there were seldom heated discussion as both the instructors and participants felt that messaging was not the best platform for lengthy discussion. As with most platforms, there were active participants (about 41% in our study) and some silent observers. In terms of privacy, students were unable to remain anonymous when they post questions through WhatsApp as their contact number is revealed.

Effects on Face-to-Face Consultations

Although the participants agreed that academic discussion is made more easily accessible and indicated their preference to have IM platform for other courses, this mode of communication has not significantly changed the extend of face-to-face interaction that a student would have with his instructors. Those who prefer face-to-face consultation indicated that they continued to have face-to-face consultations with their instructors, while those who are silent observers in discussion platforms remained as observers most of the time.

Advantages and Disadvantages: Instructors' Perception

The two facilitators of the group chat are also instructors teaching the course. The instructors evaluated the use of WhatsApp as a tool for academic discussion during and after the study. The main advantage of using WhatsApp that the instructors experienced over online forum is convenience. Students have easy access to WhatsApp on their smartphone and could post questions as and when it comes to their mind. Unlike in an online forum, students do not have to login through a browser in order to post a question. The setting of a WhatsApp group chat is also less formal than

an online forum. This could improve the perception of the approachability of the instructors and also encourage students to clarify any concepts. One of the disadvantages of using WhatsApp for academic discussion is the layout and user interface. As the app is designed for instant messaging and not forum discussion, topics cannot be organised and grouped together. Users have to scroll through or use the search function with keywords to refer back to a previous topic. Instructors found that not all students are active in the group chat and often, they have to prompt students to ask more questions. As such, in the second run, a short lesson summary that highlighted the main topics was posted by the instructor after each lesson. Extra practice questions were also shared via pdf files through WhatsApp. The use of instant messaging app for academic discussion has its benefits of easy access and encouraging more interaction between instructors and students. And this extends to other aspects such as face-to-face interaction as the students find the instructors more approachable.

Conclusion

With the increasing popularity of IM apps such as WhatsApp and Telegram, the frequent use of an informal channel such as IM platform, could provide a channel for students to clarify concepts learnt. 59% of participants agreed that using WhatsApp for academic discussion had helped them better understood concepts. Such informal platform could improve the visibility of instructors. Instructor are more approachable and instructors could get to know the students more personally. Instructors could also monitor students learning progress throughout the course of the study. The use of the chat group had encouraged face-to-face interactions for one group of students. Another group of students had reduced face-to-face interactions after their questions were answered through WhatsApp. The main challenge was difficulty in referring back to a previous discussion topic. Overall, 87% of participants found WhatsApp effective for academic discussion.

In conclusion, the use of IM platform for academic discussion is desirable for the students, but it should not be the only channel as face-to-face consultation and online forum for lengthy discussion are still important for after-class learning of students.

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Contact email: meixuan_tan@sutd.edu.sg

A "BIG" PBL Problem: What Supports or Hinders Student Motivation?

Shyamli Mehra, Republic Polytechnic, Singapore
Emilia Idris, Republic Polytechnic, Singapore

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Abstract
This study examines student perceptions and motivations toward solving a "Big" Problem over multiple lessons in problem-based learning (PBL) environment, both from student and staff perspective. It was conducted as a mixed methods research, involving quantitative student surveys and qualitative in-depth interviews. A big problem was introduced as an intervention in 'Qualitative Research Methods' module where Year 2 polytechnic students were given 4 weeks to solve it. The online survey measured student (N=71) motivations using three subscales- Intrinsic goal orientation, Extrinsic goal orientation and Self-Efficacy for Learning and Performance, adapted from Motivated Strategies for Learning Questionnaire (Duncan & McKeachie, 2005). It also included some open-ended questions to explore the reasons behind the responses. Lecturers' perceptions of student engagement with a big problem, gathered through class observations and review of reflection journals, were explored using in-depth interviews (N=2). Triangulating the findings, it can be inferred that both students and staff see value in including big problems in the curriculum, despite facing some problem solving/ facilitation challenges respectively. Further statistical analysis reveals, there is no correlation between mean motivation scores and assessment grades for this problem. Spearman's Rank correlation analysis was done as the grades data was not normal. The study gives educators the conviction to design big problems of higher difficulty, where relevant. It also provides impetus to conduct research to help staff and students adapt to big problems, where students get a combined grade across multiple lessons. Follow-up research may be done to study student motivation towards large problems using other subscales such as task value, and/ across multiple disciplines.

Keywords: Problem-Based Learning, Big/Large Problem, Student Motivation

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Introduction

Problems are the starting point of students' learning process in problem-based learning (PBL) (Sockalingam, 2011). Problems typically describe a set of situations or phenomena set in real-life context and require the students to explain or resolve them (Hmelo-Silver, 2004). Educators employing problem-based learning are constantly rethinking of how to craft interesting and challenging problems to trigger students' learning. Authentic PBL education requires the student to go through the same activities during learning that are valued in the real world. The intent is to challenge the students with a problem that he/she will be facing in practice both as a stimulus for learning and a focus for organizing what has been learned for later recall and application to future work (Barrows, 2000). Since not all future work problems may come in bite sizes, in PBL context as well, "all problems are not equal" (Jonassen & Hung, 2008). This naturally creates space for big problems in the curriculum to enable authentic learning.

A big or large problem is designed to be of higher difficulty allowing students to solve it across multiple lessons without the pressure of daily grading. Problem crafters increase the difficulty level by varying complexity and structuredness. Problem complexity refers to the breadth, attainment level, intricacy, and interrelatedness of problem space while problem structuredness represents the intransparency, heterogeneity of interpretations, interdisciplinary, and dynamicity of problems (Jonassen & Hung, 2008).

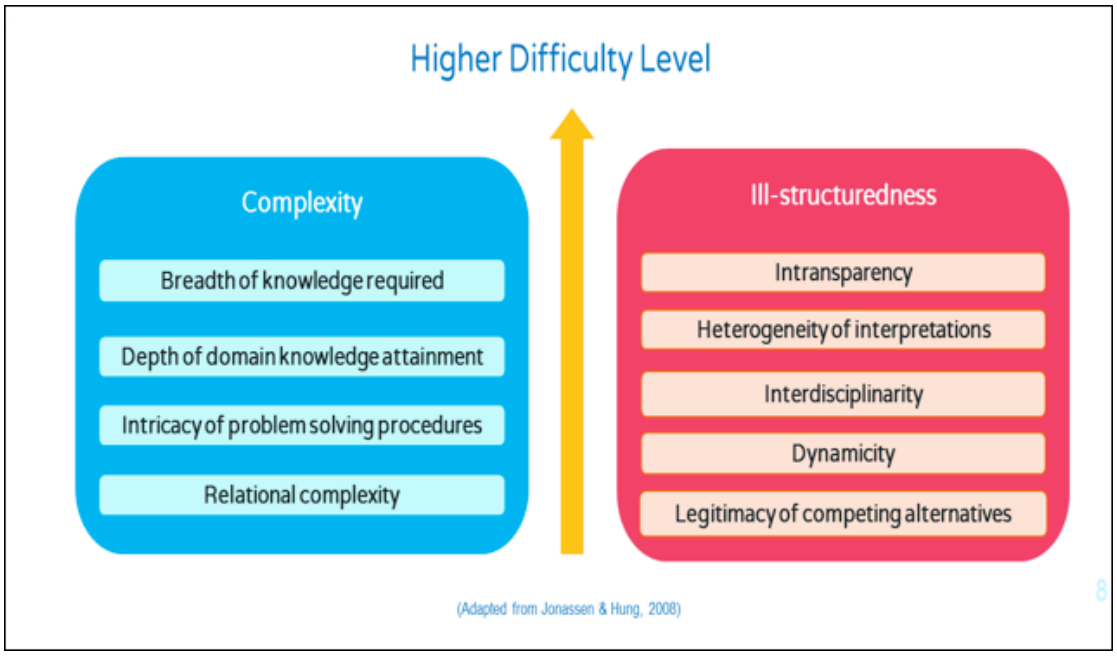

Figure 1: Factors affecting Problem Difficulty

If learning can be considered as a cycle where students constantly visit and revisit ideas (Kolb, 1984), big problems should enable learning by allowing students to revisit them over a few days. The underlying premise is that this extended interaction with the problem would allow them to internalise the concepts to propose better solutions. This paper attempts to study student response to a big problem that mirrors a demanding industry context.

Objectives of the Study

The aim of this study was to examine student perceptions a “Big” PBL problem to be solved over multiple lessons and motivations for answering it. It took into consideration the viewpoint of students and lecturers both. The study addressed the following research questions:

1. What is the extent of students’ motivations, in terms of intrinsic goal orientation, extrinsic goal orientation and self-efficacy for learning and performance, towards solving a big PBL problem?
2. Based on staff and student perspective, what are the factors that motivate and hinder students in engaging with a big PBL problem?

Methods

This study was designed to be a mixed methods research, involving a quantitative student survey and qualitative in-depth interviews to study student repsonse to a big problem. The curriculum for Year 2 polytechnic students taking ‘Qualitative Research Methods’ module included a big problem and they were given 4 weeks to solve it. The online survey measured students' (N=71) motivation through statements on Intrinsic goal orientation, Extrinsic goal orientation and Self-Efficacy for Learning and Performance, adapted from Motivated Strategies for Learning Questionnaire (Duncan & McKeachie, 2005). The survey included some open-ended questions to explore the reasons behind the responses. In-depth interviews were conducted with lecturers (N=2) to gather their perceptions of student engagement with a big problem. Lecturers shared their perceptions based on the class observations and review of student reflection journals.

The intervention used in the study was a big problem, which required students to prepare a market research proposal to meet the company's needs and design relevant research materials over four weeks. Students had to break it down into smaller tasks such as defining research objective, recommending an appropriate research method, designing a screener questionnaire, developing a focus group discussion guide and preparing a fieldwork plan. The intricacy of problem solving procedures for preparing the proposal and materials added complexity to it. Relational complexity was also high as they had to process several stakeholder relations in parallel including agency, company and respondents. It was highly ill-structured due to the legitimacy of competing alternatives at each step of the research process- research approaches/ methods/ materials/ projective techniques. To add to the challenge, in the last week, the students were asked to extend the fieldwork plan to multiple countries, making it dynamic. The students were assessed using reduced continuous assessment grade (CAG) awarded at the end of 4 weeks.

Statistial techniques employed to analyse the survey data include descriptive measures such as mean ratings for each subscale, reliability testing of subscales by computing Cronbach's alpha to measure how closely related the statements were on each subscale and correlation analysis to study if there was any relationship between mean motivation scores and assessment grades of students. To analyse the open-ended responses to the survey and interviews, in-depth content analysis was done using thematic coding.

Quantitative Findings

As illustrated in the graphs below, overall mean scores for the *motivational orientation* subscales (Intrinsic goal orientation, extrinsic goal orientation and self-efficacy for learning and performance) are from 4.55 - 5.12, with a standard deviation from 1.03 - 1.11. Since the overall mean scores are above mid-point on a 7-point scale, we can infer that most students have a favourable response to the big problem.

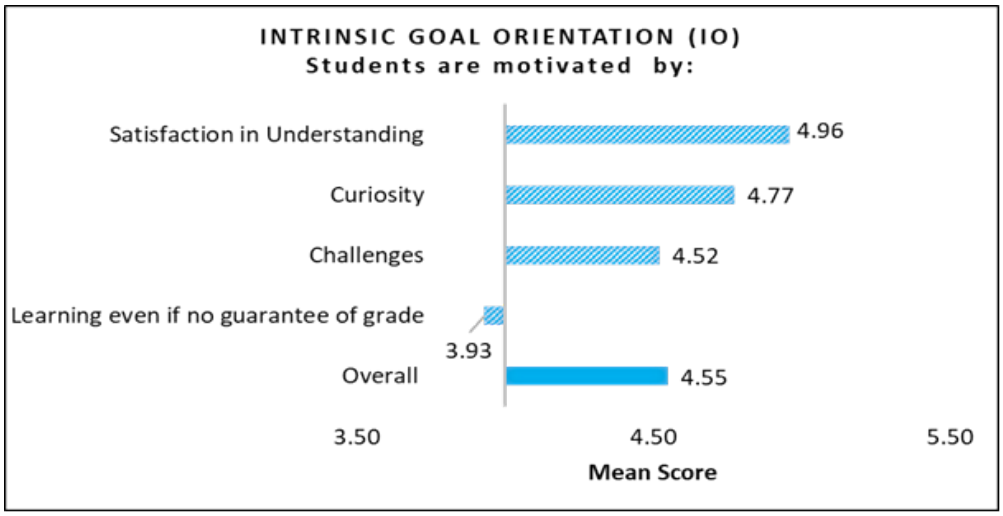

Figure 2: Student Motivation in terms of Intrinsic Goal Orientation

Students are intrinsically motivated most by satisfaction they obtain in understanding the content as thoroughly as possible, followed by arousal of curiosity, challenges to learn new things and lastly opportunity to learn more even if it does not guarantee a good grade. This shows grade are quite important for them.

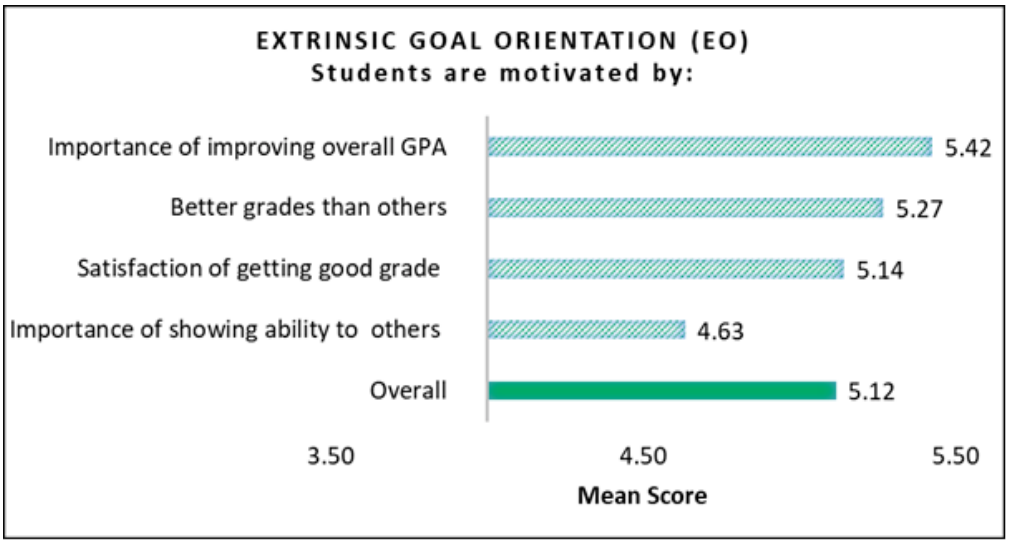

Figure 3: Student Motivation in terms of Extrinsic Goal Orientation

Students are extrinsically motivated most to improve GPA, followed by better grades than others, satisfaction of good grade and lastly importance of showing their ability to lecturer. This reiterates the value they place on GPA and grades.

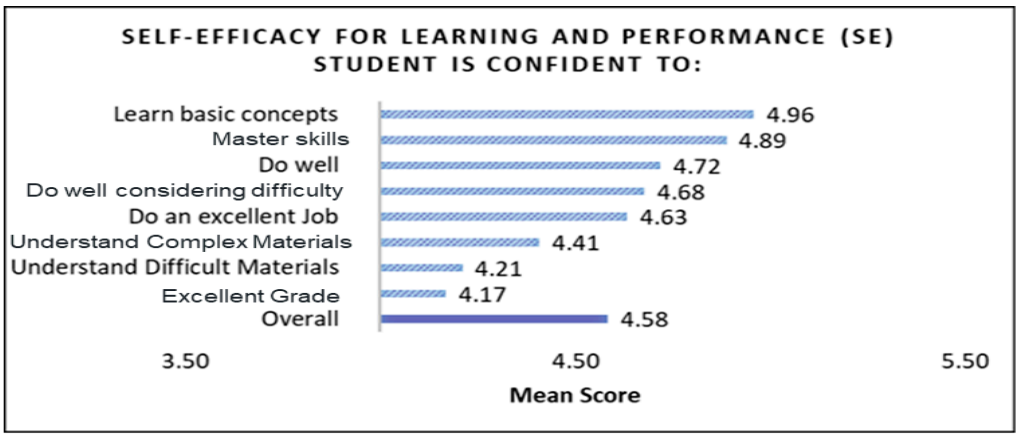

Figure 4: Student Motivation in terms of Self-efficacy for Learning and Performance

It seems natural that students are most confident of understanding basics, followed by more complex things such as mastering skills, doing well considering difficulty and lastly getting an excellent grade.

The subscales have been subjected to reliability testing using Cronbach's alpha (α), which measures internal consistency to show how closely related the items are in the subscale. Intrinsic goal orientation subscale consists of 4 items (α = 0.72), extrinsic goal orientation subscale consists of 4 items (α = 0.73), and the self-efficacy for learning and performance subscale consists of 8 items (α = 0.93). A reliability coefficient of 0.73–0.95 is considered high. Hence, we can infer that the item statements within each subscale are closely related and measure it. Further statistical analysis shows there is no correlation between mean motivation scores and grades of students.

Qualitative Findings

Thematic analysis of the open-ended responses to survey questions reveal student perceptions in terms of key motivators such as good grades and more time. It also brings forward some key concerns such as ill-structuredness and complexity. The key motivators and concerns have been summarised in Figure 5, in the order of mentions made by the students.

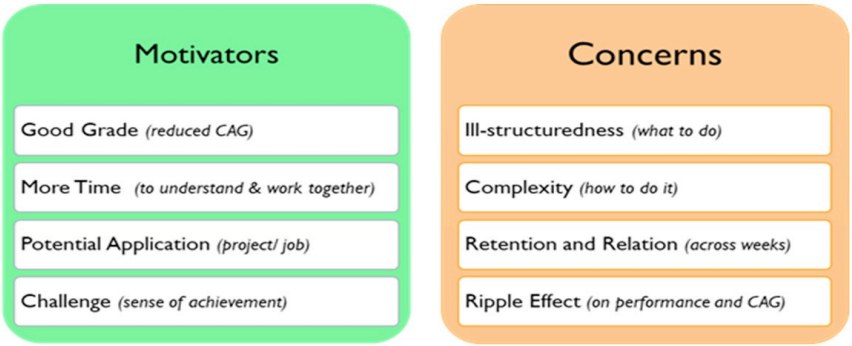

Figure 5: Student Motivators and Concerns for a Big Problem

Reduced grade was a motivator for some and a concern for the others. A student mentioned *"thinking of the possible final grade I could get, I wanted to solve the big problem as effectively and as efficiently as I can…."* On the other hand, another

student had a concern *"If I am unable to make it for one lesson, I will not be able to get an A grade… if concepts applied in the previous lesson are wrong, it would be hard to continue to the other concepts for the next lesson."*

Having more time to solve the problem helped students revisit and build on to their learning as some of them mention, *"…helped me understand & focus on concept better…no need to re-understand the problem every week; …able to follow up and link the different topics together for a finalised understanding; able to work with teammates over 4 weeks, feels like we are doing a group project..."*

The authentic problem mirroring real life gave students a drive to solve it as they were, *"able to replicate what market researchers do in their everyday life/ apply to other things/ mid-semester assignment (MSA)."*

The big problem challenged some to push themselves to achieve higher potential as one student said *"... It satisfies me, the bigger the problem, the bigger the tasks but the bigger the satisfaction."*

Students also expressed some concerns regarding the big problem. It was purposely designed to be of higher ill-structuredness and complexity, so students obviously struggled to decide what to do and how to do it. Some of them mentioned, *"I'm a lost child in* ***Neverland; …****when presenting solution… confused about how to go about it … do I use every concept…; …hard to grasp concepts to solve the big problem…took me some time to break (it) down into smaller issues to better understand it."*

The students also reported issues in retaining and relating concepts across weeks. *"I am used to having one problem a day, I often forget that the four weeks are connected; …sometimes I have difficulty linking the previous theories to the next week's lesson…"*

Similar sentiments were also reflected in staff perceptions of student responses to the big problem, categorised below as positive and not-so-positive.

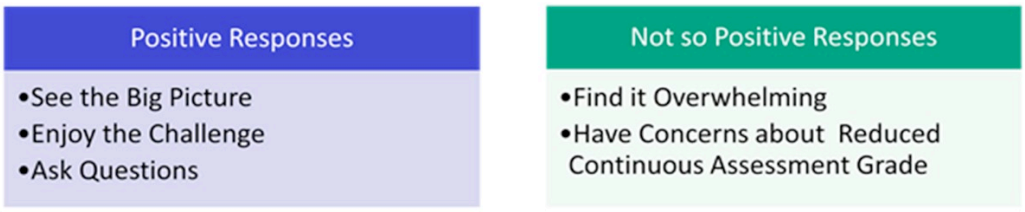

Figure 6: Staff Perceptions of Student Responses towards a Big Problem

Lecturers shared some positive observations such as *"some students enjoyed when they see it in totality; the stronger students enjoyed it as it challenged them; …the ill-structuredness caused them to ask more questions...allows them to think through..."*

They also shared some not so positive observations such as *"…some students found it unnerving…there was a lot of uncertainty; …. concerned about how they were going to be graded...how much to do each week..."*

These inputs provided deeper insights into student perceptions and motivations which can help strengthen big problems in future.

Discussion and Recommendations

It is encouraging that the big problem enables some students to see the big picture and they make effort to cope with it by asking more questions. It is also a reality check that some students are unnerved by the difficulty. Since high difficulty and ill-structuredness are purposely planted in the problem design, it is natural for students to struggle with it for the first time. However, problem crafters need to assess if the difficulty level is suitable or not. If not, either scope it to be of appropriate difficulty or develop measures to prepare students to handle higher difficulty. Characteristics of good problems include suitable difficulty and relevance (Sockalingam & Schmidt, 2011). Problem difficulty plays a role in the effectiveness of students' learning outcomes in all types of instructional methods that use problems. A problem with an appropriate difficulty level is within learners' cognitive readiness and therefore solvable, while an inappropriate difficulty level of problem may exceed the learners' readiness and result in failure (Jonassen & Hung, 2008). Building in and reiterating the problem relevance would be useful in helping students see the rationale behind the big problem.

Based on the above discussion, following recommendations have been made to enable educators to include large problems in curriculum:

1. To acclimatise students to the difficulty and overcome the issue of retention and relation of concepts over a long period, scope big problems across 2-3 weeks to begin with.
2. To balance the challenge of ill-structuredness, provide appropriate scaffolding and revisit the problem analysis regularly so that the students can become increasingly confident about their progress towards the challenging goal.
3. To allay the concerns about reduced CAG, explain the rationale behind it and provide regular feedback which would give them a reassurance they look for in a grade.

Conclusion

Triangulating the findings, it we infer that both staff and students see value in including big problems in the curriculum, despite facing some facilitation and problem-solving challenges. For this problem, there is no correlation between mean motivation scores and grades of students. The study gives educators the conviction to design big problems of higher difficulty, where relevant. It also provides researchers the impetus to conduct research to help staff and students adapt to big problems with a combined grade across multiple lessons. Follow-up research may be done to study student motivation to large problems using other subscales such as task value, across multiple disciplines.

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Contact email: Shyamli_Mehra@rp.edu.sg

Learner Responses to Language Exchange Activities in a Technology-Mediated Environment in the COVID-19 Era

Mizuki Mazzotta, Emory University, United States
Yutaka Yamauchi, Soka University, Japan

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Abstract
In response to the pandemic, language teachers around the globe are transforming their face-to-face courses into online courses and developing technology-mediated online activities has become one of the pressing tasks. While the body of research on online teaching addressing current day issues is rapidly growing, research exploring students' reactions to technology-mediated online activities in the COVID-19 Era is still limited. The goals of this paper are to (1) present a technology-mediated collaborative language exchange activity which connected collegiate language learners internationally using VoiceThread (an Internet-based interactive collaboration tool), and (2) report learners' experiences and reactions to this activity along with changes in their motivation and perception of language learning. Five learners of English at a Japanese university and ten learners of Japanese at an American university participated in this study. They were students of a course at each institution in 2020. Learners participated in two asynchronous activities in which they exchanged video comments using VoiceThread. In the first activity, everyone spoke in Japanese, and in the second, English. Then, questionnaires containing multiple choice and short-answer questions were distributed and analyzed quantitatively (descriptive statistics) and qualitatively. Results indicate that most learners had positive experiences in these exchanges, perceived benefits for language learning, increased motivation, and felt connected with students overseas though there were some individual differences. Proficiency level appears to be a factor influencing individual differences. The findings of this study lend support to the claim of previous studies that technology-mediated online collaborative activities facilitate language learning and community building.

Keywords: Technology-Mediated Collaborative Activities, Online Language, Exchange Learning, Learner Responses

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Introduction

In early 2020, foreign language (FL) courses were forced to transition to online teaching due to campus closures of many universities and school systems in the world in response to the COVID-19 pandemic. To cope with the abrupt transition, many teachers had no choice but to employ crisis-prompted remote teaching (Hodges, Moore, Lockee, Trust, & Bond, 2020) instead of planned online teaching. In fall 2020, the end of the crisis does not appear to be near, and many FL teachers are now working hard to transition to planned online teaching. One of the challenges particular to online language teaching is incorporation of speaking activities. As González-Lloret (2020a) noted, the online environment affords us to provide language input easily and thus online FL activities tend to focus on the provision of input, yet we should not neglect speaking activities because "output, interaction, and feedback are also crucial to develop an L2 (Gass,1997; Long, 1981; Swain, 1995; Swain & Watanabe, 2013)" (González-Lloret, 2020a, p.261). While learning from the previous research base is certainly helpful and important, we must also consider our current context of teaching in which students are facing many challenges due to the crisis. Regarding this point, Sykes (2020, p. 207) argues that "a human-centered approach to the research enterprise" is a necessity. In response to Sykes' call for a human-centered approach to research, we examined collegiate FL learners' experiences and reactions to a technology-mediated online speaking activity which we developed by incorporating elements that are known to be effective for FL learning. In the remainder of this paper, first we review studies that report effective elements of technology-mediated online language activities and discuss current issues in technology-mediated online activities. Then we introduce our study, report findings, and share conclusions.

Literature Review

Interaction in technology-mediated language learning activities

As FL teachers endeavor to redesign their face-to-face courses as planned online courses amid the ongoing COVID-19 pandemic, González-Lloret (2020a) reminds us the importance of creating technology-mediated activities or tasks grounded in the findings of Second Language Acquisition (SLA) research that input, output, interaction and feedback all play an important role in second language (L2) development while pointing out that technology-mediated FL learning activities tend to focus only on providing input. Moreover, she advocates the use of technology-mediated collaborative tasks in planned online language courses as they can provide opportunities for output and meaningful interaction while motivating students to learn the target language. Collaborative learning has been reported to facilitate language learning by reducing anxiety and fostering relationship among participants (Panitz, 1999), and authentic communication with real people increase motivation (González-Lloret, 2020b).

Online teacher-run language exchange, which connects learners internationally, is an example of technology-mediated collaborative language learning activity that can facilitate meaningful interactions among participants. Online language exchange activities can be synchronous or asynchronous. While synchronous option may be better for feeling the social presence, an important element of effective online

learning (Lomicka, 2020), asynchronous option may be a more suitable option in certain contexts. As reported by Tabira and Goto (2018), time difference poses difficulties for online language exchange which can easily be solved by making the interaction asynchronous. Guillén, Sawin, and Avineri (2020) explain that asynchronous activities using the recording tool are beneficial for language learning as it can "increase language learning awareness, complexity, and automaticity" (p. 324). Furthermore, asynchronous activities have additional benefits of alleviating *Zoom fatigue* as many people are experiencing fatigue caused by excessive use of videoconferencing as a result of the COVID-19 crisis.

Technology-mediated communication and learner affect

As many of us have already experienced, technology-mediated interaction differs significantly from face-to-face interactions, and we must take these differences into consideration to create effective technology-mediated L2 learning activities. Although video conferencing tools such as Zoom affords us to see each other synchronously, it cannot replace face-to-face human encounters in which we can read each other's body language and engage in conversations easily. Yet, we cannot simply assume that technology-mediated interaction is inferior to face-to-face interactions because technology-mediated interaction enables us to connect with people outside of our classrooms, and provides multiple options to create meanings through linguistic mode (e.g., content of speech), visual mode (e.g., pictures, text layout), and aural mode (e.g., music).

Central concerns of technology-mediated multimodal interaction research, identified by Chanier & Lamy (2017), are to investigate (a) what aspect of learning can be facilitated by technology, (b) by what technology, and (c) the affective experience of learners in technology-mediated interactions. Similarly, understanding affective experience of learners is an important aspect of research in the field of SLA as it is widely acknowledged that learning experience strongly influences FL learners' motivation (Dörnyei, 2009) and that motivational intensity is a prerequisite to learning (Lambert, 2017). Previous language learning studies found that a key element that contributes to effective language learning through technology-mediated interaction is the choice of the tool (e.g., Cheng & Wang, 2018) and that learners' affective experience is influenced by the tool. Satar and Özdener (2008) found that the use of text-based computer-mediated communication tool reduced foreign language anxiety while the use of voice-based tool made no difference to the initial anxiety level. Earlier studies found that video-based interactions were perceived as stressful (e.g., Goodfellow et al., 1996; McAndrew, Foubister, & Mayes, 1996). However, video-based interaction has become a preferred form of communication in technology-mediated learning activities in recent years as video-based communication became significantly easier and more accessible (O'Dowd & O'Rourke, 2019). These studies indicate that learners' affective experiences with respect to the use of tools in technology-mediated interaction change over time, which in turn suggest the importance of understanding how learners of the COVID-19 era experience the use of tools in a technology-mediated learning environment.

Learning context has drastically changed for many, if not all, collegiate FL learners since the spring of 2020. Many students are facing challenges related to the pandemic and struggling with isolation. Due to these hardships, some students are losing their

motivation to study in an online learning environment, which is a conspicuous phenomenon of online learning in the COVID-19 era. It has been reported in the media that the gap between students of higher academic performance and students of lower performance is widening. That is, students who performed well before the crisis continued to do well or even better, while students who did not perform so well before the crisis performed much worse in the online learning environment during the crisis (e.g., Fairfax County Schools Office of Research and Strategic Improvement, 2020). With this situation as a backdrop, understanding the affective experience of today's learners in technology-mediated interactions is imperative in order to guide effective online FL learning.

Thus, what tools are appropriate to learners and how they experience technology-mediated interaction in the COVID-19 era is an area that requires more research. The aim of this study, therefore, is to address this research gap. We developed technology-mediated activities by incorporating elements that promote language learning based on this review of literature, and then investigated FL learners' experiences and reactions to these activities.

Research Question

This exploratory study was guided by the following research question:

How do collegiate FL learners in the COVID-19 era respond to technology-mediated online collaborative language exchange activities?

In particular, we focused on the following three areas of learner responses:
1. Affect (enjoyment, motivation)
2. Perception (language learning and culture learning benefits)
3. Difficulties and preferences (technology and overall experience)

The Study

The study outlined in this paper is teacher-conducted classroom research referred to as action research which "seeks to clarify and resolve practical teaching issues and problems" (Richards & Farrell, 2005, p. 171). Through our action research, we endeavored to understand how learners today respond to technology-mediated online language exchange activities for the purpose of improving our teaching of online language courses. The research was conducted virtually at the two authors' home institutions, Emory University and Soka University after both institutions transitioned to remote learning in response to the COVID-19 crisis. At the beginning of the study, students of both institutions were already familiar with remote learning.

The language exchange activity was designed to promote interaction and use of the target language as a social practice. Among existing technologies, we utilized VoiceThread, an Internet-based interactive collaboration tool designed for asynchronous engagement. We chose VoiceThread because it was already widely used and was accessible via Canvas, a learning platform used at Emory University. In addition, the asynchronous engagement helped avoid complications caused by the time difference as our students were located at several different time zones.

We created two activities, one using Japanese and the other using English so that both English learners and Japanese learners can benefit from the activities. In addition, we were interested in observing changes (or the lack thereof) in learner perception by alternating their role between a fluent user of a language and a novice user of a language. Details of each activity is provided in Table 1 below.

Activity 1: Self-introduction in Japanese
• Soka students posted their self-introduction video comments. • After watching Soka students' video comments, Emory students posted response video comments. • Some students continued their video comment exchanges.
Activity 2: Japanese culture learning in English
• Soka students in consultation with their instructor chose one Japanese culture topic. • Soka students worked together to prepare the content, and one student created a video comment explaining the cultural topic. This group work format was requested by Soka students to reduce each student's workload. • Every Emory student posted video comments to comment on the culture introduction video of Soka students. • Soka students viewed Emory students' video comments

Table 1: *Description of Two VoiceThread Activities*

Methods

Participants

The participants of this study were authors' students at Emory University in the United States and Soka University in Japan. Emory University students (n=10) were novice level learners of Japanese who received approximately 100 hours of formal instruction at the start of this study. Soka University students (n=5) were intermediate-advanced learners of English with TOEIC scores ranging from 500s to 800s. When this study was conducted, students were learning remotely from the United States, Japan, China, South Korea, and Saudi Arabia. To maintain participants' anonymity, details of the participants are intentionally omitted, and pseudonyms are used. The activities reported here were all part of the course activities.

Instrument and analysis

The data source of this study consisted of an online questionnaire and a learning reflection essay. The 52-item questionnaire was composed of five-point Likert scale closed-ended questions and open-ended short answer questions which were designed to elicit information about students' affective responses, perception, and difficulties and preferences. Soka students responded to a questionnaire written in Japanese, and Emory students in English to ensure their understanding of the questions and also to allow them to fully express their opinions when responding to short-answer questions.

The learning reflection essay was an optional assignment for Emory students to write about their learning experience of the entire course. The questionnaire was distributed electronically using Google Forms and the responses were entered and recorded into Microsoft Excel worksheets. Data analysis included descriptive statistics and qualitative content analysis of short answer questions and a learning essay. We did not conduct statistical analysis because the total number of participants was small (n=15).

Procedures

The preparation and execution of our action research took place in summer 2020 as shown in Table 2. After collaboratively designing the framework of the language exchange, we spent a little over one month for preparation. As we chose the learning platform (Canvas) and the tool familiar to Emory University students (VoiceThread), the initial preparation involved creating guest Canvas account for Soka University students, which automatically granted access to VoiceThread. Then, the first author created Canvas and VoiceThread (VT) user manuals in Japanese for Soka students. In addition, the first author of this paper trained one Soka student so that he could teach his classmates how to use Canvas and VoiceThread. The students participated in two language exchange activities in July in successive weeks. After the second activity, Emory students were encouraged to review activity one as a preparation to the listening comprehension section of their final exam. The students responded to the questionnaire a few days after the completion of the second activity.

June, 2020	**Preparation** - Deciding the contents of language exchange activities with a colleague in JPN - Creating guest accounts for Soka students - Canvas and VT training for Soka students
July, 2020	**Language exchange activities using VT through Canvas** - Activity 1 (Self-introduction in Japanese) – **7/24** - Activity 2 (Japanese culture discussion in English) – **7/31**
July-August, 2020	**Reviewing Activity 1 (Emory students only)** - Students reviewed Activity 1 in order to prepare for the final exam listening comprehension questions
August, 2020	**Data collection** - Questionnaire about the language exchange activities – **8/5** - Learning reflection essay about the entire course (comments on VT activities were not required) – **8/6**

Table 2: *Research Timeline*

Findings

The following subsections are organized according to the three areas we focused in an attempt to answer the research question: How do collegiate FL learners in the COVID-19 era respond to technology-mediated online collaborative language

exchange activities? Due to space limitations, we mainly report quantitative data with some qualitative data to provide in-depth information.

Affect - Enjoyment

Quantitative results indicate that the language exchange was highly enjoyable. 12 students agreed and 2 somewhat agreed to the statement 'I enjoyed participating in this activity.' One student selected 'neither.' The response pattern was about the same for the statement 'If a similar activity is offered in my future courses, I want to participate.' 12 students agreed, 2 somewhat agreed, and one somewhat disagree.

It appears from qualitative data that authentic communication with real students made the language exchange enjoyable. To illustrate this point, James wrote in his learning reflection essay: "All the activities we did in class and outside of class were impressive, but personally, **the best activity was communication with students at Soka University**. I have traveled to Japan several times, but I have never communicated with Japanese students. However, through this activity, I even **learned how to communicate with students from all over the world** with different languages, and I could understand their culture." Also, it appears that relationship among students was fostered through language exchange which was the source of enjoyment. For example, Frank wrote in the questionnaire, "I enjoyed it. Everyone was very kind, and I felt like I wanted to interact with those students more. It would have been great if we could meet up."

The student who selected 'neither' and 'somewhat disagree' for the two questions above is Cathy, a learner of Japanese. She consistently provided negative responses in the questionnaire, which sharply contrasted with the responses of her peers. Her primary reason for not wanting to participate in the language exchange was that she did not have the time to do so (5/5, 5 indicating the strongest agreement). Secondary reasons (4/5) include not interested in language exchange, not interested in the topics chosen for language exchange, preparing a video comment was too difficult, and could not understand language exchange partners' opinions or thoughts. As Cathy's L2 speaking proficiency was lower than her peers, based on the observation of the first author, it is possible that language exchange activities were too difficult for Cathy, which made them less enjoyable for her.

Affect - Motivation to learn and communicate using the target language

Quantitative results indicate that most learners' (11/15) language learning perception and motivation changed after participating in language exchange activities. Four learners reported that they did not change. Those who indicated change were asked more questions regarding their perception and motivation. All 11 learners indicated that their motivation to improve their ability to communicate using the target language and learn about the target culture increased. In addition, almost everyone (10/15) realized that they need to deepen their understanding of their own culture. Furthermore, everyone except for Cathy, reported that they now have a stronger desire to communicate with people living abroad, and that they wanted to meet their language exchange partners in-person. This finding is consistent with findings of previous studies claiming that online language exchange can foster relationship. Qualitative results showed strong motivational energy emerged through the language

exchange. To illustrate this point, Alice's comment from her learning reflection essay is shown below:

*One of the things that contributed most to my **motivation** for learning Japanese was **talking to real students** through the VoiceThread assignments. At first, I found it **very difficult** to understand and follow along with what the Soka University students were saying. I tried my best to relate to them, but the language barrier made me feel a large distance between us (not just physically). However, even after just a couple weeks, when I went back to the VoiceThread to study for the test, **I realized that I had learned so much more Japanese already.** I felt that much of the distance between us had disappeared because I practiced and learned more about the language. I wish to continue learning so that I can further shrink this distance between me and people that speak Japanese as a whole. This activity also allowed me to **directly experience how I can use these studies in the future.***

Alice's comment lend support to the findings of previous studies; her motivation increased by talking to real students. Also, Alice commented that the difficulty she had in comprehending her partners' video comments in Japanese motivated her. In addition, Alice's comment showed a benefit of asynchronous communication. By participating in video comment exchanges and reviewing them at a later time, Alice was able to perceive her Japanese proficiency improvement, which seems to have contributed to her motivation.

Perceived benefits for language and culture learning

Most students indicated that language exchange was helpful in improving their communicative competence (14/15) and their Japanese or English abilities (11/15). With respect to specific skills, everyone (15/15) reported that language exchange facilitated improvement of their listening skill. Many students indicated that it facilitated improvement of their speaking skill (13/15) and writing skill (10/15). Regarding culture learning, everyone (15/15) indicated that language exchange helped improve their ability to explain their own culture, and to understand other culture. Qualitative results indicate that students valued language exchange as an opportunity to apply the knowledge they gained in class to real conversation settings.

Difficulties and preferences – Overall difficulties

Quantitative results showed that six students found it difficult to participate in language exchange activities, one neither and seven not difficult. The main cause of difficulties includes making the time for language exchange. In addition, students found understanding their partner's speech and expressing themselves in the target language were difficult. Overall, technology was not the main cause of difficulty.

Difficulties and preferences – Technology difficulties

Regarding technology-related difficulties, we asked about the difficulty level experienced with internet connection, logging into Canvas periodically, and learning to use the video comment function of VoiceThread. The data indicated that Soka students had more difficulty. The mean value of the internet connection difficulty for Soka students was 3.2 and Emory student 1.8, where 5 indicates the highest level of

difficulty. Logging into Canvas periodically for language exchange was difficult for Soka students (mean value 4) while it was not for Emory students (mean value 1.5), which is understandable as Canvas is the learning platform used at Emory and not at Soka. Learning to use the video comment function within VoiceThread was not very difficult for both students. The mean value for Soka students was 2.6 and Emory students 1.7.

Difficulties and preferences – Technology preferences

In response to a question asking about the learners' preference between the video comment tool and the voice comment tool, 14 learners indicated that they prefer the video comment tool and one learner the voice comment tool. This result that most students prefer the video comment tool is consistent with O'Dowd & O'Rourke's (2019) claim that video-based interaction is preferred by learners today. Qualitative data indicated that primary reasons for preferring video comments are that video comments are similar to in-person communication and thus it is possible to feel human connection and also it is easier to understand the interlocutors by looking at their facial expressions, their mouth movements, and gestures. Below is a written response from the questionnaire which represents many students' opinions.

I think that using video comments ***encourages friendship*** *between people participating in the language exchange activities. Being able to see the person you are interacting with makes the activities much* ***more personal*** *despite the online setting and physical distance. It feels less like a homework assignment and more like* ***a chance to meet new people from different places****. Video comments also make it* ***easier to convey emotions*** *and see how these emotions affect speech in different languages.*

Conclusions

This study is one of the first studies that aimed to explore collegiate language learners' experiences and reactions to technology-mediated online language exchange activities in the COVID-19 era. This study makes contributions to the field by revealing collegiate language learners' responses to online learning during the current crisis in which many students in the US filed a lawsuit against their university for tuition reimbursement on the grounds of pedagogical inferiority of their online learning (Anderson, 2020). Findings of this study strongly suggest that online language exchange that utilizes video comments facilitates effective instructed language learning in a remote learning environment. Majority of participants of the present study reported that they enjoyed language exchange, appreciated the opportunity to communicate with students who attend a school where the target language is spoken, perceived language learning benefits by participating in language exchange, and increased their motivation to learn the target language and culture. Furthermore, we found that participants preferred video comments over voice comments because video comments are similar to in-person communication, and that participants felt social presence of their partners.

The study reported here is a small-scale action research and therefore transferability of our findings to other population and contexts may be limited. Yet, it is noteworthy that students in America and students in Japan both responded very similarly to the

online language exchange. Also, we observed that one participant's response sharply contrasted with her peers. As the widening gap between higher performing students and lower performing students in remote learning has been reported, future research may want to look at individual differences in remote learning environment more closely.

Based on the powerfully positive learning experiences of majority of the participants of our study, we advocate for the use of language exchange activities in online language courses but with a caveat that teachers need to pay special attention to individual differences. It is hoped that future research deepens our insights on our understanding of the benefits and effectiveness of language exchange in collegiate online language courses.

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Contact email: mmazzot@emory.edu

Faculty Mentoring and Unmasking Gender Biases and Influences for Pakistan Returnee Doctoral Graduates from Abroad

Maleeha Ashraf, University College London, United Kingdom
Denise Hawkes, University College London, United Kingdom
Maryam RabDirector, British Council, Pakistan
Wilson Eduan, University College London, United Kingdom

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Abstract
The mentoring of faculty is an important aspect in higher education for countries investing in training faculty abroad. This study explores the key challenges faced by young female faculty returning from doctoral studies abroad and assuming leadership positions in higher education without prior mentoring. The participants of this study were doctoral graduates who completed studies in the UK and USA and working in universities overseen by Higher Education Commission (HEC) of Pakistan. A thematic analysis was conducted for interview data obtained from the British Council in Pakistan and consisting mainly of young female academics. The findings reveal cases of outright discrimination against females, a lack of support systems for female faculty and the role of socio-cultural context in constraining them. Remedial mechanisms in the form of appropriately matched mentoring is needed to address the emerging concerns.

Keywords: International Doctorates, Mentoring Female Academics, Academic Career, Higher Education, South East Asia

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Introduction

Developing world class research universities is a strong drive for many countries in South East Asia. For Pakistan, the ambition is enshrined in a program of providing scholarships for faculty to undertake doctoral studies abroad. The Higher Education Commission (HEC) connects gifted students and faculty with world class research universities through an international scholarship program. The HEC provides scholarships that include among others; the Overseas MS/MPHIL leading to PhD, UK-Pakistan knowledge corridor PhD scholarship program, Academic and research linkages under Bilateral Agreement, Learning opportunities abroad, Faculty development program, and a Split PhD and postdoctoral Fellowship program with France. Others include the overseas scholarship Aghaz-e-haqooq-e-Balochistan project and partial support scholarships offered to students at completion stages of PhD. The large number of scholarships not only provides opportunity to study in the world's top universities but also a rare opportunity for young female academics to access positions of leadership especially with the creation of women only universities in Pakistan.

According to the Higher Education Commission-Pakistan Annual Report 2013-2014), an increasing number of beneficiaries of the government scholarship program are returning. For instance, in a period between 2003 and 2013 a total of 9,895 scholarships were awarded through 22 scholarship schemes. By 2014, there were 12,895 scholarships from the projects and the Fulbright scholarship support schemes awarded. The returnees from the PhD programs during the period were 1,985 graduates. Clearly, an enduring outward mobility and inflows into the higher education system ensures that universities under the HEC will continue being fed with fresh young graduates from the best universities across the world.

The main challenge however lies in the limited capacity to mentor them into higher education tasks given the shortage of mentors or the difficulty of finding willing mentors (Bonawitz & Andel, 2009). Considering the scanty literature on the experience of young female academics and cognisant of the absence of prior mentoring, we pose questions; how do young female academics in Pakistan higher education describe their experience of being in leadership? How do the social and cultural roles of patriarchy affect the experience of the young academics? Such evidence would inform policy debates and practice on developing mentoring approaches for incoming young female academics returning from universities abroad.

Mentoring women in higher education

The issue of women participation in higher education has gained scholarly attention over the years. On the one hand, studies on mentoring for women in higher education focus on the challenges to mentoring and establishment of mentoring relationships. Recent studies attempting to understand the "glass ceiling" on women academic careers highlight exploitation and harassment of female academics often with a male line manager as a factor (Yousaf & Schmiede 2016). The idea of a glass ceiling is often used to explain the absence of women in the senior roles of medical education (McKimm et al 2015). In related studies women academics complain about teaching overload and mentoring is suggested as a possible mechanism of improving the situation (Bower 2012).

Debates still exist about the ideal mentoring relationship. Some perspectives on mentoring relationships still prefer female to female mentoring arrangements despite the apparent low numbers of female professors. Worse still, no data is available on Higher Education staffing and the little available data indicates female participation at PhD level was reported at 28% by 2003-04, from 22% in 2001-2002 (Batool, Sajid & Shaheen 2013). Despite the emphasis on female mentors for female faculty, others prefer a cross-gendered mentoring. For instance, Bower (2012:7) states;

> "I do not agree that women seeking full professorship need to be mentored solely by other females. I believe a female associate professor needs to be mentored by individuals, regardless of gender, who will provide her with the most beneficial guidance in obtaining her desired position. I was fortunate to have two mentors provide me with the guidance necessary to achieve promotion and tenure".

Therefore, considering the diversity of views on mentoring relationships, we need a more context specific evidence to enrich this debate.

Despite many studies recommending mentoring as a solution to career progress for women, a key obstacle is the few numbers of female academic mentors. Studies show that female faculty can access mentors to negotiate through the tenure process but academics progressing to positions of professorship report fewer opportunities for mentorship than men (Bonawitz & Andel 2009). Women in STEM disciplines find greater problems because some institutions hardly accept women for STEM positions with tenure and the reason is the social and family demands that hampers their participation. Unmarried women often find themselves encumbered by social and work obligations. To cope with social difficulties, Bonawitz and Andel (2009) suggests female mentees request a female mentor and where possible, a full professor. However, women face barriers of finding female mentors in higher education due to a shortage of women in leadership positions. Bower (2013), recommends having cross gender mentoring so that one provides career support and another on psycho social support. As Bower states; "I think being mentored by a man and a woman is an advantage because each has a different perspective". The proposed arrangement is consistent with findings from a study of faculty in international physical education departments (Bower & Hums 2008). The study supports a mentoring relationship helping mentees obtain knowledge and skills to do their career functions of teaching, scholarship, and service. The second aspect important for women is to nature the psychosocial or emotional benefits of the mentoring relationship. The authors further suggest a closer look at career and psychosocial functions with women in other industries.

Most available studies focusing on the experience of mentoring relationships for women are quantitative. Gender-related attributes were seen as impacting on the type of mentoring received. In the study conducted by Obers (2014), women with male mentors were more encouraged to apply for promotion than women who had female mentors. Masculine mentors were more goal-orientated and able to teach the mentee to be more "single-minded in approaches to projects, competitive, strategic and focused" and were more likely to provide challenging assignments (Khan 2013). Meanwhile, women role models were seen as being more aware of the need to build self-esteem in women and they are also known to offer advice on managing domestic and work obligations (Obers 2014). Therefore, having few women role models poses the risk of

disadvantaging women as men may be ill prepared to build self-esteem among women faculty.

Same gender relationships are perceived as providing two psychosocial functions. Ragins & Cotton (1999) quantitative study examined all possible combinations of gender and reported diverse results. Female to female mentoring were more likely to engage in social activities than female to male mentors. Moreover, compared to all the other mentoring gender combinations, male mentees were less likely to report that their mentors provide acceptance roles. They were also less satisfied with their mentors. While male mentors were expected to provide more career development functions than female mentors, there was no evidence to support it. However, mentees who had a background of male mentors received more compensation and promotions than mentees with female mentors. Male to male mentoring also reported mentee satisfaction. Males with female mentors however reported less psychosocial and career development functions than the other gender combinations. In particular, males were less satisfied with their female mentors on the mentor contribution to professional development or provision of challenging assignments and or exposure (Ragins & Cotton 1999).

Socio-Cultural influences of patriarchy

Exploring gender dynamics is a pertinent issue in the higher education context especially given the negative stereotypes against women in South East Asia. Morley et al (2014) reveals cultural perspectives as impediments to the success of women. Citing typical examples, Morley study observes attitudes in China view that an educated woman has no virtue and a parallel Japanese perspective that women should conform to patriarchal norms or risk unhappiness. The perspectives all have social and affective consequences (Morley et al 2014). Although in Pakistan, the women only universities are recognized for changes in female participation (Morley & Crossouard 2015; Shah et al 2013), that is only a small success that allows women to move up the university hierarchy. Despite the changes, more recent quantitative studies still connect gender to family and organisational barriers that fall outside the institutional domain. A prior study conducted among women managers in academia across four public and four private universities of Rawalpindi and Islamabad suggested women in management still encounter familial and organizational barriers and more especially in private universities (Ghaus 2013).

Analysis of the more context specific literature on Pakistan reveals little on the social cultural influences of patriarchy on young female academics. Similarly, Shah (2008; 2010) study of the patriarchal nature of Pakistani culture within which sex-segregated education is conducted and Durrani (2008) study of gender in Pakistan focusing on sexual harassment address issues affecting than specific mentoring challenges for young faculty. Studies of senior women academics including a Vice-Chancellors, deans or heads of the department in public sector universities in Rawalpindi and Islamabad contain descriptions of their professional experiences and framing by Patriarchal cultures and the family support roles in women's career advancement Rab (2010a and b). Building on existing studies,

In summary, while existing studies address issues of senior academics in leadership, no studies address the concerns of young academics. Furthermore, the quantitative studies tell us about the relationship between gender pairing and expected mentoring outcomes.

Nevertheless, such studies lack detail and sometimes cover up the actual experiences that lead to observed outcomes. We need a qualitative description of the experiences of female academics in the work environment. Moreover, aware that most studies are largely conducted in western societies and a few focusing on participant background characteristics, a study is needed that specifically addresses the position of women in alternative higher education settings.

Methodology

In this paper we investigate the importance of gender in establishing mentoring relationships for young academics by exploring their work experiences as leaders in higher education. The focus of the study is the experiences of female academics serving under the Higher Education Commission of Pakistan. A qualitative methodology was found to resonate with the study objective as it provides detailed descriptions of participant experiences.

In-depth interviews were considered appropriate data collection method that would allow access to participant perspectives on mentoring needs as lived experiences. Fortunately, the study founded available secondary data from in-depth interviews collected by the British Council in Pakistan. The secondary data resulted from interviews at university campuses in Pakistan. The secondary data provides 25 interviews of senior faculty members from ten public and private universities in Pakistan targeting issues and challenges they face as young academics. The data was collected from both senior and junior faculty members although it is evident that the majority of the participants in the study (76%) were junior academics. The British Council report by Hawkes and Rab (2018) indicates that the data consists; 24% respondents with more than 12 years' experience in higher education. Therefore, more than half of the sample was early researchers and mid-career researchers. The transcripts were obtained for the study and subjected for analysis.

To analyse the data, a thematic analysis as a general framework for analysis of qualitative data was followed. Consistent with the procedures proposed by Braun and Clark (2006), the analysis involved familiarising the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and then producing the report. The transcripts were read several times to gain familiarity. Data identifying barriers experienced by academics was given codes and themes assigned to specific codes. In the current analysis, a theme was defined by a process or activity that shape the mentoring needs of young academics. Finally, a report was produced. The method was found useful and adequate in developing the main themes constituting key findings of the study.

Efforts were made to ensure the credibility of the account, the British Council provided original interview transcripts. While maintaining anonymity of participants in line with ethical standards, thick descriptions were used so that citations made in the text are authentic extracts and can be traced back to interview transcripts (Erlandson, Harris, Skipper, & Allen, 1993). The language in the extracts was retained in its original form without attempts to correct errors. External refereeing of the paper was done using academics with firsthand experience of the gender situation in Pakistan higher education. Finally, bias was minimized in the analysis by ensuring that alternative

views about the experiences of young male academics as well as accounts concerning the global context were included and original text cited as it appears in the transcripts.

Findings

Experience of young female academics in higher education

The analysis of the experiences of young female academics in Pakistan higher education reveals two main constraints to performance. The system is characterised by outright bias against female academics and the absence of support systems for female faculty. In the next paragraphs, we explain how young female academics discuss their experiences in higher education.

Gender based discrimination against female academics
Women academics in Pakistan higher education often face discrimination and rarely given opportunity to demonstrate and express their knowledge even among equals. They are relegated into passive receivers of the male perspectives. The bias is compounded by the very nature of the Pakistan society where men are expected to be the leaders and women as followers. This is clearly illustrated in the statement echoed by a respondent relating to own experiences in meetings where the males were the dominant category.

> "So, you go and you sit and like the general concept is that they say "… apko nhe pta" (…. you don't know) whenever I talk something the vice chancellor say ... apko nhe pta" (… you don't know). Aor mujhe dekh dekh ke kehtay hai aap chup hojayiye (And looking at me he says you stay silent) let him talk."

The statement suggests that the Vice Chancellor with prejudice despite the abilities, knowledge and accomplishments of the female academic. Many women experience such bias and it is not only reflected in meetings but extends to promotions and allocation of responsibilities in higher education. Women perceptions are that, for any of them to rise into positions of leadership, they have to work harder than men.

> "Reaching senior positions, they [women] have to struggle harder and one and half times more than men because men are very threatened. And because of that click of school tie network they would promote men only."

While some see hard work per se as a means to overcoming male prejudice, others see their success in terms of cultivating a work culture that shows seriousness. "Also, being taken seriously, that is something I will really cherish after my retirement, I don't think there were too many times when I was not taken seriously." However, it takes a lot of work discipline to establish such image. According to this academic, you cannot walk away from a meeting because it is time for children to be back home and you have to go and supervise meals. Instead, ensuring that children get picked from school and having lunch brought to the work place for the child are some of the small things that ensure that others take you seriously. Breaking the barrier therefore, takes more than qualifications but may require additional mechanisms that can be learned from female faculty with similar experiences and have managed to gain respect.

Absence of support systems for female academics

In terms of academic support, women express the lack of support in career development. Women complain over the little support they get compared to their male colleagues and in particular, it is difficult for women to get support from men and yet men support fellow men. Such practices are attributed to socialisation patterns in the Pakistani context where the men are given more attention as reflected in the following remark;

> "there are many but sometimes I feel not many but the biggest challenge is when you are working as women the stories are much different because the male setup that we have in terms of socialisation and they have their names and their seniors' names and they can be easily supported by one another but being a woman you are not supported by these men in terms of getting some funding or supporting your research or guiding you in a positive manner so that's a big challenge"

The lack of support from the male side is also compounded by the absence of support even from female faculty. So female faculty not only face challenges from the male side but also from the fellow females. Females from the same field where one would expect support are also a source of hurdles for progress to higher positions. Respondents have a feeling that the lack of mutual support among the female faculty contribute to the lack of progress of females to senior positions. Moreover, in some cases women are blamed for undermining one another and promoting male domination. Reflecting on her own experiences, one of respondents observed females never supported her in her career and their contribution was often negative. She indicated that she was often being reported to the vice chancellor by fellow female faculty with a view that she does not gain promotion.

Networks are important for peer mentoring. Unlike the men who networked through historical links, the few women in higher education positions are undermined by apathy and fear of women to form beneficial networks of their own. Realising the importance of networks, female faculty in one of the universities came up with a social networking group. Given the absence of support for female faculty, some of them began participating in networks that support female academics but networks are few and with challenges. While explaining about women tendencies on network formations, this respondent observed;

> "Women have no networks and they are not willing to create networks. I think in a coeducation atmosphere women side with women only not openly, they don't want to do it openly because they see it as a kind of a weakness or they see that men will comment on it and men are never shy on taking sides of their friends, or their friends' friends, their brothers' friends or whatever."

The perception is that, the women are afraid to form or join such networks. Among others, they feared the comments that would come from the men. Such fears indeed have a negative effect on mentoring relationships.

An attempt to form a women club in one of the universities to allow women come together once a month and speak about women issues revealed a weakness of fear among women. At the initial stage, women were not forthcoming and were less enthusiastic in it. Some women even began to question why they were being organised

and so many nasty remarks were made but gradually the group continued to grow and became strong.

> "When the women realised that we had no political agenda, we were just wanted to have caucus of women voice to be audible and visible gradually and just as soon as I mean out of those 50 women 35 started coming, the men started best coming after us, are you starting to create an association do you want it get registered, do you want it to be a part of the ASSA to you want to be registered. We said no nothing this is just like a sorority so that we can just understand each other."

Although the group was under pressure from male faculty, it was a useful way of addressing some of the concerns of the members including personal difficulties faced by individual members. In the absence of formal mentoring arrangements, women wanted access to information contributing to professional careers development.

> "…there are some issues you know, how I apply for a scholarship, where do I go and some professional and some personal but it was airing your issues & understanding your issues and men were very threatened by it."

The absence of information inhibits planning for career development among women faculty. The group that was formed had no political intentions and was never registered. It was aimed at addressing women concerns. One such concern is the absence of information sources due to weakness in female networks. The women point out the case of a career search in Pakistan which they say is informal. Unlike the public sector where jobs are properly advertised, few posts get advertised in the private sector and information often passes through networks. In the private sector someone working in a bank spreads the word around that a bank is recruiting. Female networks for job search are weak in Pakistan and women are more likely to miss out on important job opportunities. Even though the social media has bridged the gap but the female working age population in the labour force remains low hence limiting information access. The establishment of networks for women helps the women to cope and forge a head in their academic careers, access to information is still low.

The Socio-Cultural influences of patriarchy

In the analysis done in response to the question about the social and cultural influences linked to patriarchy, female faculty face family obligations as a key impediment on academic role. However, some respondents downplay the influence of patriarchy and dismiss it as neither unique to women nor to Pakistan. The next part of the findings describes the details.

Female roles

Mentoring relationships are also influenced by women social roles. The family plays a central role in the lives of academics in career for women in Pakistan. For instance, no residential facilities are offered and this is partly explained by lack of willingness of female faculty to take residence in the university due to family obligations and even families do not grant them permission to take up residence in the university. Obviously, the disparities in facilities among societies would account for reluctance of faculty to

move. For some of the female faculty, nobody would want to come from Lahore unless for a very senior position or under serious problems in their own institutions. So, in addition to family obligations, availability of facilities would have an influence on the decision to move to an institution and therefore would affect potential mentoring relationships across universities.

Residential concerns for married women not only impose restrictions on women but also the recruitment potential of universities. It has partly contributed to the failure to fill up some positions where women have no accommodation provisions. Commenting on the influence of accommodation on gender participation, the respondent remarked;

> "We have no residential facility so there are departments which we have advertised for women for about 32 times we never had an application of a senior women. Business administration, computer sciences, public administration defence and diplomatic studies, you name it you know."

The absence of university accommodation and the reluctance of the female faculty to relocate frustrates university development. Owing to the social roles of women, the university is unable to attract applicants. Although the university has a few mid-level PhD graduates and Associate Professors, it needs Professors to generate projects and attract funding so as to develop the research profile of the university.

Other than residence, academics are affected in diverse ways. On one hand, male academics are perceived as privileged in some respects. They are free to decide on what they prefer to do and this happens even at home. If a man is working on a project, he would not take interruptions and the children would not disturb him. A woman cannot do the same. To illustrate the point a woman academic remarked that, "For a woman, it is very difficult to tell her husband do not disturb me, I'm working on this or to kids not to disturb me." Although tactics might have evolved to achieve just the same, women than men often find it challenging to cope with family and work pressures at the same time. On the other hand, women do not enjoy similar privileges and sometimes have to weigh options before deciding even on marital life. With care, women have to deliberate on decisions concerning completion of studies before getting married because of uncertainties of the potential impact it might have on academic life.

> "I was going to marry in 1992, on the day of my Mehndi and Ubtan I submitted my thesis with the threat of what will happen after marriage, maybe the in-laws are not willing to support you or the husband might have different point of view."

Not willing to risk her academic career in the event of negative marital outcomes, the respondent decided to have the PhD thesis submitted prior to the marriage. Fortunately, she found support and eventually was able to do the corrections and go for her career. However, the fear of marital outcomes represents the kind of decisions that Pakistani women face and could greatly affect mentoring relationships. This is not to imply that the male faculty are free of specific challenges. Quite the opposite was evidenced by some of the respondents.

Males are as vulnerable as females

Although socio-cultural background in Pakistan affected suggest differences in mentoring needs for females, it also came out that socio-cultural roles also affected male faculty. Contrary to common perceptions that only females face challenges in higher education, gender also has negative consequences for male faculty. Despite the expectations of high performance for males by higher education authorities, patriarchy places high demands on male faculty and undermines male career development. Patriarchy includes non-working vibes, expectations on number of children and the extended family obligations. Academics argue that gender roles impact equally on both female and male faculty. Patriarchal attitudes are rampant and stifle faculty aspirations and especially when they are deployed as tools to establish the importance of a position.

> "In fact, young male faculty members are victims of male patriarchy as well. And I have to break the shackles for them to move. There should be institutional counselling services for male faculty members because many of them are caught up in different social setups there is no one for them to go and talk to."

While patriarchy is understood to have a negative impact on young male academics, it is also difficult to break barriers and pinpoint the actual cause of the problem due to diverse social setups at play. The social expectations undermine meaningful mentoring relationships. For example; a leading faculty member who was mentoring a young faculty recalled that;

> "a young faculty member didn't publish anything because he had twins right after his marriage & he has to support his wife in taking care and now he has nothing to show in mid-career review so he might have to leave the university"

Having the first child at a time when of great demands to publish and prove yourself is perhaps no good decision. Given the negative impact of patriarchy on performance and career progress, it therefore inevitable that male academics could face difficulties without relevant mentoring relationships in a changing academic culture. Men who are trying to help their working wives, are also affected more as they spend more time on other roles. For instance, academics argued that supporting a wife is the responsibility of a husband. Men who are trying to support working wives are affected even more, because they are trying help wives write the PhD dissertation. Taking leave and sacrificing own classes. So, this whole concept of the nuclear family, surviving as working couple and having a limited family size and making choices which family gathering to attend and which not to attend are all challenging issues for males caught up in such extended family setups.

Supporting parents is considered the role of the son and not for a daughter. Therefore, having sick parents, having to look after them is responsibility of the son. Moreover, for the married daughters, the in-laws will not even allow it. Besides, attending funerals is considered an obligation and she stated;

> "Deaths and funerals, I mean I had to walk out of meetings to take a bus to Lahore to attend a funeral. I do it out of my own free will but it's a choice that has to be made"

Given the circumstances, a struggling young faculty member who has to publish or perish, applying for family holidays could impede on professional development because there is no understanding at the family level about what it takes to survive in a higher education. It is not the years of service in university; it is what you put in those years of service in university that matter. In those circumstances, patriarchy has could have an immense influence on the nature of mentoring relationships. Patriarchal influences lead to suggestions of career and family counselling.

Patriarchy as a global phenomenon

Even with the evident socio-cultural differences for male and female faculty. Participants advance arguments against attempts to localise the overall importance of gender roles in shaping mentoring relationships. While acknowledging the negative consequences of gender roles in society, respondents were quick to place the Pakistan gender situation into global context. They argued that the influence of gender cannot be localised but is a global problem that manifests itself even in other countries.

> "Developing and hampering career in other countries manifests in different ways and of course it's the multiple burden which a woman carries anywhere in the world to justify being a professional, being a wife, being a mother, maybe not being a daughter in-law in the west but here in the south Asia in India, Bangladesh, Nepal, Sri Lanka so it's a regional thing"

According to some of the respondents, the situation is not much different. The multiple social roles and expectations for women are global and the only exception for the West are the roles of the daughter in-law but which are the same for the women in South Asia. This opinion was supported by views from other respondents who argued that there is no difference for the women in Pakistan and other countries. The only unique difference might be the attachment to the family for married women. They reason that women in Pakistan are unable to relocate and take up accommodation in the university. They prefer to remain where their support systems are located.

Global differentiation of patriarchy is perceived as a case of cultural relativism that every country has its own culture. Women are facing different issues in different cultures. In Pakistan, the family environment has more influence than the work environment. Therefore, when you are living with your in-laws in joint family system, "you had to take care of your work and your husband & mother n law & bla bla". This is in contrast with the West where family consists of husband, wife and children only. The extended family is considered an important part of life. Therefore, academic life requires striking a balance between your work assignments and at the same time taking care of your family and relationships.

The importance of contexts was noted as the main source of gender differences between countries. Every country has a unique culture and women have different experiences. For instance, although women in the West have greater freedom as a result of a class struggle challenges still exist. One respondent pointed out that, among the top 500 best organisations, Harvard University is among institutions where females are made Head of Department only in crucial times. Compared to women in the third world, women in West are struggling and talking about achievements. Despite some degree of success,

females in the west continue facing discrimination at a time when upper-class women in Pakistan are actually more liberated.

Discussion and Conclusions

The study explored the experiences of young female academics who completed doctoral studies abroad and returned to senior positions of higher education in Pakistan. One of the key revelations from the interviews includes discrimination against women where women are not expected to freely discuss their views even in formal academic settings. Yousaf and Schmiede (2016) while addressing issue of harassment and discrimination of women in higher education echo the same view by stating that behind the glass ceiling effect on women, there is a male manager responsible for the ceiling. Like in the China context where the virtue of a woman lies in her ignorance and in Japan where a woman's knowledge is perceived as a source of unhappiness (Morley et al 2014), female academics in Pakistan are expected to remain silent even in faculty meetings because they are assumed ignorant (June, 2009). Therefore, it is by no surprise that female academics have to work twice better to prove their worth and gain respect as leaders. Compounding the situation is the absence of female networks that provide support on issues affecting female faculty. Female also complain about male faculty giving no support on access to research funding and even information on scholarships. Unlike the male faculty who enjoy peer support on the basis of their previous school links, the women are few and therefore lack such connections. In a unique way, women academics in Pakistan are sometimes unable to develop a strong network due to mutual suspicion and intrigue. Such problems could still be due to lack of mentoring and as a result, female academics find difficulties in access to information on available opportunities. Female faculty would need to request for mentors.

Participants in this study were also concerned about the socio-cultural challenges of patriarchy in Pakistan higher education. Surprisingly, the difficulties were reported to affect both male and female faculty. Moreover, some participants, they view gender challenges linked to patriarchy as a global rather than a problem unique to Pakistan. However, it impacted the young female faculty in unique ways and therefore the need for a specific approach for the female faculty. For instance, the availability of accommodation, marriage and the support of the husband, and the support of the large extended family with many in-laws. Such a situation may not necessarily be reflective of the global situation and each specific context has its unique ways it affects female faculty. It could have elements of a regional context though some studies have indicated variations even within regions and countries (Jejeebhoy 2001) Therefore, mentoring systems need to be sensitive to contextual variations.

Given the circumstances, mentoring by female academics would be strongly recommended for the young female academics. More important, female mentors are needed to provide the psychosocial aspects of mentoring. However, considering the important role that both male and female academics play in providing wider qualities of an academic role to the mentee (Obers 2014) and the importance of the level of satisfaction reported by mentees in mentoring relationships (Ragins & Cotton 1999), it would be better to arrange for cross gender mentoring relationship involving male and female mentors for a female mentee as suggested by Bower (2013). Perhaps, the arrangement would cater for career and psychosocial development of the young female academics returning from abroad to positions of leadership.

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Attitudes of Filipino Senior High School Students Towards English: Implications for Teaching English

Jerusha Eve F. Ong, Centro Escolar University, Philippines

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Abstract
Attitude towards a language is a crucial factor in learning the target language. Language attitude can be behavioral, cognitive or affective. This study aimed to determine the attitudes of senior high school students towards English according to their dimensions and compare them according to the learners' gender and type of school, which could provide valuable insights to the teachers of English. Descriptive-comparative method was utilized with the use of mean, standard deviation, frequency distribution, and t-test. There was a total of 133 respondents enrolled in the STEM strand in Marcelo H. Del Pilar National High School and Montessori De Sagrada Familia. A survey questionnaire was given to the respondents to determine their attitudes towards English. The study revealed that senior high school students have a positive attitude in each dimension of attitude towards English. Furthermore, there was no significant difference in each dimension of attitude when grouped according to gender and type of school. Since the results yielded only a positive attitude, these imply that further enhancement is necessary to achieve a highly positive attitude among the students through the help of teachers, parents, schools, and curriculum developers.

Keywords: Dimensions of Attitude, English Language Attitude, Gender, School Type, Senior High School Students

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Introduction

English is widely used in many countries, but in most Asian countries, it is considered as a foreign language. However, in some countries like the Philippines, it is considered a second language. In the Philippine educational system, English is not only taught as a course from basic education to tertiary education; it is also used as the medium of instruction.

Learning English entails practicing the language, but some learners find it difficult because of their native language or other languages. Even though English is considered as a second language and is taught in schools in the Philippines, not all Filipinos are proficient in using it. Khastgir and Neogi (2017) pointed out that "the importance of being educated in English cannot be denied" (p. 13634). This is true especially in the Philippines where English is used as a means of communication in the schools and in the workplace.

English competence is a must if one wishes to be hired by any company since job interviews are conducted in English. Even entrance examinations for schools and universities are in English. Textbooks in courses like Science and Mathematics are in English as well. In short, if one wants to be successful in the Philippines, be it in academics or in one's career, proficiency in the English language is one of the keys. It is for this reason that English is considered "the language for economic advancement, academic pursuits, and globalization" (Koo, 2008, p. 22).

The English language is widely recognized as the international language (Gomez & Perez, 2015, p. 315). In fact, as mentioned earlier, English is considered as a medium of instruction in the Philippines, unlike in other Asian countries where it is merely a subject taught in their schools. According to Alam (2017), research has shown that to be successful in language learning and teaching, it is important to have an understanding of the attitudes of the learners towards learning a language. Since English is used as a second language in the country, attitudes of learners towards the language play an important role in the success of learning the language (Tanni, 2015, p. 139). Because of this, teachers need to "acknowledge and respect the attitudes and beliefs of the learners towards learning a language" (Mantle-Bromley, 1995, as cited in Tanni, 2015, p. 139).

There are different factors that are related to the attitudes of the learners towards a language. Baker (1992, as cited in Navarro-Villaroel, 2011) mentioned that attitude towards a language is related to different factors such as gender and type of school (pp. 5-6). In addition, Lamb (1997, as cited in Alieto, Rillo, & Lucas, in press) stated that research has revealed a gender difference in attitude towards languages (p. 9). Meanwhile, attitudes have three components (Wenden, 1991, as cited in Tanni, 2015, p. 139). As mentioned by Wenden, these components of attitudes are behavioral, cognitive, and affective, which led to the three dimensions of language attitudes and were discussed further by Abidin, Pour-Mohammadi, and Alzwari in their study (2012).

It is for this reason that the researcher undertook this study to determine the attitudes of Filipino senior high school students towards English and whether gender differences and types of school lead to any change in the attitudes of the learners

towards English. Furthermore, the researcher looked into the three dimensions of attitude of the learners that could provide implications to the teaching of English.

Literature Review

1. Attitude

As early as the 1930s until the present time, many researchers have come up with their definition of attitude. According to Krech and Crutchfield (1948, as cited in Ianos, 2014), "Attitude is an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world" (p. 96). Sarnoff (1970, as cited in Ianos, 2014), on the other hand, stated that "attitude is a disposition to react favorably or unfavorably to a class of objects" (p. 96) While for Baker (1992, as cited in Ianos, 2014), it is "a hypothetical construct used to explain the direction and persistence of human behavior, which means attitudes have to be inferred from their manifestations" (p. 97).

2. Language Attitude

In the study conducted by Goktepe (2014), he mentioned that attitudes encompass the set of beliefs that the learner has towards the second language (p. 324). Ryan and Giles (1982, as cited in Alieto & Rillo, 2018) explained that "language attitudes are any of the person's affective, cognitive, or behavioral index of evaluative reactions" (p. 87). Moreover, Alam (2017) stated that "attitude towards a language is a crucial factor that can have an impact on the learning of that language" (p. 30). According to Arda and Doylan (2017), language learners may develop different attitudes towards language learning (p. 180). In addition, the attitudes of the learners affect their academic performance since "attitudes have an effect on how much they become interested in learning the language" (Inal & Evin, 2006, as cited in Arda & Doylan, 2017, p. 179).

Prominent researchers have conducted studies regarding attitude towards a language. One of them is Baker (1992, as cited in Navarro-Villaroel, 2011) who introduced the idea that attitude towards a language is related to different factors such as age, gender, and even type of school (pp. 5-6). Gardner and Lambert (1972, as cited in Navarro-Villaroel, 2011) also conducted a study to measure students' attitudes towards a language (p. 5).

3. Dimensions of Attitudes

Most studies conducted by researchers focused on the three dimensions of attitudes, i.e. behavioral, cognitive, and emotional dimensions. Wenden (1991, as cited in Tanni, 2015) stated that attitudes have behavioral, cognitive, and affective components (p. 139). As mentioned by Abidin, Pour-Mohammadi, and Alzwari (2012), the three dimensions are based on the three theoretical approaches: behaviorism for behavioral, cognitivism for cognitive, and humanism for affective (p. 121).

Abidin, Pour-Mohammadi, and Alzwari (2012) pointed out that the behavioral aspect of attitude, which is the first dimension of attitude, is the way the learner behaves and reacts in particular situations (p. 121). Moreover, cognitive dimension deals with the

beliefs of the language learner about the knowledge that he or she receives in school and his or her understanding of the process of language learning (Abidin, Pour-Mohammadi, & Alzwari, 2012, p. 122). The third dimension of attitude which is affective, as defined by Feng and Chen (2009, as cited in Abidin, Pour-Mohammadi, & Alzwari, 2012), is the emotional factors that affect language learning (p. 122).

Van Els et al. (1984, as cited in Hosseini & Pourmandia, 2013) mentioned that the relationship of the three dimensions is so close that even if only one dimension is measured, sufficient information regarding the learners' attitudes can be obtained (p. 68). They also stated that it does not matter which of the dimensions of the attitudes will be measured (p. 68).

4. Attitudes towards English

Many studies regarding attitudes towards English have been conducted before. These studies explored the different factors that might have an effect on the attitudes of the respondents. A recent study conducted by Coşkun and Taşgın (2018) explored the attitudes of students towards English and factors that might affect students' attitudes such as gender, year level, and school type. Results revealed that freshman students in the university had higher attitude scores towards English compared to higher year levels' scores.

Filipino bilingual students have very high positive attitudes towards English, as revealed by the study of Sicam and Lucas (2016). The general attitudes of the learners towards English showed that they are aware of the personal impact of English in their lives. They concluded that the positive attitudes have not changed over the years.

When it comes to students' attitudes towards English and their English language performance, the study conducted by Nyamubi (2016) revealed that the students' performance in the said language is related positively to their language attitudes.

5. Attitudes and Gender

As introduced by Baker (1985, as cited in Navarro-Villaroel, 2011), one of the factors that are related to language attitude is gender (p. 5). The study conducted by Coşkun and Taşgın (2018) examined the attitudes of students towards English and gender as a contributing factor that might affect the attitudes of the students. Results revealed that the female students' attitude scores towards English were higher than those of the male students.

This is also the same with Nyamubi's study in 2016. The study revealed that female respondents had consistently stronger positive attitudes towards English compared to male respondents. A reason for the differences provided in the study was explained that this might be because of "the socio-cultural behaviors of the two sexes" (Kidenyi & Getui, 2011, as cited in Nyamubi, 2016, p.129) "with girls more inclined to like the arts subjects while boys go for the sciences and mathematics" (Nyamubi, 2016, p. 129).

However, this is not always the case. The study conducted by Alieto, Rillo, and Lucas (in press) and Alieto and Rillo (2018) yielded a different result with the gender. Their

study revealed that gender does not influence the attitudes of the respondents towards the language.

6. Attitudes and Type of School

Another factor related to language attitudes is the school type (Baker, 1985, as cited in Navarro-Villaroel, 2011, p. 6). The study of Coşkun and Taşgın (2018) revealed that the attitudes of the students did not differ according to their type of school. This is similar to the research conducted by Çimen (2011, as cited in Coşkun & Taşgın, 2018) where the study revealed that there was no significant difference between the students' attitudes towards the English course according to school type. In addition, the study of Ibnian (2017) revealed that students from both public and private schools had a positive attitude towards learning English as a foreign language (EFL); however, students from the private schools showed more positive attitudes than those from the public schools. The students pointed out that the physical environment and education setting of the school affected their attitudes towards learning EFL.

However, Doğan's (2016) study opposed this, stating that there was a significant difference in the attitudes of the students towards English when grouped by school type. This is also true with the work done by İnal, Evin, and Saracaloğlu (2000).

Statement of the Problem

The study aimed to determine the attitudes of Filipino senior high school students towards English according to their dimensions, and compare them by gender and by type of school, in order to provide valuable insights to the teaching of English.

Specifically, this study sought to answer the following questions:

1. What was the profile of Filipino senior high school students according to:
    - 1.1 gender
    - 1.2 type of school?
2. What were the attitudes of the respondents towards English according to the following dimensions:
    - 2.1 behavioral
    - 2.2 cognitive
    - 2.3 affective?
3. How did the attitudes of the respondents in each dimension compare when grouped according to:
    - 3.1 gender
    - 3.2 type of school?
4. What are the implications of the findings of the study for the teaching of English?

Methods of Research

This study used the descriptive method because it describes the attitudes of the respondents. Likewise, comparative method of research was utilized in the conduct of the study since the attitudes according to gender and type of school were compared.

Setting of the Study

This study was conducted in Marcelo H. Del Pilar National High School (MHPNHS). Originally, its name was Bulacan High School. The name was then changed to Marcelo H. Del Pilar High School until it has achieved its national status, which gave the name Marcelo H. Del Pilar National High School. It is a public school located in the city of Malolos, Bulacan, Philippines.

This study was also conducted in Montessori De Sagrada Familia (MDSF). It is a private, basic education institution located in Tangos, Baliwag, Bulacan, Philippines.

Respondents of the Study

The researcher conducted the study to grade 11 students enrolled in the STEM strand in MHPNHS and MDSF for the School Year 2018-2019. There were 71 respondents in MHPNHS while 62 respondents in MDSF, totaling to 133.

Sampling Technique

There were two sections for the STEM strand in MDSF. The entire population of 62 was chosen as respondents. Meanwhile, there were eight sections for the STEM strand in MHPNHS with 35 to 40 students in each section. Fishbowl technique was used to determine the sample population for MHPNHS which totaled to 71 respondents.

Research Instruments

In order to obtain the information needed, the researcher utilized a survey questionnaire adapted from the study of Abidin, Pour-Mohammadi, and Alzwari (2012) using Likert Scale with four criteria, namely: Strongly Disagree, Disagree, Agree, and Strongly Agree to determine the attitudes of the students. The instrument is composed of 29 statements which were contextualized. This underwent validation and reliability testing.

Validation of the Instruments

The survey questionnaire was shown to and checked by an expert in the field of linguistics. The corrections, suggestions, and recommendations were properly incorporated in the instrument used in this study. Furthermore, the survey questionnaire was administered to grade 11 students from other strands not included as the respondents of the study for reliability testing. The gathered data were then submitted to the CEU center for data processing and computation. Originally, the obtained Cronbach's alpha was 0.683. Consequently, one of the statements in the affective dimension was removed to obtain a Cronbach's alpha of 0.725 which can be interpreted as *Acceptable*.

Research Protocol

The study was guided by the following steps:

1. The researcher prepared the survey questionnaire regarding the attitudes towards English. This was validated by an expert in the field of linguistics.

2. The survey questionnaire was administered to a group of grade 11 students not included in the study for pilot testing.
3. The survey questionnaire was then administered to the respondents.
4. The results of the survey questionnaire were tallied according to gender, type of school, and dimension of attitude.
5. Statistical data were submitted to the CEU center for data processing and computation.
6. Findings were analyzed and interpreted.

Statistical Treatment of Data

The researcher used the following:
1. Mean, to describe the attitudes of the students towards English.
2. Standard Deviation, to identify the homogeneity or heterogeneity in the attitudes of the students.
3. Frequency Distribution, to describe the profile of the respondents.
4. T-test for Independent Samples, to describe the significant difference in the attitudes of the students by gender and type of school.

Presentation, Analysis, and Interpretation of Data

1. Profile of ESL Learners

1.1 Gender

	Frequency	Percent
Female	62	46.6
Male	71	53.4
Total	133	100.0

Table 1: Gender Profile

Majority of the 133 respondents were male with a frequency of 71 or 53.4 percent while female respondents were 62 or 46.6 percent.

1.2 Type of School

	Frequency	Percent
Private School	62	46.6
Public School	71	53.4
Total	133	100.0

Table 2: Type of School Profile

Seventy-one (71) of the respondents came from the public school with 53.4 percent while 62 respondents came from the private school with 46.6 percent.

2. Attitudes of the Respondents towards English

The scores for the negative statements in all of the dimensions of attitude were converted to positive to get the overall mean scores; however, the original scores were retained for the computation of the individual negative statements.

Statements	Mean	Std. Deviation	V.I.
1. Speaking in English anywhere makes me feel worried.	2.29	.669	Disagree
2. Studying English helps me to have good relationships with friends.	2.73	.664	Agree
3. When I hear a student in my class speaking in English well, I like to practice speaking with him/her.	3.00	.628	Agree
4. Studying English helps me improve my personality.	3.07	.642	Agree
5. I put off my English homework as much as possible.	2.29	.724	Disagree
6. I am not relaxed whenever I have to speak in my English class.	2.39	.796	Disagree
7. I feel embarrassed to speak in English in front of other students.	2.29	.796	Disagree
8. I like to practice English the way native speakers do.	3.08	.654	Agree
9. When I miss the class, I never ask my friends or teachers for the homework on what has been taught.	1.74	.623	Disagree
10. I do not feel enthusiastic to come to class when English is being taught.	1.92	.652	Disagree
Overall	2.89	.32	Agree

Table 3: Behavioral Attitude

The statements in Table 3 are behavioral attitudes since they show the behavior of the respondents in certain situations related to language learning. As shown in the table, statements such as: studying English helps the respondents to have good relationships with friends; *when they hear a student in the class speaking in English well, the respondents like to practice speaking with him/her; studying English helps the respondents improve their personality;* and *they like to practice English the way native speakers do* are positive behavioral items demonstrating a verbal interpretation of *Agree.* Among these positive behavioral items, the statement that *the respondents like to practice English the way native speakers do* got the highest mean score (3.08). The rest of the statements are negative behavioral items showing a verbal interpretation of *Disagree.* Overall, the statements for behavioral attitude had a mean score of 2.89 (SD = .32) which manifests a verbal interpretation of *Agree.* This implies that the respondents had positive behavioral attitudes towards English.

Coronel-Molina (2009) mentioned that based on the definitions given by different scholars, one's language attitudes theoretically should influence his or her behavior (p. 9). The studies of Saade (2007) and Pierce, Stacey, and Barkatsas (2007, as cited in Kara, 2009) revealed that students who had a positive behavior towards the courses of study absorbed themselves in the courses and strived to learn more. This implies that the behavioral attitude of the learners affects their academic performance, particularly in English. When it comes to teaching English, teachers should emphasize the importance of learning English to develop a positive behavioral attitude among the students.

Statements	Mean	Std. Deviation	V.I.
1. Being good at English will help me study other subjects well.	3.41	.551	Agree
2. I have more knowledge and more understanding when studying English.	2.89	.654	Agree
3. Frankly, I study English just to pass the exams.	2.02	.712	Disagree
4. In my opinion, people who speak more than one language are very knowledgeable.	3.07	.855	Agree
5. Studying English helps me communicate in English effectively.	3.41	.605	Agree
6. I cannot apply the knowledge from English subject in my real life.	1.68	.715	Disagree
7. Studying English makes me able to create new thoughts.	3.32	.542	Agree
8. I am not satisfied with my performance in the English subject.	2.66	.748	Agree
9. In my opinion, English language is difficult and complicated to learn.	2.22	.772	Disagree
10. English subject has the content that covers many fields of knowledge.	3.22	.541	Agree
Overall	3.07	.35	Agree

Table 4: Cognitive Attitude

The statements in Table 4 are cognitive attitudes since they talk about the beliefs of the learners about their acquired knowledge and understanding of the language. Statements such as: *being good at English will help the respondents study other courses well; they have more knowledge and more understanding when studying English; in their opinion, people who speak more than one language are very knowledgeable; studying English helps them communicate in English effectively; studying English enables them to create new thoughts;* and *English subject has the content that covers many fields of knowledge* in Table 4 are positive cognitive items showing a verbal interpretation of *Agree.* Among these positive cognitive items, statements regarding *being good at English will help the respondents in other subjects* and *studying English helps them communicate in English effectively* got the highest mean score (3.41). This means that there was an application of what they had learned in English. The rest of the statements are negative cognitive items which reflect a verbal interpretation of *Disagree* except for one statement which is, *the respondents*

are not satisfied with their performance in the English subject, which has a verbal interpretation of *Agree.* Majority of the respondents were not satisfied with how they performed in their English subject. Generally, the statements for cognitive attitude had a mean score of 3.07 (SD = .35). This dimension of attitude also has a verbal interpretation of *Agree* which implies that the respondents had positive cognitive attitudes towards English.

According to Abidin, Pour-Mohammadi, and Alzwari (2012), cognitive attitude consists of four steps: "connecting the background knowledge and the new one; creating new knowledge; checking new knowledge; and applying the new knowledge in many situations" (p. 122). These steps were shown in the statements used in the questionnaire such as *being good at English will help the students study other subjects well* for the first step; *studying English helps them create new thoughts* for the second step; *they are not satisfied with their performance in the English subject* for the third step; and *I cannot apply the knowledge from English subject in their real life* for the fourth step. Shah (2008) pointed out that attitudes derived from the cognitive dimension "may block or hinder the current process of learning" (p. 23). Thus, having positive cognitive attitude may influence the students' process of learning.

Statements	**Mean**	**Std. Deviation**	**V.I.**
1. I prefer studying in my mother tongue (e.g. Tagalog, Kapampangan) rather than any other language.	2.47	.765	Disagree
2. To be honest, I really have little interest in my English class.	2.35	.828	Disagree
3. Studying English is enjoyable.	3.12	.616	Agree
4. I feel proud when I can express myself in writing and speaking in English.	3.44	.513	Agree
5. Studying English subject makes me feel more confident.	3.31	.605	Agree
6. I am interested in studying English.	3.20	.600	Agree
7. Studying English is important to me because I think it will someday be useful in getting a job.	3.68	.501	Agree
8. I look forward to the time I spend in English class.	3.05	.562	Agree
9. Studying English makes me have good emotions (feelings).	2.95	.716	Agree
Overall	3.10	.35	Agree

Table 5: Affective Attitude

The statements in Table 5 are affective attitudes since they show the feelings and emotions of the students towards English. The affective attitudes include having positive emotions, confidence, and a sense of enjoyment. Positive emotions, as revealed in the study of Quinto (2015) include being happy, excited, comfortable, and proud**.** Statements such as: *the respondents prefer studying in their mother tongue rather than any other language* and *they really have little interest in their English class* have a verbal interpretation of *Disagree.* The last seven statements, which are

positive affective items, all have a verbal interpretation of *Agree.* Among these positive, affective items, the statement regarding *the importance of studying English in getting a job someday* got the highest mean score (3.68). This means that the respondents knew the importance of English for their future. In addition, studying English gives them positive emotions. The last dimension of attitude has a mean score of 3.10 (SD = .35) which gives it a verbal interpretation of *Agree.* This implies that the respondents had positive affective attitudes towards English.

Choy and Salah (2006, as cited in Charoensuk & Jaipetch, 2017) explained that the affective attitudes of learners influence their perspectives towards the target language (p. 44). In addition, Popham (2011, as cited in Olatunji, 2013) stated that the affective dimension of attitude is important since it influences the learners' future behavior (p. 100). Therefore, having positive affective attitude helps the learners respond positively to the tasks given to them.

Among the three dimensions, the affective dimension had the highest mean score, followed by the cognitive dimension and behavioral dimension as the last. Although the three dimensions differed in their mean scores, Tables 3 to 5 revealed that the students had a positive attitude towards English**.** However, it is worth mentioning that although all dimensions of attitude were rated as positive, none of the dimensions was rated as highly positive. Similar to the study conducted by Charoensuk and Jaipetch (2017), there is still room for improvement in all dimensions of attitude.

3. Comparison of the Dimensions of Attitudes According to the Respondents' Profile

3.1. Gender

	Gender	Mean	S.D.	t- value	p-value	Sig
Behavioral	Female	2.93	.33	1.047	P = 0.297 > 0.05	NS
	Male	2.87	.31			
Cognitive	Female	3.13	.37	1.799	P = 0.074 > 0.05	NS
	Male	3.02	.32			
Affective	Female	3.15	.36	1.379	P = 0.170 > 0.05	NS
	Male	3.06	.34			

Table 6: Comparison of Attitudes According to Gender

There was a total of 133 respondents in this study, 62 female and 71 male respondents. As seen in Table 6, there was no significant difference between male and female respondents' attitudes in each dimension. However, looking at the mean scores of male and female respondents in each dimension, the female respondents had slightly higher mean scores than the male respondents. Similar studies were conducted and found that there was no significant difference between male and female attitudes towards English using t-test (Çimen, 2011; Nyamubi, 2016; Alieto, Rillo, & Lucas, in press; and Alieto & Rillo, 2018). However, results of some studies showed that there was a significant difference in the attitudes of male and female students. Female students had a higher positive attitude (Coşkun & Taşgın, 2018; İnal, Evin, & Saracaloğlu, 2009). Kidenyi and Getui (2011, as cited in Nyamubi, 2016) explained that the reason why female students have a higher positive attitude is probably due to "the socio-cultural behaviors of the two sexes" (p. 129).

3.2 Type of School

	School	Mean	S.D.	t-value	p-value	Sig
Behavioral	Private School	2.87	.32	-.844	P = 0.400 > 0.05	NS
	Public School	2.92	.32			
Cognitive	Private School	3.10	.37	.886	P = 0.377 > 0.05	NS
	Public School	3.05	.33			
Affective	Private School	3.06	.37	-1.420	P = 0.158 > 0.05	NS
	Public School	3.14	.33			

Table 7: Comparison of Attitudes According to Type of School

Table 7 shows the difference of the students' attitudes by dimension when grouped according to type of school. For the behavioral and cognitive dimensions, there was no significant difference between the attitudes of students from the private school and the public school; although looking at the mean scores, the public school students had slightly higher positive attitudes towards English in behavioral and affective dimensions. Having no significant difference between the attitudes of students from the private school and the public school could stem out from the respondents as being part of the Generation Z (Gen Z) since the study of Schwieger and Ladwig (2018) revealed that those who fall under Gen Z are known for being self-educated, self-sufficient, self-aware, and pragmatic (pp. 46-47).

A study conducted by Coşkun and Taşgın (2018) also looked into the attitudes of students towards English according to school type. Their study revealed that there was no significant difference between the students' attitudes in general when grouped according to type of school but did not explore the dimensions of attitude. A similar study was conducted by Ibnian (2017) which revealed that the students from public and private schools had a positive attitude towards learning English.

4. Implications of the Findings for the Teaching of English

The findings revealed that the students in grade 11 in general had positive attitudes towards English. However, as mentioned previously, none of the dimensions obtained a verbal interpretation of *Strongly Agree*. This implies the need for teachers of English to aim for highly positive attitudes. They can help the students improve their attitudes towards English from positive to highly positive.

As for the improvement of each dimension of attitude, Johnston (2014, as cited in Charoensuk & Jaipetch, 2017) noted that "the affective attitude is the most difficult dimension to change" (p. 55). Teachers should provide students with enjoyable experiences in studying English to increase the students' affective attitude. As suggested by Charoensuk and Jaipetch (2017), they should continue putting more effort into helping the students develop more positive affective attitudes. Holding programs like language-related competitions within the school and joining inter-school competitions can help establish closer relationships and promote camaraderie among students.

Other improvements may also be suggested for teachers of English from the public and private schools, like creating a more encouraging atmosphere, highlighting the

importance of learning English, and utilizing up-to-date materials and resources to promote the students' positive attitudes towards English (Abidin, Pour-Mohammadi, & Alzwari, 2012). In addition, curriculum developers may review the current curriculum guide as implemented by the Department of Education "to meet the needs and interests of the students" (Abidin, Pour-Mohammadi, & Alzwari, 2012).

Lastly, parents also have an important role in helping their children develop a positive attitude towards English. They should realize this and take an active role as schools' partners in their children's education. They are also advised to give encouragement, offer help, and show concern to their children in learning English as parental encouragement boosts motivation (Khastgir & Neogi, 2017).

Conclusion

Summary of Findings

The following are summarized based on the results of the study:
1. Profile of the Respondents

1.1. Gender

There were 133 respondents, 71 male and 62 female.

1.2. Type of School

Respondents of the study came from two types of school involved in the study: the private school with 62 respondents and the public school with 71 respondents.

2. Attitudes of the Respondents towards English

This study delved into the three dimensions of attitude, namely: behavioral, cognitive, and affective dimensions. The results revealed that the respondents have positive attitudes in all dimensions, with the affective dimension having the highest mean score, followed by cognitive and behavioral dimensions.

3. Comparison of the Dimensions of Attitudes According to the Respondents' Profile

3.1. According to Gender

There was no significant difference in each dimension of attitude between male and female respondents.

3.2. According to Type of School

When grouped according to type of school, there was no significant difference between the attitudes of students in each dimension of attitude.

4. Implications of the Findings for the Teaching of English

Teachers should aim to help the students develop a highly positive attitude towards English instead of being satisfied with a positive attitude only. To do this, teachers should provide students with meaningful activities. In addition, schools can help by providing language-related programs that would increase the emotional attitude of the students. Curriculum developers may also review and revise the current curriculum guide used nationwide. Moreover, parents may provide a home environment that inspires learning English. They should give their children good reading and viewing materials in English.

Conclusions

Based on the findings of the study, the following conclusions were drawn:
1. Senior high school students have a favorable attitude in each dimension towards English.
2. Male and female senior high school students have the same attitudes towards English.
3. Senior high school students from the private and public schools have the same attitudes towards English in each dimension of attitude.

Recommendations

The following are recommended based on the conclusions:
1. For teachers

1.1 Teachers should understand the beliefs and respond to the needs of their students by providing meaningful activities that would make the English class an enjoyable experience. Since Karahan (2007) reiterated that attitude is a key element for learning a language, teachers of English have a huge role in helping the students develop a positive attitude towards English. Teachers do not just have to understand the language being taught but also take into consideration the students' beliefs, because learners with realistic beliefs are more likely be productive in the class (Hosseini & Pourmandnia, 2013).

1.2 They should also help the students improve their English performance by providing remedial instructions. Burgos and Perez (2015) stated that teachers should act as agents to motivate their students and that they should stress that personal development could encourage students to improve their English. Furthermore, this is a challenge to teachers of English, to respond to the specific needs of students (Quinto, 2015).
2. For schools

Schools should provide co-curricular English activities and language-related programs that will make the students improve and be interested in English.

3. For curriculum developers

Curriculum developers may review the content of the current curriculum guide in English and revise, if necessary, to meet the current needs of the students.

4. For parents

Parents may provide a home environment that encourages learning English by reading to and with their children, and providing good reading and viewing materials in English as early as pre-school age.

5. For future researchers

Future researchers may conduct further studies regarding students' attitudes towards English and factors that affect their attitudes which may include the teaching strategies used by their teachers.

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Teaching Music in the Times of the Pandemic: Pedagogical Pathways for Online Learning

Kris Ho, United International College, China
Victor J. Rodriguez, Beijing Institute of Technology, China

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Abstract
The online learning environment demanded by pandemic conditions in China has offered opportunities for teachers to engage internet-savvy students, but also presented serious obstacles to unmediated face-to-face teaching. The possibilities for student collective collaboration in real time, the difficulties of teachers to connect with the sheer immediacy of music performance and its physical nuances, and the perceived loss of sound fidelity lost through Internet connections, have plagued teachers in the mainland. Teachers have had to adapt to a new online environment that has moved the classroom to the student's bedroom through the use of laptops and mobile devices. In this paper, we analyze these trends and others through an experiential study and analysis of the teaching of strings, percussion and piano in a mainland university music programme. We argue that performance teaching depends for its success on intimacy and proximity, its physical conditions, as well as emotional and personal closeness, its more psychological dimensions. Online teaching seems to represent their very opposites. While we find that teachers have struggled to correct student performance, foster concentration, demonstrate appropriate methods to play instruments, and guide ensemble performances, the avenues for correcting these problems rely on the establishment of classroom collaboration much more than just technical adjustments. In this respect, Carol Johnson has argued for a "transformation of pedagogical practice" that establishes cognitive, social and teaching presence. We find that what is needed is not a total transformation of pedagogy, but the means to translate the traditional classroom into the new online classroom.

Keywords: Online Teaching, Online Learning, Music Performance, Pedagogy, China

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Introduction

We have titled our project *Teaching Music in the Times of the Pandemic: Pedagogical Pathways for Online Learning*. It focuses on how the online learning environment demanded by pandemic conditions in China in 2020 has offered opportunities for teachers to engage internet-savvy students, but also presented serious obstacles to unmediated face-to-face teaching particularly in music performance. These times have been specially challenging for music teachers. Student collective collaboration in real time has been difficult, a loss of connection with the sheer immediacy of music performance and its physical nuances has affected teachers, and a perceived loss of sound fidelity lost through Internet connections have plagued teachers in the mainland. In these circumstances, teachers have had to adapt to a new online environment, moving the classroom to the student's bedroom, and mediating interaction through laptops and mobile devices.

In our paper, we analyze these trends and others through an experiential study and analysis of the teaching of strings, percussion and piano performance in a mainland university music programme. We have gathered data from over 10 courses in applied instrumental lessons, chamber and orchestral performance, choir as well as history of music, at a college in Zhuhai, Guangdong, China for a period of one semester in the year 2020. Approximately over 300 students were involved in this study. We performed a mostly qualitative study of music pedagogy online through interviews with students and teachers, ethnographic immersion in music classes, and an analysis of assessment and evaluation criteria, leveraging this information with our evaluation of student progress in class. Our guiding questions were: how have faculty designed and implemented specific strategies for online teaching? What obstacles did they encounter in the online classroom? What strategies, if any, resulted in positive learning outcomes? How do these successful strategies relate to the scholarship on online music pedagogy?

We found that while performance teaching depends for its success on intimacy and proximity—its physical conditions—as well as emotional and personal closeness, its psychological dimensions, online teaching seems to represent the very opposite. Thus teachers struggled to correct student performance, as well as foster concentration, demonstrate appropriate methods to play instruments, and guide ensemble performances. We find that the avenues for correcting these problems rely on the establishment of classroom collaboration much more than just technical adjustments. We argue that what is needed is not a total transformation of pedagogy, but the means to translate the traditional classroom into the new online classroom.

Literature review & theory

The salience of physicality in the teaching of music has led scholars into an investigation of how such presence might become a factor in online teaching. Carol Johnson (2017) identifies how a "transformation of pedagogical practice" in the move to online pedagogy requires cognitive, social and teaching presence. "There is a pedagogical shift," she argues, "that happens to faculty members when they transition from a traditional face-to-face model of music teaching to the fully online environment" (Johnson, 2017). Other scholars have argued that focusing on a pedagogical approach provides a crucial nexus to a successful transition to the online

environment and its asynchronous and synchronous possibilities as well as design strategies and student motivation (Palloff and Pratt, 2011; Garrison, 2011; Picciano, 2002; Bowman 2014). Online course design requires choices distinct to those of the "traditional music classroom" (Johnson, 2017).

Research shows that presence is crucial in online teaching in China, but that "computer mediated communication (CMC) is unable to deliver social context cues crucial to Chinese students' communicative practices." Scholars have noted that "when integrating CMC into an online learning environment, it is [thus] necessary to consider the student's local culture, language skills, keyboarding skills, format of CMC, face saving, computer literacy, use of paralanguage and emoticons, responsiveness of asynchronous communication, use of stylistic communication styles, and feelings of private/public" in order to respond to how students' perception of CMC is affected by "social presence, social context, online communication and interactivity" (Tu 2010).

Students' preference for reading rather than online discussion has also been discussed as an important factor affecting learning productivity (Fung 2007) as well as co-location: on-campus and off-campus locations for online learning becomes an important factor in learning (Xie et als. 2010). Research on the online experience in China also show that increases in online learning productivity are tied to intrinsic as well as extrinsic motivation. Enjoyment enhances acceptance of web-based online learning systems and are deeply connected to a participatory model of education that recognizes that objective motivations are only partially linked to a successful pedagogical strategy (Zhang et als. 2008).

This research does not indicate how far we can go in applying these findings to the online teaching of music. Our research seeks to fill in this gap.

Methods: Case study

The case university is here given the pseudonym of "South China University" or "SCU." SCU has been described as an international private university with partners in Hong Kong, the United State and other western nations. SCU's brochures describes its programme in Music Performance as well as a minor in Music as provides music training to students with the goal of producing world-class, global leaders in the music industry. The school possesses world-class facilities, state-of-the-art rehearsal rooms, and highly-engineered performance and rehearsal venues for this purpose. Its faculty has received extensive training in the use of online tools and teaching material, but no workshops on online methods. All music faculty are members of a wider Division of Culture and Creativity. During the semester pertaining to our research, all faculty taught online and shared experiences in informal fora. This was a first-time experience for all of them.

Ethnographic and class immersion data gathering took place in the courses "Songwriting," "Compositional Technique," "Classical Music," "Traditional Music," "Chamber Music," "Music Theory," "Orchestral Studies," "Performance—Choral," "Tonal Counterpoint," and "Keyboard Performance." Over five teaching staff participated in the study, teaching courses with over 500 students in total. We

consider the study to be quite exhaustive for this institution and a good sample of the online music teaching experience in China's higher education system.

Findings

Introduction

Our research took place in the times of the 2020 pandemic during the Winter and Summer semesters of the 2020 academic year. The urgency of the times was reflected in extraordinary increases in online search engines in China as educational organizations including universities, colleges and private studio launched online system to deliver instruction. Most of the faculty interviewed for this research agreed that although existing platforms such as Zoom, Panopto, or WeChat Work potentially served the purposes of online instruction, the demise of face-to-face interaction required urgent responses to new demands. This response is similar to that of faculty overseas (https://www.nationaltribune.com.au/australian-institute-of-music-sees-online-teaching-as-a-new-frontier/).

Faculty identified the erosion of presence as the most pressing issue as online instruction got underway. Although foreign-trained faculty were familiar with successful online music programs (Berklee College of Music, Australian Institute of Music (AIM)), this method of instruction was new for most of their Asian students at SCU. With the learning environment transformed from the normal classroom to the student's bedroom, faculty and students attempted to adapt to a new mode of delivery. For faculty, the major questions pertained to how to improve the student's performance skills? How would intonation, live performance, stage manner be evaluated if online teaching were not to provide a good implementation of ensemble performance? How would students respond to the new environment? If one could not see muscle and body movement, if sound systems were to malfunction, if transmission delays were to interrupt evaluation, if one could not see students' faces, how could music be produced? Thus translating face-to-face interaction to online instruction structured faculty and student's responses to the new challenges.

Technological challenges as challenges In mediating learning interactions

Technological challenges complicated execution in performance-oriented classes (text-based courses in music history, songwriting, and music theory performed better in this regard because it was easier to preserve intimacy and thus presence). Internet instability plagued online teaching leading to student disengagement. As video resolution and sound quality deteriorated, especially in large virtual classrooms, student concentration ebbed. As students removed themselves from the video feed, anonymity increased leading to further loss of concentration. This proved lethal to music online instruction. Students could not properly follow the instructor‘s performance online. Student course evaluations confirmed that the low quality of live broadcasting impeded students from seeing their instructors' precise or unique playing skills on the screen even when instructors would set their camera close to their hands or to the instrument in order to show students as clearly as possible; the sound and the live broadcasting will not synchronize.

As a result, student collaboration in music production suffered and deteriorated. In chamber music performance, ensemble work faltered. Time delays in sound presented a technical challenge to all concerned. Students could be playing together as they counted beats with the metronome, for example, yet sound delivery to each performer's headphones (students employed standard headphones, or studio headphones or mobile phone headphones) would be delayed for a few seconds making such ensemble work impossible. Instrument tuning and intonation problems aggravated under the technical demands of online chamber music performance. In chamber music classes, students in duets, trios and quartets, four-hands piano performance suffered as the range of tuning sounds oscillated between 436 and 439, much lower than the standard tuning of 440 to 442. The frequency of the sound might change slightly either higher or lower.

Students labored counting beats in the *Orchestral Studies* class. Although students counted beats simultaneously, video signal delays muddied performance. In such a large class—approximately 70 students—it became laborious to even play short stretches of three to five bars. Large-size classroom teaching differed qualitatively from small-classroom instruction. Faculty toiled to identify individual errors and correct students' mistakes. Listening to various sections playing together tested student and faculty patience and stamina. In physical classroom instruction, all instruments could properly play together as the instructor ran separate sections and brought them all together by the end. In online instruction, this became an impossibility. Faculty and students agreed that studio work requires specialized technology and equipment support. Students can only rely on the computer and use software to write their music; they cannot really record all instruments as if they have to record drum kit or string quartet performance. Furthermore, it just took more time to conduct one simple exercise such as how to submit the answer or how to conduct team work.

Technology, mediation and loss of presence

Technology became the crucial factor in the loss of presence that ultimately explains the failure to translate the physical classroom into the digital one. In other words, it was not just simply temporary difficulties in adjusting to the use of new technology. There was an overall perception that technological mediation undermined the physical proximity that lend music teaching its effectiveness and joy. Faculty overwhelmingly expressed their displeasure at the impossibility of midi sounds to replicate the fidelity of instrumental music sounds. Although experienced in the use of specialized software and midi, extended periods of online teaching led to frustration at the incapacity of midi to capture the nuances of instrumental play, changes in dynamics and tempo, the idiosyncrasies of performance, and the erosion of sentiment. The use of electronic instruments to facilitate sound transmission accentuated this sense of loss.

Performance classes were deeply affected as collaboration, rather than being enhanced by digital technologies, struggled. Performance students could not play music together live. To correct for these deficiencies, each student recorded separate tracks in order to combine them in one single performance. Yet all faculty agreed that the quality of music production lagged significantly at the same time that the ability to record and submit the best tracks made evaluation difficult for faculty used to live

performances. They expressed the immense difficulties in judging whether a video had been edited or if it was a one-take recording, for example. Furthermore, instructors could not pick up wrong notes or stop the performance immediately as errors occurred. In face-to-face interactions, the instructor can circle wrong notes or mark the score immediately; once students complete the piece, the instructor then reviews all missing details followed by clear explanation and demonstration. In online teaching, faculty had to write down the note and correct the student only after playing.

The consequent disruptions in the rhythms of everyday teaching exacerbated confusions especially when students could not easily pick up the bar number or did not fully understand what mistake they made in the performance. For ensemble course, this problem is very clear and not all students are on the same standard or know the piece very well. For vocal, brass and woodwind students could not really feel or see how the instructor breathed and moved the mouth or adjusted the body energy to make the sound different. Similarly, piano students could not see how the instructor adjusted the pedal on different pieces. The dynamics of teaching and playing piano were not as precise as live person-to-person instruction.

These complications afflicted students in string and percussion acutely. In string instruction, students needed to see how the instructor demonstrated various bowing and playing skills on the right hand or left hand. In online teaching, faculty noted they were not be able to show all precise details to students. The instructor had to see how students move fingers and adjusted their muscle on the left hand to interpret music patterns, particularly high finger positions, vibrato, double stops or chords. With some very tiny finer movements on the right hand, teachers were not be able to see how students moved their fingers, as for example in spring bowing, the bowing would request good control of thumb, middle and little finger. For bow contact on dynamics changes, if the student had the problem, teachers could only judge it by watching the video and could not see the exactly problem.

Percussion students were not able to see how the instructor adjusted wrists and fingers to control different size of mallets. Students were not be able to practice at home. Not everyone could have access to all types of percussion instruments at home and could only practice with the iPad and learn how to control mallets designed for different percussions. Playing real instruments is very different from the playing on the practice board or virtual instrument particularly, the sound and the feeling of the instrument.

Conclusion

We conclude that the erosion of physical immediacy constitutes the main obstacle for translating the physical classroom into the digital classroom. This situation is especially acute in the teaching of music where all faculty noted that teaching of performance is an intimate endeavor where face-to-face proximity means no mediation by technical means. While all faculty agreed that as instruction got underway, they improved in their teaching techniques, many felt that a fully online course could never replace the intimacy that characterizes teacher-student pedagogy in music. The intimacy of sound production, the proximity and sheer physicality of instrumental performance, and the immediacy of teacher feedback could not be reproduced. Yet, all faculty agreed that innovative applications and software could conceivably begin to reduce that gap. They all emphasized that technical support and

training is pivotal for the success of online pedagogy. Some agreed with Rick Broene who said that, "what makes for effective online learning is exactly the same thing that makes for good in-classroom learning." (https://www.bowdoin.edu/news/2020/07/fall-2020-how-to-achieve-continuity-in-teaching-and-learning.html). As Peter J. Perry (2020) has opined, most existing platforms are very useful for either instructors and students to prepare online lecture for history or theory classes. With the right applications and technical support, online teaching can become a useful tool for music instruction, but whether it can fully replace the physical classroom remains to be proven.

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Vocational Skill Training Model to Embody Social Independence of Mild Intellectual Disability People

Zubaedah Wiji Lestari, Universitas Islam Nusantara, Indonesia
N. Dede Khoeriah, Universitas Islam Nusantara, Indonesia
Nani Nur'aeni, Universitas Islam Nusantara, Indonesia

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Abstract
Vocational skills for people moving towards adulthood, including for mild intellectual disability people, are requisite competencies. By having vocational skills, mild intellectual disability people may empower themself and raise their confidence to live in society as it will become the power to increase their social independence. Mild intellectual disability people have the right to work appropriately follow their abilities. However, mild intellectual disability people face the problem in terms of their skills that do not meet the required skills and standards needed in the business and industrial world. Based on that problem, this study aims to develop a vocational skills training model that appropriate for post-school mild intellectual disability people. The participants of this study are post-school mild intellectual disability people, instructors, and social workers in the rehabilitation service for disabilities in West Java Province, Indonesia. The research followed stages proposed by Borg & Gall by collecting the data through observation, interviews, and focus group discussion. The research conducted successfully developed a vocational training model for mild intellectual disability people based on their competence and environmental conditions. Furthermore, the study also found that vocational skills training model for mild intellectual disability people has some components, namely: identification, assessment, focus on the abilities of persons with environmental conditions, implementation of training, and implementation of cooperation.

Keywords: Vocational Skills Training Model, Mild Intellectual Disability, Social Independence

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Introduction

Mild intellectual disability people are one of the classifications of intellectual disability people who have the highest intelligence among other intellectual disability people groups, they experience difficulties in academic fields and contain abstract things, while in non-academic subjects, they do not experience difficulties. According to Somantri (2006) that, “children with mild intellectual disability people are: Children with mild intellectual disability people have an IQ of 68-52 according to the Binet scale and according to the Weschler scale (WISC) have an IQ of 69-55. They still get training in reading, writing and simple arithmetic ”. Furthermore, people with mild intellectual disability people stated by DSM-5 that: “A person with intellectual disabilities has a score of about two standard deviations or more below the demographic average, including the margin for measurement error (generally + 5 points). On a test with a standard deviation of 15 and a mean of 100, this involves a score of 65-75 (70 ± 5). "

From the statements above, it can be concluded that people with mild intellectual disability people are classified as people who have a low level of intelligence, namely IQ 55 to 69. However, if mild intellectual disability people are given appropriate services through guidance and training with their immediate needs, their development will be achieved optimally. Based on the condition of their intellectual potential, effective training for mild intellectual disability people must be carried out through a vocational skills training approach.

Vocational skills are work-related skills and competencies that every individual, including intellectual disability people, must have to be independent. According to Siregar, Iswari and Efendi (2019),vocational skills for children with special needs aim to improve the ability to do certain jobs according to their talents, interests and needs, so that later they can achieve and create various types of work, including instilling an attitude of entrepreneurial spirit, learning work ethic and productive attitude”. It is necessary to practice vocational skills for intellectual disability people to prepare themselves for getting a job. Vocational skills will be accepted more quickly by children by giving repetitive training, so that children will get used to it even though they do not understand in theory but master it in practice (Rakhmania, 2019).

Vocational skills training as an exercise to gain proficiency in the work carried out as a series of activities in a systematic, directed and gradual manner. The planned and targeted training activities provided by the trainer to individuals actually have a purpose in producing graduates who have the skills and ability to be independent (Anwar, 2015). Training can be done individually and in groups, and it is hoped that intellectual disability people will have work dexterity and can take advantage of it. According to Kamil (2010), important work dexterity is the skills that can be achieved in order to acquire the skills to do productive activities.

Productive activities are intended so that people with intellectual disability people as training participants can maintain their skills to lead their lives to be independence with the hope that other things will follow. Hopefully in the future, mild intellectual disability people can be be accepted in society. In reality, many intellectual disability adults are still dependent on their parents or other adults, because they do not have work skills that are in accordance with standards and or the skills they have are not in accordance with the existing work field and job standards. Job standards is one criteria

that used as benchmarks or comparison to determine the success or failure of an employee or worker in doing their job (Billet, 2011).

Nowadays, there is still a lack of institutions that provide vocational skills training for people with intellectual disability people after finish school or drop out, due to a lack of understanding of the existence and conditions of intellectual disability people. Even, people who live in residential areas and in village areas give a negative response to intellectual disability people children (Sudjana, 2005). This situation needs to find a solution, namely by research to find a model of vocational skills training for people with mild intellectual disability people.

This study aims to find an effective vocational skills training model with its characteristics to obtain the effectiveness of the vocational skills training model and in the end can obtain the final model, meaning that the model can be used in vocational skills training for intellectual disability people persons.

Methodology

In line with the proposed research focus, the research design used is the Research and Development Model design (Borg, Gall, and Gall, 2003), with some modifications. This research is basically the final step of development research that carried out to develop the appropriate training program model for mild intellectual disability people. The number strategies in research aims to test the same research problem so that it will increase attention to the validity of conclusions enriched with data. In the data collection process, the qualitative approach emphasizes the role of the researcher as the main instrument, through in-depth observation and interviews. The data sources are people with mild intellectual disability people, instructors and social workforce. The research location was carried out at the Social Service of Social Institution for the Rehabilitation of Persons with Disabilities.

Findings and Discussion

The Vocational Skills Training Model is a training which can apply in developing skills and insights for intellectual disability people persons. It is the process of self-reliance and about the values of rules that must be obeyed. In designing the model it requires a plan or design of training activities that are integrated with work tasks according to standards based on the type of work.

Training at the Social Service Office of Social Intsitution for the Rehabilitation of Persons with Disabilities in West Java Province

Based on the results of observations and in-depth interviews, an actual picture is obtained systematically that the researcher sees by using a training management function approach which includes the stages, namely planning, implementing, assessing and developing by clearly sorting out the components, processes, and objectives of the Vocational Skills Training program paradigm. The training to embody the independence of mild intellectual disability people was carried out at the Social Service of Social Institution for the Rehabilitation of Persons with Disabilities West Java Province, the training outline are as follows:

1. Training Planning

In planning the training, the researcher and team did several activities to make the training program run well, those are:
1) Identification of training participants

Identification is one skill that must be mastered by staff, teachers or instructors assigned by training providers for people with special needs. Appropriate identification will have a positive impact on training participants, because they will get services that are in accordance with their training needs, (Rizky, 2014). Training participants are raw input in activities at the West Java Social Institution for the Rehabilitation of Persons with Disabilities. In the context of this study, identification try to find and recognize abilities, interests and talents related to the types of skills of people with mild intellectual disability people.

The researchers saw that what was done by the training organizers had been administratively fulfilled, where they first collected data on prospective trainees, then the training managers and organizers invited the training participants to convey their willingness to join the program. However, this system is not yet optimal, because not all service managers, and training instructors know more about the characteristics of training participants, both internally and externally. This absolutely violates what is really needed as stated by Anwar (2015) that in recruiting training participants it is necessary to pay attention to the internal and external characteristics of the training participants as prospective trainees.

Furthermore, the researchers also conducted a survey on the teachers and intructors to find out whether identification of recruitment was carried our to determine the condition of the prospective participants. The results are as follows.

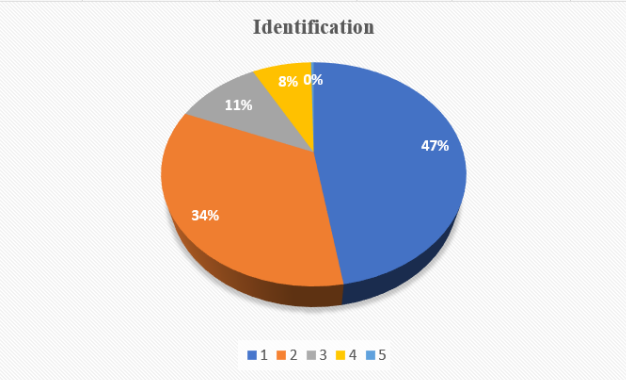

Figure 1. Prospective Participants' Identification

From all respondents, no one (0%) responded that they always did identification to the prospective participants, while 8% said that many times they identify the prospective participants, 11% responded said that they sometimes identify the prospective participants, 34% responded that they rarely identify the prospective participants and 47% said they never identify the prospective participants.

2) Identify the type of company

The results of interviews and documentation show that the training providers review various potential industries and institutions around their area, which include: types of business world and industry; production process activities which include goods and services produced by the said company or institution; workforce qualifications which include existing workforce positions, tasks performed, as well as any skills / skills that may be obtained in the company; availability of practical or production facilities; industrial power or the probable number of participants that could be accepted for training; and qualification of the institution, whether it is classified as a large, medium, or small company.

Furthermore, the service manager conducts an assessment of all the appropriate skills that can be obtained in each industry. In this case, in what parts or divisions and subsections in the industry can the appropriate skills be obtained for each skill program. The Social Service of the West Java Province PSRPD, through the service management section of the student distribution division, has initiated cooperation with industries or companies that match the standards of expertise or skills of each skill program. In this case, the West Java Province Social Service collaborated with world industry regarding the implementation of an internship by signing Memorandum of Understanding (MoU).

3) Assessment

Assessment is a variety of procedures used to obtain information about a person. The results of the assessment are used to provide the required training services based on the modalities and potentials that the individual has needed in developing a training program (Smith, 2002). The results of the assessment are for training planning and monitoring progress of participants. With this assessment, the instructor or teacher can make decisions regarding the problems of the training participants.

The components that must be covered in the assessment namely: task selection, response observation, and make a conclusion. The skills assessment area for training participants with special needs focuses on the area of vocational skills which is determined from the results of identification and assessment. It is possible that the assessment area will intersect with other areas such as academic assessment that supports vocational skills.

The results of observations and interviews show that service managers, instructors and social workers have carried out an assessment but have not followed the assessment steps and have not been maximized. This can be seen in the documentation that there is no documented data from the assessment results. The available programs are still standard, not based on assessment results, individualized transition program (ITP) documents have not been written, and instructors still do not understand the conditions of people with intellectual disability people. The social worker explained that each participant had identified their family environment, also the data collection and distribution section had prepared partner institutions including parents.

Furthermore, the researchers also conducted a survey on the teachers and intructors to find out the assessment given to participant. The results are as follows.

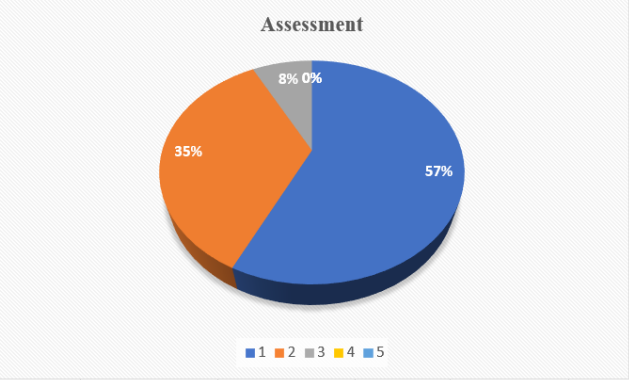

Figure 2. Participants' Assessment

Giving question about the assessment, from all respondents no one (0%) responded that they did to the participants, 8% said that sometimes they assess the participant, 35 % responded that they assess the participant, while 57 % responded that they never assess the participants.

2. Training Implementation

Based on observation, interview and questionnaire, in implementing vocational skills training techniques the social workforce and trainer instructors were trying to implement the individualized transition program (ITP) even though it has not been administered. Training activities are carried out by instructors, social workers, training participants, and service managers in continuous collaboration. According to Abdulhak and Suprayogi (2012), the training process is basically an educational interaction between training participants and other training components. The descriptions and information collected by researchers are as follows:

In fact, instructors, social workers and service managers who carry out their duties tend to treat trainees like students in school both in choosing methods, techniques, using media, utilizing time for practice and theory. The principles of special education with individual and andragogical approaches, as well as participatory methods have not been implemented optimally. Sometimes in the opening activity, the instructor has not built closeness, and in the core activity the instructor does not use task analysis but tries to use a competency approach.

However, when the training is running, the instructor provides motivation and reinforcement as a realization of the social-constructive approach even though it is not optimal and sometimes does not conduct evaluation reviews and conclusions of the training material. This training condition is not in accordance with the principles of Special Service Education training, including individual and participatory approaches oriented to the individual character of the training participants.

The training participants take part in a training program for eight months, stay in guest houses under the supervision of the social workforce, even though they live in the Office of Social Affairs complex, but there are still trainees who arrive late, cry, and there are trainees who go home before the activity is over. In addition, there were also training participants who were less focused, did not participate in activities, even passively such as in question and answer, active in class in carrying out tasks both individually and in groups. this condition shows that the motivation of the trainees is

still low. To increase this motivation, the role of the instructor is very important. According to Surya (2000), the main function of an instructor is to facilitate or provide convenience so that each training participant is an effective source.

3. Assessment activities

This activity is carried out in a non-test form during the training process and ends before the apprenticeship to determine the competency, skills and readiness to work. The results of this assessment have not been well documented, they are still fragmented. This condition indicates that the scoring system is not optimal. Evaluation activities are very important because it is used to determine the quality of the training implementation process carried out, the results of the training and post training.

On the other hand, this assessment activity is needed as a reference for improvement in the preparation of follow-up programs. Evaluation is an activity to collect, obtain, and provide information for decision making, (Arikunto, 2014). The assessment of non-formal education includes aspects of environmental inputs, instrumental inputs, raw inputs, processes, outputs, other inputs and outcomes. The results of this assessment become the basis for training participants to take part in an internship (Hadari, 2006).

4. Internship Activities

Internship is a mutually beneficial partnership arrangement voluntarily carried out by two or more business fields. One aspect of internship is the target or goal to be achieved. Seeing this, it is clear that with the internship, it is hoped that the the activity will beneficially for all parties. Okoye et al (2013) state that the benefits of internship seen from these targets are both financial and non-financial.

The forms of cooperation arrangements used in Social Institution for the Rehabilitation of Persons with Disabilities are: Joint services, namely arrangements for cooperation in providing public services, including internships. The issue of Apprenticeship and Dual System Education has been regulated in Law No. 13 of 2003 concerning Manpower, especially articles 21 - 30. And more specifically regulated in the Minister of Manpower and Transmigration Regulation no. Per.22 / Men / IX / 2009 concerning the Implementation of Domestic Ganda System Education (Undang-undang Ketenagakerjaan and Sistem Pendidikan Nasional).

Based on the results of the interview, the West Java Social Institution for the Rehabilitation of Persons with Disabilities has made an MoU to carry out an internship at the end of the three-week training. The internship were done in several agencies such as the garment industry, electronics, screen printing, salons, home industry, beauty salons, cullinaire industri, and center of learning activity. The internship program at the end of the training is consistent with the statement of OECD (2010), that school-company collaboration with world industry is an effective method, especially in preparing graduates to enter the workforce. The internship program is essensial since it is a form of education and job training which can shape the competence of students so that they can bridge schools with world industry as graduate users (Muslih, 2014). However, the internship program carried out by the Social Service has not been implemented optimally due to time constraints.

Internship activities as the final training activity are always carried out in places that have been identified and make MOUs according to the types of skills that have been trained on the training participants. Internships are only carried out for three weeks, the time set for mentally retarded people is inadequate, considering their abilities require repeated experience and training. Based on this, in the training implementation process models 1 and 2, it is necessary to increase again to make improvements: 1) initial activities. plate process friendly, Try to get used to it, build optimal familiarity, make perceptions, and convey training objectives; 2) core activities, delivery and provision of ability-based materials, using task analysis as an individual approach in the training process, training participants are given a stimulus to ask questions or dialogue (question and answer), evaluate the process, provide motivation and ongoing guidance as a social approach approach - constructive, build and socialize an integrative approach with the appropriate types of skills; 3) final activities, provide reviews and conclusions, and conduct final evaluations / absorption

The activities of the training participants, in the initial conditions of the training, there were still several shortcomings, including:
a. training participants are late in attending the training activities
b. some broke down at certain hours
c. Do not take the opportunity to ask questions / do not have the courage to ask questions
d. the mastery of skills of the training participants is not optimal
e. the motivation of the trainees is only to get certificates and training opportunities

Based on this, in the implementation of training models 1 and 2, the participation and activeness of training participants should be further enhanced to absorb the training. These efforts include:
a. obliging training participants to be disciplined in writing a letter of willingness to take part in the training and obeying the rules for activities that were compiled together as motivation
b. create rules for training participants
c. held a dialogue or question and answer to dare to communicate
d. optimize the mastery of dexterity by providing motivation to training participants
e. motivating trainees not only to get certificates and training opportunities but also to increase APK (-Attitude-Practice-Knowledge)
f. Optimizing training activities by applying an individual approach, andragogy and participatory methods.

5. Implementation of Vocational Skills Training Model

Based on the implementation of training, the results of limited trials (stage 1) and more extensive trials (stage 2), researchers made adjustments to the training model developed so as to produce the final formulation of the development of a vocational skills training model. as the following description:
a). Planning, in the initial conditions of vocational skills training, there are still weaknesses in terms of planning, namely:
- understanding of vocational skills trainers, service managers, and world industry for intellectual disability person as one aspect of instrumental input.
- the preparation of vocational programs oriented to programs carried out by the government, in this case the Social Service, so that sometimes it tends to be less relevant to the needs of society and the ability of mentally retarded persons (instrumental input).

- planning for indicators of work ability results not in accordance with the needs of the job field.

b). Socialization with partner institutions and parents.

Given these weaknesses, the researcher tried to implement the steps as an effort to develop the following phase 1 training model (limited trial).

- prepare a biodata format and identification form to obtain information about the haracteristics of training participants, in this case people with mental retardation
- prepare assessment instruments for vocational skills and independence to determine the strengths and needs needed
- the vocational skills program is jointly prepared by managers, organizers, instructors, world industry, and training participants as an Individualized Transition Plan.

c). Preparation of programs and planning for achievement indicators based on the results of assessment and identification of needs, which are formulated with service managers, instructors, business and industrial world, and training participants. Training material consists of vocational skills practice material that is in accordance with the ability of mentally retarded persons and is needed in the home industry, the independence that is taught meets the activities of daily life.

This activity is also applied to the development of the stage 2 model (more extensive trials). With the development of the model at the planning stage, however, there is a slight change in the provision of training materials consisting of vocational material taught with more specific skills based on task analysis to be able to work productively. This has provided knowledge and understanding for vocational managers, especially instructors and training participants to carry out training activities.

d). Implementation. In the initial conditions of vocational skills training, in terms of implementation activities, researchers feel that they are still not optimal in implementing the training, namely:

- readiness in preparing training facilities, such as delays in reproducing and distributing instructional media, room facilities that do not match the number of training participants.
- the implementation of the curriculum and the achievement of the expected targets, based on the assessment is not yet appropriate. Based on this, in the implementation of training models 1 and 2, the implementation of training will further optimize in terms of:
- readiness in preparing training facilities before the training begins.
- Cooperate to compile and implement Individualized Transition Program (ITP).

There are still some shortcomings in the training process, among others: 1) initial activities include friendly learning, building familiarity, sometimes not doing perceptions, and not conveying the training objectives; 2) core activities. Not using task analysis as a realization of the individual approach, training participants are sometimes not given a stimulus to ask questions, process evaluation is still not visible, motivation or reinforcement as a social-constructive approach is not optimal, competency-based training is not optimal, and the integrated approach is still limited with several

institutions; 3) the final activity, sometimes the instructor does not make a review and conclusion.

6. Evaluation

Process and final evaluation have not been documented in an orderly manner, instruments for obtaining competency skills are not standardized, instruments are

In this study, the concept of the vocational skills training model aims to realize the independence of mentally retarded persons in PSRPD which is carried out in its implementation to achieve the target so that to test the effectiveness of the model developed by this researcher assumes that by analyzing the results of the training given to wider trials and limited trials.

Based on testing the average difference in the results of the training model field test, it was found that there was a significant difference in the independence of mentally retarded persons, training participants in the PSRPD, between before and after training in the experimental group. The overall test results illustrate that the vocational skills training model is proven to be effective in realizing independence, which includes the following aspects: a) the ability to adapt to community norms; b) ability to interact with other people; c) the ability to respect others; d) ability to obey norms / rules of work in work; e) ability to communicate effectively to carry out work; f) the ability to work together to carry out certain jobs / tasks.

Based on the results of interviews and questionnaires, a) before participating in training, mentally retarded persons lack the ability to adapt, but after participating in the training and even after working they appear to have a good ability to adapt to their work environment, and try to adapt well-accepted habits at work as well as in the wider community; b) Likewise in interacting with other people, before participating in training. Some of them are very rigid to interact with new people they know, but after training, let alone getting a job, they show harmonious, friendly and pleasant interactions with their own will; c) the ability to respect others; mentally retarded persons are able to respect other people according to those exemplified by parents, teacher instructors and managers to people they know, with the increase in experience and the wider environment, an increased respect for everyone and loves the younger ones; d) ability to obey norms / rules of work in work; in fact, the discipline ability of mentally retarded persons is very limited according to their environment, but after attending training, let alone getting a job, they follow the rules that have been set, even much more obedient than normal people.

Criteria for those who work very well in following the predetermined time rules, and meet the targets that have been set; e) ability to communicate effectively to carry out work. At the beginning of the training, most of them showed limited communication, due to limited vocabulary / sentences, but after attending the training, their abilities increased, namely being able to convey ideas or wishes and hope smoothly, and of his own accord; f) increased ability to work together to carry out good work with peers individually or in groups.

Conclusion

The vocational skills training model, applicable skills to achieve independence, and the insights of mentally retarded persons about the process of skilled work by following the values of the applicable rules to support their work ability as prospective workers is a model designed by identifying and assessing and implementing it. in an integrated manner with the MOU process between training institutions, parents and world industry. This integration is manifestly realized starting from the design process of model development and training activities including internships, placement to work in a complete series of carrying out training tasks as a whole by optimizing the active role of instructors and coordinating with world industry, and parents.

The vocational training model model for mentally retarded persons is effective to use based on data: the results of the implementation of the model (very good), also the results of realizing the social independence of mild intellectual disability people.

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Contact email: zubaedah.wijilestari@gmail.com

Teaching Strategies Guidelines to Foster the Computational Thinking Ability in Higher Education

Virawan Amnouychokanant, King Mongkut's University of Technology Thonburi, Thailand
Surapon Boonlue, King Mongkut's University of Technology Thonburi, Thailand
Saranya Chuathong, King Mongkut's University of Technology Thonburi, Thailand
Kuntida Thamwipat, King Mongkut's University of Technology Thonburi, Thailand

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Abstract
The purpose of this research was to identify teaching guidelines to cultivate the computational thinking ability of higher education students. This qualitative research study focused on seven Thai instructors from public and private institutions (Chulalongkorn University, King Mongkut's University of Technology Thonburi, Kasetsart University, Silpakorn University, Assumption University, and Microsoft (Thailand) Limited). All instructors have had teaching experiences in universities for more than five years and some always have used technologies in their classrooms to improve learners' computational thinking ability. Data were collected through instructor focus group interviews. A semi-structured interview protocol was used as a guide. From the interview, we found that three elements for teaching guidelines to cultivate the computational thinking ability of higher education students were 1) learners' and instructors' role 2) learning strategies and 3) teaching tools. The instructor should use learner-centered teaching approaches. In classroom activities, the instructor should be a coach who provides guidance and give powerful questions that help the learners reflect and find a way to get the solution. Besides, this paper gathered learning strategies and teaching tools that were often used in computational thinking courses.

Keywords: Computational Thinking Ability, Instructors Role, Learners Role, Learning Strategies, Teaching Guidelines, Teaching Tools

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1. Introduction

The term computational thinking (CT) has been in academic research for decades. In 2006, Jeanette Wing published the viewpoint essay "Computational Thinking" in Communications of the ACM (Wing, 2006) and used CT to describe a set of thinking ability that learners in all fields require to succeed (Czerkawski & Lyman, 2015). Wing's definition of CT ability is proper for application across multiple fields. "Computational thinking is a way that humans solve problems; it is not trying to get humans to think like computers" (Wing, 2006, p. 35). CT is also a key skill for learners in the 21st century (Wing, 2016).

CT has become more important in various fields, and many countries have attempted to integrate CT concepts in other courses (Angeli et al., 2016). For example, the UK has carried out a set of CT courses, including computer science, information technology, and digital literacy throughout all disciplines (Brown, Sentance, Crick, & Humphreys, 2014). Another example is Australia, where CT training was set up as one of the national teaching courses for making the learners familiar with using technology to solve complex problems (Falkner, Vivian, & Falkner, 2014; Armoni, 2012). Poland has also developed computer courses for learners. The main purpose of the development is to help learners understand and analyze the problem, use computers to solve problems, and apply CT to their daily lives (Sysło & Kwiatkowska, 2015).

CT is implemented in courses to train learners' CT ability in many countries. It is tough to imitate CT teaching methods because of the differences in the educational systems and culture (Heintz et al., 2016). However, the key to developing CT is the teachers who have to cultivate their students. Ministry of Education needs to train the teachers in how to design CT learning activities so that the learners can improve their CT systematically and apply CT to other subjects (Orvalho, 2017). Besides, CT also enables learners to become more capable of problem-solving and helps learners develop skills that are attractive for future employment opportunities. (Czerkawski & Lyman, 2015). Computer science is the fast-growing job market and learners who have the ability in coding are highly sought by employers (Dishman, 2016).

For the reasons mentioned above, the purpose of this research was to identify teaching strategies guidelines to foster the computational thinking ability of higher education students.

2. Background

Computational Thinking (CT) is one of the skills that can be useful not only for learners of Computer Science but for other people. CT relates to solving problems, designing systems, and understanding human behavior by connecting the fundamental concepts to computer science (Wing, 2006). In the past studies, CT can be classified into various thinking processes (Table 1), including decomposition, pattern recognition, abstraction, algorithm design, debug and error detection, data collection, data analysis, data representation, automation, simulation, and modeling.

Thinking processes	Explanation	References
Decomposition	Breaking down a complex problem or system into smaller parts that are more manageable and easier to understand.	Hsu, Chang, & Hung, 2018; Curzon et al., 2014; Kazimoglu et al., 2012
Pattern Recognition	Finding the similarities or patterns among small, decomposed problems that can help us solve more complex problems more efficiently.	Hsu, Chang, & Hung, 2018; Kazimoglu et al., 2012; Ismail, Ngah, & Umar, 2010
Abstraction	Focusing on the important information and ignoring unnecessary details.	Grover & Pea, 2013; Wing, 2006
Algorithm Design	Creating a set of step-by-step instructions for solving similar problems or for performing a task.	Mishra & Yadav, 2013; Basu, Biswas, & Kinnebrew, 2017; Choi, Lee, & Lee, 2016
Debug and error detection	Finding mistakes and fix them	Atmatzidou & Demetriadis, 2016; Yadav et al., 2014
Data Collection	Gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest.	Rouse, 2020; Barr & Stephenson, 2011
Data Analysis	Inspecting, cleaning, transforming, and modeling data to discover useful information for decision-making.	Choi, Lee, & Lee, 2016; Atmatzidou & Demetriadis, 2016; Angeli et al., 2016; Magana & Silva Coutinho, 2017; Cesar et al., 2017; Basu, Biswas, & Kinnebrew, 2017
Data Representation	Organizing information in the form of graphs, charts, pictures, letters, symbols, and numbers.	Stefan, Gutlerner, Born, & Springer, 2015; Weintrop et al., 2016; Benakli et al., 2017
Automation	Having computers execute repetitive tasks.	Kim, Kwon, & Lee, 2014; Forrest & Mitchell, 2016
Simulation	Using a model to study the performance of a system.	Kim, Kwon, & Lee, 2014; Grover & Pea, 2013; Wing, 2006
Modeling	Creating a model which represents a system including their properties.	Kim, Kwon, & Lee, 2014; Basu, Biswas, & Kinnebrew, 2017; Barr & Stephenson, 2011

Table 1: The classification of CT

Brennan and Resnick (2012) also proposed three dimensions of CT: computational concepts, computational practices, and computational perspectives. See Table 2. Many instructors use programming languages to teach CT although it can be

integrated with various subjects. In facts, CT has been used in different subjects, including mathematics (Snodgrass, Israel, & Reese, 2016; Benakli, Kostadinov, Satyanarayana, & Singh, 2017), biology (Libeskind-Hadas & Bush, 2013; Rubinstein & Chor, 2014), language (Evia, Sharp, & Pérez-Quiñones, 2015), computer science (Shell & Soh, 2013; Grover, Pea, & Cooper, 2015), and programming (Bers, Flannery, Kazakoff, & Sullivan, 2014; Wolz, Stone, Pearson, Pulimood, & Switzer, 2011).

Dimension	Examples
Computational concepts	Sequences
	Loops
	Conditionals
	Events
	Parallelism
	Operators
Computational practices	Incremental and iterative development
	Testing and debugging
	Remixing and reusing
	Abstracting and modularizing
Computational perspectives	Expressing and questioning about the technological world

Table 2: Summary of the CT dimensions

3. Method

3.1 Participants

Seven Thai instructors were invited to take part in the focus group interview. Each lecturer has different proficiencies: CT, coding, and learning strategy. The information of the participants is shown in Table 3.

Gender	Academic position	Workplace	Proficiency		
			CT	Coding	Learning strategy
Male	Assoc.Prof.	Kasetsart University	✓		✓
Male	Assoc.Prof.	Assumption University	✓	✓	✓
Female	Asst.Prof.	Chulalongkorn University			✓
Male	Asst.Prof.	Silpakorn University	✓	✓	✓
Male	Dr.	Microsoft (Thailand) Limited	✓	✓	✓
Male	Dr.	King Mongkut's University of Technology Thonburi	✓	✓	✓
Female	Dr.	Thai MOOC			✓

Table 3: The participants' information

3.2 Instrument

A semi-structured focus group interview was designed for finding teaching strategies guidelines to foster CT ability in higher education. Poorly worded, biased, or

awkward questions can derail a focus group interview and spoil the quality of data. On the other hand, asking good questions makes powerful information so the focus group interview consisted of six open-ended questions which each of them did not ask dichotomous questions (yes or no) and use "think back" questions for taking participants back to their experience. IOC of each item was 0.67 and 1.00 (See Table 4).

Items	IOC
1. What is the role of the instructors in the CT course in higher education?	1.00
2. What is the role of the learners in the CT course in higher education?	1.00
3. Studying in groups, pair, or individual: which way is better to enhance CT?	0.67
4. Which way is better to divide learners into groups (random, up to learners, or different performance-based)?	0.67
5. What learning strategies can be applied for the development of CT in higher education?	1.00
6. What teaching tools can be used to improve CT of learners?	1.00

Table 4: IOC of each item

3.3 Procedure

We divided the procedure of Focus Group Discussion (FGD) into three parts: Before conducting FGD, During FGD, and After FGD.

3.3.1 Before conducting FGD

We designed the opened-ended questions for FGD and reserved the meeting room. After we set the location, date, and time, we sent the invitation letters to experts in computational thinking, coding, and learning strategies. The invitation letter consisted of FGD detail such as topic, venue, date, and time. We chose the location of FGD that is in a convenient place for all participants. We set the duration of the focus group interview one and a half hours. If the FGD is shorter than 60 minutes, it is often difficult to fully explore the discussion topic. If the FGD is longer than 90 minutes, the discussion can become unproductive (as participants get weary).

3.3.2 During FGD

After welcome all participants, we asked them for permission to record the audio during the discussion. One of the researchers was a moderator and the others are note-takers. The moderator allowed all participants to express their opinions and experiences. If someone had given a general answer, the moderator would have asked them to specify by giving an example.

3.3.3 After FGD

Transcribe the audio recorded on the smartphone, cutting out anything unnecessary. Enter the answers to each question into a spreadsheet and begin to analyze the data by organizing the responses into categories. We wrote a report by outlining the major findings and conclusions, as well as the recommendations of participants.

4. Results

From FGD, it can be summarized into various issues to prepare in teaching strategies guidelines to foster the computational thinking ability in higher education.

4.1 The role of the instructors in the CT course in higher education

4.1.1 Knowledge and understanding of CT teaching

The instructors should have experience, expertise, and understanding of CT teaching. Learners can learn from the material at any time, so they are less dependent on the instructor. Teaching materials help learners to learn better. The instructors should act as a coach or facilitator, need not tell everything about the solution, so that learners can solve problems by themselves, leads to systematic thinking. The instructors should connect real-world problems with CT teaching so that learners can understand and apply CT to their real-life more easily. The instructors need to know the different learning styles of learners from several ways such as observation, interview, and questionnaire to properly organize teaching activities.

4.1.2 Preparation and development for CT teaching

CT Training is crucial for CT development. The instructors should realize the importance of CT and always would like to develop themselves to learn new things. Educational institutions should provide CT training for instructors to apply ideas and create new CT instructional materials, which help the teaching and learning to be quality and to increase the interest of learners. With regular CT training, instructors can develop their ability to design learning to enable learners to develop CT sustainably. When learners cannot solve the problems or follow some steps of the process, the instructor must diagnose and guide the way to solve problems. These are the reasons why the instructors must practice or train about CT before teaching.

4.2 The role of the learners in the CT course in higher education

Developing CT ability does not depend on only the instructors but also cooperation from the learners. From FGD, it can be concluded that learners' role in the CT course is to be keen on what they are being taught. The learners need to be active participants in virtually everything that happens in the CT classroom. Learners can help their instructors make decisions such as how a lesson will be delivered or even what is taught. The learners should take responsibility for what is learned and be accountable for the results of the learning process. Their responsibility is demonstrated in their choices and actions, which could lead them to their goal or astray. Therefore, learners should be responsible for everything they are tasked to do by their instructors and attempt to contribute to the CT learning process. Besides, learners should help each

other while working to achieve common learning goals. The learners should find passion in their project or assignment to exceed expectations. Not necessarily go over-the-top, but be able to apply their ability, ask questions, and understand the importance of CT. And most importantly, learners should learn to understand CT and find ways to apply what they have learned in CT class in their daily life, not memorize the CT theory or concept to pass the examinations. To make CT learning effective, learners should make sure they inquire more about particular issues, especially when they feel they need to know more or haven't fully understood.

4.3 Studying in groups, pair, or individual: which way is better to enhance CT?

The instructors need to know the characteristics of the learners (previous experiences of the learners, personal learning styles, cognitive abilities of the learners, personality, aptitude, or intelligence of learners) before choosing the method (studying in groups, pair, or individual). For example, the learners in Mathematics-Science Program can learn by themselves so they like to learn individually while the learners in Language-Arts Program like to learn in a group. Besides, the instructors should pair high and low performers; the learners can learn from their friends. If the instructors would like to group the learners, do not make them more than five people per group because excessive group members can make group work inefficient. The optimal number of members per group should be three to five people. When making the learners into the group, the instructors should let each learner think individually about a topic or answer and then comes back to share ideas with the whole group.

4.4 Which way is better to divide learners into groups (random, up to learners, or different performance-based)?

Each grouping method has its own advantages and disadvantages. For example, if learners can choose their own group, it will make them happy and feel comfortable when working together. On the contrary, high performers will be in the same group. This may make low performers be ignored.

Random Grouping Strategies is a method of teaming learners when grouping is not dependent on factors such as achievement levels or common objectives. This method may make learners excited about member in group, but this method is no clear standard and criteria for grouping.

Different performance-based grouping (high, medium, and low) is reasonable method because it creates learners helping each other within the group to achieve the same goal without ignoring low performers.

4.5 Learning strategies for the development of CT in higher education

Learning strategies are what learners do in their learning process to get a better understanding of the lesson and enhance their own learning. Learning strategies are particularly significant for CT courses because they are tools for active, self-directed involvement, which is essential for developing CT ability. Learners need to use learning strategies as tools to achieve their goals because everything cannot be taught in the class, then learners have to study by themselves. Therefore, learning strategies help learners to study with or without instructors effectively. From FGD, we list the

learning strategies that the instructors have been used for the development of CT. The advantages and disadvantages of each learning strategy are shown in Table 5.

One instructor explained why the instructors should not deliver CT content by using a single method (learners are passively listening):

"When the lecturers read a pre-prepared script with little or no scope for interaction, it makes learners less eager to study. Passively listening to a lecture can be useful at encouraging learning to remember and understand but is not good at encouraging higher-level skills like apply, analyze, and evaluate."

It can be assumed that 'Delivery mode' lectures, where students listen rather than interact, are not good at encouraging higher-level learning and skills.

Learning strategies	Advantages	Disadvantages
Problem-based learning	It is helping learners to improve CT through a problem scene.	Creating suitable problem scenarios is difficult for the instructors and it requires more preparation time.
Project-based learning	Complex tasks allow learners to look at problems with CT, asking questions, and coming up with possible solutions for their project.	It gives a loss of time to the instructors. it also wastes money to buy the supplies for the project.
Game-based learning	The interaction involved in games can help learners understand CT better.	If games are not designed correctly, it could be a disadvantage to the learner's thinking.
Inquiry-based learning	It allows learners to develop CT and research skills. Good questions can open their minds and help develop learners into creative thinkers.	If instructors do not absolutely understand, they are unable to engage with their students on a deeper level.
Scaffolding	It trains the learners to solve problem independently and helps the learners learn the new knowledge.	Instructors are not trained specifically in this method are improbable to deliberately allow learners to make mistakes in the process of learning.
Design-based learning	It helps learners to set up their own goals and to create ideas to achieve them.	It is time-consuming and poses pedagogical challenges.
Digital storytelling	It can help learners practice CT ability. Digital storytelling empowers learners to be confident communicators and creators and reach a deeper	Digital storytelling takes a lot of time to complete the CT project. If the learners had known the assignment at the beginning of the CT course so that they would have had

	understanding of the CT curriculum.	sufficient time to prepare for the assignment. Because of copyright, the learners can not show their real ability and exert their utmost effort only with copyright-free materials.

Table 5: The advantages and disadvantages of each learning strategy

4.6 teaching tools for improving CT of learners

The most teaching tools which the instructors used for designing CT learning activities were block-based programming because most instructors believed that using block in coding can eliminate syntax error which is a barrier for learners to better understand the main programming concepts and block-based programming is suitable for learners who are just starting to practice coding or have little programming experience. It is also found that Scratch is one of the most popular programming languages to learn.

The main reasons why many instructors used Scratch to promote CT are 1. Scratch can be used by people of all ages, including learners from elementary to high school and adults in various settings; 2. Scratch allows users to integrate creativity in storytelling, games, and animation. Learners can collaborate on projects and share their projects online; and 3. Scratch is a free program so people can access and utilize Scratch for both personal and academic use. Apart from Scratch program, it is also having other programming tools for being applied in teaching for cultivating CT to learners such as Alice, LEGO, and code.org (similar to Scratch), etc. Apart from block-based programming, unplugged activities using free exercises from Code.org. This is especially helpful in countries with limited resources, but also in developed countries, where CT is regarded interesting, but there is a lack of resources and experienced instructors.

The instructors also described logical thinking as an integral aspect of CT. One of them stated:

“Whether the learners are giving each other instructions in unplugged activity or creating a game in block-based programming, they are doing it in logical steps and through logical thinking. It makes them more logical for decision-making and problem-solving.”

5. Discussion

This study is conducted to better understand the teaching strategies guidelines to foster computational thinking ability in higher education. The results show that developing CT ability does not depend on only the instructors but also cooperation from the learners, the instructors should have an understanding of CT teaching and they need to practice or train about CT before teaching. They should also connect real-world problems with CT teaching so that students can understand and apply CT to their real-life more easily. In the same way, the learners should be responsible for

everything they are tasked to do by their instructors and attempt to contribute to the CT learning process.

Supportively, results from the past studies reported that the most frequently suggested method for improving CT ability is using real-world problems (Berikan & Özdemir, 2020). It is helping learners to set their own learning goals through a problem in their real-life. Learners will explore the solution by themselves and report their own conclusions to the team. Using real-world problems is not only used to solve problems but also to enhance learners' understanding of computational thinking through appropriate questions (Wood, 2003).

6. Limitations and future studies

Both instructors and students are crucial for CT development. This study collects the instructors' perspectives that may reflect only one side of view. As we work to fill in gaps in understanding and design class activities for our students, future studies should also collect students' views because learners' voices are a powerful tool for CT development.

7. Conclusion

The Focus Group Discussion (FGD) was carried out with seven Thai instructors. The purpose of FGD was to identify teaching strategies guidelines to foster the computational thinking ability of higher education students. A 6-item semi-structured focus group interview was developed and validated. From FGD, it can be summarized into various issues, including the role of the instructors and the learners in the CT course in higher education. The instructors should have an understanding of CT teaching and practice or train about CT before teaching while the learners should be responsible for everything they are tasked to do by their instructors and attempt to contribute to the CT learning process.

This study gathers the learning strategies (advantages and disadvantages) for the development of CT in higher education, including problem-based learning, project-based learning, game-based learning, inquiry-based learning, scaffolding, design-based learning, and digital storytelling. FGD also suggests that using block-based programming is useful for learners who are just starting to practice coding or have little programming experience. Besides, using block in coding can eliminate syntax error which is a barrier for learners to better understand the main programming concepts.

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Analytics of Behavior Semantics for Understanding Constraint Conditions Hidden in Formative Process of Real-world Learning

Koryu Nagata, Shizuoka University, Japan
Masahiro Tada, Kindai University, Japan
Masaya Okada, Kyushu University, Japan

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Abstract
An alternative to classroom learning is situated learning by behavior in the world (e.g., environmental learning in a natural setting). Among the various types of human intelligence, this research is interested in understanding the process mechanism by which human intelligence is formed through learner–learner and learner–environment interactions. Here, we assume that a learner's cognition, interpretations, and behavior in the world are positively or negatively affected by various levels of constraint conditions determined by his/her body, cognition, and surroundings. For example, a learner may not generate a certain type of effective real-world behavior if he/she does not have basic knowledge (i.e., a cognitive-level constraint). In a place where interesting objects do not exist, a learner's active inquiry will be restricted (i.e., environment-level constraint). To mine a learner's prospective behavior for obtaining a multi-view understanding of the world, we developed technologies (1) to multidirectionally sense a learner's behavior in the world, (2) to parameterize time-series behavior with various different semantics, and (3) to extract constraint conditions hidden in the formative process of real-world learning. We applied our analytical framework in experiments on environmental learning with 30 participants in an experimental forest. Our initial results showed that the semantic-level data of behavior enabled us to understand the cognitive state and constraints of learners, and to find the change points of the learning situation. These results illustrate that our framework can be a theoretical basis for understanding the mechanism of situated intelligence emerging in the real world.

Keywords: Real-world Learning, Situated Intelligence, Behavior Semantics, Multimodal Analytics

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Introduction

There are two different types of learning when a person acquires knowledge. The first includes classroom learning as a typical example of learning methods by which learners learn from teaching materials or teachers. Classroom learning is a traditional learning method through which a learner receives guidance and knowledge from teachers and books. Classroom learning has been widely studied all over the world (Weinstein, C. E., Acee, T. W., & Jung, J. 2011; Berger, J. L., & Karabenick, S. A. 2011; Felder, R. M., & Silverman, L. K. 1988).

The second type is real-world learning (e.g., environmental learning in a natural setting), which is a type of situated learning (Lave, J., & Wenger, E. 1991) by interacting with the real world. In real-world learning, learners can acquire knowledge derived from various situations by their behavior in the real world. However, for real-world learning, many research issues remain because it is not known how to assess mutual influence among the real-world situation, environmental objects, and the learner's behavior. Among the various types of human intelligence, the present study focused on real-world learning and was aimed at understanding the process mechanism by which human intelligence is formed through learner–learner and learner–environment interactions.

In this study, we consider that human intelligence has the above structure in which humans behave so as to learn from real-world situations. Thus, our study was aimed at understanding how human intelligence emerges from the generation structure of a learner's behavior. The main focus of our analysis is the interaction between the real world and the learner, with special attention on the generation structure of the learner's behavior.

As a basis of our analysis, we assume that a learner’s cognition, interpretations, and behavior in the world are positively or negatively affected by various levels of constraint conditions determined by his/her body, cognition, and surroundings. For example, a learner may not generate a certain type of effective real-world behavior if he/she does not have basic knowledge (i.e., cognitive-level constraint). In a place where interesting objects do not exist, a learner’s active inquiry will be restricted (i.e., environment-level constraint).

Let us consider this point in detailed. In real-world learning, different interests are elicited at different locations and the exhibited behaviors are based on those interests in order to acquire different knowledge (Okada, M., & Tada, M. 2012). For example, when studying in the area shown in the left photograph in Figure 1, learners will see autumnal trees and ponds. As a result, learners may be wondering, "Why do trees turn red?" and "What kind of aquatic organisms live in the pond?" On the other hand, when studying in the area shown in the right photograph in Figure 1, learners will see tall trees and protrusions growing from the ground. In this setting, the learner will not think about the aquatic organisms that he/she had previously focused on. Instead, he/she will think, "What are the protrusions growing around the tree?"

As explained above, in real-world learning, it is thought that there is a structure that promotes or restrains different questions and behaviors. However, these constraint conditions are difficult to observe from the outside, and a framework for research and

analysis has not been established. In this paper, we propose a research method for understanding the structure of the constraint conditions that generate and determine a learner's behavior. In addition, we will explain our technical implementation of our method for practical data analysis.

Figure 1: Real-world learning as a typical example of situated learning.

Research Framework

Modeling human intelligence to understand constraint conditions in real-world learning

We propose a real-world oriented research framework for understanding the constraint conditions in real-world learning. Under the proposed framework, a researcher first creates hypotheses and models for real-world phenomena, and then reconstructs a better model by obtaining new knowledge while experimentally evaluating the first assumed model. The present paper explains the findings acquired by implementing the proposed framework.

At phase 1 of our framework, participant observation (DeWalt, K.M. & DeWalt, B.R. 2011) is conducted by going on site to where real-world learning is taking place. In this observation, we watch to determine what kind of behavior is performed and what learners are thinking. Based on the results, we form a qualitative hypothesis about the learner's actual behavior, and then modeled it as a computational expression to be integrated into our analytical method (phase 2). At phase 3, we plan and carry out experiments to evaluate the model. Phases 4 and 5 are for evaluating the appropriateness of our assumed model in the actual setting of the world, which promotes the re-design of our research method (phase 6). These phases are conducted in an environment with ecological validity (i.e., an experimental setting that there is no external control over the learner's behavior, such as no interventions by experimenters or no pre-defined scenario that the learner has to strictly follow). The next section concretely explains how we actually conducted our research procedure, beginning from phase 1.

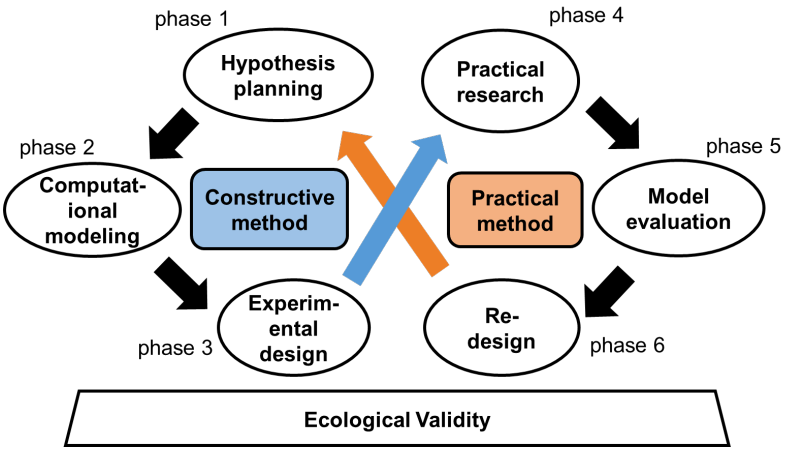

Figure 2: Real-world oriented research framework.

Hypothesis as the basis of computational modeling

Based on our participant observation at phase 1 in Figure 2, we formed the following two hypotheses. The first hypothesis is that the role of a learner's sensory functions and his prior knowledge determine the learning. As a simple example, we often found that when learners were walking along the waterside, they observed the fact that there was no moss there. We consider that this observation behavior was influenced not only by the range of vision when the learners are at the water's edge but also by their existing knowledge that water is necessary for plant growth.

The second hypothesis is that learners' behavior is constrained by their surrounding environment. As a typical example, we found that after the observation at the waterside, learners hypothesized that the moss was adapted to a different environment, and then moved to other places to look for different features of the growth of moss. We consider that the observation result that moss was not seen at the waterside became a new constraint condition of learners. This constraint condition encouraged learners to make a hypothesis and to generate behaviors to verify it.

From these hypotheses, we achieved the idea that a behavior is made under a generation structure with multi-step constraint conditions. Figure 3 shows our model of behavior generation based on multi-step constraint conditions. First, we assume that a learner acquires real-world information from the real world based on human-derived restrictions ((i), (ii) of Figure 3), such as restrictions on the visual range and the range of movement of the body. Based on real-world information, the learner interprets his/her situations using prior knowledge and hypotheses ((iii) of the model). Then, the learner internally produces a list of possible behaviors for the situation ((iv) of the model). However, in the real world, not all behaviors can be performed under the various restrictions, such as those on the body, time, and place. He/she predicts how his/her possible behavior will work ((v), (vi) of the model), and then uses the prediction results as a new constraint to select and perform one behavior that is expected to be the most effective ((vii) of the model).

Importantly, each step of human real-world processing is limited and promoted by various constraints derived from the world, a learner's internal cognitions, and his/her behavioral situations (Const. 1-4 in the figure).

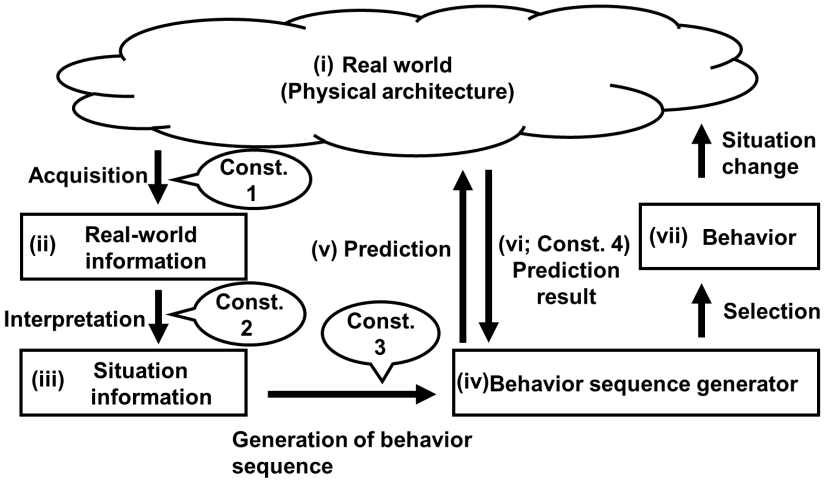

Figure 3: Model of behavior generation based on multi-step constraint conditions.

Technological Development

By considering the behavior generation structure with multi-step constraint conditions, phase 2 of our research was conducted to make computational modeling at the level of behavior semantics, not just at the level of body motion.

Methods to reproduce and analyze the formative process of real-world learning

To mine a learner's prospective behavior for obtaining a multi-view understanding of the world, we defined the requirements as follows: (1) to multidirectionally sense a learner's behavior in the real world, (2) to parameterize time-series behavior with different semantics, and (3) to extract constraint conditions hidden in the formative process of real-world learning.

Our activity map and audio-visual recording can be used as a basis to capture cognitive and behavioral activities of real-world learning (Okada, M., & Tada, M. 2012; Okada, M., Kuroki, Y., Nagata, K. & Tada, M. 2020). To perform advanced data mining, this present paper has developed three additional methods to reproduce and analyze the formative process of real-world learning. The first is the real-world jigsaw method, and the second is the real-world introspection method (Figure 4). In addition to our previous techniques, these two methods were complementarily used in the experiment for the purpose of encouraging a learner to externalize his/her cognitive processing. As a third, we developed a method to express behavior semantics for the purpose of representing behavioral data in a computable format (Figure 4).

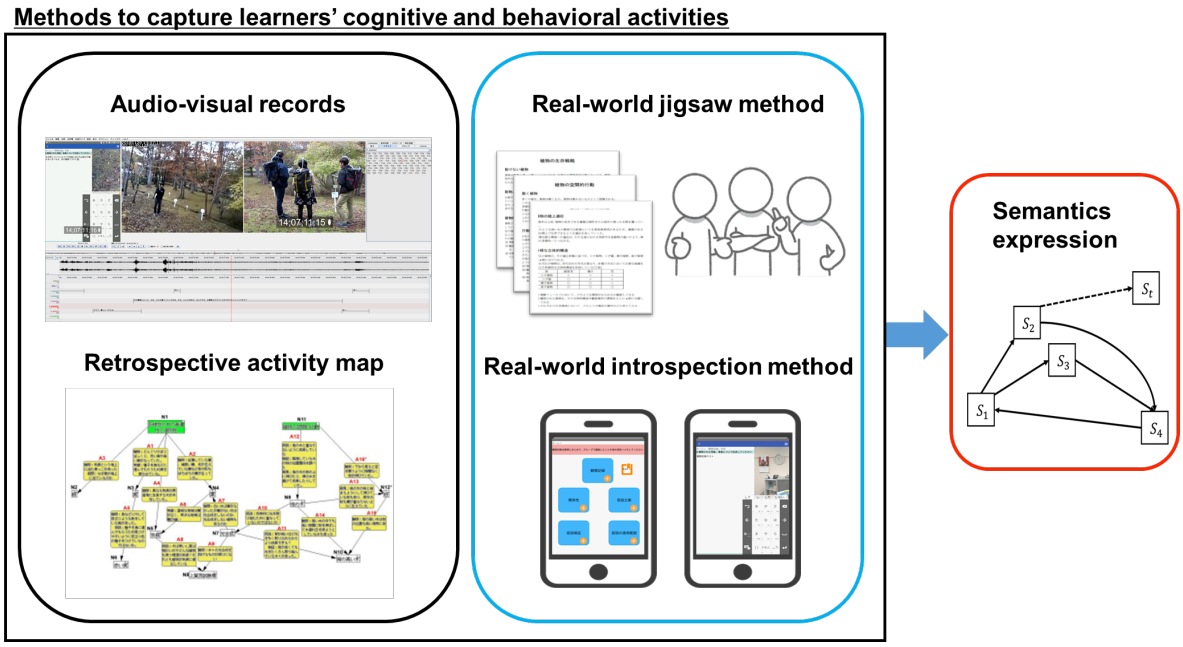

Figure 4: Methods to extract the semantics of real-world learning.

Method to externalize the learner's cognitive processing

By extending the conventional jigsaw method (Aronson, E. & Patnoe, S. 1997) frequently used in classroom learning, we developed a real-world jigsaw method. Our real-world jigsaw method provides each learner with a separate memo to be used in real-world situations. Each memo includes the academic theories of real-world phenomena. Importantly, the memos differ between learners; specifically, the memo contents that different learners can view in the real world do not overlap. The contents of the memo are, for example, the survival strategy of a plant and the community ecology of plants. This experimental control provides each learner with information from different perspectives and information at different abstraction levels. This task is designed to be used as a part of the experimental design at the phase 3 process in Figure 2.

Next, the real-world introspection method requires each learner to carry a tablet device in order to take notes of what they consider and observe during real-world learning. A learner's introspection can be written in separate UI (User Interface) fields corresponding to the essential phases of real-world learning, such as observation records, relationship findings, hypothesis construction, hypothesis verification, and the applicability of a hypothesis. We adopt this method to our experimental design so that each learner can be encouraged to meta-cognize the tasks included in the learning separately. The method also promotes the learner externalizing each cognitive process occurring inside him/her.

These first two methods capture the internal state of a learner who acquires and examines real-world information from multiple perspectives.

Method of expressing behavior semantics

Third, regarding the method of expressing behavior semantics, note first that semantics in the present study is considered as structured expression of the essence of

a target for the purpose of calculating the characteristics and relationships of the information to be modeled. For this study, we developed a parameter vector for semantic expression based on the findings of our participant observations. We subdivided and defined the different roles played in the behavior generation process in order to perform a practical analysis of a behavioral generative model.

Trial Analysis

Objective

We made an initial trial analysis as phases 4 and 5 of our research framework so that we could obtain basic and qualitative findings about the mechanism of real-world learning.

Method

We applied our analytical framework to experiments of environmental learning involving 30 participants in an experimental forest. Specifically, our experiment took place at the Kamigamo Experimental Station, Kyoto University, Japan. The 30 experimental subjects were adults (20–29 years old) who all participated voluntarily. The target task of the experiment utilized our real-world jigsaw method. Learners formed groups for collaborative learning in the real world (three learners per group). The duration of each experiment was 1 hour for each group. For our hybrid analysis, we constructed the data of the process and result of real-world learning from the experimental data by the following three methods.

The first method is formative evaluation of multimodal data such as video and audio records (Figure 5). Multimodal data were acquired using the wearable sensor set developed in our previous research (Okada, M., Kuroki, Y., Nagata, K. & Tada, M. 2020). In addition, data on human cognitive processing were obtained using our real-world introspection method with a tablet device. Based on these data acquisitions, we analyzed how behavior and real-world information at a certain point affected the learner's activities.

The second method is summative evaluation of the retrospective learning data collected by which each learner summarized his/her on-site activities in a structured format. These retrospective data were obtained in the form of our activity map, which is a network style representation of a learner’s knowledge (Okada, M., & Tada, M. 2012). This summative evaluation is for quantitatively and qualitatively analyzing the final learning results. By considering the aim of the real-world jigsaw method, we evaluated the data from the viewpoint of whether a learner could obtain a multi-viewpoint and integrated description.

Finally, we compare and integrate the results of the above two evaluations, construct a sequence of parameter vectors of behavioral semantics, and extract the constraint conditions hidden in the real world. Then, we analyzed how formative assessment of time-series learning process was related to the summative assessment of the learning result, and vice versa. We examined how various behaviors changed the learner's cognitive state and influenced the learning results.

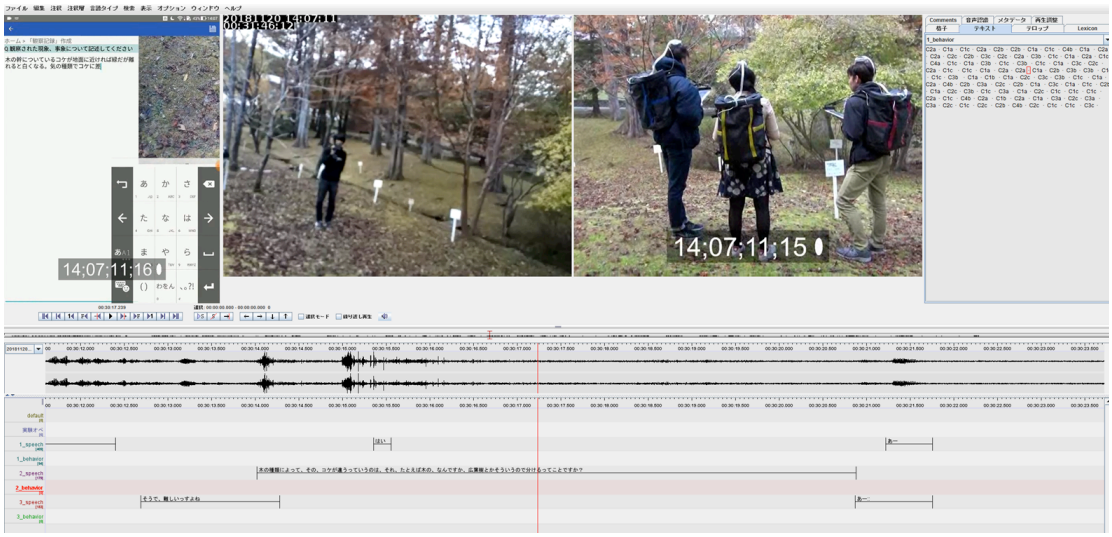

Figure 5: Hybrid evaluation of time-series multimodal data.

Results

One basic achievement of this study was that we could frequently observe that our new task utilizing the real-world jigsaw method promoted the learner actively and autonomously behaving so as to construct, compare, and integrate hypotheses among the learners and generating new collaborative knowledge to explain the mechanism of real-world phenomena from multiple perspectives. The fact that our new task design was effective is important as a research basis for examining the self-directed mechanism of real-world learning in a natural setting with ecological validity, which is different from well-defined classroom learning or laboratory experiments. We consider that our real-world introspection method was helpful not only for encouraging each learner to realize what step he/she is engaged in, but also what he/she should do at his/her current or subsequent steps. We expect that this type of enhanced meta-cognition is effective for learners to generate behavior adapted to his/her learning state.

Let us consider how each of our techniques worked. Video-based observation enabled us to trace the time series of behavior externalized as a learner's body movement. Learners' activity maps enabled us to read the semantic relationships describing how learners formed their cognition, thinking, and behavior in the real world, for example, the observed objects and phenomena, and the theories and hypotheses that connect the observation results. Our real-world introspection method enabled us to read learners' internal cognitive processing consisting of multi-step cognitive activities such as examination of the relevance of observation results, generation of hypotheses, hypothesis verification, etc. These were our ground data to construct the semantics of information processing ((i), (ii), (iii) in Figure 3) and behavior generation ((iv)-(vii) in the figure) that were both performed under multi-level constraints 1-4.

Behavior semantics data constructed by our multimodal measurement enabled us to understand the cognitive state and constraints of learners, and to find the change points of the learning situation. For example, we extracted several patterns of the main behavior sequences to explain the success or failure of a real-world learning task. When learners performed particular types of behavior corresponding to the different constraint levels illustrated in Figure 3, their intellectual achievement of

learning was heightened. When they did not conduct enough time amount of such types of behavior, their achievement levels were low. To be concrete, learners could behave so as to obtain high intellectual achievements when they compared and integrated others' hypotheses, questions, and predictions as a means for clarifying their own cognitive grounds to reflect on real-world phenomena. This comprises the co-related functions of behavior generation under multi-step constraints (assumed in Figure 3).

In the current paper, we have outlined the development of our research framework and technical measurement methods for capturing the constraint conditions in real-world learning. Currently, our research is at the stage of accumulating evidence about the applicability of our model through qualitative observations of actual learner behavior. As initial achievements of us, we found that (1) it is possible to measure internal cognitive data for estimating semantic-level data of behavior by encouraging introspection during real-world learning, (2) behavior semantics can be expressed from the correspondence between learning results and internal or representational behavior, and (3) semantic-level data of behavior enables us to extract and understand the constraint conditions hidden in the formative process of real-world learning.

Our model of the interaction process in Figure 3 was a clue for considering how the process of real-world learning is affected by the double constraints of both human–environment physical interaction and a human's cognitive perspectives of real-world observation. This means that our model can be a theoretical prediction for understanding the mechanism of situated intelligence emerging in the real world. We expect that this model will supply basic knowledge for context-aware learning support in the world, but quantitative verification of the model is important future work.

Conclusion

We consider that human intelligence is formed through learner–learner and learner–environment interactions. Thus, we conducted research with the idea that learners' behavior is determined by various constraint conditions imposed on the body and cognition. In order to extract and understand the constraint conditions hidden in the formative process of real-world learning, we developed and put into practice the following methods: a method for reproducing and analyzing the formative process of learning and a method for expressing behavioral semantics by formative and summative evaluation of learning. Based on these techniques, we acquired findings essential for supporting context-aware learning in the world.

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Contact email: m.okada@acm.org

A Real-Time Engagement Assessment in Online Learning Process Using Convolutional Neural Network

Shofiyati Nur Karimah, Japan Advanced Institute of Science and Technology, Japan
Shinobu Hasegawa, Japan Advanced Institute of Science and Technology, Japan

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Abstract
This paper proposes a framework of the practical use of a real-time engagement estimation to assess learner's engagement state during an online learning activity such as reading, writing, watching video tutorials, online exams and online class. The framework depicts the whole picture of how to implement an engagement estimation tool into an online learning management system (LMS) in a web-based environment, where the input is the real-time images of the learners from a webcam. We built a face recognition and engagement classification model to analyse learners' facial feature and adopt a convolutional neural network to classify them into one of the three engagement classes, namely, very engaged, normally engaged, or not engaged. The deep learning model is experimented on open Dataset for Affective States in E-Environments (DAiSEE) with hard labeling modification. Extracting images from every 10 seconds snippet video is done to prepare the dataset then to be fed into the convolutional neural network (CNN). The engagement states are recorded into a file to evaluate the learner's engagement states during any online learning activities.

Keywords: Engagement Estimation, Learners' Engagement, Online Learning, Convolutional Neural Network

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1. Introduction

Learners' engagement included behavioral engagement (defined as effort and perseverance in learning) and emotional engagement (defined as a sense of belonging), is significantly affecting academic performance (Lee, 2014). Likewise, engagement is an essential component in a learning process to provide personalized intervention pedagogy. The long-term absence of engagement in a learning leads to academic failure and increasing drop-out (Alexander et al., 1997). Therefore, educators, policy makers, and the research community need to pay more attention to learners' engagement and ways to enhance it (Lee, 2014).

Due to the rapid development of information and communications technology (ICT) on education and the strike of coronavirus 2019 (COVID-19), where social distancing is becoming a necessity, there is a paradigm shift of the learning process from a traditional classroom to distance learning system, e.g., massive open online courses (MOOCs) or other online learning activities.

In this term, online learning includes reading, writing, watching video lectures, online exams and real-time online classes through conference applications such as Zoom, Webex, Google Meet, etc.

Nevertheless, unlike in the traditional classroom, the educators in the online learning could not see whether all the learners are engaged during the lectures. On the other hand, real-time engagement assessment benefits the educators to adjust their teaching strategy the way they do in a traditional classroom, e.g., by suggesting some useful reading materials or changing the course contents (Woolf et al., 2009). Therefore, several kinds of research on automatic engagement estimation for online learning have been proposed.

Based on the input features to be analyzed, the engagement estimation methods are categorized into three groups, namely, *log-file analysis*, *sensor data analysis*, and *computer vision-based* methods. Computer vision based methods are promising compared to the other two methods because of their non-intrusiveness in nature and cost-effective hardware and software (Dewan et al., 2019). Therefore, in this paper, we work on computer vision-based engagement estimation for online learning, where a convolutional neural network (CNN) is adopted for the engagement level classification.

Although the proposed techniques for automatic engagement estimation have been proposed, in most cases, the recommendation of how to implement the models/tools to the actual learning process is omitted. Therefore, in this paper, we propose a framework that shows the whole picture of real-time engagement estimation from the input data, data processing, classification model, and recommendation of how to implement the tools in a learning management system. We use a publicly available engagement dataset, i.e., Dataset for Affective States in E-Environments (DAiSEE), to train the model and classify the images into one of three engagement levels: very engaged, normally engaged, or not engaged.

The remainder of this paper is organized as follows: In Section 2, related works on computer vision-based engagement estimation are introduced. Section 3 outlines our proposed framework and conclude this work in Section 4.

2. Related Work

Several methods have been proposed to automatically estimate the engagement level in online learning by extracting various traits captured from computer vision analysis (e.g., facial expression, eye gaze, and body pose), physiological and neurological sensors analysis, and analysis of learners' activities record-files in online learning (Dewan et al., 2019). Cocea and Weibelzahl (2009, 2011), Sundar and Kumar (2016), and Aluja-Banet et al. (2019) used data mining and machine learning approaches to analyze learners' actions in online learning such as total time spent for study, number of posts in forum, the average time to solve a problem, number of pages accessed, etc., which is stored in log-files, for engagement estimation. However, in log-files analysis, the annotation is not straight forward since many attributes need to be analyzed. Cocea and Weibelzahl (2009, 2011) analyzed 30 attributes, Sundar and Kumar (2016) combined with user profile and Aluja-Banet et al. (2019) added 14 behavioral indicators in analyses.

Another method possible for engagement estimation is analyzing biological data extracted from sensors such as heart rate, electroencephalogram (EEG), blood pressure, and galvanic skin response. Chaouachi (2010) studied the correlation between the engagement index with emotional state by implementing EEG in a learning environment to record the learners emotional elicitation. Goldberg (2011) also proved that the data analysis extracted from EEG provides a reliable measure of engagement. Furthermore, Fairclough and Venables (2006) used a multivariate approach to predict subjective states from psychological data, while Monkaresi (2017) also used heart rate measurement to detect the engagement. However, these measures required additional equipment and online learning hardware requirements that are not convenience to use in actual education settings.

On the other hand, computer vision-based methods offer several ways to estimate learners' engagement by optimizing the appearance features such as body pose, eye gaze, and facial expression. Grafsgaard et al. (2013), Whitehill (2014), and Monkaresi (2017) using machine learning to estimate engagement from facial expression features. They used machine learning toolboxes, e.g., Computer Expression Recognition Toolbox (CERT) and WEKA, to track the face and classification. However, using the toolboxes for engagement estimation will automate a part of the classification process but not the implementation in the real-time education process since humans manually input the extracted features. On the other hand, Nezami et al. (2017, 2018) and Dewan (Dewan et al., 2018) using deep learning to build their own classification model to estimate the engagement of online learners which possibly enable to make the preprocess both in the implementation process and the training process is done in the same way so that the input for engagement prediction is in the same distribution as the input for classification model training.

Therefore, in this work, we focus on utilizing deep learning for the real-time implementation of automatic engagement estimation. First of all, we draw the framework to show the whole mechanism of how the learners are joining online learning while the tool is capturing their face through a webcam or a built-in camera PC and record the engagement state into a file. The file contained all the learners' engagement state records, which can be downloaded anytime by the educator to evaluate their teaching or course planning. For the engagement classification model, in

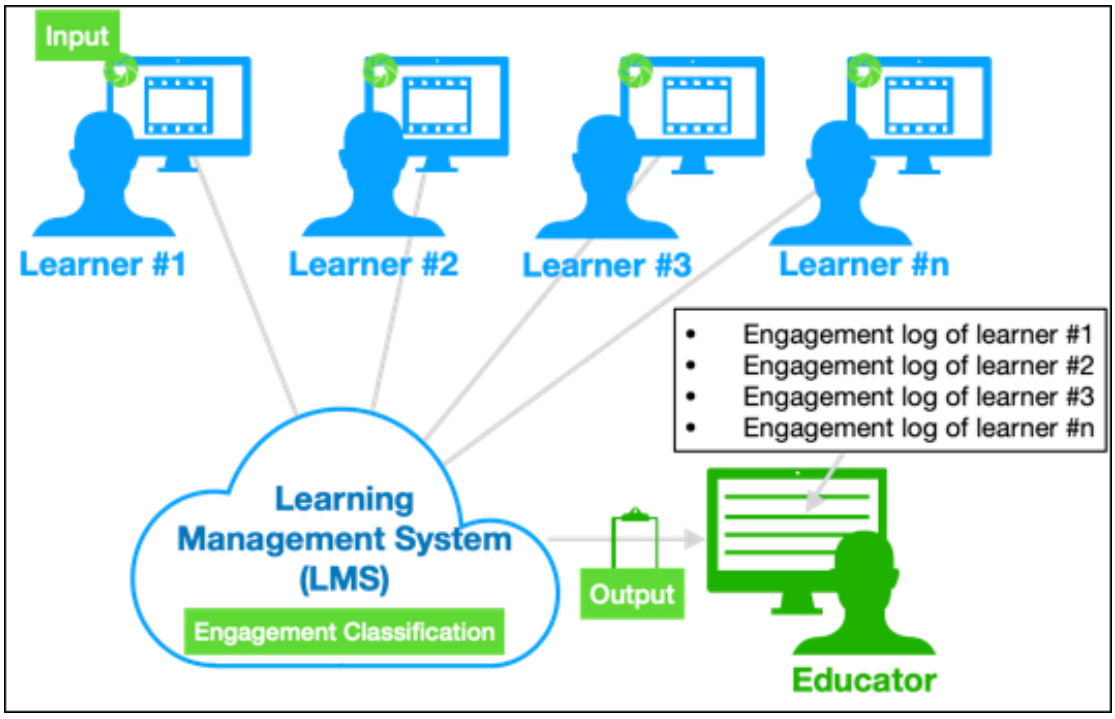
this work, we are using a convolutional neural network (CNN) to classify the real-time image into very engaged, normally engaged, or not engaged class.

To train the model, we use the DAiSEE dataset with the feature extraction, in the same way, to extract the learners' face features while joining online learning. We use CNN because it is relatively simple and one of the deep learning methods broadly used in literature (Gudi et al., 2015; Li & Deng, 2020; Murshed et al., 2019; Nezami et al., 2017). Furthermore, we believe that simplicity and cost efficiency are the keys to a reliable implementation of engagement estimation in the actual online learning process.

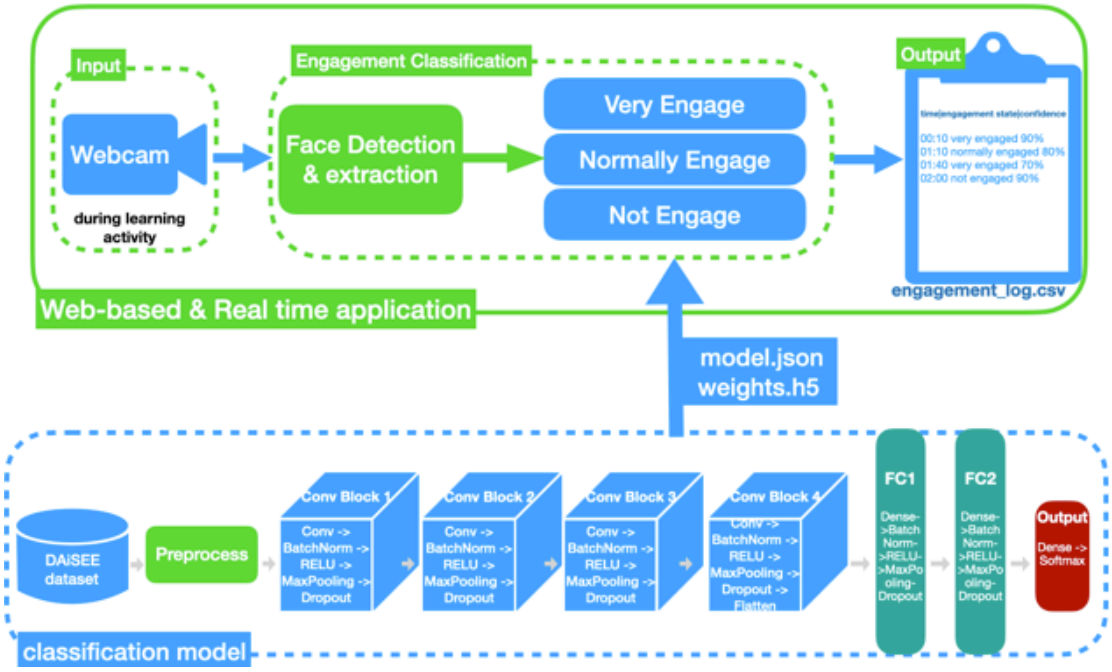
3. Real-time Engagement Estimation for Online Learning Process

In this section, we propose the framework of automatic real-time engagement assessment in online learning. As shown in Figure 1, the term automatic is not only automatic in the annotation or engagement classification. Instead, it includes the entire process from when the learner joins online learning through a learning management system (LMS), where the engagement estimation tool is installed, so that the educator receives an engagement log file.

As shown in Figure 1(b), in the output part, the engagement log file contains the information of the learner's engagement state with respect to the time it records the state and the average engagement state of the learner when the learner sign-out from the LMS or the course content page.



(a)



(b)

Figure 1: (a) The Proposed Framework of engagement assessment system where the classification system generically depicted in (b).

3.1. Pre-process

The term pre-process in this work refers to the processing of the input video to be fed as an input for the classification model both. For fully automatic engagement estimation, the pre-process is not only required in building the classification model, where the input is a set of references with engagement state label, but also when the system is running, where the input is the real-time video stream of a learner joining online learning and need to be classified its engagement state. The pre-processing when the system is online needs to be done in the same way as the pre-process for training the classification model so that the input images to be predicted are in the same distribution as the input for training the model.

In this work, the pre-processing comprises Viola-Jones (V&J) face detector (Paul Viola & Jones, 2004), where rectangle features are used to detect the presence of that feature in the given face images. Figure 2. shows three types of rectangle features used in V&J face detection, i.e., *two-rectangle feature, three-rectangle feature,* and *four-rectangle feature.* The sum of pixels under the white rectangle is subtracted from the sum of pixels under the black rectangle, resulting in a single value in each feature.

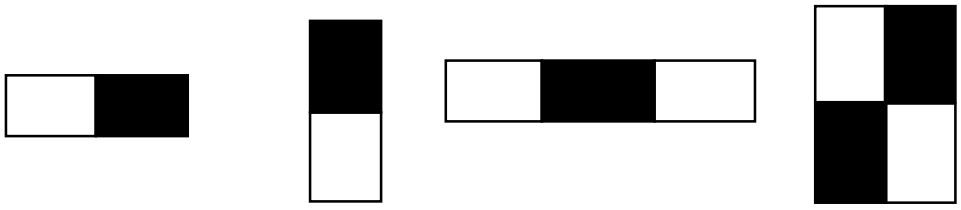


Figure 2: Rectangle features used in V&J face detection

The rectangle features are computed rapidly using integral images to be processed in real-time (P. Viola & Jones, 2001; Paul Viola & Jones, 2004). Given the base window

is 24x24, the dimensionality of the set of rectangle features is quite large, e.g., 160,000+ features. Therefore, Adaboost is used for dimensionality reduction (from 160,000+ features to 6,000 features) and to find the single rectangular feature and threshold that best separates the positive (faces) and negative (non-faces) images. Then, by using cascade classifier, all the features are grouped into several stages where each stage has a certain number of features to form complete face images while discarding the negative images. The face images are then represented in a rectangular region of interest (RoI) to be then fed to the Neural Network for training.

3.2. Classification Model

The classification model in this work employs a convolutional neural network (CNN) for engagement classification using the image features obtained from V&J face detection. We use the typical CNN architecture which contains an *input layer, multiple hidden layers,* and *an output layer*. The hidden layers combine convolutional layers, activation layers, pooling layers, normalization layers, and fully connected layers that we classified into convolution blocks and fully connected block as depicted in Figure 1(b).

3.3. Dataset

To build the classification model, we used a dataset for affective states in e-environments (DAiSEE (Gupta et al., 2016)) for training. DAiSEE is "in the wild" dataset, which captured students' faces watching videos in unconstraint environment, such as dorm rooms, laboratories, library, etc., and in three different illumination settings, i.e., light, dark and neutral. Figure 3 shows the structure of DAiSEE. There are 112 participants, where each participant was recorded in approximately 13 to 20 minutes. Each video was then split into several 10 seconds snippet videos so that there are 9068 videos in total, and 8925 of them were labelled. Originally, the dataset is labelled into four different affective states (i.e., boredom, engagement, confusion, frustration) with levels ranged between 0 to 3 for each state. We focus on the engagement label in this work, and modify it into three engagement classes, namely, *very engaged*, *normally engaged*, and *not engaged*, for the engagement level 3, 2, and less than 2, respectively. Figure 4 shows the sample of the extracted images after pre-processing to be fed into the neural network. In the DAiSEE dataset, the data have been split into training, validation, and test folders, where after the pre-processing, we got the number of face images as shown in Figure 5.

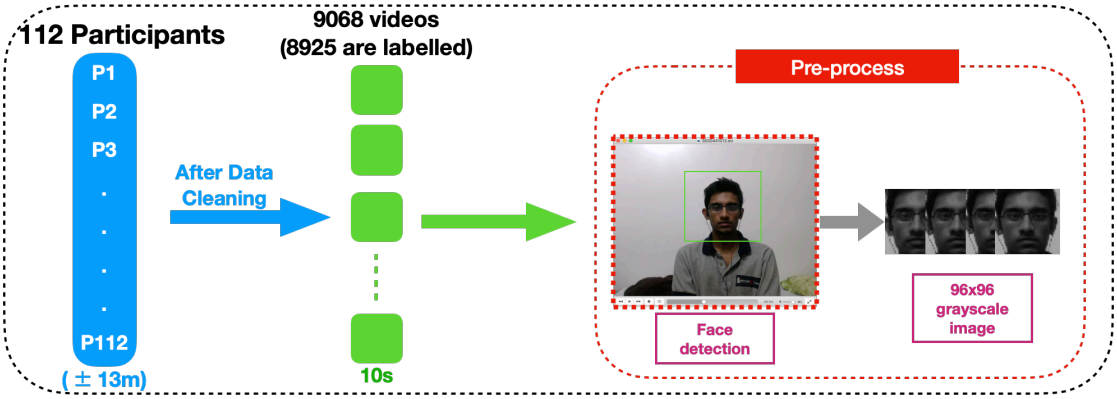


Figure 3: The structure of DAiSEE dataset and the pre-process

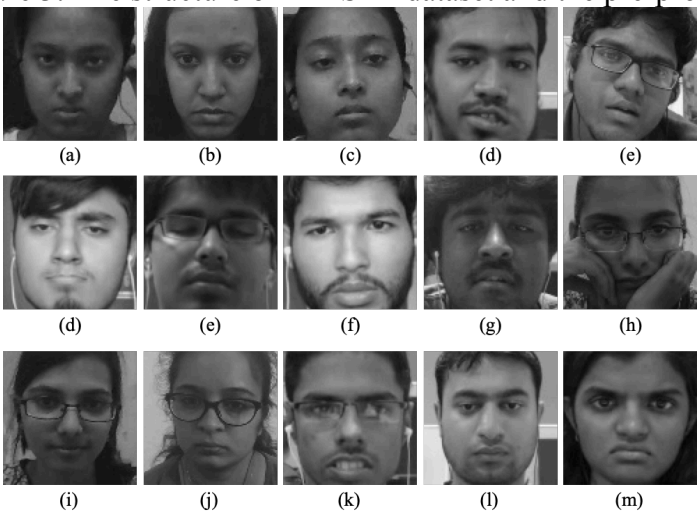


Figure 4: Samples of extracted images from DAiSEE dataset. (a)-(e), (d)-(h), and (i)-(m) are images with labelled as *very-engaged*, *not-engaged* and *normal-engaged*, respectively.

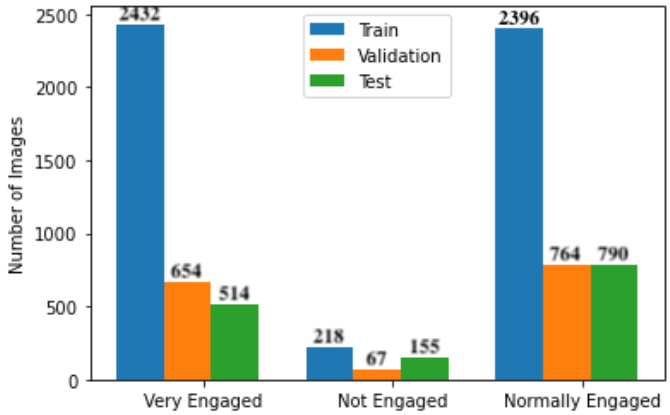


Figure 5: Number of images per class from DAiSEE dataset

3.4. Experiment Result

As shown in Figure 1(b), to build an engagement estimation tool prototype, we experimented 2432 face images for training and 654 face images for the validation test and then exported the model and the weights into a JSON and H5 files, respectively. We set the number of convolution and filter layers in the convolutional blocks as the

primal hyper-parameters, i.e., 64 (3,3), 128 (5,5), 512 (3,3) 512 (3,3) for convolutional blocks 1,2,3, and 4, respectively. For fully connected blocks and softmax layers, we use Dense layer 256,512, and 3. Other hyper-parameters we also set are Max Pooling (2,2), dropout (0.25) and rectified linear unit (RELU) activation in all convolutional blocks, while for optimization we used Adam optimizer with learning rate 0.0005 and L2 regularization 0.0001.

From the network and hyper-parameters set above, we got the training accuracy is 71% and the validation accuracy is 62%. To build a web-based application with the classifier model we have obtained, we used the Flask app from python, and the screenshot of the running application is shown in Figure 6.

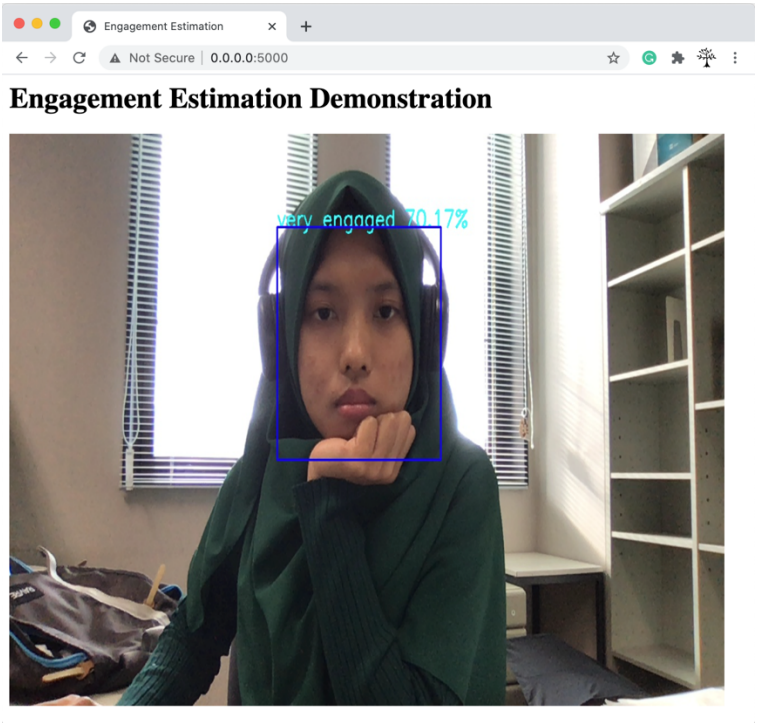


Figure 6: Screenshot of the running engagement estimation tool

4. Discussion and Conclusion

In this section, we conclude this paper with a brief discussion of our main contribution based on the description in the previous sections and consider the limitation future work.

4.1. Contribution and Findings

The main goal is to introduce the automatic engagement assessment of learners in online learning, where the term of automatic not only regards the classification method but also includes the real-time process when the learner is conducting the online learning. Therefore, we proposed the framework in Figure 1 to give an image for implementing real-time engagement assessment in an actual online learning scenario. Figure 1(a) helps to easily see the workflow where the engagement estimation tool is implemented and how it works during online learning. While from the Figure 1(b), we can see the pre-process is needed to build the classification model from the dataset and to estimate learners' engagement from the streaming video. Therefore, both pre-

processes should be done in the same way so that resulting in the input for the engagement classification is in the same distribution as the input for building the classification model. This finding motivated us in this work to extract the grayscale image and treated it as the feature to be classified due to its simplicity. The implementation of the framework in Figure 1(a) is the engagement estimation tool prototype as a web-based application, as shown in Figure 6.

4.2. Limitations and Future Work

In developing the prototype of engagement estimation tool prototype, we found that dataset preparation to the build the classification model is the most challenging issue. In this work, we use the DAiSEE dataset because it includes an engagement label and has been used for engagement estimation research in some literatures (Dewan et al., 2018; Kaur et al., 2019). However, we found that there is a significant difference in the number of images between the classes. As shown in Figure 5, the number of images in a *very engaged* class is much larger than other in classes, especially *not engaged* class. Furthermore, as shown in Figure 4, it is difficult to distinguish between the images with different class labels. Additionally, since there are three different illumination settings in the data, there is a possibility that the extracted features we obtained are not in the same distribution. Therefore, we expected these to cause the data variance and result the overfitting in prediction even though we have applied regularization and dropout methods during the training.

For future work, to the more in-depth analysis of the dataset, it considers its annotation method and data distribution. Furthermore, intensity normalization can be considered in feature extraction to solve the illumination problem. In addition, trying out other engagement datasets such as EmotiW2018 (Dhall et al., 2018; Niu et al., 2018) is another possibility.

Another limitation of this work is associated with the neural network we used for engagement estimation, where the result far from perfect. We acknowledge this limitation because using a typical CNN model that works with minimizing a loss function, which is computationally feasible but represents inaccurate prediction (Murshed et al., 2019). Some other features such as head pose, eye gaze, and distance between the monitor and the face can be further considered for input features for better accuracy.

4.3. Concluding Remarks

It is our hope that the engagement state can be included in student assessment in online learning, where the engagement can be fully automatically estimated. The fully automatic estimation is expected to lead to more effective learning and teaching, especially in an online learning environment. To that end, we presented the framework of how to build an online learning scenario with the in-built engagement estimation tool, wherein future improvement on the dataset training and pre-process, both for building classification model and when the system is online running, might increase the accuracy and overcome the overfitting.

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Contact email: sn-karimah, hasegawa@jaist.ac.jp

Self-Regulated Learning Recognition and Improvement Framework

Minh-Tuan Tran, Japan Advanced Institute of Science and Technology, Japan
Shinobu Hasegawa, Japan Advanced Institute of Science and Technology, Japan

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Abstract
Self-regulated learning (SRL) is a learning approach whereby learners actively set learning goals, then monitor, control their learning progress, and finally reflect on their learning performance. In the last four decades, SRL has drawn attention from researchers, schools, and universities that aim to equip their learners with self-study ability. With the development of distance learning and e-learning technologies, SRL has become a crucial ability for learners. Profoundly, in the last several months, the strike of COVID-19 has isolated students, teachers and dramatically challenged the current learning and teaching approaches; COVID-19 seems to force learners to self-regulate their own study without options. Understanding SRL maturity is necessary for the educational growth and knowledge fulfillment of individuals. Although there have been increasing studies and models about how SRL works and is measured, it still remains a challenge for research on the principles on which SRL exists and operates and the foundation for SRL intervention for improvement. Aiming for these principles, we propose the SRL Recognition and Improvement Framework, which is constructed on the foundation of metacognition and cognition, the philosophical habit of the mind, and existing SRL models and measurement methods, to support the process of recognizing one's SRL maturity level and improving SRL ability. Based on the solid principles, the framework will provide a reference point to assess the validation of SRL models and to design procedures, methods, exercises for supporting individuals to evaluate their SRL ability and improve it.

Keywords: Self-Regulated Learning, SRL, SRL Ability, SRL Maturity, SRL Recognition, SRL Character, SRL Habit, SRL Improvement, Self-Regulation, Framework, Cognition, Metacognition, Mind

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Introduction

Consciously or not, we all want further education. Almost all of us desire broad and deep knowledge and have a passion for life-long learning. In the internet era, we can bypass space and time constraints to approach high-quality educational programs. Thus, we can choose to learn the subjects in which we are interested. However, it poses another great challenge. Since we learn in our own paths, we might neither always have instructors nor direct guidance; thus, we must know how to learn effectively. In other words, we need to become self-regulated learners. Profoundly, in the last several months, the strike of COVID-19 has isolated us – students as well as teachers - and dramatically challenged the current learning and teaching approaches; COVID- 19 seems to force us to self-regulate our learning without options.

With the above background that introduces us to self-regulated learning, let us start the path of SRL recognition and improvement framework development with the question: What is it mean that we self-regulate our learning?

Self-regulated learning (SRL) is a crucial way of leading oneself in education. SRL is not a new thesis. It originated from ancient times, is known as the human's ability of self-consciousness (Smith, 2020), and has continuously grown in research over the last four decades. Professor Barry Zimmerman, the leading figure in Self-regulated learning, defines that *"Self-regulated learning involves metacognitive, motivational, and behavioral processes that are personally initiated to acquire knowledge and skill, such as goal setting, planning, learning strategies, self-reinforcement, self-recording, and self-instruction"* (Barry J Zimmerman, 2015, p. 541).

Boekaerts, also a profound contributor in SRL research, expresses that the ability to control and direct one's learning is the most noticeable characteristic of a self-regulated learner (Boekaerts & Cascallar, 2006). In other words, SRL is a learning approach whereby learners actively set learning goals, then monitor, control their learning progress, and finally reflect on their learning performance.

SRL research has gained breakthrough discoveries of models, methods for measuring and improving SRL ability (Panadero, 2017; Panadero et al., 2016). However, different researches investigate SRL from only a single insufficient perspective, such as social-cognitive, psychological, or metacognitive viewpoints. Hence, there is confusion about applying these models and gaining benefits from them in practice. To argue and develop reliably universal SRL related strategies and models, we must build the SRL related strategies and models on a sound foundation and principles. For that reason, this research introduces an SRL framework based on which ones' SRL maturity levels can be adequately measured, and then ones receive appropriate exercises, advice, and supports to improve their SRL ability.

Research Objectives

We specify this research into three research questions:
RQ1: What factors construct SRL ability?
RQ2: What are the measurement units of these SRL factors?

These questions articulate the essence of SRL. The factors are principles that cause SRL to come into existence and grow in maturity. The factors will be the SRL framework's building blocks from which SRL recognition and improvement activities are developed.

RQ3: What intrinsically and extrinsically motivate individuals to self-regulate their learning?

This question shows the motivations that start from individuals themselves and that trigger from the outside world, promoting them to self-regulate their learning. Answers to this question provide an essential source of SRL improvement methods.

In the next section, this paper will review the current SRL models for their outstanding contributions and the missing pieces, which encourage introducing the SRL recognition and improvement framework. The process of developing the framework is then illustrated in detail. The authors will conclude with the benefits and potential application of the proposed framework.

Literature review

The outstanding achievements of research on SRL are the SRL models, each of which describes the operation of SRL at individuals from a specific viewpoint. Panadero (2017) described, analyzed, and compared several popular SRL models to the extent of their underlying theories, processes, and empirical evidence about the application and associated measuring tools. We would like to journey through six outstanding SRL models to analyze the viewpoints from which the models are constructed.

Winne's model of SRL

Professor Phillip H. Winne's research on SRL provides a view of SRL from a metacognitive perspective, which is demonstrated in his following model (see **Figure 1**). Winne and Hadwin's model (1996) emphasizes the role of metacognition in the self-regulation of cognitive tactics and strategies. This model demonstrates a 2-phase SRL process to accomplish a learning task. The first phase is planning, and the second phase is executing the plan, monitoring the progress, and making the adaptation. Though sharing the same SRL patterns, individual learners' SRL ability differs in 5 points; they are *(i)* domain knowledge that the individual has accumulated from his or her educational background and history, *(ii)* knowledge of tactics and strategies, which is a reservoir of learning methods and techniques, *(iii)* performance of tactics and strategies which are the proficiency of applying learning techniques, *(iv)* regulation of tactics and strategies that monitor how well ones learn and make appropriate adaptations, and *(v)* global dispositions which are pathways to learn.

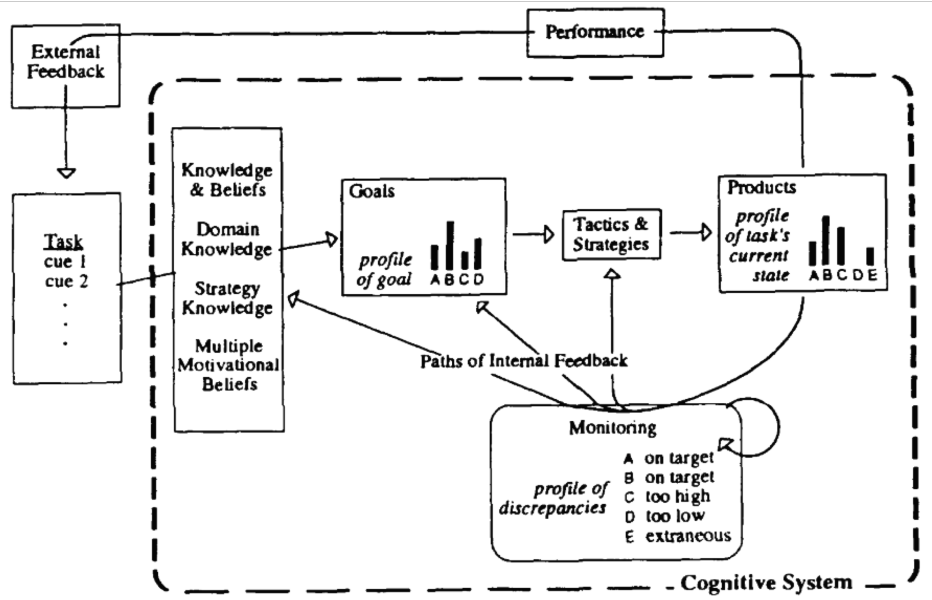

Figure 1. Winne's model of SRL (Winne, 1996)

Boekaerts's dual processing model and six-component model

Professor Boekaerts' research on SRL can be dated back to the 1980s. Her research mainly investigates the role of goals and self-esteem in SRL (Boekaerts & Niemivirta, 2000). Boekaerts introduces 2 SRL models, the six-component model of SRL and the dual processing model.

In the Boekaerts' dual processing model (see **Figure 2**), the SRL pattern is determined by a learner's selection of goals; and there are two main pathways of goals: the growth of knowledge and skills and the well-being self-esteem. Depending on the level between those pathways, learners will gather, align resources, and self-regulate their learning to balance learning performance and self-esteem (Boekaerts & Cascallar, 2006).

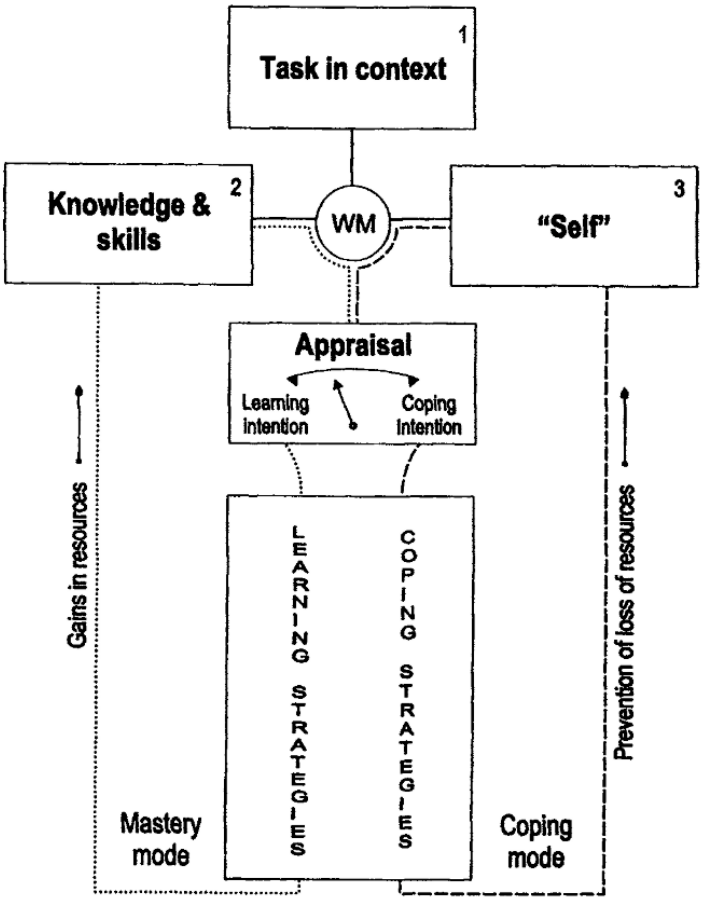

Figure 2. Boekaerts' Dual Processing Model (Boekaerts & Niemivirta, 2000)

Boekaerts' six-component model of SRL (see **Figure 3**) views SRL as the interoperation of cognition and motivation throughout the aspects of goal setting, strategy use, domain knowledge (Boekaerts, 1996). In this model, cognition and motivation function simultaneously when self-regulated learners set goals, prepare cognitive and motivational strategies, and recall prior related knowledge to learn new knowledge, which is domain-specific, effectively.

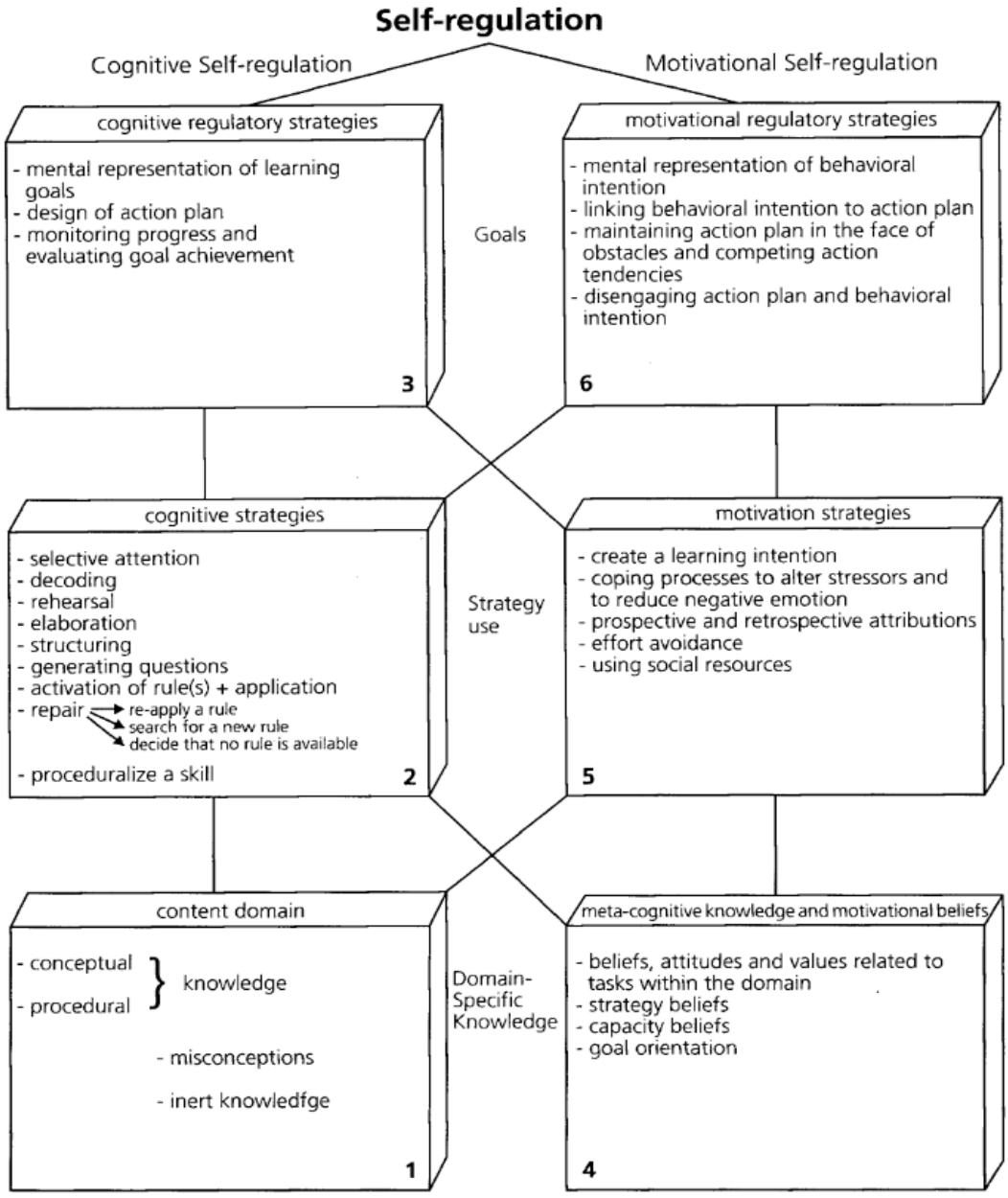

Figure 3. Boekaerts' six-component model of SRL

Pintrich's Framework of Phases and Areas for SRL

Pintrich's crucial contribution to SRL research is that he points out the common attributes shared by all existing SRL models, which are the following:

Self-regulated learners are active in terms of setting learning goals, reviewing prior knowledge, preparing cognitive strategies and learning environment for their learning process,

Self-regulated learners have the potential to monitor, control, and regulate internal and external factors of the learning process,

All SRL models have criteria against which self-regulated learners reflect their progress in order to adjust their learning progress,

Self-regulatory activities are the means that self-regulated learners apply to reach their learning goals (Pintrich, 2000).

Pintrich illustrates these common attributes in his SRL framework (see **Figure 4**), called the framework of Phases and Areas of SRL (Pintrich, 2000). The framework comprises four phases of SRL, which are forethought planning and activation, monitoring, control, reaction and reflection, and regulation activities on each phase in the areas of learners' cognition, motivation, behavior, and context. Running throughout the framework and joining self-regulatory activities are learning goals and motivations (Pintrich, 2000), the two key factors that Pintrich pays special attention to in his explanation of the framework.

	Areas for regulation			
Phases	Cognition	Motivation/affect	Behavior	Context
1. Forethought, planning, and activation	Target goal setting	Goal orientation adoption	[Time and effort planning]	[Perceptions of task]
	Prior content knowledge activation	Efficacy judgments	[Planning for self-observations of behavior]	[Perceptions of context]
	Metacognitive knowledge activation	Ease of learning judgements (EOLs); perceptions of task difficulty		
		Task value activation		
		Interest activation		
2. Monitoring	Metacognitive awareness and monitoring of cognition (FOKs, JOLs)	Awareness and monitoring of motivation and affect	Awareness and monitoring of effort, time use, need for help	Monitoring changing task and context conditions
			Self-observation of behavior	
3. Control	Selection and adaptation of cognitive strategies for learning, thinking	Selection and adaptation of strategies for managing motivation and affect	Increase/decrease effort	Change or renegotiate task
			Persist, give up	Change or leave context
			Help-seeking behavior	
4. Reaction and reflection	Cognitive judgments	Affective reactions	Choice behavior	Evaluation of task
	Attributions	Attributions		Evaluation of context

Figure 4. Pintrich's Framework of Phases and Areas for Self-Regulated Learning (Pintrich, 2000)

Zimmerman's cyclical phase model

Professor Zimmerman is one of the pioneer SRL researchers and mainly bases his SRL models on professor Albert Bandura's well-known socio-cognitive theory (Bandura, 1989).

Viewing self-regulation as a result of the intertwine among an individual's consciousness, behaviors, and the environment where he or she is working on a particular task, The cyclical phase model emphasizes the process aspect of SRL. It illustrates the paths of interaction between learners, learning tasks, and the learning environment in a specific context defined by learning contents and environment settings.

Among Zimmerman's SRL models, the most popular is Zimmerman's cyclical phase model. The model demonstrates that individuals self-regulate their learning via a 3-stage process (Barry J. Zimmerman, 2000) **(**see **Figure 5)**. The process starts with the

forethought phase, in which learners begin their learning journey by analyzing learning tasks, setting learning goals, planning cognitive strategies, and motivating themselves into learning. Then, the learners proceed to the performance phase, where they put their learning plan into action with conscious self-control over how they learn and a self-observation over how well they have been learning. Finally, the learners wrap up their learning with the self-reflection phase in which they judge the learning journey by comparing the learning performance against the goals set in the first phase, analyzing factors that contribute to learning achievements, and in which they seek adjustments and alternative approaches to help them learn more effectively and productively.

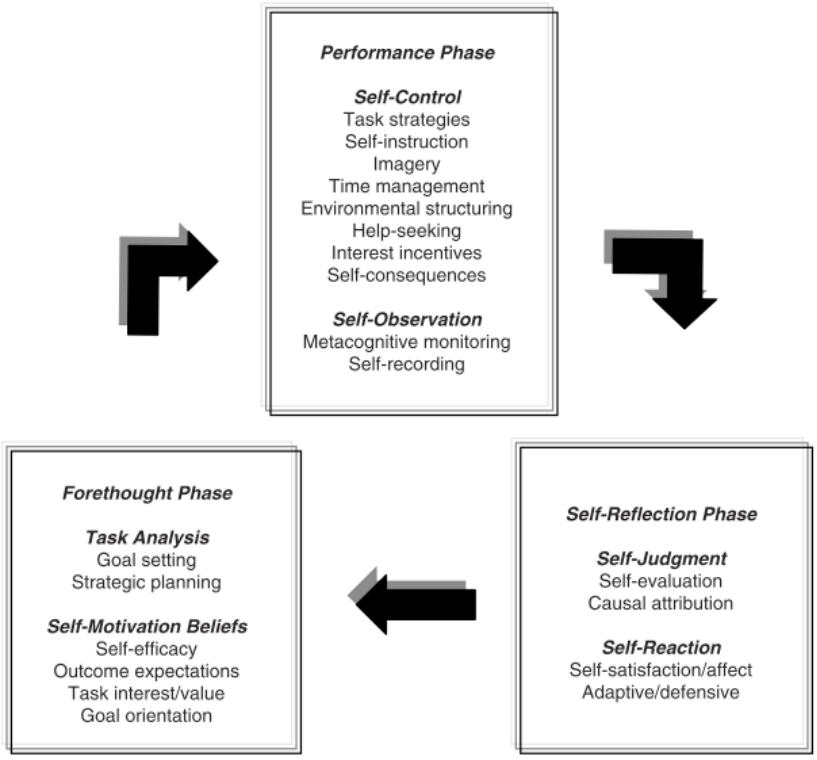

Figure 5. Zimmerman's cyclical phase model (B.J. Zimmerman & Moylan, 2009)

Efklides's Metacognitive and Affective model of SRL

One of the latest SRL models is the Metacognitive and Affective model SRL (MASRL) of professor Efklides (see **Figure 6**), which illustrates the intervention of metacognition, motivation, and affect into the SRL process when an individual learns specific tasks.

Efklides (2011) demonstrates that an individual's SRL manifests at two levels; one is the Person level, which is a general SRL level or about SRL characteristics of an individual revealing regardless of learning contents or context, and the other is Task x Person level, which is about the ability the individual to apply specific SRL behaviors within a particular learning task. When individuals, following the MASRL model, are engaged in a learning task, their Person level sets learning goals and establishes top-down self-regulation based on their metacognitive knowledge, metacognitive experiences, and metacognitive skills (written as MK, ME, MS in **Figure 6**). Those metacognitive strategies have been accumulated and built up into

the learners' SRL traits. In the Task x Person level, their cognitive strategies are regulated in a bottom-up self-regulation manner to meet the task requirements and reorganize the Person level.

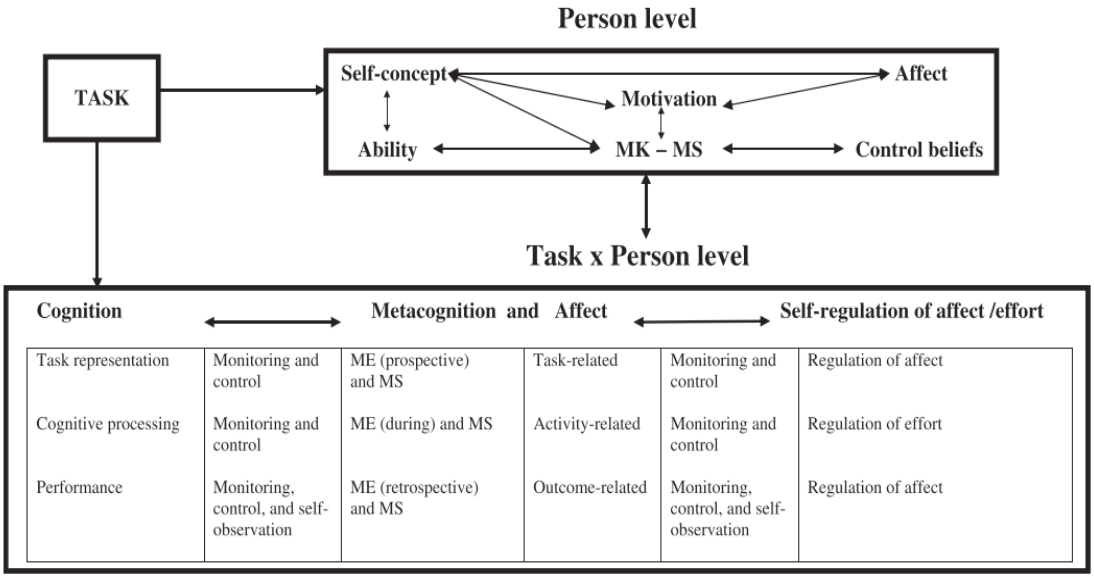

Figure 6. Metacognitive and Affective model of SRL (Efklides, 2011)

From the models mentioned earlier, each of them presses SRL on specific angles from process orientation to components orientation, from metacognition to motivation. They demonstrate how individual learners self-regulate their learning but have yet fundamentally explained why such an SRL process can lead to learning efficiency. Furthermore, starting from a specific perspective, the models might not provide a comprehensive ground on which SRL ability is evaluated.

The development of SRL Recognition and Improvement Framework

Principle of the mind

To be generic, reliable, and time-withstanding, the SRL framework must be laid on principles of the mind. The mind has two faculties (see **Figure 7**): the intellect, whose functionality is to understand knowledge, and the will, whose functionality is to drive the intellect and to choose to achieve knowledge (McInerny & O'Callaghan, 2018). The intellect operates as we cognize the world and its knowledge via what we usually call cognition. The activities that signify the operation of the intellect are analyzing, judging, abstracting certain target knowledge. Specific behaviors of the intellect can be recognized via Bloom's taxonomies (Krathwohl, 2002). The will operates as we are aware of our learning process.

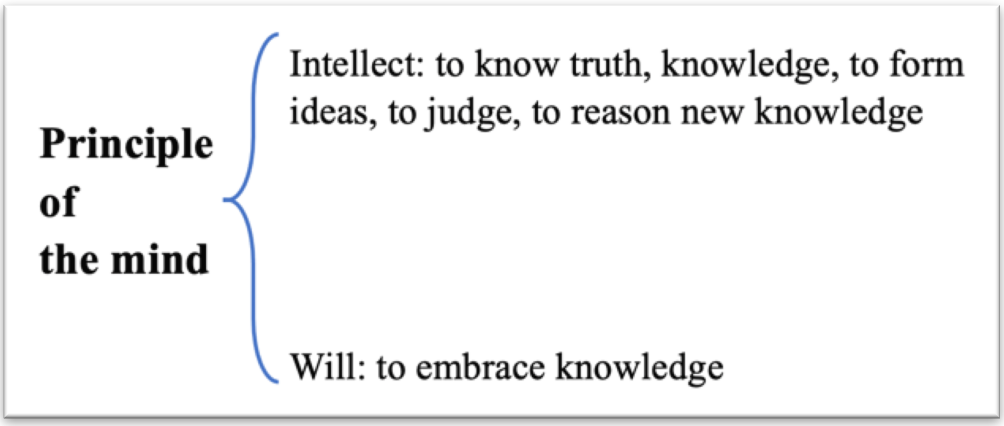

Figure 7. Two faculties of the mind

This statement gets clear when we compare the unconscious way a child learns with the conscious way a graduate learns. In either case, both absorb knowledge; however, a child does not recognize his or her in-progress growth of knowledge while an adult does recognize it. A sign for the recognition of the learning process is that adults doubt, reason over the new knowledge, and adjust their learning approach while children tend to assent new knowledge and follow instructions. To obtain intricate knowledge, one needs to be aware of his or her learning process in order to control their cognitive activities. In order words, the stronger one is aware of his or her will and uses it, the more fulfillment one has towards knowledge. The will manifests itself via metacognition.

The philosophical habit of the mind

Whether we have noticed, our mind has a habit of desiring to know. The more we know the world, the more we realize that the extension of knowledge is beyond our current understanding, and the more we desire to know. This routine is, as Saint John Henry Neuman (John Henry Newman, 1852, as cited in Tillman, 1990) puts it, the philosophical habit of the mind (see **Figure 8**). Thanks to this habit, we know more about the world, assimilate knowledge, and apply it for evaluation, creation of a variety of fields of science, art, literature, and so forth. The philosophical habit of the mind manifests in our learning process, and most clearly, when we are the regulator of our own learning process, which is self-regulated learning.

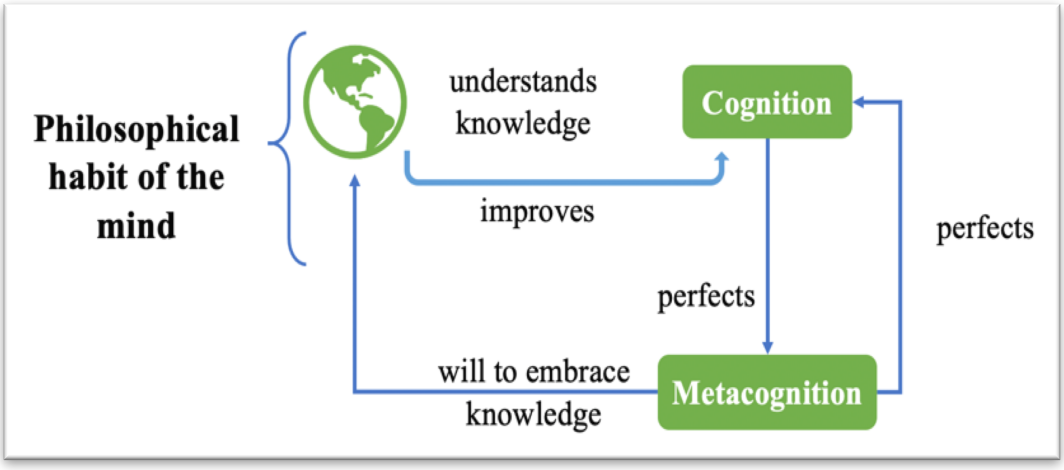

Figure 8. The philosophical habit of the mind

SRL is a conscious learning approach by which one plan, manage, and reflect on their learning process. Looking at its characteristics, we can see that SRL operates on the inter-operation of cognition and metacognition, which follows the principles of the mind.

Causes of SRL

SRL is a learning pattern that operates on the principles of the mind. Why does it exist? Everything must have reasons for its existence; otherwise, it has no use, cannot be recognized or improved. How can we recognize and evaluate our SRL? What causes SRL into existence? It is recognized based on two types of causes (see **Figure 9**): intrinsic causes, which construct the essence of SRL, and extrinsic causes, which explain the sources of SRL and the end goals where SRL leads us (Shields, 2020). The intrinsic causes contain the formal cause that defines SRL structure and the material cause that personalizes the individual's SRL quality. The extrinsic causes comprise the efficient cause that explains where SRL comes from and the final cause that shows how SRL grows to its end goal.

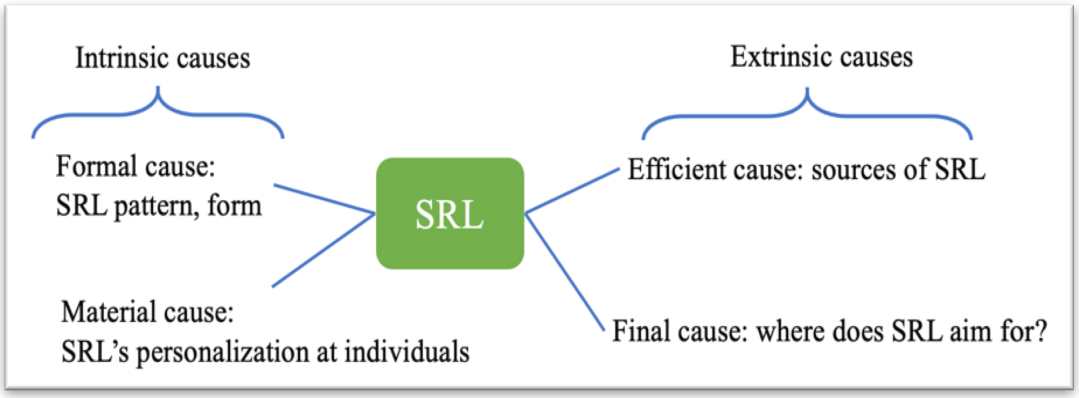

Figure 9. Four causes of SRL

When one determines and realizes these four causes of SRL, one knows how to improve SRL ability and fully benefits SRL.

Principles of SRL

Starting from 2 faculties of the mind, their inter-operation, which molds into SRL learning pattern, we can form the principles of SRL (see **Figure 10**). As stated in a sentence, SRL is grounded in the operation of the mind, grows with the development of the mind, has a nature designed to reach the goal of understanding, and personalizes to each learner.

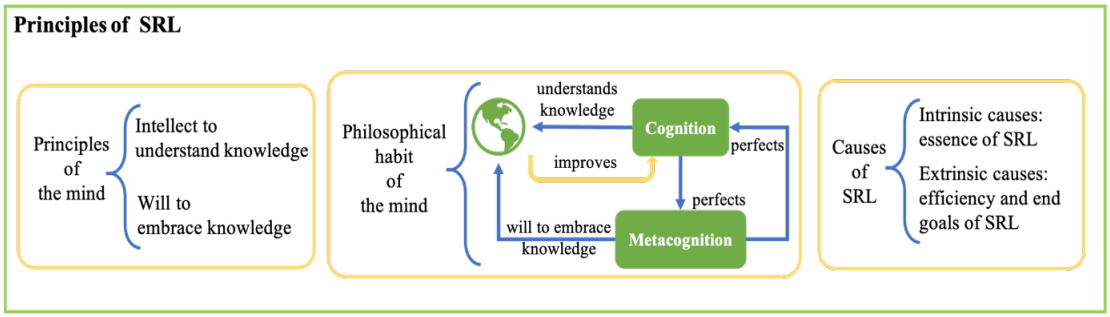

Figure 10. Principles of SRL

SRL Recognition and Improvement Process

Over the last two decades, there has been a wide range of research on SRL measurement and intervention for improving SRL. There are two SRL measurement approaches: SRL trait and SRL context-based skills. SRL trait describes the SRL character of a learner in general. SRL context-based skills illustrate a learner's ability to apply specific SRL skills in particular learning tasks.

SRL has been measured traditionally by data from self-reports, interviews, and questionnaires, which are usually known as the offline form of measure, and in recent years by data from learning behavior observation, which is known as the online form of measure. S. F. E. Rovers et al., in their review of SRL measurement methods, show that the offline form tends to give insight into learner's overall level of SRL while the online form evaluates specific SRL strategies (Rovers et al., 2019). These two forms of SRL measure, though often analyzed separately, are related to each other. The offline form describes a learner's SRL character, while the online form illustrates the learner's ability to apply specific SRL skills in particular learning tasks. In order that the SRL measurement provides accurate and meaningful data for SRL intervention and improvement purpose, there is a need for a firm theoretical model, grounding, or framework of SRL strategies so that the nature of SRL can be understood at the principle level and the SRL intervention can be offered to learners to support them from that fundamental basis (Araka et al., 2020; Rovers et al., 2019).

Interventing learners' learning process to improve their SRL ability is the purpose of all the SRL measurement activities. SRL intervention has been conducted via two approaches, one is that teachers help learners with specific learning tasks, and the other is that teachers provide learners with metacognitive feedback and the learners then reflect and make adaptation to their learning process (Araka et al., 2020). In the former, the assistance the learners receive is personal and related to concrete learning tasks. In the latter, the assistance is a kind of reminders and tips about learning methods. Relating to the SRL measurement approaches mentioned in the previous section, the former intervention is performed after the data collected from the online

form of intervention while the latter intervention uses the data from the offline form of intervention. The former approach is usually applied in traditional school settings. In e-learning environments, the latter approach is provided with the support of educational data mining and learning analytics tools (Araka et al., 2020).

One's SRL ability is recognized by one's SRL character, which comprises one's SRL characteristics and habits of regulating his or her learning. Derived from the principles of SRL, the SRL character is fivefold: *(i)* ***wisdom,*** which is the ability to see the start and the end, *(ii)* ***knowledge,*** which is the ability to use prerequisite knowledge to acquire new knowledge, *(iii)* ***understanding*** which is the ability to apply cognitive strategies, *(iv)* ***counsel*** which is the ability to seek helps and reflect, and *(v)* ***fortitude***, which is the ability to persevere during hard times. The more consistency the SRL character demonstrates, the more maturity the SRL ability is. The development of SRL character is constructed via SRL habits, which are the habits of applying cognitive and metacognitive strategies, tactics, and skills to the learning process. For that reason, the improvement of the SRL ability begins with habituating learning strategies, both cognitively and metacognitively (see **Figure 11**).

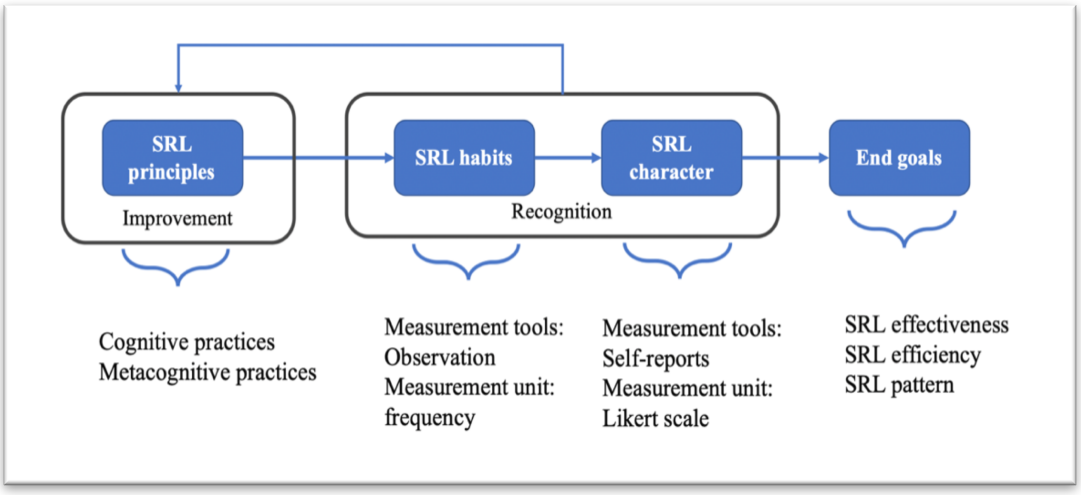

Figure 11. SRL Recognition and Improvement Process

Conclusions: the SRL Recognition and Improvement Framework

To establish a stable foundation for the SRL framework, we have traced the existence of SRL from the basic principle of the mind and its operation. We then have walked through reasons for the existence and development of SRL. And we have demonstrated the process by which an individual's SRL can be qualitatively and quantitively recognized and improved. Setting the SRL recognition and improvement process on the principles of SRL, we introduce the SRL Recognition and Improvement Framework (abbreviated as SRL framework), as shown in **Figure 12**.

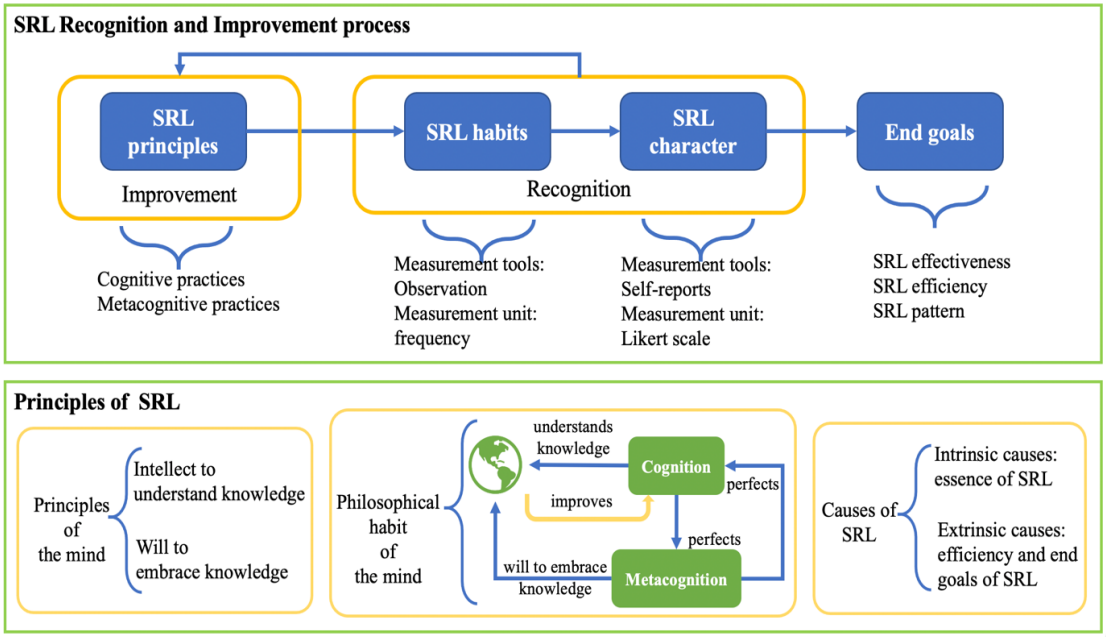

Figure 12. SRL Recognition and Improvement Framework

Let us return to the research questions. The SRL framework provides the following answers.

RQ1: What factors construct SRL ability?

SRL is an entity that actually exists and operates on the basic functionalities of the mind; therefore, its ability can be explained by specifying the causes of SRL for each learner. In general, the factors constructing SRL ability are the source, form, the goal, and the pattern of SRL at each learner. Each learner has his or her educational background, learning experiences, personality and therefore has his or her path or source of SRL development. SRL operates to enable individuals to approach knowledge effectively and efficiently; hence, it possesses a form for achieving that aim. Since SRL does not end for itself but supports the learner to a goal in knowledge achievement, the goals to which SRL is directed also shape the SRL ability. Finally, individuals develop their cognitive and metacognitive strategies differently and shape their SRL habits and character in different paths; thus, the SRL pattern is then personalized to each individual. Thus, SRL converges in the form but varies according to individuals' background, learning goals, and cognitive and metacognitive habits.

RQ2: What are the measurement units of these SRL factors?

SRL ability reveals via a learner's SRL habits and character, which are currently evaluated by learning behavior observation and different types of self-reports. Frequency of behavior application should be as the measurement unit for learning behaviors, and for measuring the quality of self-reports, such measurement scales as Likert scale is reasonable.

RQ3: What intrinsically and extrinsically motivate individuals to self-regulate their learning?

Although motivation is one of SRL's critical components (Efklides, 2011), a learner may find it unintriguing or unnecessary to develop the SRL ability since the benefits that SRL delivers are vaguely visible. However, understanding SRL from the principles of the mind, a learner can be motivated to self-regulate his or her learning extrinsically by progress to knowledge and intrinsically by the perfection of the intellect and will, cognition and metacognition.

The purpose of this SRL framework, as we stated, is not to replace the existing SRL models, which play a crucial role in guiding and shaping SRL from an idea into concrete components and processes. This SRL framework provides a reference point to argue the appropriate scope where the SRL models can apply.

To demonstrate this purpose, let us briefly review the above SRL models from this SRL framework viewpoint. Reflecting on the principles of the mind, all SRL models above shows the interoperation of cognitive and metacognitive activities, though some SRL models pay more attention to metacognition or motivation while the others focus on cognition. Checked against causes of SRL, some SRL models illustrate the SRL form as processes, components; the other shows SRL elements to personalize SRL toward individual learners. All SRL models somehow describe the intrinsic causes of SRL, but they have not discussed extrinsic causes of SRL, which play a directive role for the SRL improvement approaches. Viewed from different perspectives and unified within this SRL framework viewpoint, applying these SRL models following a particular arrangement will help learners comprehend their SRL ability cognitively and metacognitively, and show them the quality of their SRL character and the frequency of their SRL habits.

In summary, throughout this paper, we have walked through several popular SRL models, journey the path of the mind, and ended with a framework based on simple but solid principles of the mind to illustrate the process to recognize and improve SRL ability. The SRL framework is beneficial for use as a reference point to assess the validation of SRL models and to design procedures, methods, exercises for supporting individuals to evaluate their SRL ability and improve it. Since this framework is developed via arguments, future work must involve applying the framework to design empirical SRL recognition and improvement tools, programs, and exercises. Such empirical evidence will demonstrate the validity of the framework.

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Contact email: tran.minh.tuan@jaist.ac.jp
hasegawa@jaist.ac.jp

Transforming International Pre-Service Teachers' Pedagogy with Technology in the Era of Multiliteracy

Huijing Wen, Moravian College, United States
Valerie Harlow Shinas, Lesley University, United States

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Abstract
Higher educational institutions in the US witnessed a growing number of international students on campus. This group of students brought with them diverse linguistic, cultural backgrounds that are distinct from the mainstream American teacher candidates. It is necessary, then, for faculty to create experiences for international teacher candidates that support the development of the knowledge and skills for their future roles. The case study examined how an international pre-service teacher from China enrolled in a graduate-level literacy and technology course that aimed to develop the pedagogical and technological knowledge, negotiated her cultural and professional identity in a Caucasian-dominated classroom through coursework and how she used innovative digital tools to support her future ESL students in language and literacy learning. The course artifacts of blog posts, digital storytelling product, unit plan, end-of-course reflections in addition to interview data were analyzed. Results showed that 1) the opportunities of exploring and using technological tools allowed international students' expression of their cultural and sociocultural perspective using culturally-specific images, sound, and language; 2) the course's scaffold and hands-on nature of project-based learning effectively supported international students to develop the knowledge and skills for their future roles by preparing them to create similar opportunities for their students.

Keywords: Case Study, International Student, Literacy Instruction, Teacher Education, Technology Integration

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Introduction

Today's teacher candidates have grown up fully immersed in digital technologies (Prensky, 2001). Born during the digital age, they are skilled users of handheld devices and Internet-connected computers, we might expect them to readily integrate digital tools into their instruction. However, teacher candidates have also grown up in a world of state-mandated, scripted curriculum and standardized assessments that deterred their teachers from integrating emerging technologies into their instruction (Hutchison & Reinking, 2011). Thus, we cannot assume that teacher candidates have the knowledge or the pedagogical skills needed to integrate technology into their instruction without explicit preparation that highlights its powerful potential for instruction. In other words, teacher education courses must prepare candidates to design literacy instruction for a digital world, especially in times of pandemic.

Higher educational institutions in the US witnessed a growing number of international students on campus during the past decades, posing challenges to the teacher education programs. This group of students brought with them diverse linguistic, cultural backgrounds that are distinct from the mainstream American teacher candidates. Inherently, it poses challenges to the teacher education programs in the US how to best prepare them to be day-1 ready classroom teachers. Their status as international students prevent them from engaging in field-based experiences. It is necessary, then, for faculty to create experiences for international teacher candidates that support the development of the knowledge and skills for their future roles.

This exploratory case study examined the effect of a graduate-level literacy and technology course in transforming the pedagogical thinking of a teacher candidate from China relative to integration of technology in literacy instruction. We were interested in understanding how the coursework helped her negotiate her cultural identity in an American teacher education program and how she used innovative digital tools to support her English as Second Language students in language and literacy learning. The following question guided this work: How did an international graduate student enrolled in a teacher education program in the United States define and express her understanding of 21st century literacy instruction?

Theoretical Framework

Multiple related perspectives combining technology and literacy informed this research: Situated Sociocultural Approach (Gee, 2010); Pedagogy of Multiliteracies (New London Group, 1996); TPACK (Mishra & Koehler, 2006); Planning Cycle (Colwell & Hutchison, 2014) all point toward the interactions between literacy and technology in and out of schools and they shape how we analyze our data.

The situated, sociocultural perspective allowed us to examine how this international students' cultural identity framed our participant's perspectives about teaching and learning. The *Pedagogy of Multiliteracies* (New London Group, 1996) was identified as an appropriate and useful lens. It describes the complex nature of teaching the multiple literacies students need to be fully literate in an interdisciplinary, multimodal, and digital world. It allowed us to examine the critical features of Tina's digital storytelling project, including how she expressed her cultural identity through intentional design that "transforms knowledge by producing new constructions and

representations of reality" (New London Group, 1996, p.76). This perspective allowed us to closely examine the ways Tina applied course content to her digital story (Cope & Kalantzis, 2016) as well as how modes were used to communicate a coherent, unified message (Jewitt, 2009).

This research is also framed by the *Technological Pedagogical and Content Knowledge* theoretical framework (TPACK; Mishra & Koehler, 2006; see Figure 1) and the *Technology Integration Planning Cycle for Literacy and Language Arts* (see Figure 2), an instructional planning framework developed by Hutchinson and Woodward (2014). These two frameworks provide theoretical and practical guidance for studying technology integration in the context of literacy education.

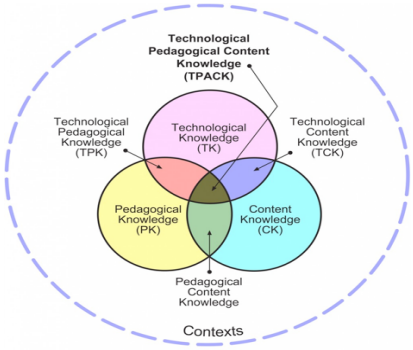

Figure 1: *TPACK Framework, http://tpack.org*

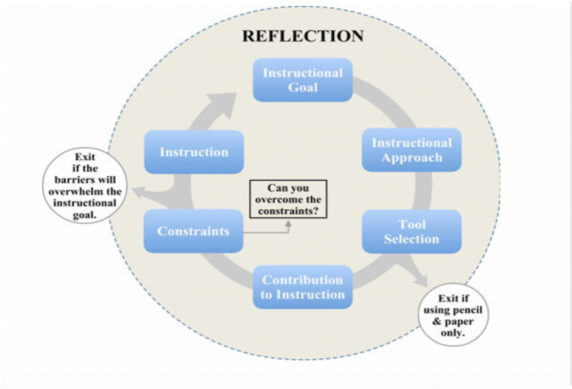

Figure 2: The Technology Integration Planning Cycle for Literacy and Language Arts

The TPACK framework, developed from Shulman's (1986) notion of Pedagogical Content Knowledge (PCK), describes three bodies of knowledge required for effective teaching: content knowledge (CK), pedagogy knowledge (PK), and technology knowledge (TK; Mishra &Koehler, 2006), and how these combine to create synthesized knowledge domains: technological content knowledge (TCK), pedagogical content knowledge (PCK), technological pedagogical knowledge (TPK), and TPACK. TPACK is a useful lens for examining the ways preservice teacher knowledge developed through participation in a literacy and technology course. The TPACK-influenced *Technology Integration Planning Cycle* (Hutchinson & Woodward, 2014) describes the key elements in a teacher's decision-making process when designing literacy instruction with technology.

Literature Review

Teaching with technology "is complicated, multi-faceted, and a developmental process" (Foulger, Graziano, Schmidt-Crawford, & Slykhuis, 2017, p. 10), yet it offers numerous benefits to learners. Technology offers classroom teachers more opportunities to establish an active and constructive learning environment where students engage in inquiry, explore and construct ideas, and solve problems (Goss et., 2016). However, a persistent challenge for teacher education is preparing technologically skilled teachers who thoughtfully integrate digital tools within standards-based literacy instruction (Harris & Hofer, 2009; Hutchison and Woodward, 2014). The challenge lies in the complex nature of preparing preservice teachers to use technology in their classroom since it must address all the domains of effective teaching – pedagogical knowledge, content knowledge, and technology knowledge (Koehler & Mishra, 2005).

There are ways to address these challenges. Educational technology courses were shown to benefit teacher candidates by providing an overview of the use of technology in teaching and improving the foundation of technology skills (Kay, 2006). Lesson planning is one promising approach for the teacher education classroom (Koehler & Mishra, 2005; Lee & Lee, 2014).Specifically, preservice teachers benefit from many opportunities to apply coursework and to design instruction that integrates digital tools in meaningful ways (Hutchison & Colwell, 2016). Teacher candidates who have not yet obtained substantial teaching experience benefited from support and scaffolds throughout the lesson planning process (Harris & Hofer, 2009).

Although some research showed preservice teachers failed to integrate technology knowledge in classroom practices using these approaches, researchers suggested that it might be the result of teachers' limited design capacity (Polly, Mims, Shepherd, & Inan, 2010).

In addition, teacher education programs must consider their roles in shaping teachers' identities (Beauchamp & Thomas, 2009). Teacher identity is considered as both a result of influences on the teacher and a process of ongoing interaction within teacher development (Oslen, 2008). Identity is multi-dimensional in nature and can be represented in multiple ways. Teachers constantly construct their own ideas of 'how to be', 'how to act' and 'how to understand' their work and their place in society. Through the ongoing negotiation with the experience, it has a dynamic, shifting nature (Sachs, 2005). Wenger (1998) argued that by participating in a community of professionals, a teacher is subject to the influences of this community on identity development. Literature in teaching stresses such ways of conceiving and exploring aspects of identity as examining the role of teacher reflection, using narratives of teachers about themselves and their practice, as well as the discourses in which they engage (Connelly & Clandinin, 1999). Given that teacher identity is at the core of the teaching profession, it is of great necessity to tell the specific stories and consider the needs of transnational students, enrolled in education programs, through their narratives and reflections as ways to examine their growing understanding of their professional identities within changing contexts (Rose & Garner, 2010).

Method

This research used a case study design to examine one international teacher candidate's change of perceptions, skills and TPACK development in planning and implementing technology-integrated literacy lessons as she participated in a technology-based literacy course. The case study, with its rich data and in-depth analysis, can provide important insights (Gerring, 2004) and an opportunity to explore the design of literacy teacher education coursework, especially for international students in teacher education programs.

Educational Context

This study was conducted at a small, private university in the Northeast region of the United States with a small but growing School of Education that offers undergraduate and graduate teacher licensure and graduate degree programs. The study is situated in a required literacy and technology course designed to prepare teacher candidates to teach standards-based literacy instruction that integrates technology, use online tools and information resources to promote students' reading, writing, speaking, listening, and visual communication skills.

The first author, who designed and taught the course, introduced students to the TPACK theoretical framework (Mishra & Koehler, 2006) and the *Technology Integration Planning Cycle for Literacy and Language Arts* (Hutchinson & Woodward, 2014) and designed a series of assignments focusing on technology exploration and integration.

Participants

Tina is a 25-year-old pre-service teacher candidate from China enrolled in the graduate program in Education Technology. Before coming to the U.S., Tina took college education in China and majored in Japanese language and Literature. Tina is fluent in Chinese and Japanese and has strong communication skills in English. Before taking this course, Tina was exposed to limited educational technology theories through another course in her graduate program. Currently she is a second-year full time secondary ESL teacher in an international school in shanghai, China.

The participant presented in this case study was identified from a larger data set of 26 teacher candidates enrolled in the course. The case was identified because Tina was the only international student from east Asia and her work served as exemplars for future students as identified by project rubrics created by the researcher for her course.

Data Sources

The data sources are multiple-layered, including quantitative and qualitative data. Table 1 shows the data sources for the study that were embedded in the course projects. Quantitative data were collected using the *Survey of Preservice Teachers' Knowledge of Teaching and Technology* (Schmidt et al., 2009), a validated, self-report survey instrument. The survey measures preservice teachers' knowledge across the seven domains of TPACK. It includes eight items specific to demographic data, 59 Likert-scale items that collect self-report data for each of the domains of TPACK, and six open-ended questions that yield qualitative data.

Sources	Description
Blog	Create a 10-week blog about your exploration or application of specific digital tools that promote student learning while addressing literacy skills. Blog entries were collected throughout the 10-week span.
Digital storytelling & reflection	Create a digital story about adhering to the fundamental elements and process of this medium. Write about a reflection on the process of creating a digital story and its potential instructional applications.
Unit plan and reflection	Design a 10-day unit plan with two detailed scripted technology-integrated lesson plans addressing target skills in CCSS. Reflect upon unit plan design and lesson delivery.
End of course reflection	Write a reflective essay in response to the prompt "What does it mean to teach literacy in the 21st century?"
TPACK survey	The *Survey of Preservice Teachers' Knowledge of Teaching and Technology* (Schmidt et al., 2009); pre- and post-surveys
Follow-up interview for digital storytelling	2-hour interview to understand the experience and design choices for digital storytelling
Member-check Interview Spring 2020	2-hour interview about current teaching position

Table 1: Description of Coursework-embedded Data Sources

Qualitative data included the following: 1) the digital portfolio artifacts from the course, including the blog posts, digital storytelling project, and her unit plan design (see figure 3) 2) multiple written reflections about course assignments; 3) interviews during and after taking the course. Tina's blog documented her efforts and curiosity while exploring digital tools that support literacy and learning for English language learners in China. In her blog (see figure 3), Tina discussed how technology can be used to engage students when teaching a foreign language. Tina's digital storytelling (see figure 4) is an imagined story based on her own life story. It is a story about how a girl named Krystal set her mind on achieving her dream in Shanghai, one of the most developed cities in China. After many failures in her job when she was about to give up, she had an epiphany, guided by a magical star on a night trip in her dream, about how to be upbeat in bad times. Tina's unit plan focused on a literature study for six-graders. Throughout the unit plan, she used URL, audio-assisted reading, movie clips, digital portfolio, digital graphic organizers to teach the literary devices and help students build background knowledge for deeper comprehension.

Figure 3: Screenshots for Tina's artifact of digital storytelling

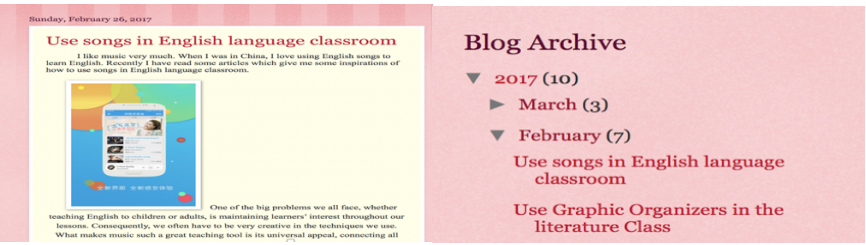

Figure 4: Screenshots for Tina's artifact of blog posts

Data Analysis

The study has both the qualitative and quantitative data. The survey data were analyzed for evidence of change from pretest to posttest, which measured preservice teachers' knowledge across the seven domains of TPACK. Unit plan measured the participant's level of technology of integration (TPACK) with a range of score from 1-4 for each domain with 4 indicating the highest level of TPACK knowledge in application while 1 indicating the lowest level of TPACK knowledge.

Tina's other coursework artifacts including blog entries, digital storytelling product, and multiple reflections on course, lesson implementation, and interviews were coded and analyzed using qualitative methods. All qualitative data were coded with the TPACK domains and guided by multiliteracies framework. The coding process started with both researchers coding independently. An open-coding method was used for the first rounds of data analysis. Data were read multiple times by both researchers to identify codes emerging from the data. Independently-derived codes were discussed and themes identified. Next, both researchers independently coded and analyzed additional reflections using the established codes. To support this work, a codebook was created and was used by both researchers. Following this round of coding, the researchers met again to determine inter-coder reliability and discuss emerging themes. The coding was compared and all disagreements were discussed until consensus was reached and emerging themes were confirmed. This iterative process continued until all data were coded and themes were affirmed. By using a constant comparative approach, coders agreed by consensus to achieve 100% inter-coder reliability.

Findings

Data analysis yielded three important findings: Tina's participation in the course resulted in moderate increase in reported TPACK knowledge and emerging skill in TPACK application due to the limited access to field experience, an expanded understanding of literacy and instructional technology and the improved self-efficacy through finding her voice through using multimodality.

A moderate increase of TPACK knowledge.

From the pre and the post of TPACK surveys, Tina showed moderate increase of knowledge in several domains of TPACK, such as Technological Knowledge (TK, from 2.83 too 3.5), Technological Content Knowledge (TCK, from 3.00 to 3.50), Technological Pedagogical Knowledge (TPK, from 3.22 to 3.33) and TPACK (from 2.5 to 2.75). However, the reported data did not show any increase in her Content Knowledge (CK, 3.0), Pedagogical Knowledge (PK,3.29) and Pedagogical content knowledge (PCK, 4). The domains of TPACK related to technology development

showed growth but not in the pedagogical and content knowledge domains. In comparison to this self-reported data, Tina's unit plan showed that she presented emerging but rather limited skills in applying TPACK knowledge when designing lessons. Unit plan measures showed her level of technology of integration (TPACK) with a range of score between 1-2.5 for the four domains, indicating an emerging but limited application of TPACK.

In her unit plan, Tina integrated appropriate digital tools in her literature study on *Gone with the Wind*. These included websites, audio-assisted reading, movie clips, and digital graphic organizers. However, most were used for presentation purposes rather than tools to extend and deepen students' thinking. Her unit plan reflection and interview analysis suggested that her status as a teacher candidate and her limited field-experience interfered with her ability to develop the pedagogical knowledge needed to design pedagogically-sound, standards-based, and technology integrated instruction.

In contrast, qualitative analysis of Tina's multiple artifacts showed that Tina expanded her understanding of "texts", the role of technology in instruction, and improved efficacy with technology use along with a renewed expression for her cultural and professional identities as an international student when English language proficiency was a potential obstacle for her identity as a teacher-to-be.

Expanded understanding of literacy and instructional technology.

During the course, Tina demonstrated her growing understanding of how technology can be used to support literacy learning. In her blog posts, Tina reflected on many digital tools she explored as she completed course assignments and how this exploration helped her understand that the same piece of information can be presented in a variety of ways, forms, and media. She recognized that multimodal digital texts were important to integrate into literacy instruction centered on meaning-making and semiotic interpretation. She pointed to other benefits of multimodal texts, such as increasing learner motivation and promoting collaboration and creativity among students. Tina remarked:

Text in modern days should go beyond the traditional printed word to include images, videos, audio recordings, and texts that include a combination of these modes…Multimodal is a term meaning a text that uses multiple modes, like writing, images, audio, visual, color, etc., to create meaning. Students are exposed to multimodal texts often in their out-of-school experiences with technology - videos, social media posts, and other communication means include multiple modes of meaning that must be interpreted and understood. These texts should be addressed in the classroom as well.

Other than having a better understanding of literacy, her reflections and interview data revealed her more nuanced understanding of technology use in the classroom. Although she reported skepticism and low levels of self-efficacy about using technology in instruction at the beginning of the course, Tina's post-course reflection suggested she felt prepared to integrate digital tools and teach digital literacies through modeling effective and responsible technology use in the classroom.

Before this class, I [had] no confidence in successfully integrate technology into my future classroom and have no clue concerning how to integrate it. But now, I can

confidently say I will use technology as a powerful tool to engage and motivate my students. Through the learning of this whole semester, I learned a lot about "what technology to implement" "how to implement". The knowledge I learned in this class and the experience I have gained through hands-on activities give me a lot of inspirations about how to design my language class, how to interact positively with my students and how to carry out objective assessment by the aid of technology.…Also, this class provides me great opportunities to explore the technology by myself. If not for this class, I would not be interested in exploring the various functions of the technologies and make full use of it for my instruction since as I mentioned at the beginning, unlike most of the "after 90s", I am very bad at technology and I was definitely not confident in using it. This class ignited my passion for technology and now I think it is so cool for me to probe into the "fascinating world" of the technology. Although I have made many mistakes when I use the technologies for my assignments and presentations for this class, I learned from the mistakes I have made. Now I am fully prepared to probe deeper into potentials of technologies because after the learning and practicing of the whole semester and guidance by our professor I am really excited to use the technology in the literacy classroom.

Meanwhile, Tina realized that technology use in the classroom was not for the sake of using technology, but to serve instruction. For Tina, the key is how to use it effectively. She remarked,

“technology is a tool. Whether it can benefit students or not depends on how we use it and how we guide students.”

More importantly, she viewed technology not only as a tool for enhancing learning, *but* as a means for social justice. On her blog, Tina wrote “Technology should serve as equalizer rather than a divider.” For Tina, technology is both a tool that facilitates differentiated instruction and has great potential to close the digital divide beyond the classroom if the teacher used it effectively.

Although Tina recognized the potential of technology to level the field for all the learners, she also acknowledged the challenges associated with technology integration, such as the need to abide by regulations concerning student safety and privacy as well as the need to remain abreast of the ever-changing digital tools available for the classroom. She commented:

Technology is helpful in promoting collaboration, facilitating struggling learners, differentiating lessons, and increasing motivation. However, with so much variety can come confusion and uncertainty about which tools to use for any given lesson. Since so many of them are relatively new, a teacher may find herself overwhelmed with the choice and with a desire to revert back to the days of "paper and pencil" just for the sake of staying within their comfort zone.

In addition, Tina stressed the importance of external factors that impact the effective application of digital tools within literacy instruction. Interview data revealed that Tina’s current teaching practices aligned with her reflections during the course, in which she stressed the importance of easy access to technology, school support, and teacher autonomy in technology use. She remarked:

[My] current school...is equipped with advanced technology… and my principal actually pushed me to think out of the box to use technology by asking me to serve as a team leader among my colleagues. He even asked me to work on the help desk team so I can help troubleshoot the technology issues in the classroom. Although it is not my areas of expertise and I felt very stressed sometimes, I do feel it pushed me to stay tuned in the field of instructional technology.

Improved self-efficacy through finding her voice through using multimodality.

Digital portfolios that include authentic learning activities such as blogs and digital storytelling allowed Tina to explore and express her cultural identity and provided opportunities to do cross-cultural comparisons in instructional practices with technology use. The symbols in her digital portfolio showcased her cultural identity. Throughout the digital storytelling, she heavily used Chinese and Japanese images and music. The symbolism and animations that are typical of oriental in their features. These venues for self-expression allowed her to communicate her culture and her identity to her peers. At the beginning of the class, Tina was very concerned about her English. The class required students to engage in discussion, something Tina was unfamiliar with given her educational background outside the U.S. Her lack of confidence in her English made her feel inferior in class and she reported feeling nervous in class. The chance for her to express herself in online writing, communicate with her peers through online tools and design her digital storytelling not only allowed her peers to better understand her, but also gave her an edge of what she does. Through these open-ended course work, Tina showed a shift in the sense of self-efficacy and a growing comfort level with digital tools in the classroom, recognized its affordances and challenges in instruction, especially the cultural context of teaching in China where teachers take on the role of "sage on the stage" and students passively participate during classroom instruction. Tina explained:

Traditional teaching mode in China is dominated by teachers, from the teaching content, teaching strategies, teaching methods to teaching steps, students can only passively participate in the process. If we can use technology like blogging, students can gain the most up-to-date learning resources. Teachers can tailor teaching content, methods, and goals when they get a better picture of students' levels and interests. As teachers, we should create a cooperative learning environment for our students, it is a great platform student-student interaction, teacher-student interaction. Teachers can also use the technology to organize teaching activities. …. Compared to American students, Chinese students are more conservative and quieter in class. They are more likely to pretend to understand the lesson instead of speak aloud and raise questions, so it is very difficult for teachers in China to grasp every student's problem about the lesson quickly and conduct targeted guidance in class. Learning difficulties and conducting targeted guidance. I think Chinese classrooms can definitely try to make good use of the blogging strategies to carry out education effectively.

Overall, Tina demonstrated TPACK growth, increasing self-efficacy for using technology in the classroom, and understanding of the importance of technology integration in the literacy classroom through hands-on experiences that created space for self-exploration and expression of her cultural and professional identity.

Conclusions

The case study examined how an international pre-service teacher from China enrolled in a graduate-level literacy and technology course that aimed to develop the pedagogical and technological knowledge, negotiated her cultural identity in a Caucasian-dominated classroom through coursework and how she used innovative digital tools to support her future students of English in China for language and literacy learning. Our findings showed that Tina benefited from course readings and supported experiences (Colwell & Hutchison, 2015) that allowed her to "try out" digital storytelling and to reflect on her course experiences in her blog. Tina also expressed her sociocultural perspective and her identity as an international student in her blog and in her digital story (Vasudevan, Schultz, & Bateman, 2010). Given the low levels of technology integration in many literacy classrooms (Hutchison & Reinking, 2011), teacher educators must create opportunities for candidates to explore digital tools and texts. This is especially important for international students, who may not have regular opportunities to engage in field-based experiences. Assignments such as the digital storytelling project and the blog allowed international students for transformation into inspiring teachers: shifting perspectives, increasing self-efficacy, plan for technology-integrated instruction in purposeful and intentional ways.

Our study suggests ways for practical application. First and foremost, teacher education courses must prepare candidates to design literacy instruction for a digital world. The sentiment about fear to use technology in the classroom at the beginning of Tina's blog underlies the idea that teacher preparation programs and professional developments in schools should focus on how to properly integrate technology into all types of instruction. Since digital resources are constantly changing, it is up to teacher educators and administrations to keep up instead of letting the teachers and teachers-to-be fall behind or feel like they don't have the proper knowledge and tools needed to meet their learning objectives. Second, transformation takes intentional and purposeful course design, scaffold and a lot of hands-on practice. The intentional course design in technology-integrated literacy instruction supported pre-service teachers in understanding relationships among technology, content and pedagogy. When designing the course, projects with hands-on experience, a more structured and scaffolded guidance, are needed to establish a good community of practice for developing knowledge and skills in effective technology integration in classroom instruction. Opportunities of exploring and using technological tools also allowed international students like Tina in expressing their cultural and sociocultural perspective using culturally-specific images, sound, and language. The course's scaffold and hands-on nature of project-based learning also effectively supported international students to develop the knowledge and skills for their future roles by preparing them to create similar opportunities for their students.

It is important to note that although this study had rich data for analysis, it had inherent limitations due to the nature of case study. Future research efforts may focus on examining if and how a larger sample of international students matriculating in teacher education programs apply coursework into their teaching in their home countries. In addition, there is evidence pointing to the need for multidimensional assessment of pre-service teachers' TPACK knowledge (Mouza, 2016; Mouza & Karchmer-Klein, 2013; Wen & Shinas, 2020). Given that there is a gap between Tina's reported TPACK knowledge and its application, the sources of this variability in the reported knowledge

and applied knowledge need to be further investigated. Finally, more research is needed on examining the effect of hands-on digital portfolio projects (such as digital storytelling, blog, etc.) and how teacher candidate can benefit from different types of scaffolds, ranging from modeling, discussion to specific guidelines for class projects.

In conclusion, the study examined how an international graduate student enrolled in a teacher education program in the United States defined and expressed her understanding of 21st century literacy instruction through participating a technology-focused literacy course. By examining our sample's course artifacts, we found the effect of the teacher preparation course, though moderate, in transforming her pedagogical thinking regarding her knowledge, skills and disposition to integrate technology in literacy instruction. Tina's interview and reflection also helped us understand how the transformation happened: the coursework helped her negotiate her identity, both professional and cultural. We learned that her experiences with exploring and using technological tools in and beyond her class community allowed her to express her cultural and sociocultural perspective. We also found that the course's scaffold and hands-on nature of project-based learning deepened her knowledge and skills as teachers-to-be. Thus, the study provided teacher educators with the deeper understanding of how to build coursework that supports preservice teachers in building more sophisticated thinking about technology use in instruction and how their new understanding potentially affected their future teaching.

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Contact email: wenh@moravian.edu

The Role of Cognitive Behavioral Therapy on Self-efficacy and Worry in College Students

Qaishum Masturoh, Universitas Indonesia, Indonesia
Adhityawarman Menaldi, Universitas Indonesia, Indonesia

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Abstract
Academic performance is influenced by many factors. Anxiety and self-efficacy are two factors that may contribute to academic performance in college students (Sarirah & Chaq, 2019; DordiNejad et. al, 2011). Students with strongly perceived self-efficacy are more likely to success in academic settings (Sarirah & Chaq, 2019). On the contrary, anxiety acts as barrier for students to perform well (DordiNejad et. al, 2011). As the main component of anxiety, worry is a chain of intrusive thoughts that results in maladaptive behavior. Worry influences student's perception of a situation or their outcomes as threatening. Facilitating students in identifying and altering their cognitive processes may help them in decreasing their worry and increasing their self-efficacy (Smith, Berry, Tart & Powers, 2008; Situmorang, 2018). Cognitive Behavioral Therapy (CBT) method helps the individual to identify their irrational thoughts and alter them into more adaptive. This study aimed to evaluate the impact of CBT on student's worry level and self-efficacy level. CBT was conducted in a group of six college students for five weeks via video conferences. The measurement of student's worry and self-efficacy was carried out three times using Student Worry Questionnaire and General Self Efficacy Scale. Friedman ANOVA analysis was conducted to evaluate the changes that occur within participants ($X^2(2)=7$, $p<.05$). The main results showed there was a significant change in worry level and there's no significant change in self-efficacy. This finding suggested CBT method has good potential to help college students in overcoming their worry. The limitation and implications of this study are discussed.

Keywords: Worry, Self-Efficacy, Cognitive-Behavioral Group Therapy, College Students

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1. Introduction

College life can be stressful for students. As a young adult, they face several changes that demand them to adapt. College students as a young adult are expected to be more independent and responsible for their academic life. Meanwhile the academic burden in this level of education is higher than the previous level. Those challenges may affect student's academic performance in college.

Academic performance is influenced by many factors. Anxiety is one of the predictors of academic performance (Vitasari, Wahab, Othman, Herawan & Sinnadurai, 2010; DordiNejad et. al, 2011;). Clark and Beck (2010) define anxiety as a complex cognitive, affective, physiological and behavioral response. Anxiety arises when an individual perceives a neutral situation as threat that beyond his control. The diversity of challenges in the academic setting may trigger academic anxiety in college students.

According to a survey in Jakarta, more than 80% college students experiences severe to extreme level of anxiety (El-Matury, Herlina & Lestari, 2020). Anxiety can acts as a barrier for students to perform well when the level is high. Academic anxiety is an intrusive thought that accompanied by physiological and behavioral responses that occur due to worry about the possibility of experiencing an unacceptable poor performance when facing academic responsibility (Ottens, 1991). The main component of cognitive process in anxiety is worry. Worry is a chain of intrusive thoughts that emerge from cognitive process involved in anxiety that serve to maintain certain levels of vigilance for personal threat (Matthews, 1990). In academic setting, worry influences student's perception of a academic situation or their outcomes as threatening. High levels of worry among college students may have a negative impact on psychological conditions and affect their academic performance.

Another factor that contribute to academic performance of college students is self-efficacy. Self-efficacy is one's belief in their capacity to execute certain behavior in order to attain specific performance. One's belief can be the main basis for motivation, effort to achieve, and emotional well-being. College students with strongly perceived self-efficacy are more likely to cope with problems effectively and successfully adapt to new environment. Self-efficacy is also known as a buffer anxiety in the academic environment in students (Nie, Lau, & Liau, 2011). Students with strongly perceived self-efficacy face adversity as challenges that can be mastered, not as a threat (Bandura, 1990). Thus, those who strongly perceived self-efficacy are most likely to have better academic performance (Lent, Brown, & Larkin, 1986; Agustiani, Cahyad & Musa, 2016; Fitri & Kustanti, 2018; Sarirah & Chaq, 2019; Mamesh & Kusmiati, 2019).

An appropriate intervention is needed to help college students who have worry problems. The intervention may help students to overcome their worry and at the same time improve or maintain their self-efficacy that will have positive impact on their academic performance. Cognitive-behavior based intervention such as Cognitive Behavioral Therapy (CBT) is an applicable intervention to overcome worry problem and enhance self-efficacy for college students. CBT is based on cognitive model's that emotions and behaviors are influenced by thoughts such as perception of an event. Based on that model, emotional and behavioral changes can be determined by

the perception of an event. Thus, disturbing emotion or behavior can be changed by reconstruct the cognitive process toward a situation (Cully & Teten, 2008; Fenn & Byrne, 2013).

CBT can be applied in a group. CBT group therapy is effective to overcome worry and improve self-efficacy in college students. Both worry and self-efficacy are root on one's belief in their cognitive process. According to Bandura (2010), individual beliefs about their abilities develop from four basic sources of information. The sources consists of mastery experience (The success experience of doing certain performance), social modeling (observing other people who are similar perform certain behavior), social persuasion (assessment, suggestion or input that were given by significant people), and physiological and emotional state. Group therapy provides each its members those basic sources of information to support the member's development.

Rose (1999) said that CBT group therapy refers to a group of approaches that use behavioral (such as modeling and reinforcement), cognitive (such as cognitive modification), relationship relationships, and group procedures to improve the coping abilities and relational abilities. The coping ability refers to a set of behaviors and cognitive aspects that facilitate adaptation to problems and situations that give pressure on daily life.

CBT are mostly consists of cognitive reconstruction and relaxation techniques (Rose, 1999). Cognitive reconstruction encourage someone to think and evaluate their thought effectively when responding to problematic situations. Facilitating students in identifying and altering their cognitive processes may help them in decreasing their worry and increasing their self-efficacy (Smith, Berry, Tart & Powers, 2008; Situmorang, 2018). Cognitive Behavioral Therapy (CBT) method helps the individual to identify their irrational thoughts and alter them into more adaptive. Meanwhile relaxation is a strategy that can be used to help someone cope with strong emotional responses, such as anger, stress, anxiety or depression. This strategy provides group members to practice relaxation techniques such as deep breathing, meditation, and progressive muscle relaxation. Each group member can help other members by providing suggestions and input related to relaxation practices that are carried out by them (Rose, 1999). In order to understand the role of Group-CBT on college's students worry and self-efficacy level, the current study aimed to evaluate the impact of CBT on college student's worry level and self-efficacy level.

2. Method

2.1 Participant

Six college students who experienced academic worry (proven by student's worry questionnaire total score were above 40). All participants were ages 20-22. The participants gave their full consents to participate the group therapy.

2.2 Design

The study used quasi-experimental and time series design. The participant's level of worry and self-efficacy were measured in three times, before the intervention (*pre-test),* after the latest session (post-test), and two weeks after the intervention ended (follow-up)**.**

2.3 Measurements

This study used *The Student Worry Questionnaire* – 30 (SWQ) and *General Self-Efficacy Scale* (GSES). SWQ consists of 30 items that measure student's worry level in academic setting (Osman, Guttierez, Downs, Kopper, Barrios, & Haraburda, 2001). The participants completed SWQ items using likert-scale. This study used SWQ Indonesian language version that was adapted by Wulandari (2019). This study also used *General Self-Efficacy Scale* (GSES) to measure participant's self-efficacy level. This study used GSES that has been adapted to Indonesian language by Novrianto, Marettih, and Wahyudi (2019). GSES consists of 10 items with likert-scale. According to Schwarzer and Jerusalem (1995) GSES has good reliability (cronbach's alpha= 0.76-0.9). Based on confirmatory analysis, GSES are unidimensional construct (Novrianto, Marettih, & Wahyudi, 2019).

2.4 Procedure

The therapy were conducted in five sessions in a group video conferences due to pandemic period. The intervention was carried out for 120 minutes for each session in five weeks. The following table showed the activities that were included in the intervention.

Session	Duration	Agenda
1	150'	• Group forming • Sharing problems • Anxiety and Worry in academic setting • Introduction ABC models as basic cognitive process
2	100'	• Introduction and Identifying *Negative automatic thought* (NAT) as an intrusive thought • *Relaxation technique: Deep breathing training* • *Grounding technique training*
3	120'	E*vidence hunting and dispute as a strategy to overcome intrusive thoughts*
4	120'	Creating alternative thoughts and mantra as a strategy to overcome intrusive thoughts
5	120'	*Managing setbacks*

Table 1: Summary of Intervention Module

2.5 Statistical Analysis

Friedman's ANOVA and Wilcoxon signed rank test were performed to evaluate the impact CBT on participants worry and self-efficacy levels. Wilcoxon signed rank test were used to evaluate the effect size from the CBT in this study.

3. Results

Table 2 showed participant's worry level and self-efficacy level at pre-test, post-test, and follow up. The descriptive analysis showed there's change in mean of participant's worry level and self-efficacy level through the time stamp measurements. At the pre-test the mean score for participant's worry level was 79.17 (SD=5.23), the mean socre at the post-test was lower than the pre-test mean score (M=70.17, SD=22.14), and the lowest mean score was found at the follow-up period (M=58, SD=14.64). Participant's mean score for self-efficacy at post-test period (M=38.83 SD= 3.31) was higher than the pre-test period (M=34 SD=1.67). Meanwhile, at the follow-up period the mean score for self-efficacy (M=37.5 SD=5.35) was lower than the post-test. The figure 1 and figure 2 showed that all the participants' worry level and self-efficacy level were changed across the measurement period. Most of the participant's showed lower level of worry at the post-test and follow-up period. Meanwhil for the self-efficacy, the graph showed improvement on participant's score.

	Pre-test			***Post-test***			***Follow-up***		
	N	**Mean**	**SD**	**N**	**Mean**	**SD**	**N**	**Mean**	**SD**
Worry level	6	79.17	5.23	6	70.17	22.14	6	58.00	14.64
Self Efficacy Level	6	34	1.67	6	38.83	3.31	6	37.50	5.35

Table 2: Descriptive analysis results

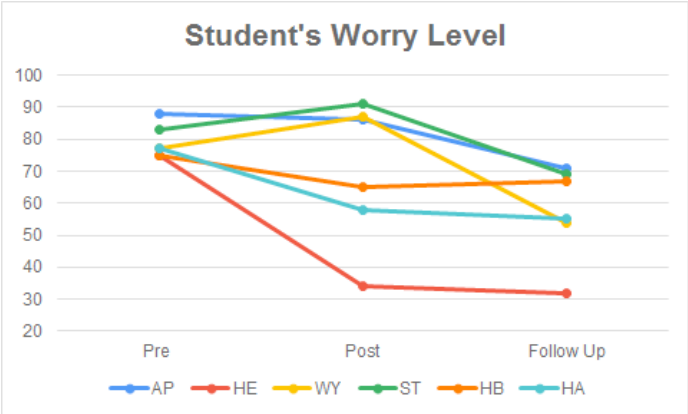

Figure 1: Paticipant's Worry Level

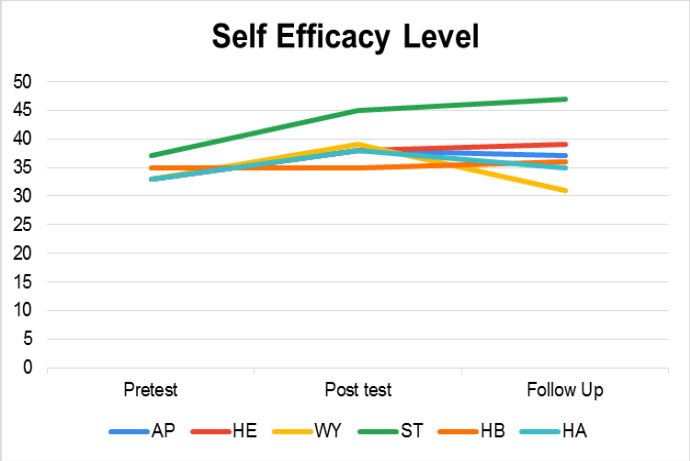

Figure 2: Participant's Self-Efficacy Level

Table 3 showed there's signifficant changes in in participant's worry level (X2(2)=7, p<.05) The additional analysis using Wilcoxon's test showed that the most significant improvement of worry occurred between pre-test to follow up period (Z=-2.2, p<0.05, r=.64). Meanwhile, there's no significant change in self-efficacy (X2(2)=5.3, p>.05). Table 4 showed that the effect sizes of CBT intervention on participant's worry level were ranged from moderate to large.

Variables	Statistical Test	Degree Of Freedom	Asymptotic Sig. (2-sided test)
Worry	7,00	2	0.03*
Self-efficacy	5,3	2	0.07

Table 4 Wilcoxon's test of parcticipant's worry level

Measurement	Z	*p*-value	Effect Size *(*r)
Pre – Post	-1.05	.29	0.30
Pre – Follow Up	-2.20	.03*	0.64
Post – Follow Up	-1.89	.06	0.55

Table 3: Friedman ANOVA analysis

Table 4 showed that there were also belief changes within participant's after the CBT intervention in this study. Based on follow-up results, most of the participants evaluated the intervention as helpful and useful for them. All the participants practiced the strategies that were learnt in the therapy independently after the last session ended. All the participants reported they feel calmer, know themself better, and feel confident they can overcome the intrusive thoughts. The deep breathing was nominated as the most helpful techniques by the participants. The participants also reported the presences of others in the group therapy helped them to learn new perspectives and feel supported.

Participant	Old Belief	New Belief
AP	"My grade didn't show any improvement. If I didn't meet certain standard it means I'm a failure."	I'm a human not God, I'm not perfect. I realized I improved in several courses, I'm not a failure."
HE	"I can't finish my study because the E-Learning isn't effective. I'll fail to finish my study"	"Things that I worry before didn't happen at all. I realized worry is common and I have control to overcome it."
HB	"I'm in wrong major and wasting my time. It's too late to just realize it now. I can't fulfill the expectations from my parents and lecturer"	"I realized the time and effort that I spent in this major is not a waste. I belief there must be a reason for something that happen in my life"
HA	"I'm a perfectionist. I have to get perfect scores for all courses and I have to finish all assignments according to my plan."	"There's situation that are beyond my control, I accept that. At least there's something that I can learn."
ST	"I'm not competent to do this exam or academic activities"	"I just don't feel confidence about myself. I can be more focus on myself than someone's accomplishment. There are things that I can't change and beyond my control."
WY	"I'm a procrastinator because I don't have enough confidences. I'll fail, it's better to depend on my friend's assignment"	"It's okay If I failed. One becomes an expert after they keep on trying."

Table 4: Participant's belief changes

4. Discussion

This study aimed to evaluate the impact of cognitive behavioral group therapy on college's student worry level and self-efficacy level. The results of this study showed that the majority of participant's worry level after the therapy were lower than the pre-therapy period. The results also showed the improvement on participant's self-efficacy level after the therapy. The statistical analysis showed that the changes on participant's worry level in this study were significant and the pre to follow-up period as the most significant changes occured. Meanwhile, the statistical analysis results showed that participant's self-efficacy level changes were not signifficant. The participants in this study reported the change of belief after the group therapy. The participants also reported positive experiences during group therapy in this study.

In this study, The participants had lower worry level after participated in group therapy. These changes cannot be separated from the existence of cognitive reconstruction and relaxation as strategies used in the group CBT approach (Rose, 1999). Cognitive reconstruction occurs through the process of identifying disturbing thought patterns and turning them into self-statements that can facilitate adaptive behavior and reduce anxiety (Rose, 1999).

The negative reconstruction process is followed by relaxation strategies that can be applied to deal with their anxiety. According to Rose (1999) relaxation techniques are strategies that can help participants cope with strong emotions such as anxious emotions. In this study, participants learnt and practiced deep breathing and grounding techniques. The majority of participants rated deep breathing as the most

helpful relaxation technique. Deep breathing techniques are considered more practical and provide a direct relaxing effect than grounding technique.

Besides changes in the participants' academic anxiety levels, there was an increase in the self-efficacy scores of all participants. Although the statistical analysis results showed there was no significant changes on participant's self efficacy level. This can be due to the fact that in this study, the intervention focuses more on managing worry in an academic context. Therefore, after the therapy ended the participants reported they feel more confident in their ability to face difficult situations only in an academic context. In addition, the insignificant changes could be caused by the mastery experience factor that was not fully obtained by the participants in this study. According to Bandura (2010) mastery experience is the most effective way to instill a strong belief in individual abilities. Mastery experiences cannot occur because the participants are not directly dealing with their anxiety triggers. Despite the statistical insignificant on self-efficacy level, the improvement of participants 'self-efficacy scores was in line with the decrease in the participants' worry levels. This is in line with Situmorang's (2018) statement that high self-efficacy in students has an impact on reducing disturbing thoughts which directly reduces the level of academic anxiety.

Based on the qualitative evaluation, the participants reported possitive experiences during the therapy session. Participants reported that they got support and new perspectives of their problems from the therapy session. This evaluation is inseparable from the presence and role of participants to participate in group therapy which triggers other participants to openly share their problems. Group therapy with the CBT approach allows participants to get input on how they deal with problems and to introspect on these ways. Even with various backgrounds and characteristics, the presence of other people in group therapy provides benefits for individuals who are involved in the group. According to Forsyth (2018) group therapy gives individuals the opportunity to get support and become more active in playing a role in overcoming their problems and achieving their goals.

5. Conclusions

The results of this study showed CBT gave positive impact on college's student worry and self-efficacy level. The mental health provider in unversity may consider to apply CBT for their college students who experience worry or anxiety problems. This study showed that CBT is applicable in virtual setting with quiet satisfying results. The online delivery method can be an alternative options for mental health profesionals, particularly in pandemic period where student's vulnerability to psychological problems might increase.

There are several suggestions for further study. First, regarding the delivery method in this study. Online delivery through video conferences were made as an adjustment based on pandemic situation during the therapy period. Further study is needed to evaluate the effect of therapy with online delivery. Second, further study may use more group samples to evaluate the effect of CBT on worry and self efficacy. Experiemental design with control group is recommended to evaluate the effectiveness CBT method in decreasing worry level and increasing self-efficacy of college students.

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Contact email: amrasmin@gmail.com

Using Constructivist Pedagogies to Support Foreign Language Teaching in Remote Spaces

Valerie Harlow Shinas, Lesley University, United States
Huijing Wen, Moravian College, United States
Lijing Luo, Conrad Schools of Science, United States

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Abstract
This paper discusses the experiences of one teacher's experiences as she pivoted to remote teaching in response to the pandemic. In the spring of 2020, schools across the globe were thrust into emergency planning as they pivoted from face-to-face teaching in brick and mortar classrooms to remote instruction in response to pandemic-related school closures. Using a combination of video conferencing, online composition tools, and asynchronous learning tasks, teachers redesigned their instruction to address district mandates and to meet the needs of their students. Ms. Luo, a Chinese language and culture teacher in a public school in the United States, re-envisioned her constructivist teaching practices for fully online instruction. She leveraged evidence-based practices including Project-based Learning (PBL) and jigsaw strategies to engage and motivate the secondary students in her Chinese language and culture classes. Her experiences uncovered recommendations for teachers as they plan remote and hybrid foreign language instruction.

Keywords: Remote Teaching, Foreign Language Teaching, Constructivist Pedagogies, Problem-Based Learning

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Introduction

In the early spring of 2020, schools across the globe were thrust into emergency planning as they pivoted from face-to-face teaching in brick and mortar classrooms to remote instruction. Using a combination of video conferencing, online composition tools, and traditional paper-pencil tasks, teachers cobbled together curricula to address district mandates and meet the needs of their students. The effectiveness of this instruction has not been measured but we speculate that the shift to remote teaching has been difficult for teachers, parents, and students (Heubeck, 2020).

The backdrop for this watershed moment in K-12 education is a decades-long conversation about if and how teachers integrate digital tools within their instruction. Although most teachers in the United States report good access to technology for instructional planning and teaching, before the pandemic mandated that all instruction be delivered in remote spaces teachers tended not to integrate these resources into their instruction (Ertmer et al., 2012; Hutchison & Reinking, 2011). We know that teachers' beliefs about technology have important impacts on their use of digital tools (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurer, 2012) yet it is not clear why many teachers did not use available digital resources to support teaching and learning (Beschorner & Woodward, 2019; Hutchison & Reinking, 2011). This is striking when we consider that in the winter and spring of 2020, teachers were asked to immediately pivot to online teaching with little time to prepare. Not surprisingly, even the most technologically savvy teachers experienced challenges (Heubeck, 2020).

Teaching Chinese Language and Culture Remotely: Responding to a Pandemic

The purpose of this paper is to describe the experiences of one teacher, the third author of this paper, during pandemic-related school closures in 2020. During the spring of 2020, Ms. Luo was teaching Chinese language and culture classes in a public school in the mid-Atlantic region of the United States. In March, she and her colleagues were forced to pivot quickly to 100% online teaching. Shortly after Ms. Luo began teaching remotely, the authors of this paper engaged in informal conversations about her experiences. What began as a collegial conversation became a process of collaborative, reflective inquiry aimed at understanding how Ms. Luo, a digital native who frequently employed digital tools and constructivist pedagogies to support student learning in her brick-and-mortar classroom, responded to the rapid shift to fully online instruction. As we reflected on the effective practices Ms. Luo used to engage and motivate students and the subsequent challenges she encountered, we identified important implications for other foreign language teachers who design and deliver hybrid and remote instruction for K-12 students.

Our collaborative journey was framed by the understanding that effective teaching is intimately bound to the content and the contexts of the curriculum (Hodkinson, 2005). This was further contextualized by evidence that teaching Chinese language and culture as a second language outside of China presents a specific set of challenges, such as the impact of teachers' pedagogical schema and beliefs about education on their practice (Moloney & Xu, 2012). Evidence suggests that Chinese-born educators demonstrate a deep appreciation and respect for education; this view shapes their teaching and their perceptions of students. Although this is a generally favorable stance, it may be problematic during pandemic-related school closings when many adolescents reported

that they had difficulty with remote learning and did not attend virtual sessions regularly (Kamenetz, 2020). Teachers' perceptions about their students' challenges, lack of participation, and low levels of engagement during remote learning complicate an already complex learning environment.

When considering the challenges of remote teaching, it is also important to keep in mind the unique challenges content-specific teachers may face when preparing for online learning. In the language classroom, we know that students benefit from regular and authentic opportunities to use their developing language in meaningful ways. The teacher must create many opportunities for them to read, write, listen, and speak in the new language (Wright, 2019). Designing instruction that includes many opportunities for students to communicate and learn in a new language may be more difficult in the virtual classroom where students must engage in a variety of activities that allow them to use their developing language skills (Zhang, 2009).

Another complexity of pandemic-related teaching was the reality that families were suddenly tasked with supporting their students' learning with little time to prepare. This made planning for remote teaching more complex, especially for foreign language teachers who relied on families to support learning of a language not spoken at home. Teachers and families were ill-prepared for the many challenges of remote learning (Richmond, Bartell, Cho, Gallagher, He, Petchauer, & Curiel, 2020). However, careful review of the literature points to tools and evidence-based practices to help teachers plan for those challenges.

Extant literature provides strong evidence that language instruction is most effective when it is framed by a strong set of standards and activities that leverage students' own interests and prior knowledge (Wright, 2019). The World-Readiness Standards for Learning Languages provide a framework for designing language instruction framed by the following: communication, cultures, connections, comparisons, and communities (National Standards in Foreign Language Education Project, 2006). *Communication,* the first and the foremost of the five standards, highlights the development of students' interpersonal, interpretive, and presentational communication skills in the target language. The *culture* standard provides guidance for curriculum that targets culturally-connected language development and the *connections* standard refers to the interdisciplinary nature of effective foreign language instruction. Integrating many opportunities for *comparisons* allows students to engage in the deep thinking about cultural and language differences. Finally, the *communities* standard describes the ways teachers prepare students to become active participants in multilingual communities. These standards may serve as the starting point for pedagogical decision-making and, when paired with pedagogies that support remote learning, provide the foundation for rigorous, engaging instruction.

Pedagogies that Support Remote Teaching and Learning

Effective pedagogical strategies for the remote classroom are, in many ways, the same as those we use to engage and motivate learners in physical spaces. For example, teachers can inspire and support learning using constructivist pedagogical approaches such as accountable talk strategies in face-to-face class discussions or video meetings. Similarly, project-based learning (PBL), a student-driven, teacher-facilitated approach to learning (Bell, 2010), is a pedagogical approach that creates a framework for

effective teaching and is well suited for the remote classroom. Evidence suggests that PBL promotes meaningful learning in language and literacy classes (Stroller, 2002). PBL encourages in-depth investigation of learning objectives through meaningful hands-on projects while it provides autonomy for students. The key elements of PBL include collaboration, curricular content, authentic tasks, multiple expression modes, and innovative assessment. It offers numerous benefits including increased content knowledge acquisition, motivation, knowledge retention, and academic achievement (Hernandez-Ramous and De la Paz, 2009; Karacalli and Korur, 2014).

One promising pedagogical approach aligned with PBL, Task-Based Language Teaching (TBLT; Yildiz, 2020), is well suited for instruction of language and culture in remote spaces. In TBLT, language teachers design engaging and authentic tasks that allow students to practice their developing language skills. The TBLT approach prioritizes meaning over mechanics, thus motivating students to communicate in the new language. Importantly, language instruction is framed within the history and culture of the language; this allows students to make authentic, real-world connections to their own experiences (Lai & Li, 2011).

Finally, any discussion of remote teaching must include consideration of the role of technology integration. Today's adolescents are technologically savvy and use technology to communicate, play online, and learn about the world (Li, Snow, and White, 2015). Evidence suggests that when technology is used to support language instruction, language production and motivation increase (Lai & Li, 2011). Given the highly motivating nature of technology (Gee, 2010) and the strong relationship between language learning and motivation (Ranjan & Philominraj, 2020), students benefit when their teachers create authentic opportunities for students to use technology for learning (Alvermann, 2002; Beach, 2012). One effective way to integrate technology within instruction is through PBL (Lee & Blanchard, 2019). With the availability of technology in classrooms, technology-integrated PBL has great potential to have positive impacts on student learning.

Teaching about Chinese Language and Culture: Ms. Luo's Virtual Classroom

Ms. Luo has taught Chinese language and culture to secondary students in a science magnet school in an urban area of the mid-Atlantic region of the US for six years. A passionate and dedicated educator, her teaching is framed by theories of motivation and engagement with a particular emphasis on drawing deep connections to students' own experiences. Before COVID-19, this was accomplished through project-based learning and peer-to-peer collaboration in her physical classroom. In the spring of 2020, Mr. Luo recognized the urgent need to reimagine her curriculum. She leveraged the constructivist pedagogies that worked well in her face-to-face teaching as she designed a project-based approach that built on students' interests and made strong connections to Chinese language and culture.

Although Ms. Luo's instructional plans were engaging, Ms. Luo's students demonstrated low levels of participation and engagement. In response, she explored new ways to draw students into the virtual learning space. Ms. Luo explored digital tools and online resources that she hoped would capture students' interest and enhance language learning. Although this was time consuming, Ms. Luo created relevant, authentic language learning experiences for her students, such as jigsaw activities to

strengthen their listening and speaking skills, that invited full participation. In addition, she drew on students' shared experiences with youth culture to build bridges into Chinese language and culture learning activities. Finally, Ms. Luo used a project-based learning approach to incorporate peer-to-peer collaboration and group work, thus creating authentic interaction among students.

The lessons Ms. Luo learned have implications for language teachers as they plan for an uncertain year that will likely include remote and hybrid learning in some capacity. Therefore, we share this list of recommendations, informed by Ms. Luo's experiences and supported by the literature. It is important to note, however, that teachers must build remote instruction based on their own experiences and the needs of their students.

1. *Use project-based learning to engage and motivate students.* Ms. Luo reimagined her project-based approach to instruction and redesigned her curriculum for the virtual classroom. For example, the online, group project, "My Trip," was easily re-designed for virtual learning for her intermediate level students. Over the course of several weeks, students worked together to conduct research and to plan a virtual seven-day trip to China. A truly interdisciplinary project, students created a budget, researched and booked hotels and flights, and planned sightseeing activities. Small groups worked together outside of the remote class time to complete the project in Google classrooms; the final projects became the performance-based instrument Ms. Luo used to assess students' learning. At the conclusion of the project, Ms. Luo invited students to reflect on their own learning and their experiences. Students were motivated by their interest in planning a trip, particularly at a time when many of them were not free to leave their homes regularly, and the opportunity to work with classmates online.

2. *Select technological tools that students know and enjoy using.* Ms. Luo is a tech-savvy teacher who regularly used available digital tools in her brick-and-mortar classroom to engage students and support her instructional goals. When teaching remotely, Ms. Luo selected tools she had used before the COVID-19 school closure such as Edpuzzle, Kahoot, Quizlet, Flipgrid, and Duolingo. By integrating these tools, Ms. Luo created content-specific activities and assessed students' language development from a distance. For example, when teaching a Chinese song "Listen to Mom", Ms. Luo used Edpuzzle and a teacher-edited YouTube video with embedded questions about the song to activate and build students' background knowledge. Digital tools that allowed for authentic collaboration, Kahoot and Quizlet, were used for vocabulary instruction and review.

3. *Embed instruction within interactive, dynamic activities.* When learning a language, students benefit from collaborative and interactive experiences (Wright, 2019) with their peers. These authentic opportunities for rehearsal build oral language skills and strengthen vocabulary knowledge. To create interactive experiences to support students' learning of longer songs and texts, Ms. Luo often implemented the jigsaw strategy using the breakout room feature of Zoom. The jigsaw approach invited students to flexibly collaborate and support one another as Ms. Luo grouped and regrouped them throughout the learning activity (Aronson, 2002).

4. *Build bridges for students between American and Asian culture (music, pop culture, etc.)*. Many young adolescents are familiar with aspects of modern Asian culture and may be eager to learn more if they can draw connections to their own lives.

One way Ms. Luo did this in her remote classroom was through the Chinese zodiac. Specifically, Ms. Luo taught students the Chinese words for their zodiac signs and those of their family members in Chinese and introduced the history and culture behind the animals and icons of the zodiac. To build personal connections, she invited students to explore personality traits based on the Chinese zodiac and compared them to the constellations they are named for. These lessons allowed students to make personal and cultural connections as they learned Chinese vocabulary.

5. *The teacher must take on the role of cultural ambassador in the Chinese language and culture classroom.* When language teaching is embedded in cultural immersion, students are more engaged and learn more (Celik, & Yıldız, 2019). To do this, Ms. Luo served as a cultural ambassador for Chinese language and culture in many ways. For example, she created a Chinese club to introduce students to Chinese history and culture. Before the pandemic, Ms. Luo shared Chinese foods and delicacies such as moon cakes and Chinese dumplings with her Chinese Club. She continued this practice during COVID-19. Although students could not taste the food, they learned many Chinese foods, the ingredients of each delicacy, and the Chinese words for each one, thus expanding students' knowledge of Chinese culture and supporting language development.

Although these recommendations were shaped by constructivist pedagogies that Ms. Luo found to be effective, these approaches will not ensure that remote teaching will be trouble-free. Students will struggle and many will become disengaged as learning becomes more challenging. However, these principles may provide guidance to teachers who must design and teach engaging language and culture curriculum in virtual classrooms.

Conclusion

Ms. Luo's reflective, inquiring stance allowed her to learn from the challenges she experienced and adjust her teaching to better meet the needs of her students. An uncertain and rapidly shifting public health landscape has taught all of us to be flexible and pivot quickly. Teachers are now prepared to do whatever they must to support student learning across all modes of delivery. Moreover, remote teaching during the pandemic has forced many of us to re-evaluate our perspectives on teaching and learning. During the shift to remote teaching, Ms. Luo's perspective shifted from an "all children can learn" stance to a more nuanced perspective that recognizes all students can learn *if* they are fully engaged. As we learn to accept that the future of education has been forever changed by the pandemic, teachers must grapple with how they can engage students and support learning for all students in the remote classroom.

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Contact email: vshinas@lesley.edu

A Prototype System with Speech Recognition Function for Practicing Speaking English

Harumi Kashiwagi, Kobe University, Japan
Min Kang, Kobe University, Japan
Kazuhiro Ohtsuki, Kobe University, Japan

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Abstract
The literature indicates that many Japanese students enrolled in English language classes do not use English outside of class. Therefore, we assume that speech recognition technology can help create opportunities to speak English. Although some speech recognition software is widely available, few studies have used software with a speech recognition function to investigate how we should adapt this technology to foreign language learners with various proficiency levels, including Japanese students. The authors, therefore, developed a prototype system with a speech recognition function to create opportunities for Japanese students practicing English. We tested the system in a pilot study with 17 Japanese university students. During the test, students were asked to use the correct English word for an image displayed by the system. Students' responses to the system were collected via a survey questionnaire. The pilot test indicated that most words were recognized accurately, and the students' speech was correctly recognized by the testing system to a large extent. In addition, 88% of the students expressed a positive attitude toward the system. These results suggest that speech recognition functions create opportunities for students to practice their English. They also suggest that we should consider the balance between a software's recognition rate and students' motivation for practicing English when using speech recognition software for language instruction, since students might be less confident if their pronunciation is repeatedly found to be incorrect.

Keywords: Language Learning System, Speech Recognition, Computer-Generated Characters, Practice Speaking in a Foreign Language

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Introduction

In 2014, Japan's Ministry of Education, Culture, Sports, Science and Technology published its English Education Reform Plan. This plan placed a priority on improving Japanese students' oral English proficiency. However, many students in Japan lack the opportunity to use English outside of language classes and lack confidence in speaking English (Kashiwagi, Kang, & Ohtsuki, 2017). Thus, it is important that these students have a welcoming environment in which they can practice speaking English. In this paper, we suggest that speech recognition software can help create this environment for students who lack English speaking opportunities outside of class. Although some speech recognition software, such as Dragon Naturally Speaking, is widely available, it is not yet sophisticated enough to recognize the English speech of all levels of English language learners (Chapelle & Voss, 2016). According to Blake (2016), effectively utilizing this technology's limited range of operations, such as word recognition or short sentence repetition, is a desirable goal. By using the speech recognition function in this way, learners can identify which words or phrases deviate from the standard pronunciation that the engine recognizes and can adjust their speech accordingly. Unfortunately, few studies have used software with a speech recognition function to investigate how to adapt this technology to foreign language learners with various proficiency levels, including Japanese students.

To meet this challenge, we developed a prototype system with a speech recognition function to examine how to best adapt this technology for Japanese students practicing English. We conducted a pilot study with 17 Japanese university students and solicited their opinions of our prototype through a questionnaire. We aimed to investigate the following research questions:

1. How accurately does the prototype system recognize students' speech?
2. How do the students respond to the prototype system?
3. Are student's responses to the prototype system related to their nervousness when speaking English, or their negative attitudes toward English pronunciation?

Below, we first describe the prototype system, then lay out the experiment, deliver its results, and discuss its findings. We conclude by reflecting on the potential of our prototype.

The Prototype System

In our prototype system, SpeechRecog, recognizes speech inputs by referring to a registered dictionary. SpeechRecog uses Microsoft Windows' speech recognition function (see Windows Support Home Page, n.d.) to recognize students' pronunciation, following the process explained below. The system's dictionary is contained in a text file so that registered words and sentences can be edited with ease. When a word is recognized by the prototype system, it provides feedback by repeating the recognized word (or sentence) and a score from 0 to 1. This score indicates the degree to which the speech input matches the registered dictionary. This feedback comes with one of three letters: "H" indicates that the input has been recognized as an accurately pronounced registered word or sentence, "M" indicates that the input speech is hypothesized or assumed to be a registered word or sentence, and "L" indicates that the input speech has been detected but it is not clear whether the input

speech corresponds to a registered word or sentence. An example of such feedback would be: "[H] sea bream (0.9426834)."

Structure of the Prototype System

The structure of the prototype system is outlined in Figure 1. It consists of three different types of software: SpeechRecog, MINI BASIC, and AnimeViewer. SpeechRecog (Figure 3) initiates and concludes the recognition of input speech and receives and saves the results of the Windows' speech recognition function. SpeechRecog sends only "H" level results to MINI BASIC.

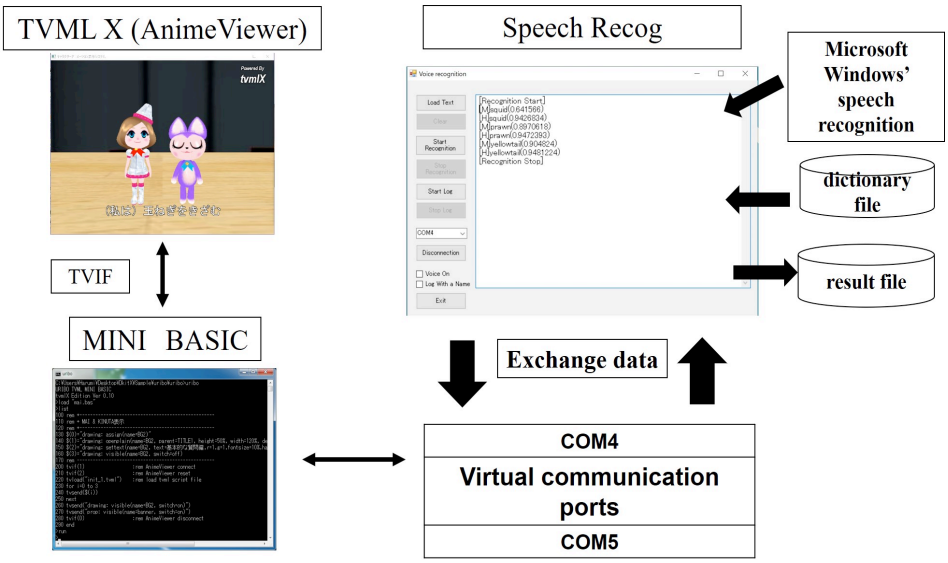

Figure 1: System overview.

MINI BASIC (Kashiwagi, Kang, & Ohtsuki, 2020) creates questions by automatically obtaining question text data and inputting this data into a TV Program Making Language (hereinafter called TVML, TVML home page. n.d.) file template. TVML is a text-based scripting language that automatically generates television programs (Hayashi, 1999). This file is sent to AnimeViewer, which is a viewer tool that displays computer-generated (CG) content from TVML scripts. AnimeViewer is prepared in TVML Player X, which produces CG content. MINI BASIC also checks whether the recognized data from SpeechRecog match the correct answer and creates feedback messages in a TVML file.

Experiment

Participants

This study had 17 participants, all students at a university in Japan, of whom 12 were second-year students, 2 were third-year students, and 3 were fourth-year students. Participants were asked to provide an English word to accompany a picture displayed by the testing system (see below) and answered a questionnaire after completing the experiment.

Procedures

First, we provided study participants with 10 English words (shown in Table 1, below) and instructed them to focus on remembering these words for 30 minutes. The words were the names of fish and shellfish. Next, we asked participants to provide the appropriate English word for an image displayed by the testing system. The system then recognized their answers, checked whether their answers were correct, and delivered feedback. The post-experiment questionnaire (Table 2) had three items, each scored on a 5-point Likert-type scale: strongly agree, moderately agree, neutral, moderately disagree, or strongly disagree. They were also encouraged to give unstructured, longer-running feedback about the experiment and the testing system.

The experiment had five steps detailed below to provide an idea of how our system might be applied in a classroom setting.

1. The experimenter boots up the MINI BASIC software, and a CG character appears on the AnimeViewer screen, gives instructions, and displays an image for a question (Figure 2).

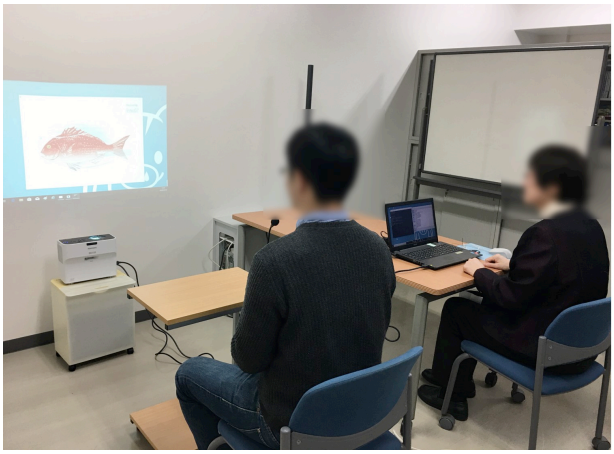

Figure 2: Experiment scene using the prototype system.

2. SpeechRecog software is booted up and the dictionary file is read (Figure 3). The experimenter clicks Start Log to initiate recording data and Start Recognition to initiate speech recognition.

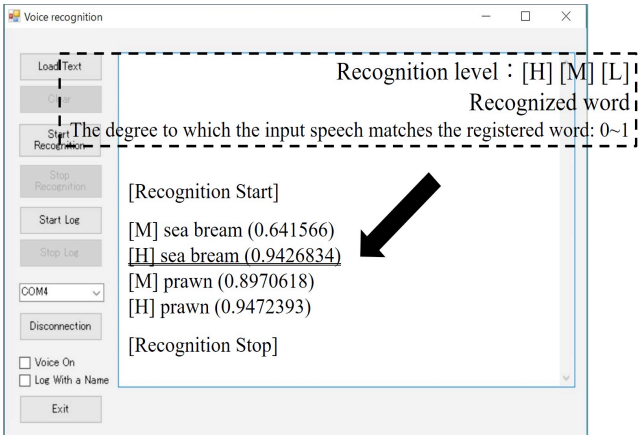

Figure 3: Example screen from SpeechRecog.

3. The student orally answers the question.
4. The speech recognition results appear in SpeechRecog (Figure 3).
5. SpeechRecog sends only the "H" level results to MINI BASIC to check whether the recognized data match the correct answer. If so, a TVML file is sent to AnimeViewer and a CG character appears to tell the user that their answer is correct. If not, the same happens but the CG character says "Once again, please" to tell the user that their answer was incorrect.
6. At the end of the experiment, the experimenter clicks Stop Recognition to stop the software's speech recognition activity and Stop Log to stop recording data. The results are then saved.

Results and Discussion

RQ1: How accurately does the prototype system recognize students' speech?

We determined the prototype system's accuracy by calculating the percentage of participants' spoken words that were recognized as correct answers at the "H" level (Table 1). Every participant's use of the words "prawn," "sea bream," "mackerel," "yellowtail," and "saury" was recognized accurately by our prototype, and 16 participants' (94%) uses of the words "globefish" and "eel" were recognized accurately, while 13 of the 17 participants' (76%) uses of the words "squid," "crab," and "turban shell" were recognized accurately. These results indicate that most of the words were recognized accurately, and the prototype system usually reflected students' speech correctly.

Table 1: System recognition of participants' use of key words.

English words	Percentage of spoken words recognized as correct at the "H" level
prawn, sea bream, mackerel, yellowtail, saury	100%
globefish, eel	94%
squid, crab, turban shell	76%

RQ2: How do students respond to the prototype system?

Participants' responses to the post-experiment questionnaire are listed in Table 3. The responses to Q1 indicate that 15 of the 17 participants (88%) agreed strongly or moderately that they had a positive attitude toward the prototype system. Participants gave some positive feedback, including: "The speech recognition software is more accurate than I expected, and it might be useful for confirming our English pronunciation," and "This system might be useful when we are more familiar with speaking English."

Two outlying responses were neutral, though the participants who gave those responses also commented that the prototype system's "use of multimedia helps us remember new words" and that "With this system, we will be able to practice answering the appropriate English word reflectively."

There were some negative comments as well, most concerning the fact that the prototype system only tells students when, not where or how, they made errors in

pronunciation. This feedback suggests that speech recognition software does not necessarily improve students' English pronunciation, even though it gives them the opportunity to practice.

Table 2: Questionnaire items.

No	Questionnaire items
Q1	I have a positive view of this software and system.
Q2	I feel nervous when I use English during face-to-face communication.
Q3	I am not good at English pronunciation.

Table 3: Questionnaire results (n = 17).

	Strongly Agree	Moderately Agree	Neutral	Moderately Disagree	Strongly Disagree
Q1	7	8	2	0	0
Q2	6	9	0	1	1
Q3	5	5	4	2	1

In this study, we have not conclusively determined how we can effectively introduce speech recognition into language learning activities. However, this type of practice with pictures and a speech recognition function can serve for oral practice with multimedia information that is not character-based and will provide students chances to say what they want to say in English quickly. One participant commented that this prototype system would be "useful for preschool and elementary school children" due to its ease of use and the way in which feedback is delivered.

RQ3: Are students' responses to the prototype system related to nervousness when speaking English or negative attitudes toward English pronunciation?

We also used the post-experiment questionnaires to examine whether participants' responses to our prototype were related to their nervousness in using English or their negative attitudes toward English pronunciation. To analyze the relationships between variables, we calculated Spearman's rank-order correlation coefficients on the data from the questionnaire shown in Table 3.

The results for the correlation coefficients between Q1 and Q2 ($r_{Q1Q2} = -0.26$) show no significant relationship between participants' responses to our prototype and their nervousness using English. Furthermore, the results for the correlation coefficients between Q1 and Q3 ($r_{Q1Q3} = 0.05$) show that there was no significant relationship between participants' responses to our prototype and their negative attitudes toward English pronunciation.

However, the results for the correlation coefficients between Q1 and Q2 ($r_{Q1Q2} = -0.26$) indicated that participants who feel nervous while using English in face-to-face communication might hold negative attitudes toward practicing their vocabulary with speech recognition software and that they might be less confident if their pronunciation is repeatedly found to be incorrect. This suggests that the software's recognition rate and students' motivation for practicing English must be considered when using speech recognition software for language instruction.

Limitations and Recommendations

Certain limitations of the current study should be mentioned. The primary aim of this study was to verify the operation of the prototype system's speech recognition function in a pilot study. More words and more participants would need to be tested before relying fully on this prototype system for English speaking practice. Moreover, it appears that students feel less confident if their speech is repeatedly recognized as incorrect. Thus, using this system's speech recognition function could actually decrease some students' English speaking if they shy away from using it in order to avoid negative feelings associated with doing something incorrectly. For future studies, we hope to further examine how we can incorporate speech recognition functions into language learning systems, considering both the recognition rate and the students' motivation to practice English.

Conclusion

We developed a prototype system that used speech recognition software to create opportunities for students to speak English. The results of our pilot study indicated that most speech was recognized accurately, and that 88% of participants viewed the prototype system positively. Our results also indicate that participants' responses to the system's use of speech recognition software was not related to their nervousness using English or their negative attitudes toward English pronunciation. It did, however, find that participants who felt nervous using English in face-to-face communication might have negative attitudes toward the use of speech recognition software, especially if their speech is repeatedly found to be incorrect. Together, our results suggest that the software's recognition rate and students' motivation for practicing English must be considered when speech recognition software is used for language instruction.

This study has several limitations. For instance, we had only 17 participants and provided them with 10 keywords. Future studies could examine more words and more participants. Future studies could also examine the utility of speech recognition in different cultural linguistic contexts to improve the generalizability and adaptability of systems such as ours.

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Contact email: kasiwagi@kobe-u.ac.jp

Overcoming Academic Anxiety and Improving Hope of University Students: A Group Cognitive Behavioral Therapy (CBT)

Larissa Amira Giyani, Universitas Indonesia, Indonesia
Adhityawarman Menaldi, Universitas Indonesia, Indonesia

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Abstract
University students' anxiety is mostly caused by academic anxiety. It is a disruptive thought pattern followed by physiological responses and behavior as a result of concern regarding the possibility of having poor academic performance. It may cause detrimental effects such as procrastination, poor academic performance, and withdrawal from social relations. Cognitive-behavioral therapy (CBT) facilitates the identification of thoughts, emotion, situations, and behavior that affect emotion and improve emotion by altering dysfunctional thoughts and behavior. CBT is an effective treatment for managing anxiety in adults, including university students (Situmorang, 2018; Situmorang, 2017; Cuijpers et al., 2016; Corey, 2012). Furthermore, hope as a protective factor against anxiety can be fostered through CBT protocols that act as a resource for pathways and therapeutic relationship which facilitates agentic thought. This research examined the effect of group CBT on reducing university students' academic anxiety and improving hope. Group CBT was conducted in five sessions with six participants of Universitas Indonesia's undergraduate students. The data were collected using validated pre-existing questionnaires: Student Worry Questionnaire and Snyder's Hope Scale for pre-test, post-test, and follow-up measurements. The data gathered was analyzed using Friedman's ANOVA. There is no significant effect of group CBT on reducing participants' academic anxiety ($x^2(2) = 3.20$ $p > .05$) but there is a significant effect on improving participants' hope ($x^2(2) = 6.52$ $p < .05$). The implications of hope as a protective factor for academic anxiety are discussed.

Keywords: Academic Anxiety, CBT, Group Therapy, Hope, University Students

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Introduction

University Students and Academic Anxiety

Anxiety is a complex cognitive, affective, physiological, and behavioral responses (Clark & Beck, 2010). Anxiety is experienced when one perceives some situation as uncontrollable, especially threatening. A certain level of anxiety will drive someone to move forward, but an anxiety level that is too high will cause the individual many obstacles (Bamber & Schneider, 2016). Among many groups that experience anxiety, one of them is undergraduate students who possess a high level of anxiety (Falsafi 2016**;** Lun et al., 2018). Undergraduate students are expected to make adjustments to deal with new patterns in their life. This adjustment ranging from academic assimilation, personal, emotional, and social aspect (Gray, Vitak, Easton & Ellison, 2013).

The transition period from school to university life brings out several new demands and challenges for university students. So it can be understood that this period may cause increasing psychosocial distress and adjustment difficulty. From an academic aspect, students face a strict curriculum and must manage their time effectively (Conley, Travers & Bryant, 2013). It is a much more challenging phase, where working on assignments demand more of the students' time, compared to assignment in high school (Park, Edmondson & Lee, 2012). In the social aspect, numerous students need to separate from their family and close friends. While at the same time they need to make new friends, build a relationship with their academic advisors (Conley et al., 2013).

From several factors that cause anxiety in university students, most of them are caused by academic anxiety (Beiter, et. al, 2015; Hooda & Saidi, 2017). It is a disturbing thought pattern that is followed by physiological responses and behavior as a result of concern regarding the possibility of having an unacceptable poor performance on facing academic tasks (Ottens, 1991). Academic anxiety felt by university students will result in maladaptive cognition, behavior, affect, and psychological aspect (Situmorang, 2018; Situmorang, 2017).

Tremendous academic anxiety may disturb students' learning activities such as decreasing study motivation, poor performance during tests and tasks (DordiNejad et al. (2011). Psychological symptoms might appear in a form of tension and panic in the classroom, feel incapable of completing tasks, and not interested in gaining a better understanding of difficult materials. Physiological symptoms may include sweaty hands, cold sensation, rapid breathing, palpitation, and stomachache (Vitasari, Wahab, Othman, Herawan, & Sinnadurai, 2010). If ignored, academic anxiety may cause detrimental effects such as procrastination, poor academic performance, and withdrawal from social relations (Mattoo, & Nabi, 2012).

CBT as an Effective Treatment

Cognitive-behavioral therapy (CBT) is a well-researched psychological treatment uses to manage emotional and behavioral problems (Butler, Chapman, Forman, & Beck, 2006)**.** CBT process follows a principle that negative thoughts and dysfunctional assumptions can be challenged and change through behavioral experiments, that is testing the dysfunctional thoughts against the reality face by the individual (Marwick

& Birrell, 2018). CBT help develops skills that enable individuals to identify their thoughts, emotions, situations, and behavior that affect their emotions and improve their emotions by altering their dysfunctional thoughts and behavior (Cully & Teten, 2008). Distorted thoughts targeted in cognitive therapy are done by using several techniques such as identifying inaccurate thinking, analyze evidence for and against the automatic thoughts, challenging and changing maladaptive thoughts, changing non-adaptive behaviors, and becoming more adaptive in relating to other people. In managing anxiety disorders, cognitive therapy is conducted together using a behavioral technique that may include exposure exercises (Kaczkurkin & Foa, 2015). The numerous CBT techniques for managing different types of anxiety disorders have one important commonality which is that cognitive aspects causally influence fear and anxiety, where the dysfunctional beliefs and cognitive distortions take part in the maintenance of anxiety disorder (Hofmann & Asmundson, 2017).

Evidence show CBT is an effective treatment for reducing symptoms of anxiety disorders (Cuijpers et al., 2016; Hofmann & Smiths, 2008). Specifically, a meta-analysis study revealed that social anxiety disorder (SAD), generalized anxiety disorder (GAD), and panic disorder can be treated effectively with CBT. The effect size was high, regardless of whether these disorders were considered as disorder-specific or generic anxiety outcomes (Cuijpers et.al, 2016). Also, anxiety disorders treated with CBT in randomized placebo-controlled trials and natural real-life settings show an effective and efficacious result for adults (Otte, 2011). Related to a group setting, group cognitive therapy can help to change and restructure cognition, emotion, and behavior that cause anxiety (Dewinta & Menaldi, 2009). Specifically, group therapy can decrease academic anxiety levels in undergraduate students (Kifli, Sunawan, & Jafar, 2019).

Hope as Protective Factor

As one of the positive psychological constructs, hope is goal-oriented thought own by an individual that consist of agency thinking and pathway thinking. Agency thinking is the motivation to initiate and sustain movements toward goals, while pathway thinking is the capacity to create ways for goals attainment (Snyder, 2002; Snyder et al., 1991). Hope is generally regarded as a protective factor against anxiety (Michael, 2000; Snyder, 1999; Snyder, Feldman, Taylor, Schroeder& Adams III, 2000). The cognitive set owns by the individual affects how anxiety is experienced, will be a facilitative or a debilitating one, in regards to goal accomplishment. When individuals perceive that others, the world, or the future as threatening, anxiety affects the human mind and interferes with the individual's capability in creating a plan (pathway thought) and make progress (agency thought) to desired goals. On the other hand, when faced with potential threats to the desired goal, an individual may have a protective cognitive set consist of the perception that he/she is capable of achieving desired goals through perceived pathways and agentic thinking. In the second cognitive set, hopeful individuals are more inclined to follow through with their goals even when facing anxiety, compared to less hopeful individuals (Michael, 2000).

To bring out hope, agency and pathway thinking must be present. CBT protocols act as a resource for pathways and therapeutic relationship facilitates agentic thought (Taylor, Feldman, Saunders & Ilardi, 2000). In terms of anxiety among undergraduate students, the intervention aims to enhance hope should focus on techniques that enhance agency thinking. Those techniques include establishing personal goals, increasing positive self-

talk, and less negative self-talk, also giving positive and encouraging stories of effective coping examples (Buckelew, Crittendon, Butkovic, Price & Hurst, 2008).

The Current Study

This current research aims to examine the effect of group CBT on Universitas Indonesia's undergraduate students' academic anxiety and hope. Especially whether the group CBT intervention would decrease the participants' academic anxiety and improve their hope. This study uses a non-experimental pre-post measurement as its method. The data were collected using validated pre-existing questionnaires. The First instrument was The Student Worry Questionnaire – 30 (SWQ – 30) (Osman, Guttierez, Downs, Kopper, Barrios & Haraburda, 2001). It is a self-report consist of 30 items which represents various situation, feelings, and reaction related to anxiety experienced by college undergraduate students. The 30 items are categorized into six domains, which are: Worrisome thinking, financial related concerns, significant others well-being, social adequacy concerns, academic concerns, and general anxiety. The items were rated on a Likert scale of 0 - 4 (0 = "Almost never characteristic of me" to 4 = "Almost always characteristic of me"), with a score range of 0-120. SWQ-30 can yield a total score utilize to measure anxiety (worry) and each scale scores (Osman et. al, 2001). A higher score indicates a higher level of anxiety.

The second instrument was The Hope Scale (Snyder, 1995), consist of 12 items divided into agency (items 2, 9, 10, and 12) pathway subscale (items 1, 4, 6, and 8. While items 3, 5, 7, and 11 were distracters items to create a less obvious content of the scale. The items were rated on a Likert scale of 1-4 (1= Definitely false, 2= Mostly false, 3=Mostly True, and 4= Definitely True). The score ranging from 8 – 32.

Information regarding the group therapy was announced on social media and participants were recruited through social media as well. Participants interested in joining the group therapy were asked to fill out the SWQ questionnaire through a google form. The inclusion criteria for the participant to join group therapy is an SWQ score ≥ of 40. 44 participants signed up for the group therapy but after the screening and selection process, six undergraduate students of Universitas Indonesia joined the group therapy (M age = 19.3 years, SD = 0.52).

The Intervention: Group CBT

The intervention module of this group CBT was created based on principles of cognitive-behavioral therapy, *What? Me Worry!?! Mastering Your Worries* module by Saulsman et al. (2015) and Manual for Cognitive-Behavioral Therapy of Major Depression (Munoz, Ippen, Rao, Le & Dwyer, 2000). The group CBT was designed to be conducted face to face in 5 sessions with one session per week. Each session has a duration of 2 – 2.5 hours. However, due to the Covid-19 situation, the group therapy was conducted online via the zoom meeting platform for 5 sessions with a 2.5-hour duration for each session. The group therapy program is as follows:

Agenda	Day/Date	Objectives	Activities
Pre-Assessment	March – June 2020	• Need assessment • Problem mapping • Participant's availability to join group therapy	Individual interview with each participant, which covers: • Explore the participant's SWQ-30's result • Demographic information (Name, sex, age, GPA, non-academic activities)
Session 1	1st week of July 2020	• Sense of belonging to the group • Gain another perspective regarding academic anxiety	• Group forming • Sharing session
		• Participants can identify how disturbing their academic anxiety is	• Participants rate how disturbing their academic anxiety on a scale of 0-10
		• Understand what academic anxiety is	• Brief materials on: • Difference between fear and anxiety • Academic anxiety and its daily life examples
Session 2	2nd week of July 2020	• Understand the underlying mechanism of academic anxiety through CBT's ABC model	• Discussion on CBT's ABC model of academic anxiety: • **A**: Antecedents/ Activating Event • **B**: Belief • **C**: Consequences
		• Understand what negative automatic thoughts (NATs) and types of NATs are • Participants can identify their NATs	• Brief materials on types of NATs • Participants identify which types of NATs operates in them frequently

		• Help participants manage their anxiety and negative thoughts • Familiar with several relaxations and grounding techniques	• Brief materials, discussion, and guided trial on several relaxation techniques such as deep breathing exercises and grounding techniques
		• Participants can apply the ABC model to their daily routine, outside the therapy session	• Homework 1: Identify the ABC model of their academic anxiety in the next one week
Session 3	3rd week of July 2020	• Participants share their homework • Able to identify the ABC model correctly	• Homework discussion • The therapist and other participants give inputs if necessary
		• Participants can identify which evidence support or against their NATs • Participants can examine their NATs more objective	• Introduction on evidence hunting: A tool to look for evidence that supports and against NATs • Working and discussion on evidence hunting worksheet discussion • Participants give feedback and point of view for one another
Session 4	4th week of July 2020	• Participants understand the effect of holding on or letting go of their NATs	• Golden questions worksheet: A tool to help participants examine the positive and negative effects of holding on or letting go of their NATs
		• Participants understand the process that needs to be done to create an alternative thought in an anxious situation	• Brief materials on alternative thought • Creating a new and more adaptive thought • Creating a mantra, a short form of

			alternative thought
Session 5	1st week of August 2020	• Participants able to identify and see whether there is a difference regarding their academic anxiety	• Participants rate again on how disturbing their academic anxiety on a scale of 0-10 • Comparison of the rate between session 1 and session 5 • Participants share what feels different and the efforts they have done to improve their condition
		• Participants understand the possibility of having a setback in managing academic anxiety • Create a self-management plan	• Brief materials on managing setbacks • Setbacks are a normal process in the journey of managing anxiety • Creating a self-management plan: • Identify signs that might lead to setbacks and adaptive strategies to minimize setbacks
		• Participants appreciate one another and identify positive things about the group	• Participant are encouraged to give appreciation and share a positive thing about the group
Follow-Up Session	3rd week of August 2020	• Gain an overview of participants' condition after joining the group therapy	• Individual interview by phone • Discussion on participant's condition, progress, benefit felt from the group therapy, techniques application on daily activities

Table 1. Group Therapy Program

Research Result

Quantitative

The data gathered was analyzed using Friedman's ANOVA. There is no significant effect of group CBT on reducing university students' academic anxiety ($x^2(2) = 3.20$ $p > .05$). Wilcoxon tests were used to follow up on this finding. A Bonferroni was applied and so all effects are reported at a 0.0167 (0.05/3) level of significance. Even though the statistical analysis showed non-significant results, there was a large effect size for the pre-test and follow-up measurement (r = -.55) (Table 1). Regarding the participants' hope result showed that there is a significant effect on improving university students' hope ($x^2(2) = 6.52$ $p < .05$).

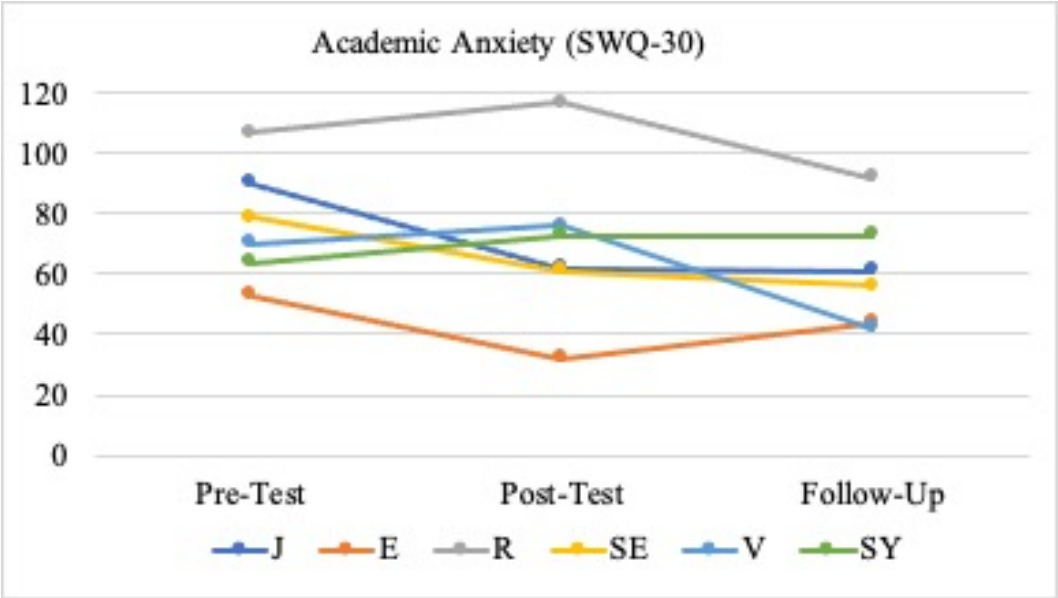

Figure 1: Score Changes of Participants' Academic Anxiety

Time of measurement	*Z*	*p*-value	Effect Size (*r*)
Pre – Post	-0.943	.438	-0.27
Pre – Follow Up	-1.892	.094	-0.55
Post – Follow Up	-1.214	.313	-0.35

Table 2. Effect Size of Group CBT on Participants' Academic Anxiety

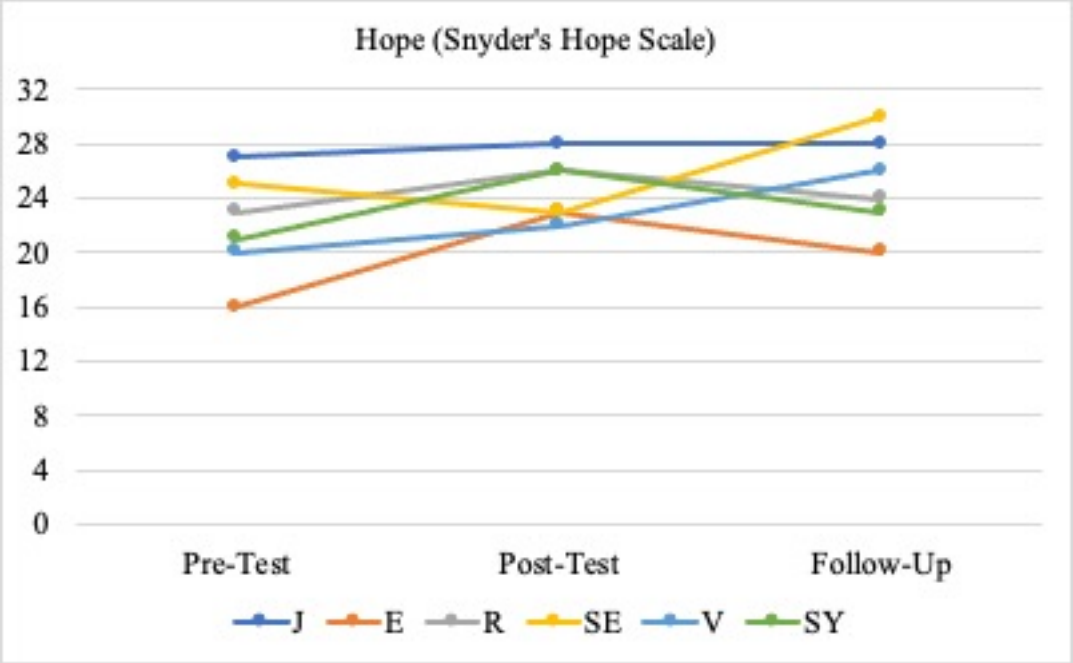

Figure 2: Score Changes of Participants' Hope

Qualitative and SUDS

According to qualitative evaluation, all of the participants stated that the sessions delivered and group dynamics were helpful for them in managing their academic anxiety. They are also sure that they can apply the techniques learned in the sessions, especially evidence hunting and deep breathing, to manage their anxiety. In terms of the subjective unit of distress scale (SUDS) score, participants reported a decreasing SUDS score from session 1 to session 5 on how disturbing their academic anxiety for them. The SUDS score ranging from 1-10, where 1 is least disturbing while 10 is very disturbing. In the 1st session, participants' SUDS scores were 8-10 while in the 5th session their SUDS scores were 4 – 6.5.

Conclusions

At first, problems faced by participants regarding academic anxiety include facing difficult subjects, competitive university environment, comparing themselves with other students with better scores, disturbing negative thoughts, feeling hopeless, worry, and anxious about their scores, achievement, and future. To overcome those problems, participants did several efforts such as: discuss their problems with a friend, avoiding tasks and not studying, emotion-focus coping such as crying, or consuming calming food such as ice cream. Those efforts done to overcome academic anxiety were not fully effective, so the participants would like to learn more about how to manage their anxiety effectively.

After joining the group therapy, five participants stated that the group therapy was very helpful (Score 9 and 10 on a 0-10 scale) and one participant stated that the group therapy was helpful (Score 8 on a 0-10 scale) for managing their academic anxiety. Participant no. 1 stated that now she realizes the pattern that operates frequently in her, which was focusing on the negative side and predicting negative events, even though the facts show the opposite. She felt that the materials are given, really helped her to see things

objectively, and determined to apply evidence hunting in her daily life. Participant no. 2 said that by joining the group therapy she learns to appreciate the process of doing things and there are kind people that need to be appreciated who helps her in the process of managing her anxiety. Participant no. 3 learns to see things from both sides and efforts to calm herself when facing anxiety through grounding techniques, alternative thoughts, and evidence hunting. Participant no. 4 can manage her anxiety better, especially it is easier for her to think more positively. Participant no. 5 learns how to understand herself and managing her negative automatic thoughts better. Participant no. 6 feels grateful to learn how to manage and face the anxiety that is not only applicable to the academic aspect but also other aspects of her life.

On the other hand, the quantitative result shows a non-significant effect of group CBT on reducing university students' academic anxiety. This result might be caused by several factors such as: Due to the pandemic, the group therapy was switched from offline to an online platform. This condition might decrease the opportunity for each participant and therapist to create a deeper therapeutical alliance, unlike a face-to-face group therapy. This was supported by feedback from participants that prefer the group therapy to be conducted offline so the interaction between participants and therapist is more natural and comfortable. The therapeutic alliance is known to be an important predictor of therapy outcome where strong therapeutic alliance such as Agreement on task, goals, and bond) is more likely to result in a better outcome of treatment in anxiety disorders (Newman, Stiles, Janeck, & Woody, 2006; Newman, Erickson, Przeworski & Dzus, 2003). Specifically, group therapy with anxious participants, which has high cohesiveness resulted in better immediate outcomes compared to less cohesive groups (Hand, Lamontagne, & Marks, 1974). Second, online and distance learning put more academic burden on the participants, where they need to adjust the learning method. They need to focus on watching the lecture from their laptop which increases their fatigue. Due to the increasing academic challenges, they might need constant support and supervision to manage their study load. Where the support in a form of online interaction only, might not be enough to fully facilitate their needs in managing academic anxiety.

However, a follow-up test confirmed that there is a large effect size for the pre-test and follow-up measurement. A small sample size may affect the statistical power and thus resulting in a non-significant result (Fritz, Moritz & Richler, 2012). On the other hand, a large effect size with no statistical significance shows that there is some evidence for a meaningful effect, though greater power is needed for further research (Fan & Konold, 2010). This finding indicated some evidence of a meaningful effect of the group therapy for overcoming undergraduate students' academic anxiety.

The second finding, showed a significant effect of group CBT to improve the hope of university students. This finding is in line with the literature that states CBT treatment protocols act as a source for pathways thought and therapeutic relationship facilitates agentic thought (Taylor et al., 2000). When faced with the inability of task completion and other negative beliefs of self, they refocus their attention on the task completion itself. Though in that situation they are also likely to experience anxiety, it is facilitating anxiety that channeled to agentic thought. That sense of agency protects an individual from impairing effects of anxiety and they make use of the anxiety-related arousal to facilitate greater agentic thinking (motivation). Through repetition of this process, the hopeful individual is better protected from anxiety problems (Michael, 2000).

In the context of academic success in college, when faced with educational obstacles, high hope individuals are fluent in channeling their energies to their new avenues. Internal, agentic self-talk statements such as "Keep going!" reinforced the energy production and maintenance of high hope individual characteristics (Snyder, LaPointe, Jeffrey Crowson, & Early, 1998). That finding is actually in line with current findings, where the participants utilize and felt that several techniques learned in the group therapy help them to manage their anxiety. Specifically for the agentic self-talks statements (Snyder et al., 1998) that can be manifested or exercised through the alternative thoughts and mantra that they created. One example of the mantra was "Good job, you've made it this far". Participants were able to create alternative thoughts and mantra that is relatable and applicable to their situation.

To conclude, qualitatively the participants in this study can apply a more adaptive approach to overcoming their academic anxiety. They felt the tremendous benefit from materials and positive interaction gained from the group therapy. However, this study found no statistically significant effect of Group CBT on reducing university students' academic anxiety. But a large effect size was found for pre-test and follow-up measurement. There is a significant effect of Group CBT on improving university students' hope. From the literature review and the current study, we conclude that hope may act as a protective factor for anxiety. It is probably possible that the mechanism by which CBT works to tackle academic anxiety is done through the improvement of hope. Future study may investigate the mechanism that underlies the effectiveness of CBT on reducing academic anxiety, that might be done through the improvement of hope. For further research, a greater sample size is needed. This can be done by having more participants and a greater number of intervention groups.

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Contact email: larissa.amira81@ui.ac.id, a.menaldi@ui.ac.id

Developing University EFL Learners Debate Speaking Skills through Closed Facebook Groups and Zoom Lessons

Leveth Jackson, Keiai University, Japan

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Abstract
Students acquire communicative competence in a variety of ways hence a need for higher education to provide diverse instructional strategies such a debate. Kennedy (2007) advocates that this type of active involvement in the classroom enables content to be learned in meaningful ways rather than passively consuming information. Students therefore, learn more effectively by actively analyzing, discussing and applying content when participating in debate classes. This study reports findings on the pedagogical feasibility of developing students debate speaking skills through the use of closed Facebook Groups and Zoom lessons. The research participants included 25 English as a Foreign Language (EFL) learners taking Debate classes at a private university in Chiba Prefecture, Japan during the first semester of the academic year 2019-2020. Data was collected from students' critical reflections an in class structured surveys. The findings indicate that notwithstanding the structure and technological limitations, delivering debate presentations through closed Facebook Groups and Zoom lessons may help students develop their English speaking and presentation skills, build their confidence in speaking before an audience, and reinforce their English macro skills such as listening and reading. This paper concludes with the pedagogical implications for EFL teachers, curriculum developers and researchers.

Keywords: Debate Speaking Skills, Closed Facebook Groups, Zoom Lessons, Teaching Debate, University EFL Learners

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Introduction

The present global pandemic (COVID-19) has forced the closure of schools globally and has introduced emergency remote teaching and learning as the current norm. This has generated a need for uncovering new channels of communication and collaboration such as digital spaces like Facebook groups and Zoom video conferencing. Online debates stimulate critical thinking and can be a highly effective way to actively engage students in research in an online classroom (Shaw, 2012). Findings from research conducted by Sheeran & Cummings (2018) on communication through social networking sites (SNS) suggests that student engagement increased more in courses with official Facebook groups.

Other pedagogical researchers have elaborated on debates as an active learning tool that promotes critical thinking and triggers higher order learning such as synthesis, analysis and evaluation (Kennedy,2007; Paladino 2009). Moreover, debates can be an educational and valuable life experience (Galloway, 2007). Additionally, there is also evidence that communication through SNS imposes no restrictions through physical space, time or time zones since collaboration can take place asynchronously (Stevenson & Bauer, 2019). Besides, the audience/students are rarely passively reading; they are responding in numerous rhetorical forms. This study reports the findings on the pedagogical feasibility of developing students debate speaking skills through the use of closed Facebook Groups and Zoom lessons.

The Description of Debate Course Activities

Preparation for the debate began with teaching the structure of debate: The topics covered included: Agreeing and Disagreeing, Giving Reasons, Supporting an opinion, Debating an opinion and Deliver Skills, Building confidence Students were placed in teams to discuss and share their opinions. Each week students were given a moot that supported their interaction, critical thinking and reflection skills. Students had to develop their own points of view regarding the topic. With the purpose of informing further practices in an online debate class the researcher sought to describe a range of activities that can be performed inside a closed Facebook group and zoom video conferencing to enhance students' debate skills (formulating an opinion, supporting an opinion, debating an opinion and building confidence).

The course covered the essentials of mastering basic debate skills. The course was taught in a fun, yet challenging online classroom setting. The main goal of the course was to develop student's confidence, critical thinking and speaking skills as they practice understanding argument and basic debate skills. Additionally, it was the aim of the instructor/researcher that students received encouragement and gained confidence as they explored debate topics such as Agreeing and Disagreeing, Giving Opinions and Support, Comparing and Contrasting.

Using Closed Facebook Group

Each week students were given a moot that supported their interaction, critical thinking and reflection skills. Students had to develop their own points of view regarding the topic. After ten weeks of Facebook.The moot was shared as an assignment.

Using zoom meeting

Online instruction differs greatly from traditional in class instruction and does not function at the same speed (Dykman and Davis, 2008). The debate class for this particular course occurred in a synchronous course session where the speakers can be seen and heard by other classmates. For each activity students were placed in groups then assigned to breakout rooms. Active participation among university learners has been regarded as a valuable aspect of conducting online lessons (Santilli & Beck, 2005).

The activities assigned required students to play a specific role, they were either debate leaders (as in Devil's Advocate the advocates are tasked with provoking the discussion, encourage various points of views and ensure the debate continues) or students pose questions (as in the panel discussion where students ask questions and challenge them on their views while presenting alternative views to the topic). This format of assigning specific roles encourages active participation from all students during the debates which is positively linked to their overall performance in the course (Pratt-Phillips, 2011). Furthermore, the format of the lessons allowed collaboration among students. In teams/ groups they had to research a position. This fostered critical thinking and allowed the learning objectives to be met.

Methodology

Participants

The research participants included 25 English as a Foreign Language (EFL) learners taking Debate classes at a private university in Chiba Prefecture, Japan during the first semester of the academic year 2019-2020. Number= 11 Males 14 Females who are 1st -4th year students.

Instruments

The data gathering tool in the quantitative research was collected from students' critical reflections and in class structured surveys. It consisted of 12 items, 10 open ended questions and 2 closed ended questions.

Procedure

The researcher employed practical action research using a mixed method approach. The purpose of practical action research is a reflective change approach to improving one's practice or social situation through methods of collaborative problem solving in order to improve the situation or produce guidelines for best practices. AR seeks to engage participants equally and fully in the research process while fulfilling its purpose of being a systematic process of inquiry (Stringer, 2014).

Data Analysis

Thematic analysis was conducted to analyze themes from the critical reflections. Thematic analysis is characterized as a method to identify, analyze and report patterns of meaning in a qualitative research. It transforms data into rich and data (Braun and

Clarke, 2006). Consequently, the reflections were comprehensively reviewed and then the basic themes were extracted.

Findings

The findings indicate that notwithstanding the structure and technological limitations, delivering debate presentations through closed Facebook Groups and Zoom lessons may help students develop their English speaking and presentation skills, build their confidence in speaking before an audience and reinforce their English macro skills such as listening and reading.

The results of the study showed that the general student feedback on the use of zoom meetings and a closed Facebook group were positive. The students briefly reported their debate experiences after the debate in a reflection format. They mentioned an increase in understanding debate terms. A few mentioned they felt really "engaged" and that had "many speaking chances". One student said, "I enjoyed the online zoom. Although it was only on the screen, it was like a normal school because I could talk before and after class. I think the class was bright and fun. I think that it was good because it was easy to talk because of the online zoom. What I enjoyed was the group sessions. I was able to gain a lot of knowledge by exchanging opinions. I'm glad I could make a strong opinion. The challenges for Facebook were easy to understand. After class, I could study as a review".

While some students reported that they had an increased understanding of the course content others reflection showed an increase in their confidence to express their opinions. Based on student's critical reflections this format of using Facebook groups and zoom meetings has shown to support: interpersonal and teamwork skill development. The interactivity of this format increased student motivation to learn, increasing communicative competence.

Another student reported, "I enjoyed the group work, and I'm glad I did. The reason for this is because I was able to engage with many different people in each class. In actuality, it is difficult to make a group with the same group members or to form a group with people you have never talked to before in a classroom, but ZOOM forces you to form a group, so I had a lot of fun making friends. Also, I was able to put what I learned into practice immediately".

Table 1: Student Responses

Questions	**Yes**	**NO**
Which do you prefer: zoom classes or face to face?	68%	32%
Did you enjoy learning debate online via zoom?	76%	24%
Did you enjoy doing assignments on Facebook?	80%	20%

Table 2: Basic themes derived from participant's reflections

Questions	Evidence	Basic Themes
Which do you prefer: zoom classes or face to face?	• Many chances to speak • Online classes were exciting" • Zoom classes allowed me to introduce my opinions and my speaking abilities improved" • I had a chance to communicate with many students" • Speaking activities in the breakout rooms helped me a lot"	**Communication:** Creates opportunities for increase in communicative competence, listening, presenting and public speaking Sharing thoughts ,questions, ideas and solutions
What did you enjoy the most about the zoom classes?	• Group work • Practicing immediately • Engage with classmates and make friends • Speaking in the breakout rooms	**Collaboration:** Promotes teamwork and collaboration
Did you enjoy doing assignments on Facebook? Was it helpful? Explain	• Seeing everyone submit I was prompted to hurry and submit my assignment before the deadline. • Facebook activities were fun • I was surprised I could give my opinion • See the opinion of others helped me in thinking of my own opinion • I had many speaking and listening chances	**Critical Thinking:** Ability to gather, analyze, and interpret information to information Building confidence Looking at problems in a new way
What class activities in the course helped you to improve your speaking ability?	• Sharing ideas in pair work • Working in groups • Warm up activities	**Useful teaching aid**

Discussion and Conclusion

Based on the experiences with teaching this debate course online, it is recommended that educators in higher education use debate in an online format to assist students to develop their speaking proficiency. Online debates are enjoyable for both instructors and students despite the delivery mode. Studies conducted by Sheeran & Cummings (2018) on communication through social media proposes that student engagement improved greatly in courses with official Facebook groups. According to Santilli and Beck (2005) active participation among university learners has been regarded as a valuable aspect of conducting online lessons. However, further research is needed on students' perceptions and experiences.

The pedagogical implications for EFL teachers, curriculum developers and researcher are as follows:

- This is a significant contribution to the field of research on instruction techniques and online learning, especially in a pandemic.
- Gain insights into the merits of online debate classes as a teaching strategy to improve speaking skills.
- Encourage EFL teachers, curriculum developers and researchers to take the step to teach debate online.
- Online debates are innovative and enjoyable for students

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Contact email: l-jackson@u-keiai.ac.jp

Unpacking Mission Statements of International Universities Recognized for Innovation

Kate A. Montgomery, Southern Methodist University, United States

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Abstract
This research supports some of the mounting pressures higher education practitioners face in approaching innovation strategically while recognizing the mission-driven needs of the institution. Two research questions were examined. First, how do highly innovative universities balance traditional missions and innovation? Second, how do mission statements project isomorphic or distinctive rhetoric? This research was grounded in institutional theory given its relevancy to assessing the debate over legitimizing tendencies, such as symbolism and signaling. For the research design, the unit of analysis was at the institutional level, specifically, 85 of the top 100 international universities recognized for innovation by Reuters that had publicly accessible mission statements. For Phase I, a content analysis of mission statements allowed for Concept and In Vivo Coding using ATLAS.ti CAQDAS software. In Phase II, quota sampling was used to more deeply explore six universities: University of Tokyo, National University of Singapore, Stanford University, Harvard University, University of Oxford, and KU Leuven. Most universities featured fell closer to central tendencies which would suggest isomorphism in projecting the scope of their mission statements. Phase II allowed for the incorporation of a qualitative investigation – for instance, Oxford's intentional reference to innovation as opposed to Harvard focused solely on traditional mission. The National University of Singapore varied most strongly with the least descriptive rhetoric. This exploratory study piques research interest to pursue additional studies such as investigating the strategic plan alignment with missions and investigating explanatory, causal studies.

Keywords: Higher Education Institutions, Mission, Vision, Innovation, Mission Statements, International, Content Analysis, Comparative Analysis

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Introduction

As institutions face challenges with balancing their traditional institutional missions and modern-day quests for relevance, they find themselves embracing innovation initiatives to thrive in the years to come. The age of the fourth Industrial Revolution, racial inequities and unrest, and most recently, a global pandemic have catapulted the most traditional, residential of campuses to innovate at lightning speed as they face existential threats.

This research supports some of the mounting pressures higher education practitioners face in approaching innovation strategically while recognizing the mission-driven needs of the institution. Two research questions were examined. First, how do highly innovative universities balance traditional missions and innovation? Second, how do mission statements project isomorphic or distinctive rhetoric?

A poorly constructed mission-vision statement can present negative outcomes, inconsistencies with strategic plans and resource allocations, accreditation vulnerabilities, and student recruitment, admissions, and enrollment declines (Morphew & Hartley, 2006). Of note, governing issues may expand beyond accrediting bodies to state and national departments of education, ministries of education, and international organizations such as the European Union, the United Nations, and the Organisation for Economic Co-Operation and Development (Özdem, G., 2011).

High research universities typically refer to three components of mission dependent on institutional type: teaching, research, and service in their respective communities (Harris, 2013; Morphew & Hartley, 2006; Thelin, 2019). Mission statements provide lenses to assess the rhetoric of traditional institutional missions and potential innovations in order to foster legitimacy and/or utilitarian purposes to guide strategic direction. A mission statement outlines the organization's purpose and serves as a roadmap for programs and initiatives; whereas a vision statement outlines an aspirational direction the organization would like to achieve in a future state (Jonker & Meehan, 2014). For purposes of this study, "mission statements" referred to both mission and vision statements given the use of one and/or the other by institutions measured in this research; both terms demonstrated the organizational goals, presently and in the future.

In their seminal work on innovation in higher education, Henderson (1970) and Thelin (2019) discussed the heritage of innovation in higher education such as the establishment of the land-grant system, professional schools, and community colleges. They posited that innovation has been built on the blending of society and individual needs of which are not static. Their positions aligned with a definition of innovation by Poole and Van de Ven (2004) in which they described innovation as "the wellspring of social and economic progress, and both a product and facilitator of the free exchange of ideas" (p. xi).

When considering theories most relevant to mission-related research, institutional theory was selected for grounding at a high level. Strong breadth of literature linked this theory to institutional rhetoric and its relevancy to assessing the debate over

legitimizing tendencies, such as symbolism and signaling, versus more meaningful utilitarian prose (Ayers, 2015; Meyer & Rowan, 1977; Morphew & Hartley, 2006).
So, why examine from an international vantage? First, mobility and technology have made international education increasingly more prevalent in the higher education sphere (Landorf, Doscher & Hardrick, 2018). Additionally, university missions often include solving broad societal challenges. Also, global citizenship and problem-solving are prevalent at the institutional and individual levels, even within their own backyards, such as with the presence of international students, migration, and global collaborations.

It is important to acknowledge the researcher positionality given experience in higher education, innovation, and corporate management from the United States. To mitigate potential bias, data was triangulated through secondary sources including literature outside of the United States and by obtaining advisor and peer reviews.

Research Design

This research built on previous studies based on exploring the Reuters (2018a) Top 100 universities recognized for innovation internationally (Montgomery, 2020a; Montgomery, 2020b). These universities were determined through an algorithm that measured patents, research, and publications (Reuters, 2018b). In Phase I, a content analysis (Merriam & Tisdell, 2016) was conducted by sourcing publicly available institutional mission statements for high research universities displayed in the English language of which 85 of the Top 100 universities were available. The 85 mission statement documents were uploaded into ATLAS.ti CAQDAS software to then be coded and serve as a benchmark against continents and institutional levels (ATLAS.ti, 2020; Contreros, 2017; Miles, Huberman, & Saldaña, 2014). Of note, the United States was referred to as a continent in comparison to Asia and Europe given the little incidence of Canadian institutions in the Top 100. In Phase II, quota sampling was used to select six institutions (two each from Asia, the U.S., and Europe) for closer examination against the benchmarks.

Data Analysis

Geographic Contextual Overview

Before exploring the mission statements, broader context was examined via descriptive statistics utilizing ATLAS.ti geospatial maps to provide a visual view (Yoon, Gulson, & Lubienski, 2018). This section was first published in an interdisciplinary overview to provide context leading into unpacking the mission statements (Montgomery, 2020b). Given the unit of analysis based on an international sample, geospatial mapping plotted the Top 100 institutions with publicly available mission statements (44 in the U.S., 22 in Europe, and 15 in Asia) (see Figure 1).

Figure 1: International Institutions Recognized for Innovation (Reuters, 2018a): Geographic Dispersion Utilizing ATLAS.ti Software

In looking beyond the geospatial mapping, some variance by continent occurred in viewing the rankings by quadrant. The U.S. led the first three quadrants; Europe and Asia jockeyed for second and third positions in the first three quadrants; and Europe led the fourth quadrant followed by the U.S. and Asia respectively (see Table 1).

Top 25			26-50			51-75			75-100		
Region	#	%	Region	#	%	Region	#	%	Region	#	%
U.S.	17	68%	U.S.	12	48%	U.S.	10	40%	Europe	10	40%
Europe	4	16%	Asia	7	28%	Europe	8	32%	U.S.	7	28%
Asia	4	16%	Europe	5	20%	Asia	6	24%	Asia	6	24%
Other	0	0%	Other	1	4%	Other	1	4%	Other	2	8%
Total	25	100%	Total	25	100%	Total	25	100%	Total	25	100%

Table 1: International Institutions Recognized for Innovation (Reuters, 2018a) – Geographic Composition by Rankings Quadrant

University Selections for Phase II

The unit of analysis for Phase II included six international institutions selected based on a quota sampling technique to equally represent Asia, the United States, and Europe based on the Top 100 (Reuters, 2018a) – University of Tokyo (Tokyo), National University of Singapore (NUS), Stanford University (Stanford), Harvard University (Harvard), University of Oxford (Oxford), and KU Leuven. These universities represented a good dispersion of mission statement approaches as evidenced with mission and innovation In Vivo Codes.

Category and Coding Process

The working definition for categories represented many elements within the defined scope (Merriam & Tisdell, 2016), were more explicit relative to themes (Rossman & Rallis, 2003; Saldaña, 2016), and were prescribed based on the research purpose and corresponding literature. When beginning the formal coding process (Saldaña, 2016), data was synthesized by building on the Concept Codes in light of the data collected. For instance, some of the preliminary codes based on the research were maintained such as innovation, teaching, and research. The need to create two catch-all codes, general mission phraseology and descriptive innovation phraseology, for quotations that did not fall into the more detailed Concept Codes was recognized (see Figure 2 for a category and concept codes listing).

Category	Concept Codes
Mission	General Mission Phraseology
	Teaching
	Research
	Service
	Traditional Mission
Innovation	Descriptive Innovation Phraseology
	Innovation Within Mission
	Innovation Beyond Mission

Figure 2: Mission and Innovation Concept Codes List

Descriptive Statistics for Top 100

The first data point assessed the total number of words in mission statements as a way to assess the depth of text to describe the institutional purpose. The mean number of words for the total universities amounted to 205, with Europe higher at 284 words and the U.S. and Asia lower at 194 and 124 words respectively. The ranges of words for each continent provided interesting accounts in that the U.S. and Europe were relatively close in ranges, 23-950 and 28-954 respectively. Asia exhibited mission statements of increased brevity at a range of 14-269. Of note, all universities with statements were left in the analysis as those on the higher and lower ends of the spectrum could be exhibiting less isomorphic behaviors (see Table 2).

	Total	Asia	U.S.	Europe
Mean	205	124	194	284
Median	130	94	156	181
Range	14-954	14-269	23-950	28-954
N	85	17	44	21

Table 2: International Institutions Recognized for Innovation (Reuters, 2018a): Benchmarks – Total Word Count (University Average)

Unpacking Mission Statements for Six Universities

The Tokyo (2020) mission statement emphasized Mission Concept Codes at 89% on par with the institutional mean also at 89%. However, their total number of words at 92 compared to the institutional mean of 205. The Tokyo mission statement generated ten codes. Their mission statement emphasized all traditional areas of mission – a "world-class platform for research and education" and fostering a "strong sense of public responsibility." Innovation was evidenced with general phraseology such as "a pioneering spirt" and to "expand the boundaries of human knowledge" (see Figure 3).

University of Tokyo
Mission Statement Summary

Total Words: 92
Mission vs. Innovation Concept Codes: 89% vs. 11%
Sample in Vivo Codes:
World-class platform for research and education
Strong sense of public responsibility and a pioneering spirit
Expand the boundaries of human knowledge in partnering with society

Figure 3: University of Tokyo – Mission Statement Summary

The NUS (2018) mission statement emphasized the highest percentage of Innovation Concept Codes at 66%, well above the institutional mean at 11%. Their total number of words at 14 was the lowest frequency of all universities measured and well below the institutional mean at 205. The NUS (2018) mission statement generated four codes, the lowest number of all universities on the Top 100 list (Reuters, 2018a). The NUS mission statement was not only short but also used more general language that was not unique to high research universities around the world. Two In Vivo Codes signaled general innovation phraseology, "inspire and transform" and "shaping the future," one word related to mission, "educate," and one proclaiming prestige on an international scale (see Figure 4).

National University of Singapore
Mission Statement Summary

Total Words: 14
Mission vs. Innovation Concept Codes: 34% vs. 66%
Sample In Vivo Codes:
Educate
Inspire and transform
Leading global university

Figure 4: National University of Singapore – Mission Statement Summary

The Stanford (2020) mission statement was focused on a more visionary perspective with the traditional mission of research, education, and service embedded within which was expected given their premiere status as the international university most recognized for innovation. In fact, they emphasized Innovation Concept Codes at 53% versus the institutional mean at 19%. Their total number of words at 251 were closer to the institutional mean at 205. The mission statement generated 17 codes. Stanford emphasized strong evidence of traditional mission and innovation within their mission statement rhetoric such as finding "new ways of fulfilling mission." They included a good deal of innovation phraseology such as "discovery and creativity" and "transforming education" (see Figure 5).

Stanford University
Mission Statement Summary

Total Words: 251
Mission vs. Innovation Concept Codes: 47% vs. 53%
Sample In Vivo Codes:
Discovery and creativity
Accelerating impact
Transforming education

Figure 5: Stanford University – Mission Statement Summary

The Harvard (2020) mission statement emphasized Mission Concept Codes at 89% on par with the institutional mean also at 89%. They communicated specific language related to a liberal arts curriculum with some reference to innovation (e.g., "transformative") without explicitly stating. Their total number of words of 179 were less than the institutional mean at 205 but still relatively close. (see Figure 6).

Harvard University
Mission Statement Summary

Total Words: 179
Mission vs. Innovation Concept Codes: 89% vs. 11%
Sample In Vivo Codes:
Standard for residential liberal arts and sciences education
Experience an unparalleled educational journey
Intellectually and socially transformative

Figure 6: Harvard University – Mission Statement Summary

The University of Oxford (2020) mission statement emphasized Mission Concept Codes at 87% which is virtually on par with the institutional mean also at 89%. However, their total number of words at 191 were significantly less than Harvard at 179 and the institutional mean at 205. The Oxford (2020) mission statement generated 18 codes. Codes encompassed all areas of traditional mission – teaching, learning, research, and service. In some cases, they were intertwined such as with "world-class research and education," "independent scholarship and academic freedom," and "diverse staff and student body strengthens our research learning." Service provided the breadth of communities served by stating the intent to "benefit society" on a "local, regional, national and global scale." In regard to innovation, general phraseology with specific mention of innovation was evidenced such as "culture of innovation and collaboration." Innovation Within Mission rhetoric included "advancement of learning by teaching and research" (see Figure 7).

University of Oxford
Mission Statement Summary

Total Words: 191
Mission vs. Innovation Concept Codes: 87% vs. 13%
Sample In Vivo Codes:
World-class research and education
Long-standing traditions
Independent scholarship and academic freedom
Culture of innovation and collaboration

Figure 7: University of Oxford – Mission Statement Summary

KU Leuven (2020) did not publish a mission statement but did reference mission-related content in their policy plans. KU Leuven solely emphasized Mission Concept Codes at 100% with no innovation referenced in their mission statement. Their total number of words at 93 were significantly less than the institutional mean at 205. The KU Leuven mission statement generated seven codes. The mission statement focused on education and research with no immediate reference to service. In regards to education, they discussed "focus on the individual student" and "study programmes." Even more reference to research was exhibited with rhetoric such as "research-intensive" (see Figure 8).

KU Leuven
Mission Statement Summary

Total Words: 93
Mission vs. Innovation Concept Codes: 100% vs. 0%
Sample In Vivo Codes:
Research-intensive, internationally-oriented university
Learning in itself
Focus on the individual student, the study programmes, management and quality assurance of these programmes

Figure 8: KU Leuven – Mission Statement Summary

Summary of Findings

In reviewing descriptive statistics from a word count perspective, the U.S. and Europe both demonstrated a wide range of mission statement lengths which suggested more differentiation of how institutions were communicated. Conversely, Asia showed much less of a range and a lower median score which suggested more normative behavior within that continent.

When reviewing codes for Mission versus Innovation, Asia constituted the highest number of Innovation codes with the U.S. highest for codes related to mission (education, research, and service). In comparing universities specifically, Tokyo had a higher number of mission codes relative to peer institutions within the Asian continent. Conversely, NUS exhibited the highest innovation composition and the shortest mission statement out of all 85 universities researched. Stanford exhibited high innovation rhetoric and the longest mission statement of the six universities measured. Harvard focused on a high degree of mission language.

Both European universities, KU Leuven and Oxford focused on mission rhetoric. Of note, Oxford actually mentioned innovation outright in its mission statement while KU Leuven was the only university to make no reference to innovation.

Conclusion

Future Research Agenda Recommendations

Most universities featured fell closer to central tendencies than variances which could suggest isomorphism in projecting the depth of their mission statements. Descriptive statistics and associated benchmarks provided a good starting point but should incorporate qualitative investigation. For instance, Oxford's intentional reference to heritage and innovation contrasted Harvard who focused solely on traditional mission rhetoric.

Gaps in Literature

This research filled several gaps in the literature related to international higher education studies, the intersections of traditional university missions with innovation, and the critical use of ranking systems. It provided a vantage on interdisciplinary uses for ATLAS.ti software beyond the robust coding features, such as geospatial mapping.

Limitations

While efforts were made to understand the context of Asian and European universities, researcher positionality could be argued to posture a U.S-centric interpretation. To address this issue, international literature was included in addition to peer reviewers with experience in international higher education policy. Initiatives going forward would benefit from collaborations with Asian and European co-investigators. This descriptive study piques research interest to pursue additional studies such as investigating the strategic plans associated with operationalizing mission and innovation as well as investigating explanatory, causal studies.

Concluding Remarks

In closing, innovation continues to be hotly contested in the higher education sphere. A recent special edition of *The Chronicle of Higher Education* (2019) described the debate of innovation as a mechanism for "high hopes or broken promises" (p. 59). In the current worldwide climate of the COVID-19 pandemic, the world is witnessing higher education institutions rapidly innovate programming and policies in real time as a means to adapt to pressing challenges, and in many cases, to maintain existentiality. Also at this time, great emphasis is placed on focusing precious resources on initiatives most directly supporting institutional mission – the intersection of mission and innovation challenges faced in higher education today and for years to come.

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Contact email: kmontgom@smu.edu

Developing a Textbook of Writing Pantun, Syair, and Acrostic Poetry by Using the Website www.rimakata.com and kbbi.kemdikbud.go.id

Armilia Sari, Sriwijaya University, Indonesia

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Abstract
This study aimed to develop a textbook of writing pantun, syair, and acrostic poetry by using the website www.rimakata.com and kbbi.kemdikbud.go.id. The researcher used the Research and Development (R&D) method with the ADDIE model from Branch (2009) where the steps were Analyzing, Developing, Implementing, and Evaluating. The results of the need analysis with a closed questionnaire showed that 94% of students needed a textbook of writing pantun, syair, and acrostic poetry. The book consisted of four chapters; Tutorial in Writing Pantun, Tutorial in Writing Syair, Tutorial in Writing Acrostic Poetry, and Anthology. In the three beginning chapters, there were three types of evaluations; completing the first two lines called 'sampiran' and the second two lines called 'isi', matching the rhymes, and writing poetry exercise. The textbook draft was validated by three reviewers. After being revised, the researcher conducted three tests of formative evaluation with students. The textbook draft was revised again based on students' suggestions.

Keywords: Research and Development, ADDIE Model, Teaching Materials, Pantun, Syair, Acrostic Poetry

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Introduction

Writing poetry can be fun or even burdensome for students of the Indonesian and Literature Education Study Program. If poetry comes from the innermost expression of their hearts, it is not difficult for students to write poetry. But if it is a mandatory task imposed by the lecturer, not all students can write good poetry. Though, poetry can also be a means of entertainment and fatigue relief for students after days of facing the intense lecture activities on campus.

As it is known, poetry has several types with different characteristics, such as pantun, syair, gurindam, epigram, romance, elegance, ballad, satire, acrostic, and so forth. From many types of poetry, only some poetries can be written by students. In the Indonesian and Literature Education Study Program, Faculty of Teacher Training and Education, Sriwijaya University, lecturer of Apresiasi Puisi Subject taught writing pantun, syair, and acrostic poetry only through the examples provided. There was no specific media or learning material that could be applied to help students in writing these three types of poetry.

Based on that problem, the researcher tried to develop a textbook about easy and fun tutorials to write pantun, syair, and acrostic poetry by using the website www.rimakata.com and also kbbi.kemdikbud.go.id. This textbook guided students on how to find the perfect AB-AB rhymes for pantun, the perfect AA-AA rhymes for syair, and good vocabularies for acrostic poetry through the two websites mentioned above.

The difference between this textbook and other previous textbook was in how the material was presented. In the previous lesson, students read textbooks contained only theories before they practiced, meanwhile this textbook directly presented exercises to write pantun, syair, and acrostic poetry so that students did not need to memorize the procedures. Students could directly practice writing the three types of poetry by using the website www.rimakata.com (Rimakata, 2019) and kbbi.kemdikbud.go.id (Ministry of Education RI, 2019).

The specifications of this textbook consist of a cover, preface, table of contents, exercises to complete sampiran and isi in pantun, exercises to complete syair, exercises to complete acrostic poetry with a picture, exercises to write pantun, syair, and acrostic poetry based on their respective genres, summaries of each chapter, minimum completeness criteria (KKM), glossary, and bibliography, and author's curriculum vitae on the back cover of the book.

The problem of this research was "How were the results of need assessment analyze, design, validity, and evaluation of developing a textbook of writing pantun, syair, and acrostic poetry by using website www.rimakata.com and kbbi.kemdikbud.go.id?"

The objective of this research was to describe the result of need analysis, design, validity, and evaluation of developing a textbook of writing pantun, syair, and acrostic poetry by using website www.rimakata.com and kbbi.kemdikbud.go.id.

Definition of Textbooks

According to the LKPP Hasanuddin University (2015), textbooks were part of the facilities or completeness of learning that had a mission to transfer material based on curriculum and syllabus. Meanwhile, Tarigan and Djoyo (2009) stated that textbooks were teaching materials in certain fields of study compiled by reviewers, and were easily understood by readers, so they became a standard of learning to achieve instructional goals both in schools and colleges.

From those opinions above, it could be concluded that the textbook was a paper in a particular field that was used by educators (teachers, instructors, tutors, lecturers) and learners (students, pupils, collegians) in the teaching and learning process to achieve learning objectives.

Developing Textbooks

A researcher should develop the textbook following the needs of students to achieve the specified learning goals. Tomlinson (2011) stated that the development of textbooks referred to all activities carried out by writers, lecturers or educators, and students in providing learning resources designed to maximize learning experiences and achieve learning objectives. Ministry of National Education (2008, p.10-11) stated that in developing textbooks, it was necessary to pay attention to the principles of learning, including starting from easy to understand difficult, repetition would strengthen understanding, positive feedback would provide reinforcement student understanding, learning motivation, gradual and ongoing, and contained clear guidelines.

To develop something, a researcher should do need analysis. According to (Yaumi, 2013), needs were the gap between reality and expectation. Thus, a situation that did not meet the desired expectations indicated a need. Learning needs were the gap between the current conditions of reality and the conditions of learning undertaken.

Prastowo (2013) argued that analysis of textbook requirements was an initial process carried out to compile textbooks according to needs. In line with this, Nurhayati (2012) stated that needs analysis was the initial stage in determining certain behavioral goals to be achieved.

Data analysis was done to find out the most needed, less needed, and not needed parts by students. Besides, this data analysis was carried out to measure the level of development of students by looking at the level of difficulty of the material presented to produce textbooks that were following the competency demands that must be mastered by students

Writing Pantun, Syair, and Acrostic Poetry

According to Tafifin (2015) writing pantun had an objective to develop students' potential following their abilities and wants. Introducing the abilities and limits of students' abilities is intended to be able to introduce and maintain themselves in social life. Besides, writing pantun was also intended so that students had a high sensitivity to intrinsic values, effective values, sensory values, and social values in society.

Meanwhile, according to Miftakhurniyati (2017) writing syair was a creative and productive learning activity. The purpose of learning to write syair was for students to be able to produce literary works in poetic form and use them in their daily lives. Furthermore, Miftakhurniyati (2017) explained that writing syair could sharpen the reasoning and sensitivity of students to things that happen around them.

Lastly, Kustiyah (2017) believed that writing acrostic poetry was a very easy and fun activity because it used the first letters of each line to spell words that could be read vertically and then used as sentences in poetry. Learners easier arranged words because there had been previous stimuli.

From the statements above, it could be concluded that writing pantun, syair, and acrostic poetry were good activities that could be both fun and beneficial because it could increase students' sensitivity to values in social life.

The Website www.rimakata.com

www.rimakata.com website is an online Indonesian rhymes dictionary. Through this dictionary, everyone could find rhymes that could be used as poetry or other writings. This website provides several types of rhymes.

1. Rima Sempurna (Perfect Rhymes), where two or more words have the same sound in the last syllable. Example:
Jalak ~ Salak
Panggung ~ Tanggung

2. Rima Tak Sempurna (Imperfect Rhymes), where two or more words have identical sound in the last syllable. Example:
Macan ~ Sopan
Ragi ~ Caci

3. Rima Ganda (Double Rhymes), where two or more words have the same sound in the last two syllables. Example:
Sahabat ~ Terlambat
Korupsi ~ Erupsi

4. Rima Ganda Tak Sempurna (Imperfect Double Rhymes), where two or more words have the same sound in some of the last two syllables. Example:
Jelas ~ Keras
Curang ~ Pulang

5. Rima Awal (Beginning Rhymes), where two or more words have the same sound in the initial syllable. Example:
Harga ~ Harta
Mangkat ~ Mangsa

6. Rima Konsonan (Consonants Rhymes), where two or more words have the same consonant. Example:
buku ~ buka ~ baku ~ baka

7. Rima Algoritma Metaphone (Metaphone Algorithm Rhymes), words based on sound equations with the Metaphone algorithm. Example:
bibit ~ bebet ~ bobot

8. Rima Algoritma Soundex (Soundex Algorithm Rhymes), words based on the sound equation with the Soundex algorithm. Example:
kumbang ~ kambing ~ kembung

The Website kbbi.kemdikbud.go.id

The online version of Kamus Besar Bahasa Indonesia/KBBI (The Big Indonesian Dictionary) is an official word search homepage developed by Badan Pembinaan dan Pengembangan Bahasa (National Agency for Language Development and Cultivation). The aim is to give information as much as possible about the development of Indonesian vocabulary. This page is updated two times in a year, in April and October. The last update was in April 2020.

Research Methodology

The researcher used the Research and Development (R&D) method with the ADDIE development model (Branch, 2009) which the steps were Analyzing, Developing, Implementing, and Evaluating. The product was a textbook of writing pantun, syair, and acrostic poetry for students

1. Analyzing

In this stage, the researcher analyzes the students' needs toward a textbook about how to write pantun, syair, and acrostic poetry. Researchers gave a closed questionnaire about the need for textbooks to write pantun, syair, and acrostic poetry to 35 students.

2. Designing

The researcher designed a textbook draft that suited the needs of students, which included the design of a cover page, table of contents, preface, learning objectives, and material in each chapter, exercises, KKM (minimum completeness criteria), bibliography, glossary, and author's curriculum vitae.

3. Developing

In this stage, the researcher made a textbook draft of writing poetry, poetry, and acrostic poetry. Before the textbook draft of writing pantun, syair, and acrostic poetry was given to students, the researcher applied a summative evaluation with three reviewers to review the textbook draft of writing pantun, syair, and acrostic poetry. The three reviewers consisted of one reviewer of language, one reviewer of content, and one reviewer of presentation. Then the researcher revised it following some notes from students.

4. Implementing

In this stage, the researcher applied the use of the textbook through formative evaluation. In this stage, researchers conducted one to one with three students, a small group test with twenty students, and a field trial test with thirty-five students. Through these three tests, the researcher could find out the weaknesses of the textbook. Students suggested the design, colors, and images contained in the textbook draft.

5. Evaluating

In this last stage, the researcher revised the textbook draft again. The deficiencies given by students were used as references in revising the textbook draft.

Data Collection Technique

Closed questionnaire and validation were used as data collection techniques. A closed questionnaire was given to obtain information about the obstacles encountered in writing rhymes, poetry, and acrostic poetry. The validation assessment instrument was aimed to find out the quality of the textbook draft. The reviewer assessment covered three aspects, eligibility of language, eligibility of contents, and eligibility of presentation. Besides, a column was provided in the questionnaire to give comments and suggestions.

Data Analysis Technique

The researcher used description technique data analysis. Data obtained from students and lecturer's questionnaires were calculated in percentage and described, data obtained from interviews with students and lecturers were described, data obtained from validation assessments by reviewers were described, data obtained from tests were analyzed and described.

Results and Discussion

Results of Needs Analysis

The researcher did need analysis by giving students a closed questionnaire. This stage was aimed to determine the level of students' needs toward the textbooks. The researcher gave a closed questionnaire to 50 students of the Indonesian and Literature Education Study Program on Tuesday 30 July 2019 at FKIP Unsri Indralaya.

For the first question, do you think lecturers and students need easy and fun teaching material to write poetry? 2 students (5%) answered a) need it enough, 0 students (0%) answered b) do not need, 43 students (94%) answered c) need it badly, and 0 students (0%) answered d) do not need at all.

For the second question, which of the three types of poetry is needed in textbooks for writing poetry? 4 students (8%) answered a) pantun, 7 students (15%) answered b) syair, 1 student (3%) answered c) acrostic poetry, and 33 students (74%) answered d) all of them.

For the third question, what kind of pantun do you wish to be there in the teaching material? 1 student (3%) answered a) pantun about advice and religion, 0 students (0%) answered b) pantun about tradition and riddle pantun, 1 student (3%) answered c) pantun about love and joke, and 43 students (94%) answered d) all types of pantun.

For the fourth question, what kind of acrostic poetry do you need in the teaching material? A total of 19 students (42%) answered a) acrostic from every first letter or last letter of a word, 1 student (3%) answered b) acrostic from every first letter or last letter of a person's name, 1 student (3%) answered c) acrostic from the first or last letters of the names of animals and plants, and 24 students (52%) answered d) all types of acrostic poetry.

For the fifth question, what kind of practice do you need in the teaching material? 1 student (3%) answered a) completing sampiran and isi, 6 students (13%) answered b) matching rhymes, 9 students (20%) answered c) the practice of directly writing poetry, and 29 students (64%) answered d) all types of practices.

Results of Textbook Design

The textbook draft had three sections, beginning, content, and the final section. The beginning section consisted of a cover with the title and author's name, preface, and table of contents. Next, the contents section consisted of the title of material in each chapter, instructional design and indicators, description of the material, summary, formative test, assessment rubric, mastery learning criteria, bibliography, and glossary. The final section contained the author's curriculum vitae.

Results of Developing Textbook

The textbook draft entitled *Asyiknya Bikin Pantun, Syair, dan Puisi Akrostik Keren* (It's Fun to Write Nice Pantun, syair, and Acrostic Poetry). Chapter 1 entitled 'Asyiknya Menulis Pantun'. This chapter contained tutorial for writing pantun with perfect A-B-A-B rhymes. The evaluation provided was completing sampiran and isi (content).

Chapter 2 entitled 'Asyiknya Menulis Syair'. This chapter was about easy and fun tutorial for writing syair with perfect A-A-A-A rhymes. There were some practices of matching rhymes at the end of the chapter.

Chapter 3 entitled 'Asyiknya Menulis Puisi Akrostik'. This chapter talked about the tutorial for making various acrostic poetry using the website kbbi.kemdikbud.go.id. The evaluation given was a direct practice of writing poetry from a word, name of a person, object, animal, or plant.

Chapter 4 entitled 'Sajak-Sajak Kehidupan'. It was a bonus chapter where all pantun, syair, acrostic, and other kinds of poetry written by the author were presented in this chapter. The design of the material in each chapter in the textbook entitled Asyiknya Bikin Pantun, Syair, dan Puisi Akrostik Keren can be described in the chart below.

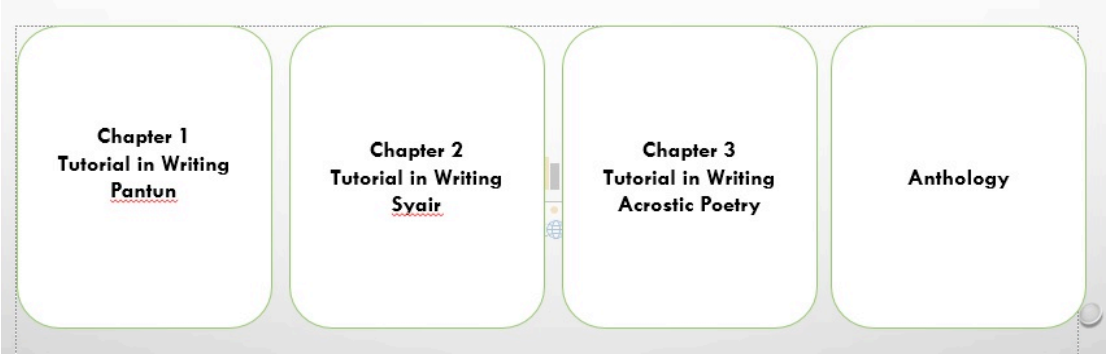

Figure 1: The Titles of Each Chapter

Results of Textbook Implementation

Before the textbook draft was given to students, the researcher applied a summative evaluation that was adapted from the developed model of Tessmer (2013). The summative evaluation was conducted by asking 3 reviewers to review the textbook draft of writing pantun, syair, and acrostic poetry. They were a reviewer of language, a reviewer of content or material, and a reviewer of graphics.

The eligibility of language was validated on Friday, October 4th, 2019 by Dra. Sri Utami, H.Hum, lecturer of Indonesian and Literature Education Study Program, Faculty of Teacher Training and Education, Sriwijaya University. In the aspect of language appropriateness, the minimum score was 1 and the maximum score was 4. The accuracy of sentence structure got a score of 4, the effectiveness of sentence got a score of 4, rigidity of term got a score of 3, understanding of information got a score of 4, the ability to motivate students got a score of 4, conformity with students' development level got a score of 4, grammar got a score of 3, and accuracy of spelling got a score of 3. The reviewer of language decided that this textbook was worthy of publication with revisions.

The eligibility of content was reviewed on Wednesday, October 16th, 2019 by Dr. Latifah Ratnawati, M.Hum., lecturer of Indonesian and Literature Education Study Program, Faculty of Teacher Training and Education, Sriwijaya University. In the aspect of content or material eligibility, the minimum score was 1 and the maximum score was 4. Completeness of the material got a score of 3, the depth of material got a score of 3, accuracy of definition and concept got a score of 4, the accuracy of fact and data got a score of 4, the accuracy of case examples got a score of 4, the accuracy of pictures, table, and diagrams got a score of 3, the ability to encourage students' curiosity got a score of 3, and ability to make students interested in giving questions got a score of 3. The reviewer of content concluded that this textbook was appropriate to publish with revisions.

Meanwhile, the eligibility of presentation was reviewed on Monday, October 21st, by Dr. Zahra Alwi, M.Pd., lecturer of Indonesian and Literature Education Study Program, Faculty of Teacher Training and Education, Sriwijaya University. In the aspect of presentation eligibility, the minimum score was 1 and the maximum score was 4. The regularity of concept got a score of 3, the clarity of learning goals got a score of 3, the learning indicator got a score of 3, the learning instructions got a score of 3, the glossary got a score of 3, bibliography got a score of 3. The same as two previous reviewers, the reviewer of the presentation stated that the textbook draft

entitled Asyiknya Bikin Pantun, Syair, dan Puisi Akrostik Keren was worthy of publication with minor revision. After being validated, the researcher revised the textbook according to notes that were given by the three reviewers.

After the textbook draft had been written, reviewed, and corrected, the next stage was implementation. The researcher carried out one-to-one, small group, and field test. One to one test was conducted on Thursday, October 23, 2019, with 3 students at FKIP Unsri Inderalaya. The researcher asked 3 students that were consisted of the high, medium, and low ability students to read the textbook drafts. After that, they wrote some notes to add supporting pictures on certain pages.

A small group test was conducted on Tuesday, October 29, 2019, with 20 students at FKIP Unsri Inderalaya. Students corrected some typing errors and numbering on certain pages.

Lastly, a field test was carried out on Saturday, October 26 with 35 students at FKIP Unsri, Ogan Campus. The results of the test field indicated that several pages needed to be revised, such as adding pantun, syair, and acrostic poetry as examples, removing images and colors that were too conspicuous in the cover design, and deleting footnotes that were considered ineffective in this textbook.

Results of Textbook Evaluation

The textbook draft was edited following students' notes in one to one, small group, and field trial test. According to the student's notes, supporting images were added on certain pages. Besides, the author also revised several pages where there were errors in writing letters and numbering that was not consistent. The researcher also did not forget to make more examples of pantun, syair, and acrostic poetry. Cover designed with too flashy images and colors was changed to cover designs with softer colors and simpler images. Footnotes were no longer included in the revised book draft.

Conclusions

The textbook entitled *Asyiknya Menulis Pantun, Syair, dan Puisi Akrostik Keren* (It's fun to Write Nice Pantun, Syair, and Acrostic Poetry). It consisted of four chapters; Tutorial in Writing Pantun, Tutorial in Writing Syair, Tutorial in Writing Acrostic Poetry, and Anthology. In the three beginning chapters, there were three types of evaluations; completing the first two lines called 'sampiran' and the second two lines called 'isi', matching the rhymes, and writing poetry exercise. The textbook draft was validated by three reviewers. After being revised, the researcher conducted three tests of formative evaluation with students. The textbook draft was revised again based on students' suggestions. This textbook draft will be published by Unsri Press. By using this textbook, the students can write pantun, syair, and acrostic poetry easier than before.

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Contact email: armilia_sari@unsri.ac.id

Instructional Coaching for School Principals: Lessons and findings from the Peruvian Principal Mentoring Programme

Pamela Valdivieso, Ministry of Education, Peru

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Abstract
In Peru, the role of principals has been traditionally associated with administrative duties at school. However, in recent years the Ministry of Education of Peru (MINEDU) has been promoting an education reform oriented towards the improvement of school management, which implies empowering principals in their role as pedagogical leaders. This reform has become even more critical considering the poor principal performance both in the results of the National Principal evaluation and in the national school management indicators (MINEDU,2018), showing that for the most part, principals in the country are still unclear about the best practices to improve their pedagogical leadership strategies. Given this scenario, the MINEDU launched in 2019 a principal instructional mentoring pilot programme for government schools, aimed at strengthening principals´ leadership skills. The programme promotes the use of school evidence to enhance pedagogical practice, school planning and collaborative work. The programme has now been implemented nationwide and its design has been adapted to address the new challenges posed to principals in the scenario of home school learning faced by COVID-19. By using the programme baseline and monitoring data, the study will explore the impact of the programme on principal's performance. Our findings show that the MINEDU mentoring programme has been significantly successful in enhancing principal skills to effectively support pedagogical practice, the creation of professional learning communities and school planning. These preliminary results show the relevance of developing further studies to better understand the importance of developing programs that use school evidence and data to improve school management.

Keywords: Leadership, Mentoring, School Principals, Principal´S Training

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Introduction

A principal plays a crucial role in the success of school, especially over teaching practice and student's performance (Sebring & Montgomery, 2014). Nearly 60% of a school's impact on student achievement is attributable to principal and teacher effectiveness (Sammons et.al., 2014). Yet, for several years the school principal's role was mainly associated with administrative and managerial duties, leaving aside their role as school leaders (Day & Sammons,2014). With the latest reforms carried out by governments and policymakers to make schools more accountable for students´ outcomes, the pressure for principals to demonstrate that they are able to translate this reform into improvement for their schools, has increased considerably (Vega Rodriguez, 2018). This policy shift has led to the question, how well principals are prepared and supported to succeed in improving education quality on their schools.

In this sense, mentoring and induction programs have been recognized as essential for principal preparation (Villani, 2005; Leithwood, 2013). Mentoring approaches have grown popular over the past decade, especially in developed countries like the United States, United Kingdom, Canada, Australia and New Zealand (Carrasco & González, 2016). In Latin America, the use of mentoring strategies for principal professional learning is still incipient, with Chile, Argentina, Brazil, and most recently Peru being the pioneering programs in the region (GSL, 2020). International experiences portray principal mentoring and coaching as a highly promising strategy to principal professional development and to improving student achievement (GSL,2020), but there has been a lack of evidence on the effects of principals´ preparation programs (Arshan et.al, 2019; Clifford et.al, 2016) and how to scale these programs in developing contexts, especially in Latin America.

In Peru, the focus of the reforms conducted by the Peruvian Government, has been mainly directed towards teacher training. It was not until 2016 that the Ministry of Education (MINEDU) started prioritizing policies targeting school principals, with the implementation of an induction programme and the formalization of a professional mobility scheme for principals (MINEDU,2019). In spite of this reform, the situation of principal training is still a matter of concern, where more than 60% of principals still show low performance on school management indicators (MPE, 2019). This situation clearly exposes that most part of principals in the country are still unclear about the best practices to improve their pedagogical leadership strategies.

Given this context, in 2019 the MINEDU implemented a mentoring training pilot programme addressed to school leaders in low-performance schools, which has escalated into a national policy for 2020. The mentoring strategy promotes an intensive use of data for school improvement. It comprises three main pillars addressed to build instructional leadership capacity: (a) school planning; (b) instructional coaching; and (c) the promotion of professional learning communities in the school. The programme content has been adapted to a remote learning strategy given the COVID-19 context, using a blended methodology that involves asynchronous and synchronous learning methods.

The purpose of the present study is to discuss the findings and lessons from the principal mentoring programme. The first part of this paper provides a background of school leadership in Peru. The second part presents the programme design and

methodology features. Finally, in the third part, using the analysis of the programme baseline and monitoring data collected during 2019-20, and drawing on survey data from a sample of principals who received the mentoring sessions, we examine the main programme outcomes to gain important insights on its effectiveness on improving principal practice.

1. School leadership and management background in Peru

In Peru, the role of principals has been traditionally associated with administrative duties at school. However, in recent years the MINEDU has been promoting an specific education reform, oriented towards the improvement of school management, resulting in empowering principals in their role as pedagogical leaders.

This reform has become even more critical considering the poor principal performance in the national school management indicators. An analysis of the results from the MINEDU school management monitoring system and from the National Principal Evaluation, reveals that school principals' performance on leadership and school management, specially concerning instructional coaching and school planning indicators, is poor and has not presented significant improvements throughout different historical measurements (MINEDU,2018). Figure 1 shows that while in most schools (42.4%) there is a participative school planning process, there is no following up of the programmed activities. In addition, more than 50% of schools are between level 1 and level 2 in the school planning indicator, meaning that in these schools there is not an institutional planning process: no institutional diagnostic, goals or activities planning.

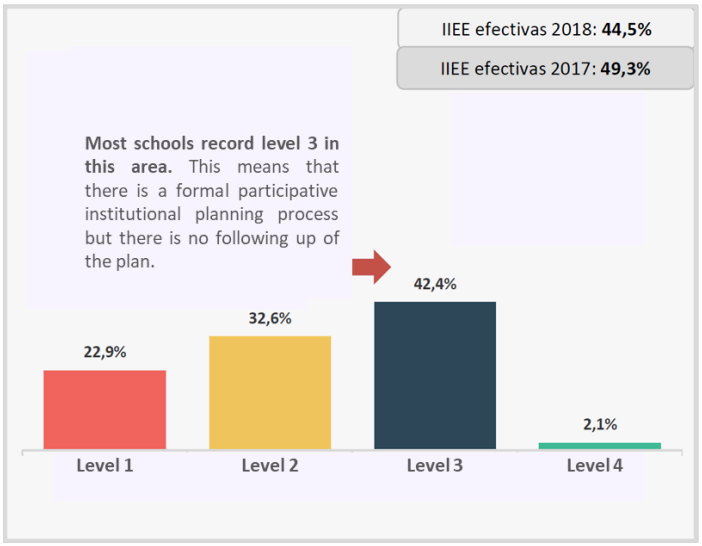

Figure 1: School Planning indicator, 2018

Similarly, the outcomes of the indicator for teacher monitoring (Figure 2) demonstrate how most schools are stagnated between level 1 and 2. This means principals do not have a teacher monitoring plan or, if there is, class observations are mostly not implemented.

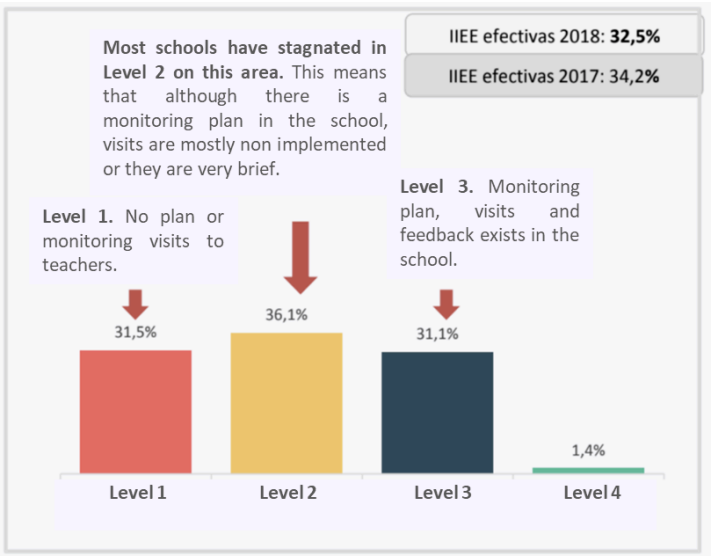

Figure 2: Teacher monitoring indicator, 2018

Further corroborating these initial evaluations, the results of the National Principal Evaluation (EDD) (Figure3) reveal that 67% of principals do not reach an effective level in the area of "monitoring pedagogical practices". This shows that the principals are unable to either conduct class observations, or teacher feedback. Similarly, in the "Promote teacher collaborative learning" area, it was found that 43% of principals do not carry out activities for strengthening pedagogical practices in their schools. If they do undertake such activities, the same are not based on a teacher needs assessment or in school data. This situation clearly exposes that most part of principals in the country are still unclear about the best practices to improve their pedagogical leadership strategies.

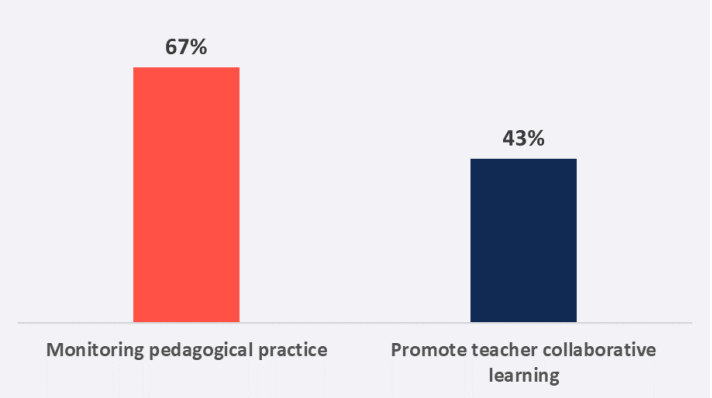

Figure 3: Principal performance evaluation, 2018

The evidence from a correlation analysis between students´ performance in the National Student Assessment (ECE) and the results of the Principal performance Evaluation for 2018, also reveals a statistically significant relationship between principal performance and student achievement. Thus, the percentage of primary and secondary-level students with a satisfactory level in the ECE 2018 in both reading and mathematics rises by almost 5% in the schools where principals have a better performance on monitoring pedagogical practices in the EDD.

Area assessed: Monitoring pedagogical practices				
EDD Score	% Primary Students with satisfactory level on Reading	% Primary Students with satisfactory level on Mathematics*	% Secondary Students with satisfactory level on Reading*	% Secondary Students with satisfactory level on Mathematics*
1 o 2	26.9	24.6	19.4	16.4
3 o 4	29.1	27.0	23.2	21.0

Table 1: Correlation between student achievement and principal performance

2. Principal Mentoring Programme

2.1 Programme design

Based on the analysis of the school leadership and management situation in Peru, the MINEDU decided, in 2019, to implement a mentoring pilot programme focusing on school leaders. The programme was created with the aim of strengthening principals´ instructional and distributional leadership capacities through specialized in-house mentoring sessions.

The programme design draws on international evidence from other principal mentoring and coaching experiences, that are linked to improved principal practice, reflected in an improvement of school leadership (Nannyonjo,2017; Alonso, 2018; OEI,2020). The findings also show that offering mentoring and coaching training to principal significantly increases student achievements and improve teaching quality (Fryer,2017, Arshan et.al, 2019; Barros et.al, 2019; Jacobs et.al,2015). Taking this evidence into consideration, the Peruvian mentoring programme was expected to impact principal practice in the short term, teaching practice in the intermediate term, and finally students' achievement in the long term.

The programme was created as a remedial mentoring programme targeting experienced principals (with +4 years tenure) in low-performance schools and, therefore, who are in need of in-house training. The intervention assists primary and secondary level schools from urban and rural areas and each cohort receives the mentoring for two years.

The programme pilot was implemented in 2019 for 5 months, covering 215 primary schools and 259 principals in 21 (out of 25) regions of Peru. For 2020, the intervention increased its coverage to 536 schools, working with 593 principals in 23 regions for 10 months. Given the COVID-19 pandemic in 2020, the intervention has shifted from face-to-face visits into a remote learning strategy, which also led to an adaptation of the mentoring protocols and instruments to a virtual mode. For 2021, the 2020 cohort will continue to receive the second year of mentoring.

2.2 Mentoring pillars

The delivery of the mentoring sessions contemplates a training design based on three main pillars in order to enhance principal instructional and distributional leadership:

a) Institutional planning oriented to improve teaching practice and learning outcomes
b) Strategies for improving instructional coaching to promote the strengthening of teacher practice.
c) Promotion of Professional Learning Communities (PLC) based on school data to promote collaborative work in schools.

The three pillars are interconnected and oriented towards the improvement of leadership practice. On the one hand, the mentoring imparts principals with strategies for developing school planning oriented to improve teacher performance. Simultaneously, the programme also provides principals with strategies for enhancing instructional coaching and teacher feedback, from where it is expected the principal will obtain data from teachers' performance, they can use for improving collaborative work on their schools through the implementation of professional learning communities (PLC). It is believed these three pillars will led into an effective instructional and distributional leadership performance.

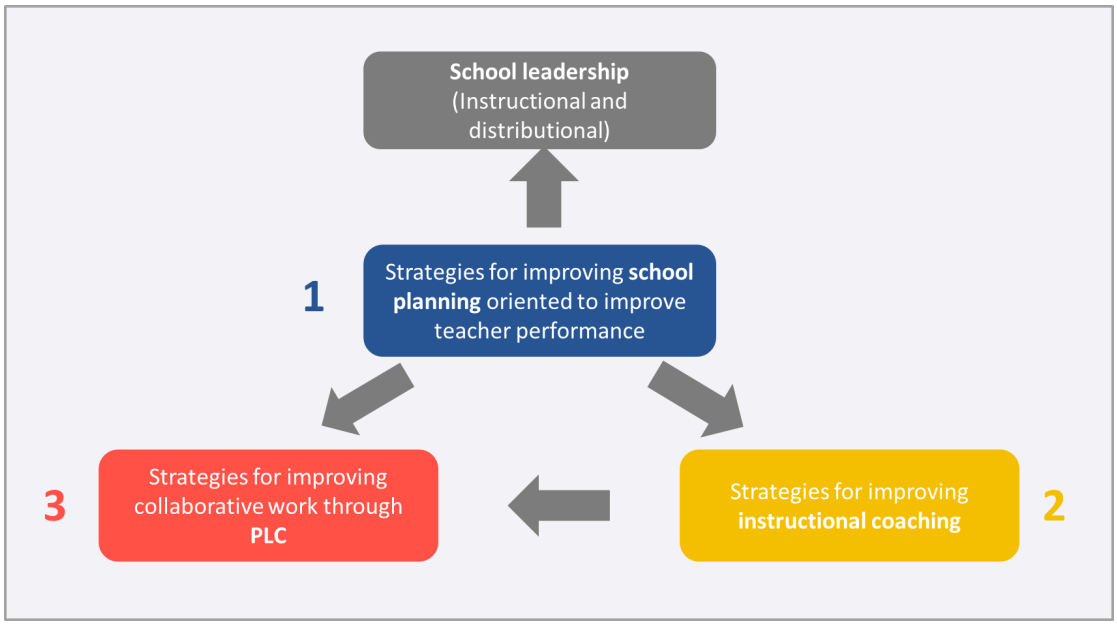

Figure 4: Mentoring Pillars

The *'school planning'* pillar comprises two areas of work with principals: planning process and remote learning strategies. In the planning process we support principals in the school-self-evaluation process, considering school strengths and limitations from the perspective of the whole-school community. Principals are also guided on the use of school data for goals establishment and activities addressed to improve the quality of teaching and learning. The second dimension was designed in the context of remote learning given COVID-19. On this dimension, principals are delivered with support in the use of the technology needed for distance learning (skype, zoom, google classroom, etc.) and in identifying the connectivity conditions of school members in the context of remote learning.

The *'instructional coaching'* pillar, comprises three main areas of work with principals: monitoring planning process, teacher feedback, and the use of monitoring outcomes data. Under monitoring planning, principals are mentored on how they can

design a class observation plan for the school year and guided in the development of an observation rubric (adapted to the characteristics of virtual learning). In the second dimension, principals are mentored on the teacher feedback process. This provides them with strategies for collecting and analyzing pedagogical evidence for understanding strengths and improvement areas of pedagogical practice, and equips principals with strategies for providing effective feedback to teachers based on evidence. Finally, within the third-dimension principals are guided on how to use monitoring outcomes for goals establishment and improve teaching practice.

The third and last pillar of *'promotion of PLC'* comprises two main areas of work: PLC planning and organization process and the use of school data for PLC implementation. Firstly, the principal is mentored in the methodology for the development of PLC, helping them to identify and analyse school data from pedagogical practice and students learning outcomes for the organization of PLC. Secondly, principals are guided in the distribution of roles for the PLC implementation, in the setting goals process from the results of PLC to improve teaching practice, and in implementing and adjusting teachers´ practices to meet the needs of all learners.

2.3 Mentoring sessions

The mentoring sessions are organized in six meetings with the principal during the school year. During 2020, the sessions' content and instruments have been adapted to a virtual mode, to facilitate remote learning. Each session duration is 2 days long, during which the mentor works with principals in synchronous and asynchronous learning. Each mentor assists between eight (8) and eleven (11) principals.

The mentoring sessions consists in three main parts, as it is show in Figure 5: the mentor starts the session by making a personalized diagnostic of the principal needs on the three programme pillars, using a mix research methodology that involves interviews, documentary revision, etc. Based on the analysis of this evidence, the mentors fill up the principal needs' assessment instrument. Once identified the principals' strengths and needs, the mentor provides them with a reflective feedback and they engage into a practical workshop where the mentor promotes the use of the material from the in-house mentoring toolbox that can fit the principal needs. Finally, the session ends with the mentor and principal establishing a personalized improvement plan, on which they set the mentoring goals and agreements.

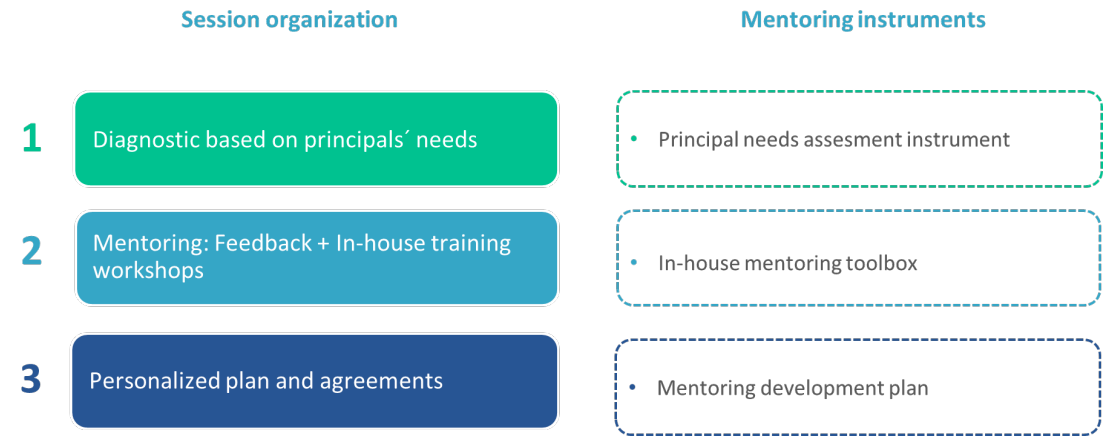

Figure 5: Structure of mentoring sessions

The mentoring methodology is grounded on the use of different education research tools to prepare a personalized diagnostic of the principal´s needs, which are transversal to all three pillars. This methodology involves an interview with the principal and teachers to collect evidence on their practice regarding the three pillars, followed by the documentation revision of the school plan, a virtual observation of principal feedback to teachers; the analysis of teacher feedback to students (synchronous and asynchronous) for the instructional coaching pillar and, for the PLC pillar, involves a modelling PLC meeting organized by the mentor and a virtual observation of a PLC leader by the principal.

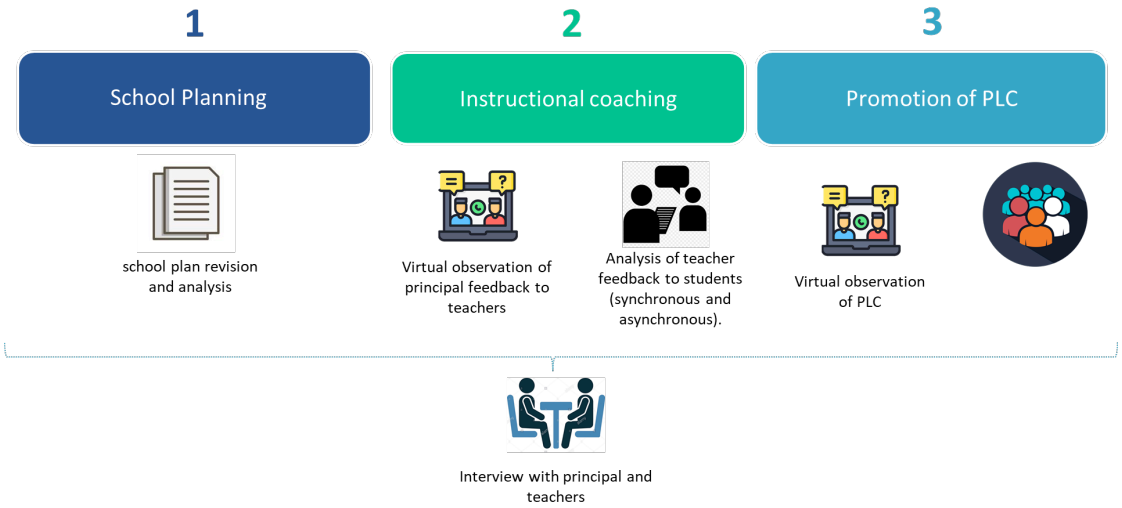

Figure 6: Mentoring methodology

2.4 Impact of school leadership training on school leaders' practice

Throughout the time of the programme implementation, our findings show that the mentoring programme has been significantly successful in enhancing principal skills to effectively support pedagogical practice, the creation of professional learning communities and school planning.

Using the baseline and monitoring data from the mentoring sessions reported during 2019-2020 by mentors, an analysis on school leaders' performance was conducted by the programme based on their progress on the programme indicators for the three

pillars (school planning, instructional coaching and PLC). For the 2019 pilot, the intervention prepared a final balance report in December 2019, presenting the results from the three mentoring sessions. For 2020, we collected baseline information from a new cohort of school leaders during the first three mentoring sessions and following up information for the other three. To date, three reports have been prepared up to the fifth mentoring session.

The 2019 pilot results showed a significant change on school leaders' practice for all three pillars and in particular for instructional coaching and promotion of PLC. As depicted in Figures 7 and 8, the percentage of principals who use monitoring outcomes for goals establishment and improve teaching practice increased in almost seven times in a span of three mentoring visits and the percentage of principals promoting PLC in their schools raised up from 22% to 94.5% by the end of the third visit.

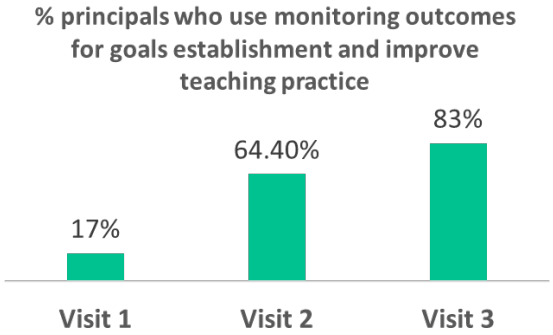

Figure 7: Instructional coaching indicator,2019

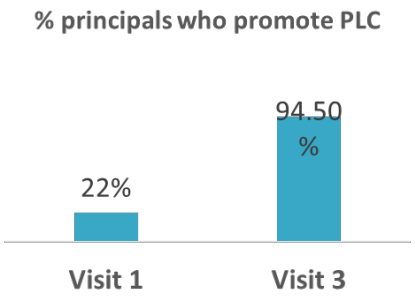

Figure 8: PLC indicator,2019

The implementation of the 2020 virtual mentoring strategy also displayed a positive progress on principals' practice. The latest programme monitoring report from October 2020, compared baseline information collected during the three first mentoring sessions with the results from the fourth and fifth sessions, conducted in September and October, respectively. Following a similar trend of the pilot, the results for 2020 confirm there is a significant progress in the instructional coaching and PLC pillar.

Thus, the percentage of schools with a monitoring plan raised progressively between sessions 3 and 5, with 90% of principals having an observation rubric, and 93% having a monitoring calendar by the fifth session. There is also significant progress in the percentage of principals who provide feedback to teachers, raising from 14.4% to 74% by the fifth session. The percentage of leaders using monitoring outcomes for improving teaching practice also increased from 3% in the baseline session to 72% by the fifth session.

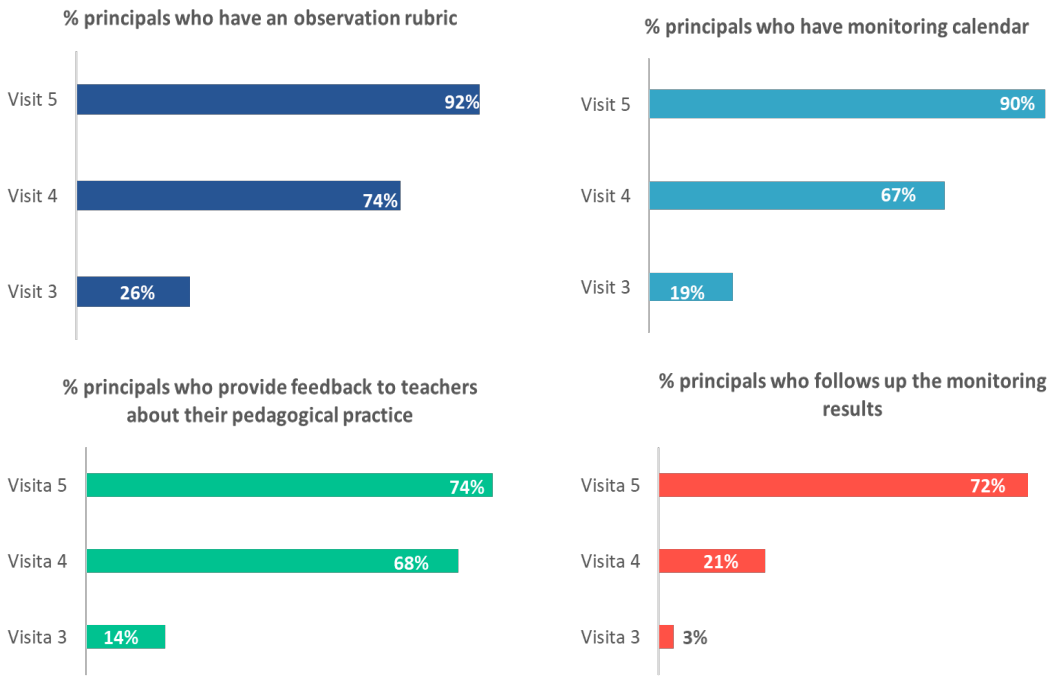

Figure 9: Instructional coaching indicators, 2020

In addition, the evidence shows that the number of schools implementing PLC based on data have progressively increased. As such, the percentage of school leaders organizing PLC in their schools rose from 50% in the baseline, to 86% on the fifth mentoring session. Similarly, and the percentage of principals that use school data for PLC implementation increased from 16% to 71% by the fifth session.

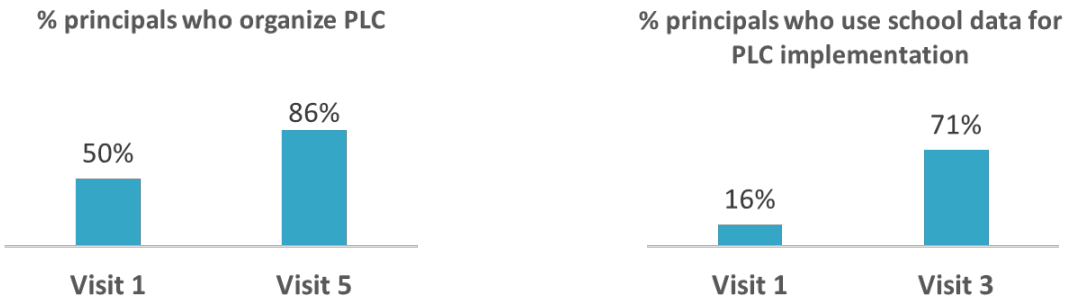

Figure 10: PLC indicators, 2020

As part of programme quality measuring, a satisfaction survey addressed to participant school leaders was implemented by the end of the third session in August. From the 345 respondents, 96.8% would recommend the mentoring programme to other colleagues. In addition, more than 90% of the respondents considered the programme to be ‘useful’ and ‘very useful’ to improve school planning, instructional coaching and collaborative work and that the level of satisfaction with the feedback provided by the mentor is more than 90%.

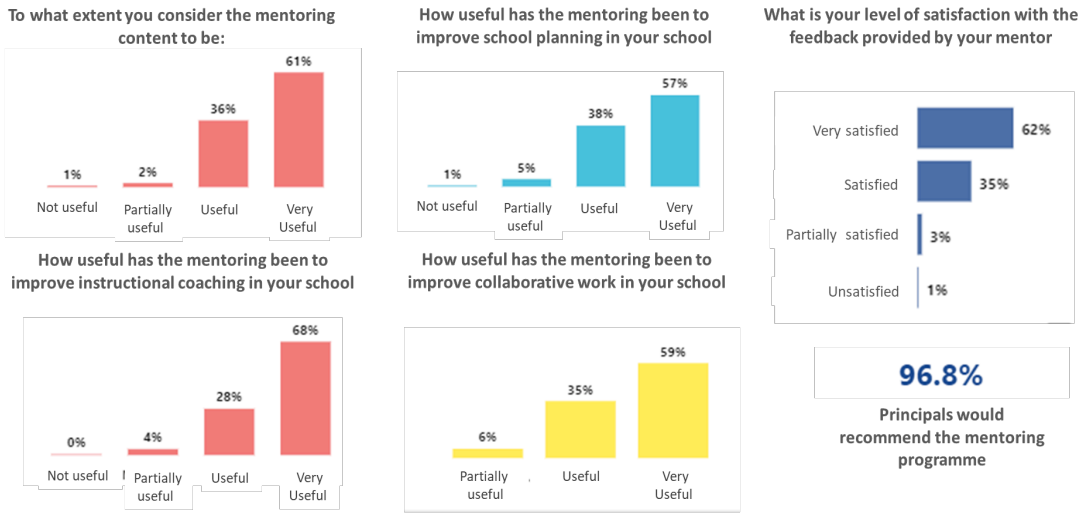

Figure 11: Programme quality survey outcomes

3. Lessons for implementing high- quality leadership mentoring programs

From the experience implementing the mentoring programme over these two years, we have identified certain lessons that can be useful for the design and implementation of high-quality leadership mentoring programmes:

Quality of mentors training

The mentor role is a crucial factor for achieving a change on school leaders´ practice. This is why the programme conducts a meticulous selection process to guarantee they will be a good match for the principals. Part of the recruitment process involves an immersive workshop on mentoring and education research tools. This workshop is key for the mentor's preparation since, even when the prospective mentors are experienced principals, they are not necessarily trained on mentoring and coaching or in education research approaches. Therefore, it is crucial for the programme to conduct a sensitization process to ensure they understand the horizontal leadership focus we want them to promote in the school.

In this sense, mentors' training and sensitization are crucial for breaking with traditional hierarchical leadership models. It is vital to immerse mentors in the culture of distributional and instructional leadership so they can transmit this to principals and break with the common fear of feeling evaluated.

In addition to this, the programme provides support for the mentors, who are in charge of providing guidance to mentors in the use of the programme protocols and instruments. Therefore, we look up for professionals with former experience on education research and social background for the mentor support profile, who also receive an immersive workshop on the mentoring tools.

Developing a bottom-up approach

We found a need to consider a bottom-up approach, to develop in-house training tools, in order to have a real impact on principal practice. Most leader training programs are designed from the policymakers' view without considering and

understanding the needs and motivations from local educational stakeholders, or in this case, to school leaders.

In this sense, it is pivotal for this type of programmes to receive constant feedback from mentors and school leaders in order to improve protocols and develop mentoring instruments that fits the beneficiaries needs. Taking this in consideration, the Peruvian mentoring experience, through consultation, focus groups, and surveys addressed to principals, is constantly collecting evidence from beneficiaries´ satisfaction level with the programme as well as alerts, recommendations and good practices identified by mentors, which are taken into consideration in order to adapt and improve the mentoring tools and protocols to principals' needs.

Finally, flexibility and adaptation are crucial to succeed. Although there are official protocols and guidelines developed by the programme, it is important to consider that each school context is different, so the mentoring process should be flexible and adapted to each school and principals´ needs and context.

Conclusions

The study presented the lessons and findings from the Peruvian experience of the first mentoring programme addressed to school leaders in the country. The results from the programme pilot and monitoring data reveals that the MINEDU mentoring programme has been significantly successful in enhancing principal skills to effectively support pedagogical practice and the creation of professional learning communities.

One of the most significant effects from the mentoring programme in the peruvian context has been the shifting from the traditional management model to a distributional and instructional leadership, reflected in the promotion of regular PLC, participative and collaborative institutional planning process. In this sense, there is reasonable evidence to believe that the mentoring process is leading into a progressive change on school leaders' practice towards a data based-decision making. Further research needs to be conducted on the effects of the mentoring on teaching and student achievement.

The mentoring programme methodology approach involving education research tools-such as triangulation, ethnography, interviews, observations-, represents an innovative strategy to make a solid diagnostic centred on principals´ needs. Also, important to mention is the adaptation of the mentoring methodology given the remote learning context, which required thinking outside the box to adapt the mentoring protocols and instruments. This involved the development of an innovative methodology for collecting pedagogical and student evidence through synchronous and asynchronous methods for different connectivity scenarios.

Finally, in order to deliver high quality leadership mentoring programs, it is crucial to provide high quality mentor training and to consider a bottom-up approach that takes in consideration feedback and good practices from the protagonists: school leaders and mentors.

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Contact email: pvaldivieso@minedu.gob.pe

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