



The IAFOR Hawaii Conference Series 2019

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**Official Conference Proceedings**

**January 03–05, 2019 | Honolulu, Hawaii, USA**

Organised by The International Academic Forum (IAFOR) in association  
with the University of Hawai'i at Mānoa, the IAFOR Research Centre at  
Osaka University and IAFOR's Global University Partners

ISSN: 2189-1036



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The IAFOR International Conference on Education – Hawaii 2019

Official Conference Proceedings

ISSN: 2189-1036



© The International Academic Forum 2018  
The International Academic Forum (IAFOR)  
Sakae 1-16-26-201  
Naka Ward, Nagoya, Aichi  
Japan 460-0008  
[www.iafor.org](http://www.iafor.org)



## Table of Contents

<i>I “Like” It: How to Increase Facebook Group Enrollment and Engagement for University Programs</i> Garrett Fisher	pp. 1 - 11
<i>Working in Silos: A Report on the Coordination of Course Collaboration at a Japanese University</i> Gary Cook	pp. 13 - 27
<i>Comparing a Skills-Focused English Test Against a Lexico-Fluency English Test for International Nursing Students in Higher Education</i> Amanda Müller Michael Daller	pp. 29 - 34
<i>Usefulness of Bilingualism and Literacy</i> Ananda Majumdar	pp. 35 - 44
<i>Basic Research and Ethical Inquiry for EFL Students: Implementation and Reflection</i> Michael H. Brown	pp. 45 - 49
<i>Mastery Learning of Early Childhood Mathematics Through Adaptive Technologies</i> Anastasia Betts	pp. 51 - 63
<i>Action Research Writing Ability among Secondary School Teachers</i> Gemmeline C. Bumanglag	pp. 65 - 73
<i>An Education Model for Coding and Software to Improve Computational Thinking</i> Heeseon Jang	pp. 75 - 87
<i>Purpose of Mindfulness in Teaching Learning Process: Perspective of Buddhism</i> Pramila Bakhati	pp. 89 - 101
<i>Agile-Model Based Dynamic Curriculum Development and Refinement Approach</i> Leon Pan	pp. 103 – 109
<i>The Impact of a Literacy Strategies Course Taught in a Public-School Setting on Teacher Candidates and Students with Emotional Behavioral Disorders</i> Stephen Wills Pat Wolf	pp. 111 - 119
<i>Students’ Perceptions of Availability of Infrastructure and Resources in a Faculty of Education: A Transformative Agenda</i> Zilungile Sosibo	pp. 121 - 131

- How can We Encourage Students to “Interact” and “Produce” in English Classes?: Voices of Japanese EFL Teachers*  
Maki Ikoma pp. 133 - 146
- Diving into the Vortex: Examining Math Identity, Science Self-efficacy, Sex, and Race*  
Talisa J. Jackson  
Joanna G. Jauchen pp. 147 - 152
- Language Learning Strategies of Grade Viii Students in Tabuk City National High School, Tabuk City, Kalinga*  
Shiela Esteban pp. 153 - 174
- Facilitating Tabuk City National High School Employees Gender and Development Seminar-Workshop Through Cooperative and Collaborative Learning Approaches*  
Doddie Marie L. Duclan pp. 175 - 187
- The Self-Management System Standard for a Prosper Lifestyle An Educational Module for Dependencies Interface Management: from the Teachings of Islam*  
Ruba Ahmad AlZeer pp. 189 - 194
- The Effect of Instructor Intervention on the Usage of Mobile Devices for Informal Language Learning*  
Daniel J. Mills pp. 195 - 209
- Self-Selection and Mathematics: Racial Equity and Appropriate Placement*  
Alana M. Tholen pp. 211 - 227
- Comparing Vocabulary Profiles of L2 Asian Written English in the ICNALE Corpus*  
Dax Thomas pp. 229 - 236
- Chinese Immigrant and European American Parents’ Emotional Expressions in Childrearing Activities: Cultural Norms of Emotions*  
Yvonne Liu-Constant pp. 237 - 255
- Research as Assessment for Learning vs Assessment of Learning at Higher Education*  
Dennis Zami Atibuni pp. 257 - 266
- Tough Situation of Teachers for Informatics in Japanese Junior and Senior High Schools*  
Yoshiaki Nakano  
Yasuichi Nakayama pp. 267 - 276
- The Impact of Culture on the Usage of SNS for English-Language Learning in Japan*  
Megumi Kohyama pp. 277 - 287

- Food Apartheids and the Curriculum that Saves it*  
Shakeara Latrice Mingo  
Tiffany Brooks pp. 289 – 306
- Study Abroad Program: Case Study for Career Program*  
Mayumi Hori pp. 307 - 315
- Urban and Rural Secondary School Parents' Sense of Community in Alberta, Canada*  
Bonnie L. Stelmach  
Marcela Herrera-Farfan pp. 317 - 329
- New Literacy Memberships: Implications for 21st Century Literate Identities*  
Lisa Delgado Brown pp. 331 - 341
- The Effect of Gamification Elements on Engagement and Achievement in Calculus 1 and 2*  
Leslie Molnar pp. 343 – 352
- Community, Peace and Sustainability: Leveraging Institutional Positionality to Affect Local and System Change*  
Diana Rice pp. 353 – 363
- Does English Work as the Universal Language?*  
*- Judging from the Current Trend of World Englishes -*  
Masako Mouri pp. 365 – 369



***I “Like” It: How to Increase Facebook Group Enrollment and Engagement for University Programs***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

The rise in social media use over the years brought Facebook to universities across the US, so departments and programs are currently experimenting with using it for academic and communication purposes and they are finding it to be beneficial (Wang, Woo, Quek, Yang, and Liu, 2013; Clements, 2015; Guo, Shen, and Li, 2018; Heiberger and Harper, 2008). This research presents a case study of how to improve a pre-existing university departmental Facebook group and suggests actions based on a successful implementation strategy in the Department of World Languages at Western Carolina University in North Carolina. Other studies on Facebook groups analyze the creation and use of a Facebook group, making this study unique because the original Facebook group was created for the department in 2012, yet five years later, there were only 64 members in the group, demonstrating that the group was not optimized to its full potential. This study found that fourteen specific actions can increase the number of members within the group while encouraging engagement. The strategic actions in this study tripled the number of Facebook group members over a ten-month period and promoted intercultural diversity and communication.

Keywords: Facebook group, diversity, languages, members, communication, social media

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## Introduction

Universities in the United States realized quickly that using social media is important to students. While there are many choices with social media, Facebook continues to be the most popular social media platform in the US (Greenwood, Perrin, & Duggan, 2016). According to Brenner and Smith (2013), of 1,895 interviews conducted with American adult internet users, 89% of users from the 18-29 age group use Facebook. Facebook is not only a tool for the common individual, but also a pedagogical tool for educators and a space where groups can form to support and encourage learning and communication. Facebook groups can be classified as open, closed, or secret to give the administrators options to protect the privacy of group members (Miron & Ravid, 2015). Group members do not have to be “friends” on Facebook, but the group space allows for a virtual experience similar to a classroom, yet the members access the information when they want and as frequently as they desire. Because of the notification function on smartphones, group members receive reminders to check new content that is posted, which is helpful by encouraging engagement. The following study discusses how a fairly inactive existing Facebook group for a university language department can be revived to increase membership and engagement in the virtual environment. While this study focuses on a language department, the study provides useful suggestions that could be applied to other university programs or departments.

## Background on the Study

Western Carolina University is situated in the western region of North Carolina in the United States. The Department of World Languages at WCU provides education through its language programs in Cherokee, Spanish, French, German, and Japanese. A Facebook group called World Languages @ WCU was created on March 13, 2012 by Dr. Santiago García-Castañón in an effort to create a channel of communication with students and alumni that would allow for sharing relevant or interesting information (S. García-Castañón, personal communication, October 27, 2017). This is worth mentioning because the group originally began as a networking tool, yet later became an academic virtual learning space where students, faculty, and supporters of the department could communicate and share academic content.

## Problem

**Table 1: Total Student Enrollment in the Department of World Languages at Western Carolina University**

Semester	Number of Students
Spring 2012	548
Spring 2017	578
Fall 2017	704

As seen in Table 1 above, the Department of World Languages Western Carolina University had 548 students taking language courses in the spring of 2012 and had 578 students taking language courses as of January 30, 2017 (M. Allen, personal communication, October 27, 2017). The World Languages @ WCU Facebook group only had 64 members after approximately five years of being in use. Using these figures, this would mean that only approximately 11% of current students in the

department were members of the group, but some members were faculty members or alumni as well. This percentage was perplexing because although multiple generations are represented at the university, the majority of university students in the US represent Generation Z, according to a 2013 study of full-time enrolled undergraduate students at 2 and 4-year public institutions (National Center for Education Statistics, 2013). Generation Z students are known to be constantly connected and as discussed earlier, 89% of the 18-29 age group in the study by Brenner and Smith (2013) use Facebook. This data suggests that the students were and are using Facebook for many purposes, but very few were members of the World Languages @ WCU Facebook group. The group was only being used occasionally and the content was outdated. An additional problem with the Facebook group was that it was not inclusive of all of the languages represented in the department.

### **Purpose of the Study**

This study aimed to serve as an intervention in a previously established Facebook group to increase membership and engagement. Two main goals were established by the researcher:

1. Double the number of members in the World Languages @ WCU Facebook group (64) while provoking more participation from faculty and students.
2. Make the group inclusive of all languages represented in the department.

### **Research Question**

How can an existing Facebook group be changed to increase membership and engagement with university faculty and students?

While the creation of a Facebook group could be beneficial to a university program, this study focuses on changes that could be made to an existing group, as the Department of World Languages at Western Carolina University already had one in place.

### **Significance**

The interest in the use of a Facebook group for academic purposes has increased over the years, as researchers have found beneficial results (Wang, Woo, Quek, Yang, and Liu, 2013; Clements, 2015; Guo, Shen, and Li, 2018; Heiberger and Harper, 2008). This research adds to the studies completed on Facebook groups, yet is unique because it encourages language learning without focusing on a single second language and it tests strategies to increase membership and engagement within the group. The Facebook group also serves as a virtual environment to promote Community Language Learning (CLL), which may be appropriate for newer generations of students (Fisher, 2017).

This study addresses the low Facebook group membership numbers in World Languages @ WCU and may serve as an example to model for other language programs and/or departments in the US.

## **Data**

The data is found at World Languages @ WCU on Facebook and is publicly available once the member is approved. Member approvals are only required for behavior management purposes and to ensure that each member is an actual person. The data used in this study covers a period of ten months from January 30, 2017 to October 30, 2017. Quantitative data is available on Facebook to show the number of members, views, likes, and comments. Qualitative data is also available within the group, as posts can be seen by all members.

## **Data Analysis**

Because the main goals of this study are to double the number of Facebook group members and make the group more inclusive of all departmental languages, the analysis is simply to observe the trends over the ten-month period while specific actions are taken to increase the membership number and state the success or failure of the multiple language representation goal.

Scheduling posts and engagement analysis (“insights”) are two functions that are beneficial to administrators because the “insights” feature permits the viewing of key metrics such as: actions, views, likes, reach, post engagements, messages, and videos (Lua, 2017). Some social media dashboards like Hootsuite do not currently offer analytics for Facebook groups because of a business agreement.

The “group insights” feature was utilized in this study to analyze the engagement in the group quantitatively instead of manually counting or calculating the membership and engagement data.

## **Goals**

1. Double the number of members in the World Languages @ WCU Facebook group (64) while provoking more participation from faculty and students.
2. Make the group inclusive of all languages represented in the department.

## **Framework for Actions**

This Facebook group mentioned in this study is public and does not only have university students, yet the purpose of the group is to provide a space for people who study, support, and teach world languages at Western Carolina University. This space was created based on the availability of new technology, taking into account the communication style of those born after 1995, known as Generation Z, as the majority of students studying at Western Carolina University represent that generation.

Seemiller and Grace (2016) conducted a study to analyze Generation Z’s characteristics, learning styles, engagement, and outlook on life through surveys of 1,223 students in the US, born 1995 or later and found that “...Generation Z students use Facebook the most in comparison to other mass communication methods” (p. 72). Seemiller and Grace (2016) also discussed the fear of missing out (FOMO) observed with Generation Z that explains why they are constantly connected and checking their phones, even moments after waking up. Seemiller and Grace (2016) explain,

“Generation Z students are comfortable with sharing their opinions or expertise and use multiple platforms...to do so” (p. 77).

Ahern, Feller, & Nagle (2016) explored 260 undergraduate students’ use of Facebook groups to understand what motivates students to use them and what benefits they receive from being involved with the groups and found that students are members of Facebook groups for both social and educational reasons. Facebook groups allow students to seek information with ease, communicate quickly and efficiently, and learn from others while creating a sense of community that they can access remotely on their own time (Ahern et al., 2016).

The researcher identified seven major themes in the studies by Seemiller and Grace (2016) and Ahern et al. (2016) to develop actions for the Facebook Group World Languages @ WCU. These themes are:

1. Fear of Missing Out (FOMO)
2. Teachers and peers are role models
3. Education matters
4. It is okay to share opinions
5. YouTube is valuable
6. Diversity should be embraced
7. Hybrid experiences are interesting

The themes are specifically designed for the Generation Z students, but they may apply to other generations as well.

### **Actions**

1. Email students individually, inviting them to the FB group. This relates to FOMO, as mentioned by Seemiller and Grace (2016).
2. Announce the existence of the FB group in classes. This relates to FOMO, as mentioned by Seemiller and Grace (2016).
3. Post link to FB group on Blackboard courses with an optional invitation to join. This relates to FOMO, as mentioned by Seemiller and Grace (2016).
4. Post more photos to group of students and faculty. Teachers and peers are role models to Generation Z (Seemiller & Grace, 2016).
5. Post articles about faculty success stories. Education matters to Generation Z (Seemiller & Grace, 2016).
6. Create polls to encourage group participation while gaining information about students and faculty. Generation Z students don’t mind sharing their opinions (Seemiller & Grace, 2016).
7. Post and re-post entertaining videos from YouTube and campus events. YouTube is valuable to Generation Z (Seemiller & Grace, 2016; Sparks & Honey, 2014).
8. Post culturally-relevant articles to encourage reading. Generation Z students embrace diversity (Seemiller & Grace, 2016). Group members share common ground, so the content is relevant to them (Ahern et al., 2016).
9. Encourage students to post in group. This may be a challenge for Generation Z students, as Seemiller and Grace (2016) noted that Generation Z students have a tendency to just observe what is going on, as they do with reality shows, yet students

appreciate the ease of posting in a group over other methods, such as email (Ahern et al., 2016).

10. Provide event information within the group. This creates a hybrid experience, as members can read and plan online before going to an event in person. Generation Z students like hybrid experiences (Seemiller & Grace, 2016).

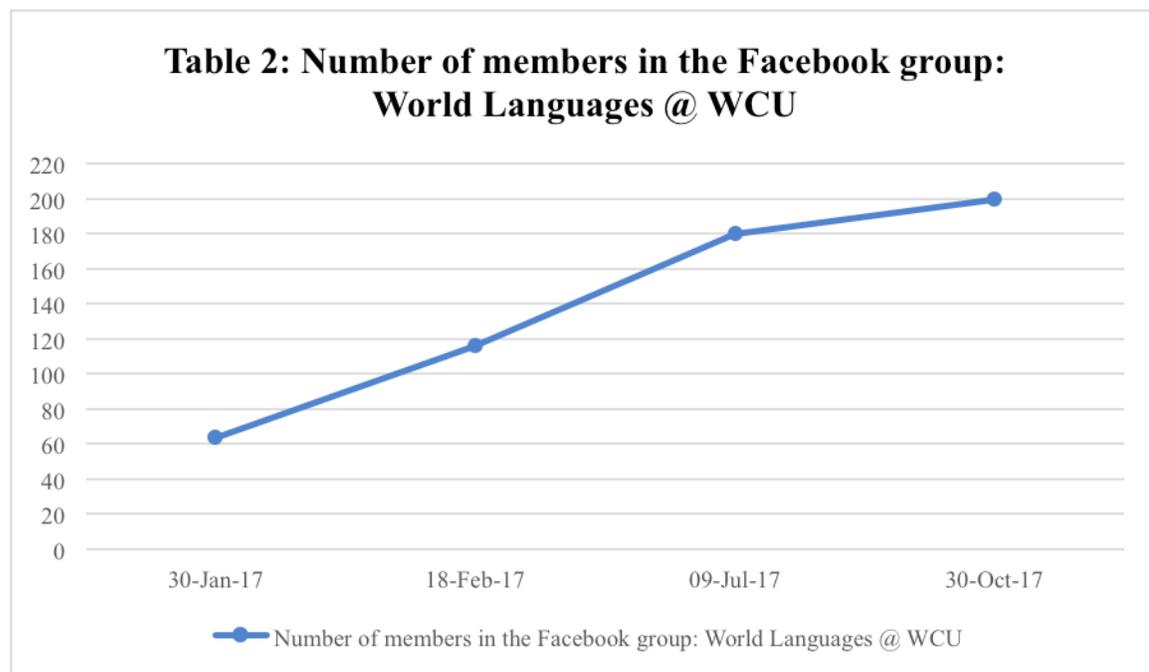
11. Invite others to join while at conferences. This provides networking and continuing education opportunities for students and faculty members and adds to the diversity of the group. Generation Z students embrace diversity (Seemiller & Grace, 2016).

12. Spend approximately one hour per day researching content and posting frequently. The study by Ahern et al. (2016) found that 45.9% of undergraduate students (93% were ages 18-24) regarded posting on the Facebook timeline as important.

13. Create a YouTube Channel to integrate video of faculty and students. YouTube is valuable to Generation Z, as students report using it to supplement the material learned in courses (Seemiller & Grace, 2016; Sparks & Honey, 2014).

14. Share posts from other WCU language programs. Generation Z students embrace diversity (Seemiller & Grace, 2016). The Facebook group creates a sense of community (Ahern et al., 2016).

## Results and Discussion



As seen in Table 2, the combination of all aforementioned actions produced positive results, as the number of Facebook group members more than tripled in a period of 10 months. There were 64 members on January 30, 2017 and the numbers increased to 116 members on February 18, 2017, then to 180 members on July 9, 2017, and finally to 200 members on October 30, 2017.

The actions also increased the engagement with faculty members, students, and WCU supporters. Posting frequently and sharing interesting photos and videos provoked

many members to view, comment, or like the content. This group also promoted the other language program groups within the department, which increased the number of views, likes and comments. Because posts were inclusive of all languages, the content was found favorable by many members. This was a significant finding, as representing multiple languages was beneficial to the whole group.

The integration of the YouTube Channel was particularly engaging and easy to analyze with the analytics function on YouTube. A series called “iLanguage Talk” was created in which the researcher recorded interviews on video with WCU professors to discuss language and culture topics. This gave the professors a voice and space to share their expertise. Once uploaded to YouTube, the episodes were easily posted to the Facebook group. Further analysis on iLanguage Talk will be provided in a future publication by this researcher.

The number of views can be seen within the Facebook group and that average number also increased with the positive trend in the number of group members, as seen in Table 2. Also, because one action was to post frequently, many group members simply viewed the content, but did not interact. There were some discrepancies between the number of views on YouTube videos posted in the group and the number of views in the YouTube analytics. This may suggest that members clicked on the content to read the description, but did not actually view the video. Similarly, some questions or polls were answered only by a few, yet a significant number of members viewed the post.

### Graphic A: World Languages @ WCU Engagement Numbers and Days



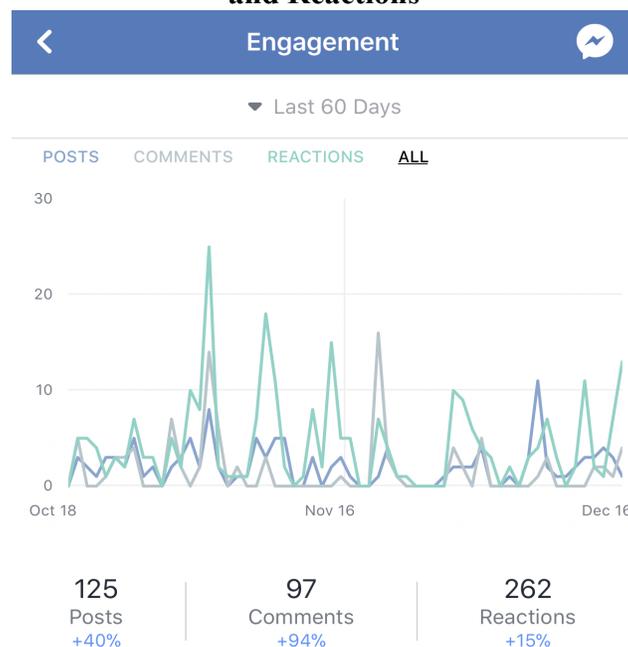
As mentioned previously, Facebook groups do currently provide some data analysis to understand engagement within the group. Graphic A above indicates that there are 164 “active members”, which demonstrates that some members want to be a part of the group, but are not actively involved or engaged. Tuesday, Wednesday, and Thursday are the most popular days for engagement within the group, so this could suggest that either more posting could be done to increase engagement on other days or the prime time to engage with the group is between Tuesday-Thursday.

One of the actions in this study was to spend one hour per day researching, developing, and posting content for the group. This took significant time for the researcher, as one hour per day for ten months totals over 300 hours.

This study found that membership and engagement can be increased by the 14 actions that were previously mentioned. It is impossible to highlight a single action that had the most impact, as many of the actions were implemented simultaneously and frequently. It is understood that the combination of the 14 actions led to the increase in members. This increase of 136 group members is significant when considering that this study took place during only 10 months. Also, the student enrollment for the Department of World Languages at WCU for the fall of 2017 was 704, so this could demonstrate that 25-28% of students are now members of the group, yet one must take into account that some of the new members are not students at WCU.

This study was also helpful to identify ways in which group members interact. Many members voluntarily chose to view content and absorb the input, yet they did not feel inclined to interact and demonstrate output. This observation aligns with Seemiller and Grace's (2016) study that found that Generation Z is "...drawn to seeing what is going on with those around them, and social media is a quick and easy way to do just that" (p. 74). Could this be considered to be passive engagement? According to Coates (2006), "Institutions should work to transform passive styles of engagement into other likely more productive styles of interaction with learning" (p. 178). While passive engagement can be seen in a negative light, it is important to note that membership in this particular Facebook group is not required, nor is it linked to any single university course. It simply serves to quench the thirst for knowledge about languages and cultures while facilitating communication with a diverse group of people. That being said, active engagement could be beneficial for the general experience in the group, so strategies to provoke active engagement could be analyzed in a future study.

### Graphic B: World Languages @ WCU Engagement Through Posts, Comments, and Reactions



Graphic B is an example of the group engagement with posts, comments, and reactions from October 18, 2017 to December 16, 2017. The Facebook application on an iPhone currently restricts the view to increments of 7, 28 or 60 days, so the 60-day view is shown above to have a glimpse of the group at the end of the ten-month observation period and also the engagement moving forward. Accessing the “Group Insights” on a computer allows for a 4-month view, but does not currently have the option of a 10-month view. As seen above, the reactions tend to peak when there are more posts. This could indicate that more frequent posting could increase the engagement.

The researcher is currently learning more about effective ways to work periodically instead of spending an hour every day to work on this Facebook group. The use of Hootsuite is one way to schedule posts, yet it can be costly to use advanced features to increase group engagement.

### **Conclusions**

The use of a departmental Facebook group for interaction with university students and faculty was analyzed in this study and found that fourteen actions can be helpful to increase the number of members, improve quality, and increase engagement. The study found that (1) emailing students, (2) announcing in class, (3) posting link to Blackboard courses, (4) posting photos of students and faculty, (5) posting articles about faculty success stories, (6) creating polls, (7) posting and re-posting videos from YouTube and campus events, (8) posting culturally-relevant articles, (9) encouraging students to post in group, (10) providing event information, (11) inviting colleagues while at conferences, (12) spending approximately one hour per day researching content and posting frequently, (13) creating a YouTube Channel to integrate video of faculty and students, and (14) share posts from other departmental language programs can all benefit the group and produce positive results. The two main goals in this study were accomplished, as the membership numbers exceeded the expectation and multiple language program posts were re-posted. This study was not only beneficial for the Department of World Languages at Western Carolina University, but also for other universities, as they can now use this group as a model of success for future implementation of a Facebook group. Further study and analysis could be done on the types of engagement activities within the Facebook group to keep members actively involved.

For the readers of this research who would like to learn more about Generation Z students, Facebook groups, or creativity with language education, feel free to connect with the researcher through social media.

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***Working in Silos: A Report on the Coordination of Course Collaboration at a Japanese University***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

Universities can be workplaces where staff work in silos. Teachers are often left to their own devices when designing and implementing curricula. Whilst the freedom of independence may be welcomed by teachers, it can lead to missed opportunities such as the chance to encourage a spiral curriculum. This paper will report on the coordination of staff teaching on a variety of English courses across four years at a women's university in Japan. Tasks asked of teachers were chiefly related to the creation of a shared Google document containing separate tabs for each English language course. The Common European Framework of Reference for Languages (CEFR) was employed as a tool for teachers to choose language goals in the form of Can Do statements. Teachers were required to add course assessments, and any rubrics and test specifications where applicable. Additionally, columns were created for any comments or suggestions related to the course. Finally, a chart showing all courses was created to display any progression of CEFR course levels throughout the curricula. While in its infancy, initial feedback from a teacher questionnaire in this study has highlighted the importance of course collaboration to increase curricula knowledge and improve transparency for both teachers and students alike. Further benefits along with shortcomings are discussed. As a conclusion, future teacher workshops and smaller team meetings to improve the collaboration process are recommended.

Keywords: Spiral curriculum, coordination, CEFR, goals, Can Do statements, assessments, collaboration.

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## Introduction

This study originates from the author's five-year period spent as a General English (GE) coordinator (2012-2017), as well as his position as Global Communication Department (GCD) coordinator (2017-current). The study, which aims to improve collaboration amongst staff teaching English on GCD courses, comes off the back of a five-year GE curriculum project carried out by members of staff at the Bunkyo English Communication Center (BECC), located in Hiroshima Bunkyo Women's University (HBWU), Japan.

At HBWU there are five departments: Early Childhood Education, Psychology, Welfare, Nutrition and Global Communication. Until 2018, all students were required take a GE communication course in their first and second years of study which are conducted by the BECC (from 2018, second-year students could elect not to take the GE course). In 2012, BECC management commenced a collaborative GE curriculum renewal project that involved all teaching staff. Up until this point in time teachers had been teaching the GE program somewhat independently of each other, an observation from the author given support by a former BECC director's recurring comment that teachers were 'working in silos.' As noted by Swap and Wayland (2013), universities are well-known to have figurative silos, whether institutional or personal, within their walls which can act as barriers to inhibit the exchange of knowledge amongst staff. An additional reason to include all staff on this project was every teacher at the BECC teaches the GE course, therefore have a vested interest in the outcome. Directors and coordinators started with the planning of a two-year curriculum based off the Common European Framework of Reference (CEFR) (Council of Europe, 2001). Course goals were chosen in the form of Can Do statements, a core component of the CEFR which describe what the learner can do in their target language at different levels. All teaching staff received various CEFR education and workshops, and were tasked with creating lessons and assessments, giving feedback once the curriculum had been taught, and revising content in a cyclical process over a period of five years. For more information on this project see Bower, Runnels, Rutson-Griffiths, Schmidt, Cook, Lehde, and Kodate (2017), and Bower, Rutson-Griffiths, Cook, Schmidt, Lehde, Kodate, and Runnels (2017).

In contrast to the GE course, GCD courses at the BECC are taught by either one, two or three teachers. Teachers who teach the same course are obliged to have some communication with each other regarding course content and assessments. However, teachers solely responsible for teaching GCD courses have little to no communication with other teachers regarding their curricula. Regardless of whether a course is taught by one or more teachers, apart from a GCD meeting once a semester there had been little coordination and sharing of information amongst teachers across the four-years of education at the BECC. It could be argued that these teachers were still working in silos, as they were mostly left to their own devices to create, teach and improve curricula. With this point in mind and from personal observations of various GCD classes over a period of two semesters in 2017, the GCD coordinator sought to improve collaboration regarding GCD courses.

The collaboration started by way of a shared Google document containing separate tabs for each course. Teachers were required to complete each of their course tabs with CEFR-informed course goals, assessments, test specifications, rubrics,

suggestions and/or any issues regarding courses. By sharing this information in a single easily-accessible document one intention was for teachers to see opportunities to promote spiraling across the curricula. A spiral curriculum is one that revisits itself enabling learners to progressively build on basic principles to gain a deeper understanding of more complex forms (Bruner, 1960, p.13). With the GE curriculum, one such example of spiraling is the replication of a presentation. In semester one, students give a presentation using Keynote to introduce themselves. In semester three, students partner up with a classmate to make another Keynote presentation introducing her, thereby switching from first person to third person tense. Conjugating verbs in the third person is a typical error for Japanese learners of English (Bryant, 1984), therefore students have an opportunity to build on their presentation skills while gaining experience with a more complex language point. On GCD courses, with teachers working independently of each other an opportunity is being missed to create materials which allow learners to revisit content at progressively more complex levels.

A later addition to the Google document was an outline created from the goals component to check the progression of CEFR course levels throughout the four-year curriculum (see Appendix A). As a follow-up to this collaboration document a teacher questionnaire was administered to obtain feedback on both the document itself, and collaboration in general. The purpose of this study is to document the collaboration process, analyze the results of the teacher questionnaire, reflect, and feed back into the plan to improve course collaboration on GCD courses at the BECC.

## **Background and Methods**

### Global Communication Department (GCD)

The list of courses and number of assigned teachers at the time this study commenced in April 2017 can be seen in Appendix B. Eight of the 17 courses are compulsory. The 13 teachers were from Canada (1), Japan (1), New Zealand (1), the Philippines (2), the United Kingdom (2) and the United States of America (6). In 2017, the registered number of GCD students were 32 first-year, 19 second- year, 28 third-year and 44 fourth-year.

### Questionnaire.

A questionnaire asking the following three questions was distributed to teachers in April 2018:

1. Please give your feedback regarding the GCD course collaboration document created in 2017.
2. How do you feel about collaboration with GCD courses that you co-teach? For example, collaborating with teachers teaching the same course.
3. How do you feel about collaboration with all other GCD courses? For example, collaborating with teachers teaching different courses.

Data was collected via Google forms. Teachers were not required to give their names to responses. Eight teachers completed the questionnaire.

## Results

To analyze the results excerpts from teachers' responses to the questionnaire have been selected. Full responses to the questionnaire can be found in Appendix C.

Table 1. *Feedback for the GCD course collaboration document.*

Teacher	Comment
1	Huge and cumbersome. Navigating and filling in the google sheet was tricky resulting in time wasted having to re-do portions, re upload links, etc...I suppose I could not see the direct benefit to me individually and so inputting all the data in all of these classes I teach just felt like yet another busy work task I had to take time away from my teaching/planning/research/committee work just so I could show that I filled in all of the boxes.
2	It was helpful to be able to consider concrete CEFR goals for the course. Also, it is handy to have all assessments in one place so that others can easily see what I am doing and likewise. It is also neat to see the CEFR bands of each class side by side.
3	This doc has hopefully / probably made everyone think more deeply about their course goals... It also helps us see what is being repeated across courses... and we can also see how we can help other courses complement each other...
4	... it helped root out some bad course goals I had and helped me focus on using the CEFR to improve the courses I teach. The assessment section helped me see how I could change the assessments I use to more closely match what I cover in class.
5	I think it will be really helpful when it comes time to revise my course, since I will be able to see what previous teachers have had to say about the course. I can also pull ideas from other courses relatively easily.
6	... it not only helps to give GCD teachers a better idea of what other teachers are doing, but also allows teachers to share ideas and see what works or does not work in other courses. In particular, being able to stretch vocabulary across different courses and utilize similar testing methods and rubrics is beneficial for both students and teachers.
7	I found it helpful because, by adding CEFR-based course goals, I could clearly see how challenging the content of my course can be for lower-level students. It was also helpful to see all of the course's assessments in one document, which made me reflect on some of the shortcomings of my course.
8	I like how you can find the information of all the courses in one place. I also like the Overview tab, where you can see the levels of can-do statements used for all the classes at a glance.

Comments in Table 1 highlight the usefulness of the collaboration document when considering course goals, assessments, the CEFR and the sharing of course knowledge amongst staff. Goals and assessments are integral components of a language course which require careful consideration. Comments made by teachers 2, 3, 4 & 7 highlight how teachers have now been made more aware of bad course goals, how they now have goals related to the CEFR, and how their goals give a better indication of the level of the course. The convenience of having all assessments in one document was noted by teachers 2, 7 & 8, and teachers 4 & 7 commented how this task has encouraged improvements to assessments. Teacher 6 could see the value of

sharing assessment rubrics and specifications to both teachers and students. Teachers 2 & 8 referred to the overview tab and the usefulness of the CEFR, where the bands of different English levels show a comparison of course goal levels at a glance. Teachers 2, 3, 5 & 6 noted the sharing of ideas and knowledge as being beneficial for teachers, particularly to be able to revise courses so that they can complement each other.

Teacher one's argument against the collaboration document would seem to relate mostly to the amount of time spent attempting the task. The use of Google documents has become somewhat of a standard practice at the BECC within different committees, however, navigating Google Excel can be a time-consuming process. This teacher's comments would also seem to address the busyness of teachers at the BECC, where they are expected to serve on different committees in addition to creating, teaching and grading courses.

Table 2. *Feedback for collaboration on courses co-taught by teachers.*

Teacher	Comment
1	Some teachers I get along with very well and so there are not many bumps in the road and teachers which I don't necessarily get along well with or have less respect for I don't collaborate much other than bare minimum. It is important for administrators to hire and train (and continue to train) the best staff they can/ who share similar work ethics.
2	I don't co-teach, but when I did, it was fine. We had many meetings, and often the assignments we came up with were a little simpler than I would have made them, but that may have been for the best as a counterbalance to my curriculum style.
3	...autonomy within the classroom, but all frameworks should be the same: Same rubrics, same terminology (between years), same dates for assessments (within a year). Also stops one class thinking it has to do more than another / is missing out on something...
4	...it can be tricky to stay on the same page or keep the students on roughly the same schedule for assessment purposes. It's certainly easier to have each course taught by one teacher, though that could lead to some people heading off in unhelpful directions if left unchecked.
6	My experience so far has been only positive. It is nice to bounce ideas off another teacher and share activities.
7	On the positive side, a lot of creativity can come out through a collaboration of ideas, and with more teachers involved creating new materials and making updates can be a quicker process. On the negative side, collaborating can be a challenge if the teachers have conflicting ideas about what they'd like to accomplish with their students, and teacher preference starts dominating the direction of the course.
8	When I worked at a different university in the past, teachers teaching the same courses used different textbooks and taught different contents, and to be honest I never understood it. It was usually left that way because there wasn't any communication among them, let alone collaboration. Students can't choose teachers, and if what's covered in the classes differ, I think it's not fair for students.

Comments in Table 2 outline both positive and negative aspects of collaboration where teachers must teach the same course. Teachers 1 & 7 mention the issue of conflicts and the necessity for people to share similar work ethics. Teachers 2, 6 & 7 comment on the positive aspects of sharing which includes reduced time, increased creativity and a balanced complexity when creating materials. Teachers 3 & 8 both touch on the issue of equity for students when course content can differ depending on the teacher. Teacher 4 brings up the topic of quality control on courses when there is only one teacher assigned to teach it.

Table 3. *Feedback for collaboration on different courses taught by different teachers.*

Teacher	Feedback
1	Regarding the compulsory GCD courses it is more important to collaborate among teachers to have background knowledge of what students have already learned or routines they are trained. For example, knowing the writing processes students are familiar with helps future GCD teachers and reduces student confusion/anxiety, etc.
2	To be honest I'm not really thinking so much at the moment about what others are teaching in their courses, but if there was a way to link them up so that we are sure students receive a holistic curriculum and are prepared skill-wise for the advanced level courses they wish to take, that would be excellent.
3	...a 'must'! Even if it is just letting each other know what they have done tech wise within courses, all FE GCD teachers should collaborate for the benefit of the kids!
4	It's helpful to think of our courses from the students' perspectives. If we can avoid having them give three presentations in a week on the same topic I think that's a good thing for them and the collaboration aspect generally helps set us apart from other universities.
5	I would like to have a chance once in a while to hear about some specific activities teachers have introduced into their lessons that were particularly successful, which I can adapt to my own course.
6	I think this is a good thing, but it is important to balance the amount of freedom teachers have with the amount of course integration required. I do feel it is important to coordinate aspects of a course so that the classes complement each other.
7	Students can gain a deeper understanding, if they can connect what they've learned in more than one course. Also, if there isn't enough time to fully cover something in one course, students are still able to receive support in another. (i.e. Students work on the final draft of their BEC paper in their Writing Strategies class.)
8	I'd be happier if I know how my course is related to other courses, where there are any overlaps, the roles my course plays in the bigger picture of BECC education. I think the teachers here don't mind / want to have some collaboration. The difficult question is how much.

In Table 3 we can see topics related to students acquired knowledge, benefits to students, teachers and the university, the optimum amount of collaboration, and a spiraled curriculum. Teachers 1, 2 & 3 comment on the usefulness of utilizing background knowledge such as routines already trained and skills learned to prepare students for other courses. Teachers 3, 4 & 7 agree that teacher collaboration is particularly important for the benefit of the students. These benefits include balancing

workloads and giving adequate support to students. For example, when time is an issue in one course they can still receive support in another if teachers collaborate. Benefits to teachers is mentioned in teacher 5's comment which asks for the sharing of successful activities so that they can be adapted to use in multiple courses. The amount of collaboration at the BECC is noted by teacher 4 as seeing this university set itself apart from others. In teacher 7's response we can see a reference to a spiraled curriculum, where students can gain a deeper understanding by connecting content in different courses. In agreement with collaboration across courses teachers 6 & 8 raise a critical question; how much course integration is required to gain the most benefit when considering both students and teachers perspectives?

## **Discussion**

The purpose of this research was to document a process of collaboration whereby teachers input CEFR-informed course goals, assessments, rubrics, specifications, and comments related to GCD courses at the BECC into a Google excel document. Subsequently, teachers gave feedback on this document and collaboration in general. The results from the teacher questionnaire showed that a focus on selecting CEFR-informed course goals encouraged teachers to work on improving the direction of courses for both teachers and students alike. This improvement is being achieved by pruning course goals considered not appropriate, and selecting new course goals based on Can Do statements from the six levels of the CEFR, from A1(Basic user) to C2 (Proficient user). The sharing of these goals gave rise to a course overview tab which shows a general picture of the level of progression of course goals throughout four years of English language education at the BECC. Regarding levels of the CEFR, teachers indicated that they are now more aware of how challenging their courses are for students. Consequently, they can inform students to carefully consider whether their English level is suitable to take the course in the case where it is an elective option.

When one considers the CEFR and language goals, the topic of assessment naturally springs to mind. From comments received by teachers who completed this task, benefits are primarily related to the convenience of having all assessments in one document. Learning and teaching are not static processes. Therefore, when it comes time to revise courses by having all assessments, specifications and rubrics easily accessible, teachers commented that the process may be easier and the value to students greater. An example of how students may benefit is familiarity with test formats. According to Lakin (2014), there is a reliance on metacognitive monitoring skills when encountering new test formats. Therefore, with a familiar test format a student may fully focus their attention towards the assessment itself, rather than how to answer it. Additionally, previous knowledge of a rubric may improve clarity of what is expected of an assignment for students, and subsequently the results obtained.

A major benefit to this study according to teachers has been the increased sharing of course knowledge. Knowing what occurs in one course can in turn enable teachers to create materials where content is revisited progressively in more complex forms, i.e. a spiral curriculum, Bruner (1960). The sharing of knowledge also allows for a bigger picture to be drawn, for example, how one course relates to others in terms of goals and assessments. Furthermore, teachers can see what comments previous teachers of a course have shared, or any suggestions as to where improvements could be made.

Not all feedback regarding the collaboration document was positive, however, and the issue of time spent doing the task including navigating a Google excel document was raised by one teacher as being a busywork task. The criticism raises red flags related to transparency of the purposes of the task itself, along with how much guidance was given, and whether feedback received was adequate. The purposes for the collaboration document task were stated as being:

1. To investigate language goals for GCD students over four years of study.
2. To investigate assessments for GCD students over four years of study.
3. To determine how goals are being matched by assessments.
4. To determine how language skills are being represented across curricula.
5. To encourage teachers to draw upon specifications used in the GE course when creating GCD assessments.

Although transparency would seem to be covered by the five purposes above, the author notes here that guidance and feedback can certainly be improved in the future for teachers as improvements are sought for not only the courses, but the collaboration process itself.

Teachers at the BECC unanimously agree that there are numerous benefits to collaborating on courses for both teachers and students. The team of teachers have been collaborating considerably on the GE curriculum since 2012, creating materials based on the CEFR. Specific benefits of collaboration given by teachers were increased creativity, reduced time, and a balanced complexity when it comes to co-creating materials. However, the issue of conflicts arose where teachers have differing opinions on education, and domineering teachers may dictate the direction of a course. This brought up an important point regarding the hiring, training, and re-training of teachers who can share similar work ethics. Points raised by teachers from the questionnaire that could be used for future discussions of what constitutes good BECC teacher ethics would include ensuring that there is equity for students, adequate support within and between courses, and a balanced workload. Furthermore, to adequately prepare students for future courses the sharing of background knowledge and pre-learned methods, for example writing processes, could foster a smoother transition between courses for both teachers and students alike.

## **Conclusion.**

The results from this study indicate a positive attitude towards not only the GCD collaboration document, but the concept of collaborating on courses at the BECC. The sharing of course knowledge by way of a Google document is the start of a metaphorical building of bridges between the silos that currently exist within GCD courses at the BECC. The next steps forward are to improve guidance for teachers regarding language goals and assessments, to seek stronger links and more spiraling between GCD courses for the benefit of students, and to continue the BECC's alignment of course curricula to the CEFR. This is hoped to be achieved by conducting CEFR workshops, by continuing to update the course collaboration document as courses are revised, and by having GCD teachers work together on small teams. Two-way feedback between management and teachers on projects will be critical as the BECC continues in its endeavor to provide a quality language education for its students, and a mutually beneficial collaborative environment for its teachers. With improvements to guidance and feedback, the question of how much course

integration being necessary to gain the optimal benefit when considering both students and teachers perspectives may be one step closer to being answered.

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## Appendix A

### Global Communication Department (GCD) course goal overview at the Bunkyo English Communication Center (BECC), 2017.

	Basic user		Independent user	
	A1	A2	B1	B2
Basic English Communication 1/2				
English Communication 1/2				
Reading Strategies 1/2				
Writing Strategies 1/2				
English Communication 3/4				
Reading Strategies 3/4				
Writing Strategies 3/4				
Junior English Workshop 5/6				
International Communication Strategies 1/2				
Hospitality English				
Tourism English				
English for Education				
International Communication Strategies 3/4				
Business English				
Senior English Workshop 7/8				
Popular Culture				
Academic English				

Footnotes: 1/2 is first-year, 3/4 is second-year, 5/6 is third-year, and 7/8 is fourth-year. An exception is International Communication Strategies where 1/2 is third year, and 3/4 a fourth year course. All other courses are electives which can be taken in either third or fourth years.

A1 to B2 refer to language levels on the Common European Framework of Reference (CEFR) (Council of Europe, 2001).

## Appendix B

Global Communication Department (GCD) course list at the Bunkyo English  
Communication Center (BECC), 2017.

Course Title	Year	Number of Teachers
Basic English Communication I/II	1	2
English Communication I/II	1	3
Reading Strategies I/II	1	1
Writing Strategies I/II	1	1
English Communication III/IV	2	2
Reading Strategies III/IV	2	1
Writing Strategies III/IV	2	2
International Communication Strategies I/II	3	1
Junior English Workshop III/IV	3	1
Hospitality English	3 & 4	1
Tourism English	3 & 4	1
English for Education	3 & 4	1
Business English	3 & 4	1
Popular Culture	3 & 4	1
Academic English	3 & 4	1
International Communication Strategies III/IV	4	1
Senior English Workshop V/VI	4	1

## Appendix C

### Bunkyo English Communication Center (BECC) course collaboration teacher questionnaire, 2018.

#### 1. Please give your feedback regarding the GCD course collaboration document created in 2017.

Teacher	Response
1	Huge and cumbersome. Navigating and filling in the google sheet was tricky resulting in time wasted having to re-do portions, re upload links, etc. It's a big undertaking trying to sync all GCD classes into one all-encompassing document but at the same time it was not very user-friendly inputting and recording information. At the same time, I can't think of another alternative which would have been easier. It reminded me of homework I was tasked with, not really for a purpose, just for something for me to do and show my work by the deadline. I suppose I could not see the direct benefit to me individually and so inputting all the data in all of these classes I teach just felt like yet another busy work task I had to take time away from my teaching/planning/research/committee work just so I could show that I filled in all of the boxes. I'm sure all of this effort will be useful for administrators but it wasn't very meaningful for me as a classroom teacher.
2	It was helpful to be able to consider concrete CEFR goals for the course. Also, it is handy to have all assessments in one place so that others can easily see what I am doing and likewise. It is also neat to see the CEFR bands of each class side by side. However, I really only used my course's page and not others' pages, so I can't say I have a greater understanding of what they do (although I now know I could read about it any time).
3	Short version: I think it is a great idea...very necessary. Teachers should have (relative) autonomy in the classroom, but we can't have components of a course all over the place (as they have been in the past) with some teachers having proper goals, assessments (ie work!) while others 'see wikipedia!' This doc has hopefully / probably made everyone think more deeply about their course goals and lesson plans etc. It also helps us see what is being repeated across courses so we don't have to / shouldn't do it, and we can also see how we can help other courses / other courses (writing / BEC / reading or business class / academic class can complement each other.
4	I liked engaging in the process, it helped root out some bad course goals I had and helped me focus on using the CEFR to improve the courses I teach. The assessment section helped me see how I could change the assessments I use to more closely match what I cover in class.
5	I haven't spent much time on it yet but I think it will be really helpful when it comes time to revise my course, since I will be able to see what previous teachers have had to say about the course. I can also pull ideas from other courses relatively easily.
6	I like the idea of this document as it not only helps to give GCD teachers a better idea of what other teachers are doing, but also allows teachers to share ideas and see what works or does not work in other courses. In particular, being able to stretch vocabulary across different courses and utilize similar testing methods and rubrics is beneficial for both students and teachers.
7	I found it helpful because, by adding CEFR-based course goals, I could clearly see how challenging the content of my course can be for lower-level students. (Ideally, students would know this too, before they sign up for a course that is well beyond their abilities.) It was also helpful to see all of the course's assessments in one document, which made me reflect on some of the shortcomings of my course. (i.e. There wasn't a writing assessment in semester one, so I created one.)
8	I like how you can find the information of all the courses in one place. I also like the Overview tab, where you can see the levels of can-do statements used for all the classes at a glance. Before, it was difficult to see how those courses were related to each other

(i.e., do we have overlaps between the course contents and the levels set for the courses). Also, inputting the course information made me think about my course more.

2. How do you feel about collaboration with GCD courses that you co-teach? E.g. collaborating with teachers teaching the same course.

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Teacher	Response
1	As in any team-teaching situation it depends on the teaching partner. Some teachers I get along with very well and so there are not many bumps in the road and teachers which I don't necessarily get along well with or have less respect for I don't collaborate much other than bare minimum. This is the nature of team-teaching. It is important for administrators to hire and train (and continue to train) the best staff they can/ who share similar work ethics.
2	I don't co-teach, but when I did, it was fine. We had many meetings, and often the assignments we came up with were a little simpler than I would have made them, but that may have been for the best as a counterbalance to my curriculum style.
3	I teach all my year alone (guess who!?! :) , but I really feel that teachers teaching the same subject either within a year or between 2 years should collaborate. Again, autonomy within the classroom, but all frameworks should be the same: Same rubrics, same terminology (between years), same dates for assessments (within a year), all using wix sites rather than random google sites, recycling of vocab etc. Also stops one class thinking it has to do more than another / is missing out on something...both complaints that were made to me about another course last year.
4	I don't mind it, but it can be tricky to stay on the same page or keep the students on roughly the same schedule for assessment purposes. It's certainly easier to have each course taught by one teacher, though that could lead to some people heading off in unhelpful directions if left unchecked.
5	This does not apply to me at the moment, but seems like a very good idea.
6	My experience so far has been only positive. It is nice to bounce ideas off another teacher and share activities.
7	I have mixed feelings about it. On the positive side, a lot of creativity can come out through a collaboration of ideas, and with more teachers involved creating new materials and making updates can be a quicker process. On the negative side, collaborating can be a challenge if the teachers have conflicting ideas about what they'd like to accomplish with their students, and teacher preference starts dominating the direction of the course.
8	When I worked at a different university in the past, teachers teaching the same courses used different textbooks and taught different contents, and to be honest I never understood it. It was usually left that way because there wasn't any communication among them, let alone collaboration. Students can't choose teachers, and if what's covered in the classes differ, I think it's not fair for students. Yes, if the students' levels differ greatly, you may need to cater the course to your students, but I think you should at least try to share the same goals, contents (textbooks), and assessment.

3. How do you feel about collaboration with all other GCD courses? E.g. collaborating with teachers teaching different courses.

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Teacher	Response
1	This depends on the course and grade of students. With GCD elective courses

there is not much collaboration because generally there is not much overlap in curriculum or students. Regarding the compulsory GCD courses it is more important to collaborate among teachers to have background knowledge of what students have already learned or routines they are trained. For example, knowing the writing processes students are familiar with helps future GCD teachers and reduces student confusion/anxiety, etc.

- 2 I guess I'm okay with it as long as I can continue to teach the contents of my course as I wish to. To be honest I'm not really thinking so much at the moment about what others are teaching in their courses, but if there was a way to link them up so that we are sure students receive a holistic curriculum and are prepared skill-wise for the advanced level courses they wish to take, that would be excellent.
- 3 Same as for the doc...a 'must'! Even if it is just letting each other know what they have done tech wise within courses, all FE GCD teachers should collaborate for the benefit of the kids! Also, stops scenarios where one teacher tells students one thing, and another tells them another....who should they listen to?
- 4 I like it. It's helpful to think of our courses from the students' perspectives. If we can avoid having them give three presentations in a week on the same topic I think that's a good thing for them and the collaboration aspect generally helps set us apart from other universities.
- 5 I would like to have a chance once in a while to hear about some specific activities teachers have introduced into their lessons that were particularly successful, which I can adapt to my own course. While sharing an activity document where teachers can write details (Moxtra or spreadsheet) is helpful, it would be much clearer for me if the teacher could explain and demonstrate in person.
- 6 I think this is a good thing, but it is important to balance the amount of freedom teachers have with the amount of course integration required. I do feel it is important to coordinate aspects of a course so that the classes complement each other. I hope that the majority of GCD teachers feel the same way.
- 7 If all participating teachers are onboard with the idea, I think it's good. Students can gain a deeper understanding, if they can connect what they've learned in more than one course. Also, if there isn't enough time to fully cover something in one course, students are still able to receive support in another. (i.e. Students work on the final draft of their BEC paper in their Writing Strategies class.)
- 8 I'd prefer collaboration to people working individually. I'd be happier if I know how my course is related to other courses, where there are any overlaps, the roles my course plays in the bigger picture of BECC education. I think the teachers here don't mind / want to have some collaboration. The difficult question is how much.



***Comparing a Skills-Focused English Test Against a Lexico-Fluency English Test  
for International Nursing Students in Higher Education***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

This paper expands on the rationale, context, and conclusions of a study conducted by Müller & Daller (2019) which looked at the performance of the academic version of the International English Language Testing System (IELTS) and English testing using the C-test format among international nursing students at an Australian university. The results found for the study will be reproduced, with some comments made about how to interpret the findings in a wider educational context.

Keywords: Language testing, IELTS, C-test, nursing, international students

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## Background

In English-medium universities, there is a need to establish whether international students with a non-English background have sufficient language proficiency to engage in their degree. The students can either be directly tested, or establish proof of proficiency through some other means (e.g. graduating from a college that offers a course in learning English). There are some language tests which have the specific purpose of establishing academic English proficiency (e.g. IELTS Academic, TOEFL iBT, PTE Academic, etc), and they use a skills-based format where linguistic responses are elicited within an academic-related task is tested. For example, IELTS tends to require full essays, short answers, 1-3 word cloze answers, multiple-choice selection, matching tasks, table completion, diagram labelling, comprehension responses, and so on.

In practice, for professional degrees such as nursing, the emphasis on academic English may be less appropriate because other types of English are being used. For example, in nursing there is a strong emphasis on spontaneous speech, the need to code-switch, and to fill in charts (but less so the need to write an essay at work). Thus, the requirements of the context may involve strong skills in one aspect of English that a particular test does not really concentrate on. Another means of testing language proficiency might be needed, such the C-test format. The C-test appears to measure a number of things (this itself is still up for debate), such as language fluency and expectancy grammar, and as such might yield better results for establishing communicative capacity in professional environments. On the surface, the C-test seems to be quite simple, since it only requires people to fill in the second half of every second word in the sentences presented in a paragraph of text, usually five completed in half an hour. The main task, it might be argued, is to have sufficient grasp of the elements of a sentence to anticipate the possible type of word that would be needed, recognise what aspect of grammar is involved (e.g. adjective, adverb, or noun form), and to produce the particular word (vocabulary knowledge, collocation knowledge) that would naturally follow from the letters already given in each prompt (context cues). Thus, the mechanics of the test requires the person to deal with the missing part of the word (redundancies), and use their own language experience to assist this process. Such repair of redundancies and misheard/missing input is important in a noisy, busy, and accent-diverse workplace such as a hospital.

When designing this study, it was expected that there would be a large overlap between the constructs of general English, academic English, and professional English, since both academic and professional English situations build upon general ability. It was also expected that there would be some relationship between proficiency and fluency, since you tend to become more fluent with more practice and exposure (itself which contributes to proficiency). Thus, it was with some trepidation that any comparison of two types of English test was to be made. However, the researchers were fairly confident that different aspects of language proficiency and ability were being tested - especially since the IELTS Academic test focused on academic English and the C-test was more generalist. The experience of the researchers was that gaps still existed in clinical situations among students who had reasonable IELTS scores. Building on this expectation, it was anticipated that IELTS, as a purpose-built test for academic study, would be more related to students' grades in academic subjects (non-clinical, non-practicum topics) than the C-test. It was also

expected that the C-test would have a stronger relationship to grades than IELTS for professional clinical topics which involved hospital placements and face-to-face patient simulations. This is not because the C-test is particularly geared towards clinical communication (IELTS Academic was designed specifically for Australian university study), but the C-test does seem to measure the general fluency and general language proficiency needed for professional contexts (i.e. spontaneous language performance and a broader language requirements in an environment that switch registers quickly).

## Methods and Results

The full details of the study can be found in Müller & Daller (2019), but a summary will be given here. There was data collected from 49 undergraduate international nursing students (mostly Chinese language backgrounds) at an Australian university. The study paid for participant testing at an official IELTS venue (score transcripts collected from students), at the start and finish of the academic year. The researchers used a timed C-test (100 items in 5 paragraphs) at the university to gain C-test scores both at the start and finish of the academic year. The collection of grade averages was taken at the end of the year (grading of topics was completed by nursing lecturers in the course of their normal duties, independently of the researchers), and these grades were sorted according to academic versus clinical topics. Correlations were produced between these variables.

The study found that, indeed, the IELTS had a stronger relationship to academic grades than the C-test, and that the inverse was true for clinical topics where the C-test had a stronger relationship to clinical grades than IELTS. However, in both situations, the IELTS and C-test still had significant relationships to the other type of topic grade, albeit lower than the other test type. IELTS had the smallest relationship overall, in relation to clinical topics, and the C-test performed at a rate that other studies usually find as good for the relationship between IELTS and grades.

A reproduction of the table found in Müller & Daller (2019, p. 9) summarises the relationships between tests and grades:

**Table 3**

Correlations (Pearson) between predictor variables and dependent variables.

Variables	Academic topics	Clinical topics
IELTS	.509***, p < .001, n = 46	.302*, p = .049, n = 43
C-test	.381**, p < .01, n = 49	.417**, p < .01, n = 46

\* Significant at the .05 level.

\*\* Significant at the .01 level.

\*\*\* Significant at the .001 level.

As expected, the study found there was overlap between the two types of English test, with a correlation of .68, so a reasonable proportion of the variance between the scores of the two tests was shared (see Müller & Daller 2019 for more detail of this). It would

have been suspicious if there was no overlap, because many aspects of language proficiency theoretically overlap. However, there were also differences detected between the two tests, and the tests reveal that different language constructs were tapped into.

## **Conclusion**

Language proficiency is clearly important for international students who wish to study in an English-medium university, but do not have English as their first or native language. This study highlighted that it is important to keep the purpose and gains of each language test in mind when selecting which test to use. Educators, policy makers, and institutions would do well to note this.

In regards to the relationship between language proficiency and grades, it is very interesting the grades were correlated to any language score at all. These grades were given by nurse educators to students for their academic and clinical nursing performance, and not for language ability. However, language ability appears to be an important correlated variable. It may be the case that particular levels of language ability impacts on the students' ability to engage in the educational process. It may also be the case that the level of language skill that the examiner detected in the person being assessed determined how the content of the assessment was marked (e.g. the number of errors made in speech or writing negatively affects grades). Either way, if language skill is an important factor in understanding or communicating educational concepts, we are left with a situation of what is enough English? It is possible that higher levels of language proficiency (general or academic) will mean that there is no longer a significant negative impact on grades (a ceiling effect) because language proficiency has been fully met for the task. Conversely, there is probably a point where insufficient language proficiency entirely impedes understanding of academic content (a floor effect). Where these floor and ceiling levels are located are not yet known with certainty, but they are important factors that must be researched further. Academic attainment, at least in this study, seemed to be related to English ability of some kind (as evident for both tests) and more needs to be known about the relationship of language to the university experience and outcomes.

Some observations can be made about the strength of the results found in this study. Our study had a good range among the variables. The range of IELTS scores was 5.5-7.5 (out of 9) and grade averages (12-89 out of 100). One reason is that not all students had taken a test to enter university (which usually requires them to have IELTS 6.5), and instead many entered through non-tested pathways. It is speculated in the article that the variability found among the cohort allowed more robust findings. This variability gave us a better picture of how the elements were correlated, especially for English ability (many studies on IELTS have cohorts with little variation in English ability). This points to the need for educational research to consider the influence of sampling in their projects, and to consider the possibility that a null result might simply be from poor sampling or statistical understanding. While there was a skew towards Chinese participants, it had the positive attribute of sampling a strong English as a Foreign Language population (where incidental English exposure is low). This skew towards Chinese participants might also be a weakness, in terms of not being representative of international students generally, but admittedly, Australia gets about 32% of its international students from China.

The wider utility of language tests is another thing to consider here. Might a slightly lower performing test do a good enough job? The focus is usually on gaining the most accurate result, with repeated verification of each version of the test costing a lot of money, and this is passed on to the consumer. To do the tests themselves are often also time-consuming, costing anything from AUD \$300-\$600 and taking a whole day to complete (traditionally, two days for IELTS). The C-test, however, costs nothing beyond the time needed to: find a natural text; apply the C-test format to it; and double-check that the test makes sense (i.e. avoid some proper nouns, jargon, acronyms). It takes half an hour to do, with immediate results (i.e. you don't have to wait a few days, like the other tests). The C-test format is fairly reliable, and seems to be quite robust across texts. For those who wish to create their own C-test, a good summative guide can be found in Hood (1990). Weighing accuracy and gain against the tests, the C-test format seems to be a possibility worth considering for a various number of purposes in a higher education setting, and possibly beyond, especially given how cheap it is to create and the short amount of time to do, with an immediate result. Returning to this study, was the IELTS result worth the cost needed to get the higher correlation to grades when it performs worse in a clinical setting? This is a decision for the policy makers. The C-test seems more versatile for the purpose, in this type of degree. Overall, this study shows that policy makers need to be clear about the type of English they need to test for, and then use the appropriate means to do so, taking into account the full range of cost/benefit involved.

Another point can be made that extends on the previous paragraph, and this relates to test use in different sectors of society. In Australia, tests like PTE and IELTS are used for migration and nursing registration, yet these are not necessarily a good match of test to purpose. This study shows that there is a shift in the type of language ability required for different communicative situations. Admittedly, in terms of migration, PTE and IELTS Academic should capture the general English required, but maybe the bar is set too high for migrants who come to menial jobs with no academic component. Refugees are also subject to these tests, perhaps unfairly. These tests also may not capture the types of language proficiency needed for professional communication. Ideally, different types of English test should be used for the purpose they were built for, and cautiously extended beyond this. In the case of the health professions, the Occupational English Test was built for this purpose; IELTS was not, it causes one to wonder why IELTS and other academic English tests continue to be used to establish English proficiency for nursing and health registration.

In conclusion, this study revealed some interesting results regarding test appropriateness and the link between English and grades, and hopefully, the discussion of the reasoning behind the study and the relationship this study has to practice will spur others to commence research into similar issues. Language testing is often high stakes and affects large numbers of people in different ways, and a better understanding and application of such tests is desirable.

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Acknowledgement: This study was made possible by the Flinders University Re-Entry Fellowship.

## *Usefulness of Bilingualism and Literacy*

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

### **Abstract**

Bilingualism in the United States is an important topic because of extensive immigration from around the world, children from immigrant families especially from Mexico are admitting to early learning school setting every year and the percentage of the immigrant children whose first language is not English is increasing yearly, as a result because of their initial development in early education US education board has taken various initiatives such as bilingual educational curriculum in early learning centre, learning of bilingualism, extensive literature education through skill based learning and knowledge based learning, content learning, language learning, teacher's professional development, extensive diverse environmental training, children's fair and extensive careful assessment etc. US board of education has setup an age based learning and it has been taken after extensive scientific experiment through neuroscience, bilingual approach has been taken for the academic achievement of those children whose first language is not English and who can equally make a higher academic achievement with monolingual children, initiative of community-school, school-parents partnership has been built for the continuation of bilingual development through literature study, and to read, write, speak fluently from the beginning of their age, which can finally make them a master of more than one language, learning has been introduced to the children of 3 to 8 years old who starts their education from prekindergarten until grade 3 (PreK-3<sup>rd</sup>), this six years continuous learning on English, math, neuroscience, language developments, common curriculum, conceptual development, reading development brings advancement into them.

Keywords: Knowledge based learning, Pre-K to 3<sup>rd</sup>, English Language Development (ELD)

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## Introduction

Monolingual vs bilingual from Pre-K to grade 3 (3-8 years kids, good for starting learn two languages because of various reasons such as brain development stage, cognitive, social, cultural developmental stage, and they can do it smartly, for long-term developmental goal bilingualism is better than monolinguals, it teaches kid's universal acceptance of every community, makes harmony among various communities, therefore instead acceptance of only English, new comer kids keep their first language through their family, and accept English through school set-up for academic, economic and their developmental achievements, it increases their literacy such as decoding skill and their English language skill, therefore bilingualism is good for native English kids and second language kids both, (Pre-K, Kindergarten to Grade 1,2,3) are initial moment for all kids for their childhood development which lead their adulthood as well, Pre-K education is the combination of full day education funded by government, through aligned educational strategies, modern attitude(curriculum), well round curriculum including math, social studies, English, numeracy, arts, physical education, emotional learning(an important approach in Play Work as well, Play Leadership course of the University of Alberta's Physical Education and Recreational studies) and science, under this program(Pre-K education) regular planning, professional development among staff 'and teacher's(Pre-K, Kindergarten, 1,2,3), Principal's engagement for the professional development of teachers and the support of kids families = are all together Pre-K education(USA standard), parents relations as a primary supporter. English Language Development(EDL) strategies should be the combination of teacher-parent relations through positive communication, visual displays of language, culture in the classroom to making the environment multicultural, innovative, provides books that have various shadows of various culture, languages which can reflect into kids, pre-read stories in child language, using similar home language that bridges to English, using real world concept, sense(touching), object to understanding meaning of themes which is classroom learning, Young children need to be able to regulate their emotions, follow directions, form positive social bonds, and express their feelings appropriately to succeed in school, encouraging all families to talk (and talk, and talk!) - Dr. Catherine Snow's view as well, this talking skill is important in bilingualism, as per Dr. Nonie K. Lesaux, skill based competencies is important for the reader to understand and recognize the word and the knowledge based competencies is important for the conceptual and vocabulary knowledge and to comprehend the text message ( reading based competencies is good in the United States, get importance in early grades but knowledge based competencies is not that good), skill based and knowledge based education are must for kids in their early education for their development lifetime, though kids in early grades are good in reading but junior high and high school students are facing difficulties on reading, it is because of school's unstructured knowledge based skills, literacy skill is important in bilingualism as well and need to be continue from their early age to stages of their life, need a good demographic knowledge based education(they can understand the object, concept, sense) in high and junior high schools, we have to understand that reading is not only a word but its understanding, the reader needs relevant background knowledge related to the text's vocabulary, topic, and structure, they can understand various context of reading and thus they solve reading difficulties, Japanese bullet train (high speed train) is a special

example on entire bilingualism, it refers some pattern such as map sound onto letter(/s/p/ee/d/) and blend these into a form(word like speed), they need to gain in the fastest way, such as student's in the grade 5th must read correctly 115 words a minutes(high speed train example), fastest learning is better than slower learning, because slow learning leads forgetting that what kids learn recently, therefore code based learning( knowing word), knowledge based learning(understanding concept and the reading), mechanical based skill and meaning based skill – all are important for the language and literacy development. Again, code based skill is good for the kids (DDL, non-DDI) and lacking knowledge based or meaning based skills but if they have mechanical skill (an advertise through words that has been described, they can read and have idea about the passage) and code based skill (26 letters and 44 words), it will something good at least than nothing through faster learning from the beginning of childhood (Pre-K to Grade3), however printing a passage from book and see something on the advertisement are not similar standard language, therefore when it is a matter to understand literacy, it is matter to gain knowledge based learning to understand its context and it is difficulties to critically analyse. Literacy and language development is important for successful employment, kids psychological development, physical development, children's early literacy skills are a foundation for all of their academic efforts and are closely linked to their health and well-being as well, therefore a modern attitude (curriculum), knowledge based staff's and teachers are also expected for the development of kids on their language, words and off-course on vocabulary (vocabulary gap by Dr. Catherine Snow) ( literacy- reading, writing, listening and speaking, skill-concept about print, ability to hear and work with spoken sounds, word reading, spelling and fluency), knowledge- concept about the world, understanding about complex ideas, oral language skill), with faster development on language student need knowledge based teacher and staff who have effective instruction spans through early childhood years and respond positively for their developmental needs, organizing classroom effectively, learning on thematic based(an appropriate instructional plan based on multifaceted academic topics), skill based and knowledge based instruction, direct instruction and inquiry based learning, common planning time and joint professional learning(all together), coordinated curriculum, shared assessment, however, with knowledgeable teacher and staff, public school need to be designed with all Pre-K facilities(Pre-K presence), a partnership between school-community and parents etc. Response and Intervention are good way for better literacy skill (learning words faster), therefore teacher need to be positive responsive and intervene to the problem faced by the student and monolingual peer support (only English speaking kids conversation, interaction with non-native English student) can be a good way for better learning, so the early childhood leader (play worker – Lead for Literacy) need to be knowledge based, positive responsive, good program designer, early intervention practitioner, early literacy assessor, good designer of professional development for instructional changes( universal modern attitude), a good designer of volunteer program focused on literacy, a good comprehensive literacy curriculum, a good bridge between school and family etc. family is important tool for the development of language learning, therefore parents must be engaged with their kids through conversation, and in which language they are most comfortable just use during conversation which is better way to learn faster, storytelling, visiting home to home, are approaches for family conversation, kids conversation.

"Response to Intervention", "Coordinated approach of curriculum", "Code based", "knowledge based", "Children and the world knowledge" - are all important words to learn and to teach other for literacy development by expansion of vocabulary and knowing new words. I used to think that it is something about various languages but now I think it has branches that is broader and world wide. Bilingual people get government job easily (Air Canada) then a monolingual person, the research paper is focused on social-economic issues of the world, its regions and find out solutions, bilingualism is human's linguistic development which is important for overall development through English language program because of its global scenario. I would like to pursue my PhD in international development and writing topics based on it for logical ethics.

### **Literature Review**

The approach of bilingualism and its setting up in US early school system is an important decision by the education board of the United States for the development of immigrant children's whose first language is not English, this is a decision through which immigrant children will go forward with monolingual students and performed higher achievement in academic field for their further career, it is an evolution from their childhood to re-build their base through an authentic style, however it is still not 100 percent successful because of cultural, language, differences, initiatives has been taken but this is something human error, still few teacher does not understand diversified environment, they are not well trained, as a result expectation has not been reached yet, therefore real mind setting need to be created to achieve 100 percent goal.

### **Methodology**

I am a professional education student at the Harvard University, Graduate School of Education and taking courses through online learning, I aim for the publication of all my professional courses that I have taken, I have several references, resources through my Harvard University online account, I use those resources, articles on child welfare to write this article, as I took these courses, I have knowledge on topic, I again read all those resources, make a draft, and finally make a final draft on it adding and cutting from the preliminary draft, thus I write the final article.

### **Result and Discussion**

Bilingualism in the United States is going to be important for the demand of external accountability and the high grade-level expectations in English Language Arts in the Common Core Standards (CCSS), students from the age of 3 to 8 (PreK to 3 grade in all primary school in the USA) whose first language is not English and speak two languages and not fluent in English language, have been identified as a Dual Language Learners (DLL's), initiatives have been taken by the United States Department of Education and the Office of the Head Start to promoting linguistic developmental skills to every young children in the USA who speaks languages other than English, the initiatives have been taken in 2008 and had effective to US Early Care and Education (ECE) and the Public Schools, the development of English language learning at

the prekindergarten is necessary due to big percentage of non-English speaking children in the USA, it is more than 50 percent some of US states that has come from non-native family background and their English language level is not sufficient for a high grade and the school standard level, in the past 15 years much development has been done for the creation of dual language development and the multilingual development through the extensive research on neuroscience that can provide guidance on policies and practices for dual language learner, learning has been introduced to the children of 3 to 8 years old who starts their education from prekindergarten until grade 3 (PreK-3<sup>rd</sup>), this six years continuous learning on English, math, neuroscience, language developments, common curriculum, conceptual development, reading development brings advancement to those children for their further studies and life development which is related with their adulthood as well, the program of advancement for the dual language children is also connects with their parents for a positive parents-children and parents-teacher relationship to understand children, to establishment a better communication and relation with parents for home studies, to let understand their parents about the importance of bilingualism and its initiatives, relations helps to increase the likelihood of the children's positive adjustments to early schooling. Learning two languages in the early childhood (infants-toddlers) seems like confusing and difficult but it is also true that those years of child's continuous learning of dual languages develops their brain and the ability to sort the sounds of each language into separate categories and its contextual cues to know it's appropriate using time, thus their brain works wonderfully, they can use to learn, understand multiple languages, its sounds, cues, excuses and the linguistic connection of both languages (English and their mother tongue), it is their innate capacity to learn dual languages from their birth and if their learning of quantity and quality are similar they become fully proficient in both languages, learning two languages from the beginning of their life (7 month of age) to throughout their childhood helps to build their varieties of cognitive development and functions such as working memory, inhibitory control, relevant and irrelevant tasks, mental and cognitive flexibilities etc., it also helps to improve language skills and creates a balance between two, it is completely recognized as early bilingualism, balance between two languages increased abilities day after day and thus it creates a mastery skill on bilingualism, who is a master of bilingualism through their practice, innate abilities, did a better performance in their early education and throughout their educational career, it was better than monolingual children's, children from 7 month to 3 years of ages showed a better result in learning of two languages, English and their mother tongue and according to scientific research it did not effect on academic achievement through English language in schooling environment and also learning through their native language at home, it is a clear evidence that children can successfully add another language other than their native language and the advantages have been observed through their long term social-economic and cognitive development. "In the brain, the ability to hold onto and work with information, focus thinking, filter distractions, and switch gears is like an airport having a highly effective air traffic control system to manage the arrivals and departures of dozens of planes on multiple runways. Scientists refer to these capacities as executive function and self-regulation—a set of skills that relies on three types of brain function: working memory, mental flexibility, and inhibitory-control. Center on the Developing Child at Harvard University (n.d.). Executive Function: Skills for Life and Learning." (Centre on the

Developing Child at Harvard University (n.d.). Executive Function: Skills for Life and Learning). Learning more than one language changes the neural patterning and the language processing system in the developing brain during the first year of childhood a child can aware about all kinds of sounds of spoken language, after 7 years of age human capacity to hear and process unfamiliar sounds of languages decreases, this is why PreK-3<sup>rd</sup> years are the ideal time for bilingual learning, it has been observed by the cognitive neuroscientists that young bilingual children dispersed and distributed neural pathway in both brain hemisphere, bilingualism helps to set different skills in bilingual children than those monolingual children because of their various challenges to learning more than one languages and at the end they become master on bilingualism, however they face challenges like during the learning process like taking longer time to respond to language tasks than the requirements, they cannot learn sufficient word lists yet as they go through various challenges and processes to be skilled on bilingualism, their brain development and learning looks different than monolingual children, monolingual children's are native English speakers and are the main streams in the USA, they are mostly not poor financially, they parents are supportive in primary English language, but unfortunate bilingual children's are from different cultural, socio-economical background, parents are not highly educated and therefore they are living under poor condition, as a result it need to be realized before judgement on those children on their achievements, speaking and listening are among most important fundamentals that helps children to be master in English language and it is important for their academic achievements to be fluent in English in school, as their first 5 years are for language development, it need to be cleared that those bilingual children must learn English very well for better future because of its main stream language recognition in the United States, however, due to the English Emmerson Program (ECE), children could be confused and could lose their interest on their first native language that they speak in home with their family members, as a result neither they will be master in their native language nor in English to know about the important world knowledge and the outcome could be decrease of academic achievement, so it is recommended to learn through both languages that they are developing their mastery skill on that, statistics says that learning through both of their home language and in English gets the highest grade of achievement after grade 3 and beyond, young children can learn their nursery skills such as songs, extended vocabulary, early literacy skill through their home language and in English which is the best way of combination to be master on both language and be bilingual accurately, therefore it is also recommended to their parents to encourage their child to speak with them in home language, parents can sing, talk, communicate in their own language with their kids for the development of their first language in early childhood while they develop English skill in PreK-3<sup>rd</sup> setting in school through teachers instructions, the United States is an immigrant country since its independence, early learning bilingual program has launched entirely not only for DDL students but for representatives from different languages, 10 Of students raised in poverty, only 17 percent in fourth grade and 16 percent in eighth grade read at or above proficiency levels, it is going to vulnerable in the United States, reading demands are high in high school but students are not doing good that head been expected, reading standard is not the same in various grade, reading in grade 3 is not that grade 6, a 3 year old children can not read like 8 year old children, but it is also recommended or expected form a matured reader to understand the concept of the

reading and thus be knowledgeable using multiple resources, it is a process to build a foundation of learning in courses like math, science, education, drama etc. Skills-based competencies are those that allow students to master the mechanics of reading, they can read, such as knowing the full array of sound symbol relations using the twenty-six letters and forty-four sounds in the English language enables accurate word reading, on the other side knowledge based skill is deeply understanding of the course, concept, so that children can express their own words because of their conceptual understanding of the course or particular topic, a reader has to be a minimum background of knowledge related to the text, vocabulary topic and the structure to understand broadly, high-speed Japanese train description in 5<sup>th</sup> grade is an example to understand the reading by both knowledge and skilled based(skill is the ability to read words, knowledge is to know the entire things deeply and to understand the concept), Japanese trains are high speed (s/p//e/e/d), so they need to form the sound onto letter and then a word like speed, they need to know the spelling pattern as well which is decoding skill and grade 5<sup>th</sup> children need to read 115 words correctly in a minute, skill based and knowledge based skills are both important for further conceptual understanding of the reading, example a passage on Japanese high speed trains, the passage might be short but has extensive depth to understanding the technicality of the train and its technology, so it is not only skill based understanding by just reading but to understand in-depth by using knowledge skill as well through various sources like dictionary, phrases, idioms etc. reading development through skill and knowledge based have been examined among non-English speaker's Latino school children, they are economically poor and have limited vocabulary (Dr. Catharine Snow of Harvard University Graduate School of Education has given importance on much vocabulary skill for the learning and the reading development and she mentioned economic background also affects to learn vocabulary, therefore economically rich students have more vocabulary words than the poor students and it is also depends on their family background whether parents especially mother is much educated to learn and then to teach her kids or not , she calls vocabulary gap between rich and poor children), limited vocabulary among non-native speakers forced to down them in front of native English speaker children's on the course marks and a low academic result, this problem can be solved by three approaches such as implication for assessment, implication for instruction and implication for instructions, a regular and comprehensive assessment can be vital for those children who have limited vocabulary problem, only can understand by reading and have few word and sound knowledge, a knowledge based reading competencies approach is good for them to support a comprehension, that guides reading assessment practices to early readers and adolescence reader, comprehensive reading assessment is an important screen for early learning children to monitor their reading, sounding on words and it has to be designed by both skill based and knowledge based for their mastering and to solving mental stress , same thing for the adolescence learner as well, implication for the instruction is also valuable for the reading, learning and literacy development among early, adolescence and junior/high school learner, reading has to be conceptualized and knowledge based for better understanding from the roots, baser and skilled based education, greater attention to sustained, comprehensive, and deep instruction, and using assessments that capture complex thinking and learning, will enable teachers to begin augmenting students' knowledge with the competencies that are crucial to this population's success in school,

focused on theory and scientific approach, updated program and curriculum by the teachers, maintain quality of the classroom by inventing various theories which can be interested and good knowledge for all children, reading, speaking, writing are multiple learning that can be another way of research for the multiple development. Early childhood literacy education is important for the development of adulthood, it is connected with further education in high school, employment, poor reading from Pre-K to end of the 3<sup>rd</sup> grade affects in high school studies and as a result students can't able to graduate on time, then face unemployment problem and finally fall into depressed, frustration, so these are all affects just because of poor reading, listening, speaking as combined learning development, child need to be always proficient reader during his/her entire life and it can be through school, it can be through communication between child and adult in the community, at home with parents as their primary sources, so the comprehension of the text is very important to understand, understand the concept of their subjects through their knowledge, skill development through knowledge based such as oral language, vocabulary, and listening comprehension skills, as well as the foundational knowledge for the access and apply a text's message (knowledge based learning), children can be the master of the reading technique, able to map the 26 letters onto their respective sounds in combinations (44 in total), and thus read words(skill based learning), therefore literacy(reading, writing, listening and speaking), skill(concept about print, ability to hear and work with spoken sounds, alphabet knowledge, word-reading, spelling and fluency), and knowledge(concept about the world, ability to understand and express the complex ideas, vocabulary, oral language skill) are necessary for all early child development for their good adult life until the end of life, they will sure be succeed if they obey those instruction for their early reading development, literacy instruction focused on developing language and reading skill need to designed as an updated curriculum in developing countries to follow western education(USA Education Board), they are basically four ways to learning, effective instruction span and responds to children's developmental needs in a way that the children can understand easily and with fun such as for three years children, education should be play based education for reading skill, science skill and language development, content learning through the thematic units of multiple learning opportunity and the innovation of science, so the curriculum will be designed by the combined skill, learning instruction would be interacted, engaged, focused and structured, a strong communication and planning among teachers such as common planning time, a joint professional development promote and create a high quality instruction for the literacy development, a coordinated approach of curriculum is good for the creation of institutionalizing professional knowledge for teachers, staff and it is good for the teaching and literate children appropriately, shared assessment is another way for a strong literacy development within children, teachers spend time for the students' academic development report through academic score and then find out their resources for need, a kindergarten teacher can share assessment with Pre-K teacher to give the knowledge about the next stage of education and it's expectation, a public education system with Pre-K in every school coordinated by shared assessment, interaction, joint professional development, updated curriculum of both skill and knowledge based learning, need to be launched for a strong literacy development, early childhood is a developmental period that starts at birth and ends at eight or nine years old—around Third Grade, a good literacy teacher, whether Pre-K or Third Grade, is one

who is sensitive to this developmental stage and understands each new stage in the context of the overall developmental period, and therefore teacher certification and preparation on developmental stages will boost for a strong literacy skill and reading instruction, school and community, school and parents partnership is important for a good literacy development and it's continuation in school and in home, it is a shared pathways, so it is clear that children at risk can still able to learn wording, techniques of their studies through skill based learning but they can not express or understand deeply further which is knowledge based skill, but high quality coordinated Pre-k literacy instruction creates and expands kids learning ability, vocabulary, reading skill and the foundation of their life span, intervention on child development need to be faster than delaying, then it will be a problem according Professor Nonie Lesaux of Harvard University Graduate School of Education, so the teachers need to understand the areas of difficulties of children whether they are facing problem in skill based learning or knowledge based learning, Professor Nonie Lesaux also thinks that English language learners can study through both of their languages, in school it is English instruction for academic achievements and in home it is by their first language, it is like a combination of language process than can teach children appropriately and thus they can claim their bilingualism continually, as per Professor there is no need to approach only English rule to their parents to teach their kids, it will not bring good thing but will be harmful for their entire learning development, she encourages native language that is off course comfortable to their parents and thus teach their children, from the early years children's need to know the concept of the world, and the commutation to talk by talking with parents, peers ( Dr. Catherine Snow of Harvard University Graduate School of Education), English only rule can not create a more narratives in the language, more words and more vocabulary, it is good to create a community-school partnership, parents-school partnership for better linguistic education, storytelling, questioning, dialogue etc.

## **Conclusion**

Bilingualism, literacy development, strong teaching background, a combination of skill based learning and knowledge based learning (content and language) school and community and parents relations are key points for the development of bilingualism and the creation of a education model for the bilingual children's for their highest performance in the school and in their entire academic life which is the pathway of their professional life and through the life, relations between DDL and monolingual students need to be more focused for the behavioural development, for the equality in every section and thus to build a diverse environment, things such as updated curriculum, professional development, community relations need to be focused and flexible, finally a question raise that is, why still problems occur in school? The answer is, in reality teachers, educators still can not find out the psychological factors of children and their parent's and it is something very difficult, immigrant children's are still behind than the native English children, adult immigrant as their parents can not actually match with a new environment and can not integrate with school or teachers, this is why expectation is still not meeting, so it is depends on the children's, their parents that how do they accept the entire things.

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***Basic Research and Ethical Inquiry for EFL Students: Implementation and Reflection***

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The IAFOR International Conference on Education - Hawaii 2019  
Official Conference Proceedings

**Abstract**

Ethical inquiry and reasoning are essential types of critical thinking. Developing and understanding research skills are necessary components of a university education. This paper details the rationale, implementation, and instructor reflection of an integrated research skills, ethical inquiry, and essay writing unit in an undergraduate, low to low-intermediate proficiency, English as a Foreign Language (EFL) university course in Japan. The rationale will be discussed in terms of why ethical inquiry may be a useful and appropriate vehicle for student research in an EFL context. The implementation will be discussed in terms of unit planning choices that make the project accessible and meaningful for students, as well as how to structure the project in a way that avoids telling students what to think ethically in favor of allowing students to utilize their own pre-existing ethical reasoning capabilities. The instructor reflection will be discussed in terms of perceived outcomes, benefits, and challenges. Overall, the paper describes a flexible student research unit that provides opportunities for meaningful target language use and can be modified for a wide variety of teaching and learning contexts.

Keywords: Ethical inquiry, Ethical reasoning, Student research

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## Introduction

In some ways the term ‘critical thinking’ operates as a buzzword in English Language Teaching (ELT) settings. It is not always clear what is meant by the term, how or whether it should be taught or included, or what the objective of critical thinking in ELT should be. Often in ELT, critical thinking as a focus of instruction arises in spoken or written debates on controversial issues or in the context of analyzing the values, assumptions, and biases in advertisements, news, or other media (Banegas & Villacañas de Castro, 2016). However, there is a more straightforward, and potentially helpful, way of considering critical thinking: “Critical thinking is the art of analyzing and evaluating thinking with a view to improving it” (The Foundation for Critical Thinking, n.d.). The idea that critical thinking presupposes the purpose of improving thinking informs the project described in this paper.

This project engaged English as a Foreign Language (EFL) students from a Japanese university in ethical inquiry and research. They conducted survey research on self-generated ethical topics, presented and wrote about their research, and developed skills and strategies for expressing their thinking and reasoning in a clear and orderly fashion in English. Fundamental to every stage of this project was the activation of students’ own powers of reasoning and thinking carefully about how to explain their reasoning; in other words, students had to think critically, or think about improvement, regarding their own thinking and reasoning.

## Rationale

The students on this project were second-year university students in Japan, and were of low to low-intermediate English proficiency. The course was a genre-based EFL writing course which included a research essay module. The exact nature and requirements of the research essay module were flexible and could be determined by the instructor.

EFL student research projects can suffer from an array of issues. One issue is that the purpose of research may be unclear. In, for example, an engineering course, students might conduct research related to engineering. Language education courses, however, are not so straightforward; they are not necessarily ‘content-driven’. What students should, or even could, research is not always clear. Additionally, even if students have a subject for research in mind, they may lack the necessary background knowledge and/or English proficiency to conduct the research.

Ethical inquiry, as conceptualized in this project, avoids such concerns about students’ ability to do research. In this project ethical inquiry is distinct from the teaching of ethical principles. Rather, it is about reasoning, or asking ethical questions and explaining or justifying choices. Ethical reasoning, then, is not the teaching of sets of principles about what is right and wrong, but about how one thinks and approaches issues of right and wrong (Sternberg, 2010). These are things students are already capable of doing, though perhaps they do not have experience doing so in English. They do not need a formal background in ethics or philosophy or subject-specific academic vocabulary to engage in ethical reasoning. Thus ethical inquiry was selected for this project as something that all students could undertake.

In fact, everyone already engages in ethical reasoning all the time. This project harnessed this reality to structure the research essay module in such a way that it would be interesting and illuminating, with student-generated topics, and allow for language development appropriate for the genre without requiring an overwhelming amount of new language.

### **Implementation**

The format of ethical inquiry for this project was based on The Ethics Game (Leave No Trace, n.d.). This ‘game’ presents participants with three ‘bad’ behaviors, then asks participants to explain which one they think is the worst. None of the behaviours are objectively worse than the others, so participants must engage in ethical reasoning to come to a decision. While there is no right or wrong answer, the ‘game’ illuminates different ways of thinking about ethics and how different people can come to different conclusions. The ‘game’ is flexible and accommodates a wide range (in terms of the degree of severity) of ethical concerns. It also allows participants to reflect on their own reasoning and the reasoning of others, which creates space to improve reasoning (i.e. critical thinking).

Using this format as a foundation, the project was structured with five ‘modules’. First, the ‘game’ would be introduced and students would practice reasoning and explaining their reasoning. Second, students would develop their own “The Ethics Game”-type questions. Third, students would create and conduct surveys based on their questions. Fourth, students would present their survey results. Fifth, students would write an essay in which they compare their results to their own opinion about the ‘game’ questions they designed.

This structuring resulted in a project that lasted for 10 90-minute class periods (two weeks). The first two periods introduced the ‘game’ and focused on language and strategies for expressing opinions and giving reasons. For example, the students were asked which of the following three behaviors they thought was the worst: 1) littering, 2) spraying graffiti, 3) being extremely noisy in public; then, in small groups, the students were asked to explain their choice. In the third period, students worked in groups to develop ‘game’ questions that were posed to the rest of the class. In the fourth period, students developed ‘game’ questions individually and began preparing questionnaires (conducting surveys was homework). The fifth period was spent preparing presentations, and students presented their results in the sixth period. The remaining periods were spent drafting and editing essays.

At every stage, tasks were modeled. Example ‘games’, explanations, questionnaires, a presentation, and an essay were provided to students. In addition, explicit language development activities were undertaken in every class period. In this manner, English development was connected to the students’ ethical inquiry.

### **Reflection**

There were several benefits and positive outcomes from this project. In general, students responded very positively to the project, and many students put in an impressive amount of effort despite some language difficulties. Having students generate their own ‘game’ questions helped to create a sense of personal investment

in the project. That is, conducting surveys based on topics they came up with provided a personal connection to the project. This connection could be rooted in the project being more meaningful to students than if some semi-random subject about which they lack prior knowledge and research interest had been selected. It may also be due to the students having a sense of autonomy about the topic, and that, because they are already capable of ethical inquiry, they can feel a sense of learning to do something in English that is personally valuable. Furthermore, there were several skills involved in this project, both linguistic and academic, and students found that they could actually conduct and report basic research using English.

There were, of course, also some challenges that arose. For instance, there was a significant amount of scaffolding needed in the early stages to help students organize their explanations of their reasoning, and to see how to connect ideas and express details clearly. Another issue was that the linear design of the project meant that if students missed any class, especially in the first half of the project, it was difficult for them to keep up. Furthermore, while clear modeling of reasoning/explaining was very important, there was a constant concern that the modeling might stray into a top-down teaching of principles.

### **Conclusion**

The project described in this paper demonstrates how ethical inquiry can be used to structure a student research project in an ELT context. Utilizing ethical inquiry this way allows students to learn to conduct research in a way that is personally meaningful and does not require background knowledge or specialized academic vocabulary about any particular subject; as such, it is appropriate and useful for EFL students, even those at lower proficiency levels.

Ethical inquiry as the basis of student research conceptualizes critical thinking as having the objective of the improvement of thinking. It helps students to develop clarity and rigor in presenting opinions, explanations, and reasoning; and it connects well with other, more general language development objectives. Furthermore it affords students the opportunity to reflect on their reasoning and the reasoning of others that, which is essential to critical thinking.

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## *Mastery Learning of Early Childhood Mathematics Through Adaptive Technologies*

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

### **Abstract**

Childhood mathematics achievement has been associated with success in later schooling, and is predictive of later career success and adult socio-economic status. Despite the critical need for strong mathematics skills, not all learners are able to develop them. It is well-documented that children enter school with different levels of mathematics skills and understanding. These gaps in learners' mathematics foundations not only cause students to lag behind their peers, they also make it less likely that such students will find career success after formal schooling. A growing body of research exists documenting the impact of preschool and early elementary school mathematics achievement and its relationship to later mathematics achievement in school. It has proven challenging to help all young students achieve the mastery of important foundational concepts and skills in mathematics. There is promise, however, in using adaptive technologies designed to efficiently identify what the child already does or does not know, and what the child is ready to learn next, thus keeping students in the zone of proximal development. This paper discusses the design of a new adaptive platform that uses Bloom's Mastery Learning model to develop mastery of number sense foundations in a digital environment. Early results show that students are not only able to master important key concepts and skills in a very short amount of time, but that the system is able to efficiently monitor and move students through key concepts and skills using personalized learning trajectories optimized for maximum learning.

**Keywords:** mathematics education, early childhood, mastery learning, learning trajectories, achievement gap, number sense, digital learning, adaptive technology, mathematics achievement, personalized learning, game-based learning

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## Introduction

A primary goal of the U.S. educational system is to graduate students who are prepared for careers, college or both. Key to college and career readiness is a strong understanding of mathematics (NAEYC & NCTM, 2002; U.S. Department of Education, n.d.). According to the National Mathematics Advisory Panel (2008), “mathematics education has risen to the top of the national policy agenda as part of the need to improve the technical and scientific literacy of the American public. The new demands of international competition in the 21<sup>st</sup> century require a workforce that is competent in and comfortable with mathematics...” (p.1).

Strong academic skills, and mathematics skills in particular, are associated with positive professional outcomes in adult life (NCTM, 2000; NCTM, 2013; NMAP, 2008; Ritchie & Bates, 2013; Schweinhart et al., 2005). The relationship between children’s mathematics achievement in early elementary school and later academic achievement in mathematics has been documented in many studies as well (Bailey et al., 2014; Claessens & Engel, 2013; Duncan et al., 2007; Entwisle & Alexander, 1998; NMAP, 2008; NRC, 2009; Siegler et al., 2012). Because of this, there has been a significant push by national governmental organizations, policy makers, and advisory groups to emphasize the importance of teaching mathematics throughout schooling and more recently, at the earliest levels of schooling: preschool and kindergarten (NCTM, 2000; NCTM, 2013; NMAP, 2008; NRC, 2009).

Despite the critical need for strong mathematics skills, not all learners are able to develop them, as has been well documented by both standardized measures of assessment, and ongoing research (Jordan, Huttenlocher, & Levine, 1992; Jordan & Levine, 2009; NAEP, 2015). Moreover, children enter school with different levels of mathematics skills and understanding (Bodovski & Farkas, 2007; Claessens & Engel, 2013; Clements & Sarama, 2011; Jordan, Huttenlocher, & Levine, 1992; Jordan & Levine, 2009; Siegler, 2009). Some of this is due to the naturally differentiated development of young children (NAEYC & NCTM, 2002), but other differences are due to factors such as socio-economic status (SES), ethnicity, mother’s education level, etc. that have been shown to put children at an advantage or disadvantage for learning (Abedi et al., 2006; Entwisle & Alexander, 1990; Siegler, 2009).

Children from disadvantaged backgrounds, primarily those from low-income and minority families, lag behind their more advantaged peers on several measures of early mathematics skills at school entry (Claessens & Engel, 2013; Jordan, Huttenlocher, & Levine, 1992; Jordan & Levine, 2009; Siegler, 2009). As children progress through school, the disparities and differences do not disappear, even though students of different SES levels may be exposed to the same curriculum and teaching practices. The research consistently shows that students who begin school behind their peers are more likely to stay behind throughout the rest of their schooling (Claessens & Engel, 2013; Clements & Sarama, 2011; Seigler, 2009). These gaps in learners’ mathematics foundations not only cause them to lag behind their peers, they also make it less likely that such students will find career success after formal schooling, thus reinforcing the cycle of poverty. Conversely, children that enter school with better mathematics understanding and skills will be better prepared to receive instruction and build upon that knowledge, even leading to placement in

higher ability groups (Claessens & Engel, 2013). Such early advantages positively impact students as they move forward in their schooling.

### **The Importance of Early Mathematics Competencies**

A growing body of research exists documenting the impact of preschool and early elementary school mathematics achievement and its relationship to later mathematics achievement in school (Claessens, Duncan, & Engel, 2009; Claessens & Engel 2013; Clements & Sarama, 2011; Duncan et al., 2007; Sarama & Clements 2004). While most studies have focused on general mathematics achievement in the early years, a few studies have focused on certain finer-grained mathematics skills and competencies that might have a particularly strong influence on later success in mathematics (Claessens & Engel, 2013; Clements & Sarama, 2011; Nguyen et al., 2016). The identification of key competency indicators in mathematics is critical, as it may provide assessment opportunities that allow for early identification of and intervention for students most likely to be at risk for lagging mathematics achievement. Even so, only a few studies have sought investigate the relationship between certain preschool mathematics competencies and later mathematics achievement, and whether or not specific competencies are *more* or *less* predictive of later mathematics achievement (Claessens & Engel, 2013; Nguyen et al., 2016).

The idea that certain early mathematics competencies might be more or less impactful on student success in the long term is relatively new, and the body of research is small. One study by Claessens and Engel (2013) focused on the relationships between school-entry mathematics skills and later achievement in both elementary and middle school across the subjects of math, reading, and science. The authors found that specific early math skills are important in predictors of later academic achievement. Number recognition, counting, shapes, and patterns, the ability to read all one-digit numerals, count beyond 10, recognize a sequence of patterns, and use nonstandard units of length to compare objects, were the “most consistent and important predictor[s] of later achievement test scores in both reading and math across elementary school” (Claessens & Engel, 2013, p.20). In a separate study by Nguyen and colleagues (2016), the authors found that advanced counting skills demonstrated by the end of kindergarten, including such competencies as being able to count beyond ten, count on one quantity to another, and to count forward and backward from any number within ten (e.g., start at four and count forward), were most predictive of later overall fifth grade mathematics achievement.

The findings of these studies and others are important for informing the creation of preschool curriculum and intervention programs, as well as parent education programs that build awareness around the kinds of math activities that are most likely to promote later success in mathematics. Knowing which mathematics competencies are most predictive of later achievement is important. However, that knowledge alone is not enough to help all students succeed. Even with targeted instruction, not all learners are able to improve (Lannin et al., 2013). The achievement gap between different subgroups of students is pervasive and has persisted for decades with only minor narrowing, despite the ongoing efforts of teachers and researchers to eliminate it (Barton, 2004; Goodman & Burton, 2012).

## **Bloom's Theory of Mastery Learning**

Over the years, various theories have emerged to explain why some children seem to learn easily while others struggle. One such theory is Bloom's (1968) Mastery Learning theory. Bloom's Mastery Learning theory held that all students were capable of learning, albeit at different rates and in different ways. The more standardized the school curriculum became, the more difficult it became for all children to learn successfully. The standardized curriculum worked for some but did not work for many others. This has been true historically but may be even more so in today's diverse classrooms. A 'one size fits all' instructional approach does not work for all learners, which may explain the persistence of the achievement gap even today (Lannin et al., 2013).

Bloom developed his theory of Mastery Learning from studying both the interactions of one-on-one tutors with students and the behaviors of successful students. He compared these observations with his observations of traditional whole-group instruction in the classroom. Bloom observed that in the classroom, teachers working with groups of students provided the same instruction to all at the same pace, then followed that instruction with a test through which students were expected to demonstrate what they had learned. Some students performed well, while others did not. According to Bloom, "the test signifies the end of instruction on the unit and the end of the time they need to spend working on those concepts. It also represents their one and only chance to demonstrate what they learned. After the test is administered and scored, marks are recorded in a grade book, and instruction begins on the next unit, where the process is repeated" (Guskey, 1997, p.5). The problem remained one of competency; though some students had not demonstrated a level competency needed to move on to the next topic in the sequence, everyone still moved on. Across successive units, concepts that built upon prior concepts were understood less and less by students, until at last a large portion of the students were completely lost.

Conversely, Bloom observed a very different approach when studying the practices of effective one-to-one tutors with their students. Bloom considered the ideal learning situation to be when an "excellent tutor is paired with an individual student" (Guskey, 1997, p.6). In such situations, Bloom observed that the tutor was highly attuned to the needs of the student, provided ongoing feedback and corrective guidance, and only moved on once the student had demonstrated understanding of the concept or proficiency with the skill under study. With this in mind Bloom theorized that classroom instruction could be transformed based on these same principles. Beyond instruction, Bloom theorized that mastery learning should provide preassessment, feedback, correctives, enrichment, and alignment among instructional components, if it were to better replicate the ideal teaching conditions of one-to-one tutoring. Figure 1 below shows the relationships among key components of Bloom's Mastery Learning model.

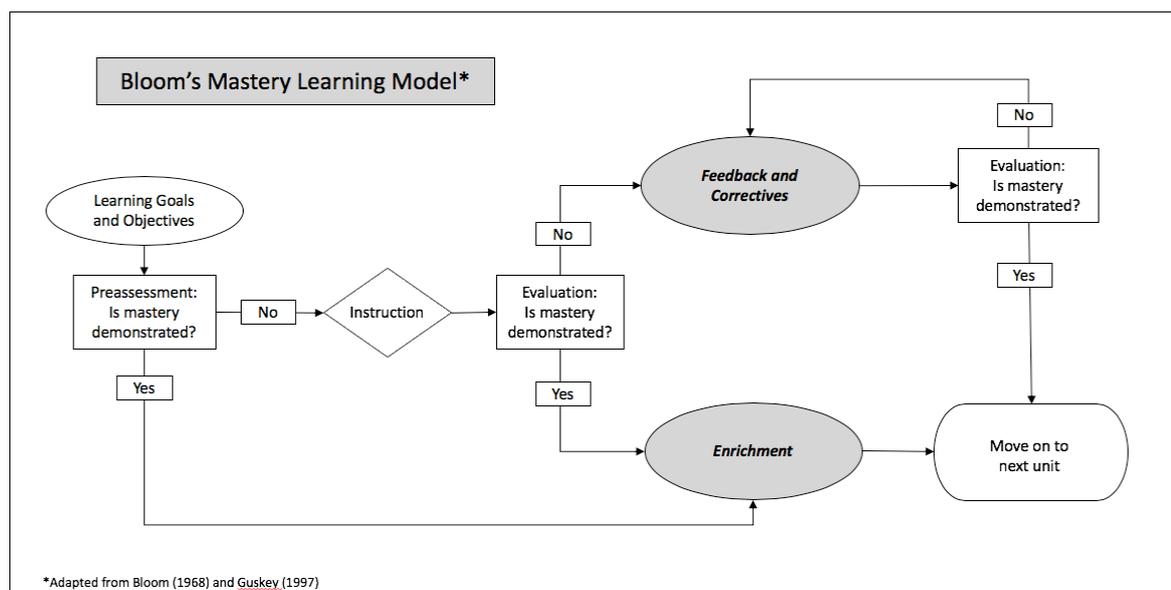


Figure 1: Bloom's Mastering Learning Model. Adapted from Bloom (1968) and Guskey (1997).

*Preassessment.* One of the critical components of the Bloom's Mastery Learning model is the step of preassessment. Before embarking on instruction, Bloom believed it was important to assess students to determine who, if any, already possesses mastery of the content to be studied. Any students who demonstrate mastery are summarily moved on to an enrichment group, where they can apply and extend their learning through independent projects. Those students who do not demonstrate mastery of the content receive targeted instruction from the teacher. In this manner, the teacher ensures that only students who need and will benefit from instruction receive it, while those students who do not need instruction are able to build on what they already know through enrichment.

*Feedback & Correctives.* In order to improve, students must receive feedback on their performance. Evaluation or summative feedback at the end of an instructional unit without the opportunity to improve is not beneficial for ongoing learning. Formative assessment that provides students with a better sense of what they do and do not understand, along with an opportunity to practice and improve, is more beneficial. Bloom asserted that feedback helps students to recognize what they have learned well, reinforces key concepts, and identifies the specific concepts upon which students need to spend more time. When such feedback is accompanied with interventions or targeted lessons ("correctives" as Bloom called them) designed to unpack and address any misunderstandings, students are able to effectively learn and move forward (Guskey, 1997).

*Enrichment.* A major challenge of Mastery Learning in the classroom context is promoting the ongoing learning of students who quickly and easily master the content. What is to be done with mastery students while the teacher is otherwise occupied delivering "correctives" to non-mastery students? In the Mastery Learning approach, Bloom asserts that students should be presented with independent learning opportunities that build on and extend their understanding of the concepts under study. In Bloom's view, these "enrichment" opportunities should be designed to stimulate intellectual curiosity and promote the independence of students, with the

added benefit that no learning time is sacrificed while the teacher provides remediation to students who are not yet ready to move on.

*Alignment.* Perhaps one of the most important components of Mastery Learning is the idea that teaching and assessment should be aligned to learning objectives and outcomes. This has led many to criticize Mastery Learning as “teaching to the test,” however that is not the case. It is more a matter of “testing what you teach.” Bloom’s Mastery Learning model holds that teaching should be based on targeted outcomes and objectives, while assessments should be aligned to and evaluate student performance on those same outcomes and objectives (Guskey, 1997).

Bloom’s studies on Mastery Learning did show marked improvement in the individual performance of students participating in whole-group classroom instruction under Mastery Learning conditions. Though he was not able to replicate the achievement gains students made in one-to-one instruction with an excellent tutor, Mastery Learning did show great promise. In a landmark study, Bloom compared three groups of learners: (1) one-to-one instruction with an excellent tutor, (2) Mastery Learning whole-group instruction, and (3) traditional whole-group instruction. The results showed that the final achievement of the average student in the one-to-one tutoring condition was about two standard deviations above students in the control condition (traditional classroom teaching), while the final achievement of the average student in the Mastery Learning condition was about one standard deviation above those students in the control. Even more impressive was the result that “about 90% of the tutored students and 70% of the Mastery Learning students attained the level of summative achievement reached by only the highest 20% of the students under conventional instructional conditions” (Bloom, 1964, p. 40). This result was known ever after as the *2-sigma problem*.

### **Learning Trajectories, Bloom, and ABCmouse’s Mastering Math™<sup>1</sup>**

Academic achievement involves the accumulation and mastery of new skills, while improving and building upon already existing skills (Entwisle & Alexander, 1990). Much as Bloom and others had observed, competencies are built up and upon over time; doing well in one grade helps the child do better in subsequent grades (Entwisle, Alexander, & Olsen, 2005). Bloom, however, did not attempt to define what these competencies were, leaving such decisions up to the judgement and wisdom of the teacher (Guskey, 1997). Bloom did, however, assert that the curriculum must be based on clear learning goals, and divided up into successive, highly-focused units of instruction that could provide a hierarchy or trajectory of concepts and skills for learning (Bloom, 1968).

More recently, researchers and practitioners have built on the work of Bloom and others to develop the idea of learning trajectories. According to Simon (1995) a learning trajectory is defined as a framework that includes the “the learning goal, the

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<sup>1</sup> Disclosure: the author of the present paper was one of the principle architects of the curriculum planning and design for Mastering Math, including the development of the knowledge map and learning trajectories, and remains involved through leadership of the team that plans and designs the Mastering Math system. Much of the information in this section comes from the author’s personal experience as one of the architects of the Mastering Math system. Other sources of information are noted as warranted.

learning activities, and the thinking and learning in which the students might engage” (p.133). Another definition might describe a learning trajectory as the learner’s pathway through a hierarchy of goals and activities where each successive objective and interaction is designed to build on the understanding and mastery of previous objectives (Clements & Sarama, 2004; Sarama & Clements, 2004). Accepting the premise that all learners are different, and learn in different ways and at different rates, it is assumed that learner trajectories are best individualized. Much like Mastery Learning, the Learning Trajectories approach depends on the learner’s success with prior learning and uses that as a foundation for subsequent learning that is tailored to the needs of the individual student (Clements & Sarama, 2004; Sarama & Clements, 2004).

Nowhere are these learning trajectories of concepts, skills, and activities more critical than in mathematics, “with each step drawing upon skills laid down in the preceding steps” (Entwisle & Alexander, 1990, p.454). This is especially true for young learners whose early experiences with number are the very foundations of their future mathematical understanding. Indeed, some researchers have suggested that all subsequent learning may be driven in large part by what the child has learned by third grade (Bloom, 1964; Entwisle & Alexander, 1990).

Few early childhood mathematics programs make effective use of the learning trajectories approach. Two programs that do are *Number Worlds* (formerly called *Rightstart*), and *Building Blocks*. Though both of these programs are currently distributed by McGraw Hill Education PreK-12, they originated as research-designed programs used to determine the efficacy of various pedagogical and curricular approaches to early mathematics instruction (Clements & Sarama, 2011). While *Number Worlds* and *Building Blocks* are both based on developmentally sequenced learning trajectories for each mathematical topic, neither program is explicitly grounded in Bloom’s model of Mastery Learning. A more recent program, *ABCmouse’s Mastering Math™*, is grounded in Bloom’s Mastery Learning model and uses it to drive student progress through individualized learning trajectories. *Mastering Math* is an adaptive digital application that teaches mastery of number sense foundations to preschoolers through second grade.

Designed primarily for individual use by students in the home (without a teacher or mentor present), *Mastering Math* relies on a tightly structured sequence of learning objectives, and adaptive algorithms to determine what the student knows and has mastered, what the student does not know, and what the student is ready to learn next. This “smart” system places the student in structured game-based activities that most closely match the learner’s anticipated zone of proximal development, and then adjusts in real time to the learner’s individual needs based on ongoing interactions and game-play. As a result, each student’s learning trajectory through the content is entirely unique, based on his or her prior knowledge, experience, learning ability, and agency within the game.

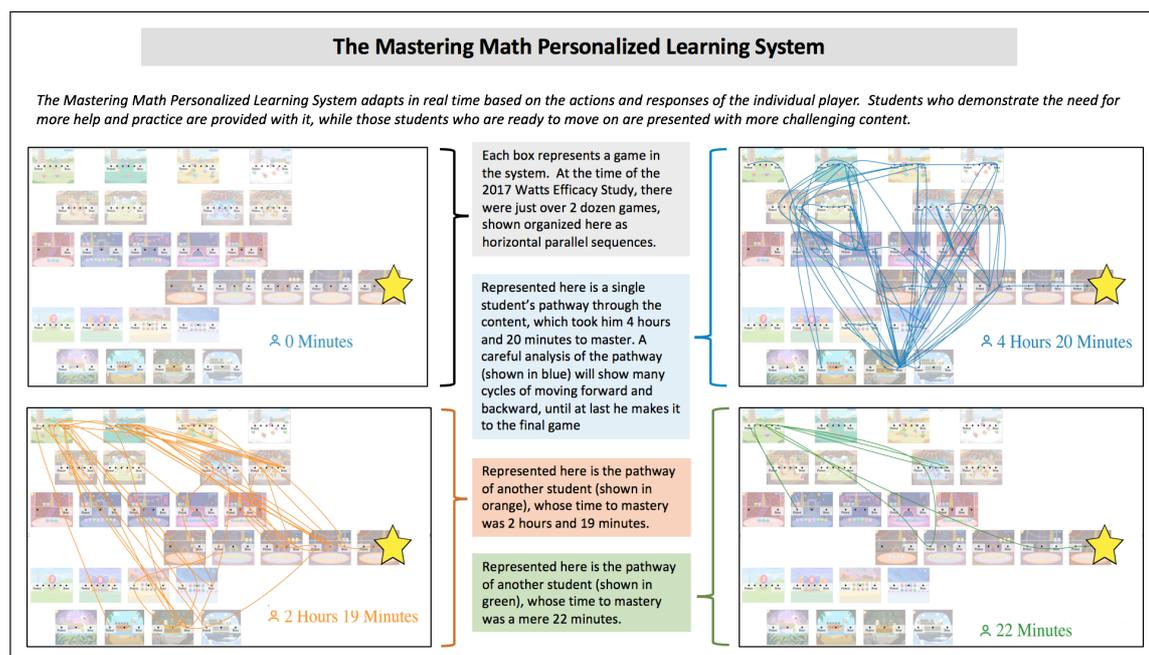


Figure 2: Examples of student learning trajectories in the Mastering Math system (Age of Learning, 2018)

Figure 2 above shows the diverse pathways of three different students through the same portion of the *Mastering Math* content. The lines on the images represent the different learning trajectories of each student, along with the time to completion listed at the bottom right of each student's trajectory map. As shown, one student was able to complete mastery of the content in 4 hours and 20 minutes; another student required 2 hours and 19 minutes, and a third student only needed 22 minutes. As the individual learning trajectories of these three students indicate, the need for personalization in a single classroom is great. It is possible that a teacher might be able to personalize instruction for these three students. It is less likely that a teacher might be able to personalize instruction for 30 students, each with their own unique learning trajectory.

In Bloom's model of Mastery Learning, the student who mastered the content in 22 minutes would have been moved to an enrichment group, while the other two students would have received instruction as well as feedback and correctives. However, in the Mastering Math system, students who demonstrate mastery are simply moved forward to the content they are ready to learn next, rather than into an enrichment group. The need for an enrichment group in Bloom's model is driven primarily by the demands of the classroom, where the teacher has a need to keep mastery students meaningfully occupied while the teacher delivers instruction, feedback, and correctives to non-mastery students. In the digital space, mastery students can be meaningfully occupied by moving on to the next topic, as there is no need to wait for the attention of a teacher.

### The Mastering Math Personalized Learning Model

Key components of Mastering Math are aligned with the those of Bloom's Mastery Learning model, including preassessments, instruction, feedback and correctives, evaluation, and alignment to a hierarchy of learning goals and objectives. As mentioned previously, enrichment is not part of the Mastering Math model, since

students who demonstrate mastery are able to move forward unhindered to the next topic they are ready to learn. Figure 3 below shares additional information regarding the ways in which the Mastering Math personalized learning model exemplifies key components of Bloom's Mastery Learning model.

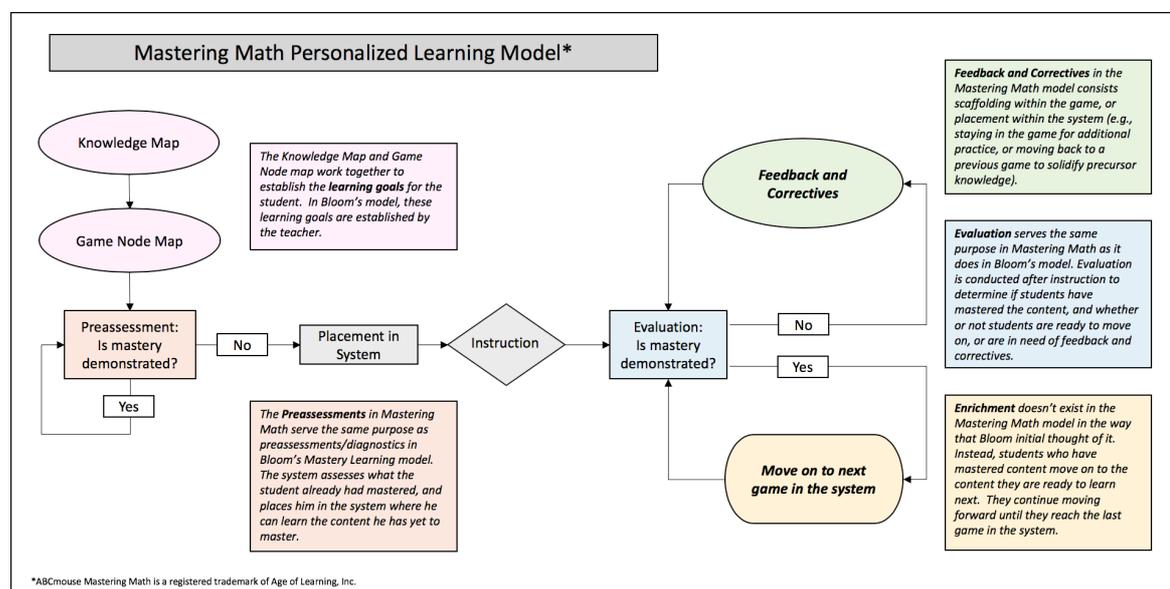


Figure 3: Mastering Math Personalized Learning Model

Early results for *Mastering Math* are encouraging. Students are not only able to master important key concepts and skills in a very short amount of time, but the system is able to effectively and efficiently monitor and move students through the architecture of concepts and skills using personalized learning trajectories optimized for maximum learning (Age of Learning, 2018). In an efficacy study conducted in the fall of 2017 ( $n = 460$ ), learners in the treatment condition experienced a 36% greater gain in early number sense skills over the control group in during an average of only 5 hours of game play spread over 12 weeks. In addition, the schools participating in the study were 100% Title I schools with extremely low SES, little or no access to technology, and no existing math curriculum (teachers created their own). Moreover, through the use of *Mastering Math*, these students were able to demonstrate mastery of those very same advanced counting competencies identified by Nguyen and colleagues (2016) and Claessens and Engel (2013) as especially critical for later success in mathematics, including counting out (within 20), counting on (within 20), recognizing numerals (within 20), and counting forward and backward from any number (within 20) (Age of Learning, 2018). Though still in its infancy, *Mastering Math* has already shown strong potential for helping all students—including minority and low-SES students who are most at risk—learn the most critical mathematics competencies.

## Conclusion

Early mathematics knowledge and skills are key for success in later schooling and beyond and are further critical for helping to eliminate the pervasive and persistent achievement gap that keeps low-SES and minority students from reaching their full potential. Yet, there are time-proven theories of learning and instructional methodologies available that can, if implemented effectively, help diminish or even

eliminate the achievement gap, thus making it possible for all students to learn. Curricular approaches that employ both learning trajectories and key components of Bloom's Mastery Learning approach have tremendous potential for producing lasting gains. Moreover, the implementation of mastery learning and learning trajectories through digital mediums carry the promise of scalability and efficacy, as they are not dependent on the presence of a highly-qualified teacher, nor are they dependent on small group or class sizes. Carefully crafted, adaptive digital programs such as Mastering Math have the potential to closely replicate Bloom's ideal one-to-one condition with an "excellent tutor." With time and refinement, the team behind Mastering Math hopes to eventually solve, or come close to solving, the 2-sigma problem at scale.

Programs like *Mastering Math*, that attempt to integrate a wide body of research, theory, and practice, from a wide array of disciplines, are still in their infancy. More research is needed to determine just how impactful such programs will be. However, early signs indicate that the ability to effectively teach all young learners the mathematics competencies needed to ensure future success may finally be on the horizon.

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## ***Action Research Writing Ability among Secondary School Teachers***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

### **Abstract**

This study focused on the action research writing ability of secondary school teachers in Tabuk City Division, Philippines, as affected by their socio-demographic profile. There were 15 secondary schools in the division; however, only 7 schools were participating in research. This was planned as a basis in giving technical assistance to improve teachers' action research writing ability. The study involved 41 chosen teachers who have conducted action researches. It was a quantitative study and employed descriptive research design. The data on respondents' socio-demographic profile was presented in percentage. Furthermore, Chi-square test was used to determine the association of the action research writing ability of the teachers with their socio-demographic profile. Results showed that most of the respondents were in the field of English, followed by Science, Math and Filipino. Majority were 36-50 (70.70%) years old, female (78%), master's degree holders (75.6%), in the service for ten years and below (53.7%), with three or more trainings on research writing (65.9%), and with one action research conducted. Almost half (46.3%) hold Teacher III positions and the rest hold either a Master Teacher or Teacher II position. Results further showed that the overall action research writing ability of the respondents is at *moderate* level. Furthermore, Chi-square test revealed that the action research writing ability of the teachers does not have significant association with their educational attainment, teaching position, and length of service but have significant association with their field of specialization, age, gender, number of trainings attended and number of action research conducted.

Keywords: research writing ability, secondary school teachers, Tabuk City

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## Introduction

The word research is the momentum for positive change leading to the main goal of teachers “We care, we share and we make a difference”. Through research, teachers could make new policies and could address the immediate need of our students. According to Hanover (2014) as stated in the study conducted by Padoyan (2016), “a culture of research provides a supportive context in which research is uniformly expected, discussed, produced, and valued”. In line with RA 9155, the Department of Education had to enable policies and mechanisms from which the delivery of quality basic education could be continuously improved. Chapter 1, Section 7 (5) of R.A. 9155 stated that DepEd is mandated to “undertake national educational research and studies” from which it could become part of the basis for necessary reforms and policy inputs. In fact, one objective in the Individual Performance Commitment and Review (IPCR) for DepEd teachers was to conduct one (1) action research per school year. It was also one of the criteria for ranking in Teacher II to Master teacher II, teaching related positions, and non-teaching promotions. Koshy (2005) claimed that learning through action leads to personal and professional development. Grossman and McDonald’s (2008) study also indicated that experiential learning of implementing action research combined with knowledge of action research might provide fruitful combination for learning. Action research as methodology had provided teachers with opportunity to develop research skills and practitioner disposition that created reflective practice as well. Thus, encouraging teachers to continue using action research as a tool for improvement was necessary. Neapolitan (2000) found that teachers believed that engaging in action research helped them grow personally and professionally and enabled them to influence other teachers toward improving curriculum and instruction. On the contrary, despite the importance of conducting action research in improving curriculum and instruction, according to Allwright, et.al (1993), lack of expertise or skills in research, lack of support especially from within their own institution, and threats to their self-image as a teacher were some reasons why teachers were not able to make one. Sardo, et.al (1995) also emphasized their interactions with experienced classroom teachers that teachers encountered major barriers to conducting action research. These included fear of the perceived technical nature of research, the tendency to believe that research was not within the domain of practicing teachers, the belief that research was not relevant to teachers' everyday lives, lack of time and flexibility in the school day to do action research, concerns about the potentially sensitive nature of action research topics to parents and other stakeholders, and either the lack of administrative support or administrative resistance to conducting action research. Among the strategies offered, the authors suggested better training of teachers and administrators in conducting action research starting with pre-service education. Some said they were not interested to do action research while the others were very much willing but they did not know when and how to start. These reasons had driven the researcher to assess the action research writing ability among secondary school teachers and the problems encountered in conducting action research. Findings of this study would be an empirical evidence to aid policy formulation.

This study focused on the action research writing ability of secondary school teachers in Tabuk City Division, Philippines, as affected by their socio-demographic profile. There were 15 secondary schools in the division; however, only 7 schools were participating in research. This was planned as a basis in giving technical assistance to

improve teachers' action research writing ability. The study involved 41 chosen teachers who have conducted action researches. It was a quantitative study and employed descriptive research design. The data on respondents' socio-demographic profile was presented in percentage. Furthermore, Chi-square test was used to determine the association of the action research writing ability of the teachers with their socio-demographic profile.

As to Socio-demographic Profile of Respondents, the highest number of 14 or 34.1 percent was those teachers teaching English and the least with a frequency of 1 or 2.4 percent were teachers teaching Araling Panlipunan and TLE. No action research was conducted by teachers teaching MAPEH. The data implies that research is an application of writing skills where English teachers are equipped with. Based on survey, most of the local researches conducted on action research were case studies which were focused on English teachers' awareness in teaching and conducting action research particularly on colleges and Universities (Mesfin, 2003; and Emiru, 2012). Since research is scientifically based, science and math teachers are more adept in doing research. Conducting research is an application of scientific principles in which these two subjects are anchored. The results contradict the findings of Zeleke (2014) in his study entitled "The Status of Action Research Conducted in Government Secondary Schools of Addis Ababa". He found out that majority of the respondents was found to be from the Natural Sciences followed by Social Studies and the Languages. The Technology and Livelihood Education teachers were more focused on the application of life skills rather than writing, computing and reading. Related to the finding, Bautista (2018) highlighted in her article entitled TLE Teaching Strategies that with the advent of 21<sup>st</sup> century education, TLE has become a very important subject. Educators are now employing strategies that will make TLE inviting and more focused, particularly with the inputs and output of the students gained from the subject. This is also true with MAPEH teachers who find researching taxing on their part since their skills are leaned toward kinesthetic application. However, for AP teachers, it could have been easier for them since they are expected to read a lot and be updated. The finding contradicts Zeleke's (2014) finding wherein Social Studies ranked second in the "Status of Action Research Conducted in Government Secondary Schools of Addis Ababa".

The highest number of 29 or 70.7 percent was those whose age group is 36- 50 followed by 12 or 29.3 percent aged 21 – 35. The result implies that teachers who were at the age group of 36-50 were at the height of their energy in doing activities that would eventually enhance their teaching career. At this age group, these teachers are already teacher 3 and master teachers 1 and 2; therefore, they are expected to be the leaders in the development of the school especially in instruction. In the previous study of the author on the research writing ability of teachers in Tabuk City National High School, Tabuk City Division, she found out that out of 84 respondents, 56 were at the age group of 21-35 while 28 were at the age group of 36-50. However, in this study, most of the teachers who were able to conduct action research came from the age group 36-50.

The teaching field is dominated by the female with the higher number of 32 or 78 percent and the male gender with lower number of 9 or 22 percent. This implies that the teaching profession in the country is dominated by females. And since it was so, it would follow that there would be more female teachers who would conduct teaching

related activities such as conducting action research. This data corroborates with the study entitled “Evaluation of attitude to knowledge of and barriers toward research among medical science students conducted by Memarpour, et.al (2015). They found out that female students had greater knowledge than males. Barriers were emphasized as lack of funding support and lack of time for research. The finding is in contrast with the findings of Horeto (2013) in his study entitled “School Related Factors Affecting Teachers Participation in Conducting Action Research in Secondary Schools” conducted in Ethiopia. He found out that out of 208 teacher respondents, 160 (76.9%) and 48 (23.1%) were males and females respectively. In this place, the teaching profession was dominated by the males. Moreover, the majority 81.1% of respondents of Zeleke (2014) were males while the remaining 18.9 % were females.

The teachers with master’s degree obtained a higher number of 31 or 75.6 percent and those with baccalaureate degree obtained the least frequency of 3 or 7.3 percent. This result implies that many of the secondary teachers were able to finish graduate school and few were able to finish post graduate school. Moreover, after acquiring master’s degree, this group of teachers are still fresh with the ideas and skills in research they recently conducted as a requirement in their master’s degree and were ready to apply these skills not only for personal. The finding is consistent with the previous findings of the studies of Kincheloe (1991) and Keyes (1999) as cited by Gray and Campbell-Evans (2002) which indicated that many teachers, and particularly beginning teachers, do not feel that they can confidently engage in debates on issues within the classrooms and were reluctant to admit that they have done any research in the classroom. In short, they have yet to develop confidence in doing activities related to their teaching responsibilities. Moreover, findings of Seider and Lemma (2006) revealed that teachers involved in action research projects as part of their graduate work requirements saw this work as professionally and personally worthwhile. To this degree, the assumption that teachers would see value in conducting action research was realized, but perhaps only during the capstone semesters and the Masters’ program. It seems that once they completed their university requirements, only some teachers continued to initiate additional action researches. Zeleke (2014) in his study, which examined the current status of action research conducted by teachers in government secondary schools of Addis Ababa, found out that 95 % of the respondents were found to have first degrees and the remaining 5 % had their second degrees (MA/MSc). However, the result contradicts on the study conducted by the author (2016) entitled Level of research writing ability among TCNHS teachers wherein most of the TCNHS Teachers have baccalaureate degree with a percentage of 56. There are 41.7 % teachers with master’s degree and only 2.4 % of the teachers graduated with doctorate degree.

Teacher III obtained the highest number while teacher II obtained the least frequency of 2 or 4.9 percent. No T-I participant was noted. The data manifested the expectation that is regarded to teachers who are of higher positions. They are expected to do more than those who are of lower positions. They should be the drivers of curriculum development. As observed for those with teacher 3 position, they give more effort and spend extra time since these are needed for them to step to a much higher positions as stipulated in the D.O 66. s. 2017 which is the “Guidelines on the Appointment and Promotion of other Teaching, Related Teaching and Non- Teaching Positions” and DECS Order No. 51, s.1999 “Guidelines in the Promotion for Master Teacher I and II.” Zeleke (2014) claimed that novice teachers are expected to conduct action

research as they have already written their theses, senior essays or projects before their graduation from college or university.

Teachers whose length of service was 10 years and below obtained highest number of 22 or 53.7 percent and teachers with 11-20 years of teaching experienced obtained the least with 8 or 19.5 percent. This implies that within the early years of teachers' teaching service, they conduct action research more than when teachers stay in the service for more than 10 years. This is another evidence to the claim of the Center for Analysis of Longitudinal Data in Education Research (CALDER) that the impact of experience is strongest during the first few years of teaching; after that, marginal returns diminish. Ladd (2008) as cited in a meta-analysis by the Center for Analysis of Longitudinal Data in Education Research (CALDER) (2010) found out that teachers with more than 20 years of experience are more effective than teachers with no experience, but are not much more effective than those with 5 years of experience. The center also claims that studies have also documented some evidence that effectiveness declines after some point, particularly among high school teachers. While this meta-analysis on the impact of teacher experience refers to the effectiveness of teachers in teaching per se but it is a clear proof the performance of teachers in all aspects, including conducting researches, is affected by their teaching experience.

Teachers with three or more trainings attended obtained the highest number of 27 or 65.9 percent and teachers with one training attended obtained the least frequency of 5 or 12.2 percent. The data implies that secondary school teachers do attend trainings on conducting action research. Aside from learning about research in baccalaureate and graduate schools and the conduct of in-service trainings, DepEd mandated the conduct of School Learning Action Cell (SLAC) through D.O. No. 35 s. 2016 which could be an avenue for teachers to have trainings and workshops on making an action research. However, teachers' knowledge on the process of conducting research does not guarantee their participation in making action research. The findings contradict with the Authors' (2016) previous study where 29.8 % teachers attended only one training, 10.7 % had two and 7.1 % were able to attend three or more trainings. The study of Zeleke (2014) entitled, "The Status of Action Research Conducted in Government Secondary Schools," confirms this finding. It found out that although teachers in secondary schools have some skills to conduct action research, their participation was very low. In the study of Meerah, et.al (2016) entitled, "What Motivates Teachers to Conduct Research," it was found that having the knowledge and skills in research do not necessarily involve teachers in research. It should emphasize on changing the teachers' attitudes to conduct research rather than providing only research knowledge and skills.

Teachers with one conducted action research obtained the highest number of 34 or 82.9 percent and teachers with three conducted action research obtained the least frequency of 1 or 2.4 percent. Based from observation, teachers are contented on having conducted one action research since action research is usually geared toward making an innovation. Once a teacher is able to complete an action research with an innovation, he/ she is assured of 25 points when he/ she applies for promotion. It also confirms from the authors (2016) previous study that there are 14.3 % teachers conducted only one, 3.6 % had three or more and 2.4 % were able to conduct two action researches in Tabuk City National High School. Unfortunately, there are 79.8

% teachers who do not have action research. The findings of Seider and Lemma (2006) substantiate the data gathered wherein only few teachers began new research projects since the original one had been conducted. Nonetheless, through interview data, it appears that action research is becoming an option for teachers' professional development. This further implies that conducting an action research often did not serve its purpose as stipulated in its very own meaning. In connection with the number of trainings attended by the teachers, the data does not guarantee that the more trainings they attended, the more action research conducted. This observation supports the results of Meerah, et.al (2016) that very few teachers had conducted action research regularly and twenty percent of those who have attended in-service course have done so. Much lower frequencies were obtained from those who did not attend any action research courses. In order to encourage teachers to carry out research in schools, one teacher succinctly noted from the same study. She emphasized that what is more important is, the teacher should be self-motivated. Have internal focus control. The teacher should feel action research is for their self-improvement, so that teaching becomes more effective for personal reasons and not because somebody asked you to do or to seek reward. Evans (2011) claimed that a more positive attitude towards research will lead to intrinsic motivation to engage in research.

The action research writing ability among secondary school teachers in Tabuk City division along introduction obtained a total average weighted mean of 3.61 described as "high ability". The finding indicates that the teachers know how to write an introductory part of an action research. This is expected because all trainings and seminars on research writing emphasize on the introductory part research which includes the background, framework, objectives and review of related literature. These results justify the earlier finding which showed that the respondents had attended two and three trainings in action research which have given them high ability in writing the introduction. However, this contradicts the findings of Padoyan (2016) that there was a fair level of action research writing ability along introduction among teaching and teaching related personnel of Baguio City Division.

The action research writing ability among secondary school teachers in Tabuk City division along methodology obtained a total average weighted mean of 2.78 described as "fair ability". The abilities in writing the methodology of an action research, along "concrete planning on how the results of the research will be disseminated," "detailed explanation of encoding/coding procedures, quality control, plan for data analysis," and "use of appropriate program software" obtained lower means of 2.63, 2.39 and 1.68 described as moderate, fair and poor abilities, respectively. Despite the rigid trainings and SLAC conducted, close supervision on these indicators is needed since it involves the use of statistics. The researcher as the member of the School Review and Evaluation Committee (SREC) since 2016 also encountered problems in evaluating action researches. She found out that most of the teachers' research proposals and final research reports had a problem on identifying what statistical tool to be used to test the significant difference between groups. Consequently, analyzing their data is a chaos. The researcher reiterated in her action plan that there is a need to enhance the writing ability of teachers in action research especially in analyzing the data year round. Once teachers are enabled and equipped in analyzing data, it is easier for them to give meaning and implications of the data presented.

The action research writing ability among secondary school teachers in Tabuk City division along results/findings and discussion was “moderate” as evidenced by the total average weighted mean of 2.95. From the 5 identified criteria in assessing the respondents writing ability of the results/findings and discussion, “Presented appropriate data using tables or figures” obtained the highest mean of 3.22 described as “moderate ability”. This means that the respondents know how to present the data in their studies using tables or figures but they still need mentoring and guidance from research experts. On the other hand, the indicator “Found and chose appropriate studies to corroborate the findings/results of the study” obtained the lowest mean of 2.22 described as “fair ability”. This means that the respondents have difficulty in researching and reviewing literature related to their action research topics thereby having difficulty in choosing appropriate findings to corroborate the results of their action researches.

The action research writing ability of secondary school teachers in Tabuk City Division along conclusion, recommendation and referencing is “moderate” as evidenced by the total average weighted mean of 3.22.

Results further showed that the overall action research writing ability of the respondents is at *moderate* level. Furthermore, Chi-square test revealed that the action research writing ability of the teachers does not have significant association with their educational attainment, teaching position, and length of service but have significant association with their field of specialization, age, gender, number of trainings attended and number of action research conducted.

## **Conclusion**

Based on the findings of the study, the respondents varied in their demographic profile along field of specialization, age, gender, educational attainment, teaching position, length of service, number of trainings conducted, and number of action research conducted. As to the overall action research writing ability of the respondents is at *moderate* level. Furthermore, Chi-square test revealed that the action research writing ability of the teachers does not have significant association with their educational attainment, teaching position, and length of service but have significant association with their field of specialization, age, gender, number of trainings attended and number of action research conducted.

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## ***An Education Model for Coding and Software to Improve Computational Thinking***

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The IAFOR International Conference on Education - Hawaii 2019  
Official Conference Proceedings

### **Abstract**

The regular coding (programming of software) education in elementary, middle and high school has been begun in Korea since 2018. In this paper, a new coding education model to improve the computational thinking which is critical in software development is proposed. In addition to, 645 questionnaire survey for teachers, programmers, and students is analyzed, and its results are reflected on the proposed model. The model consists of following steps; *i*) problem definition and understanding of mathematical concept, *ii*) problem solving and algorithm design, *iii*) Raptor flowchart development, and *iv*) understanding of source code. Note that the Raptor is the free software tool based on visual flowchart of international standard organization (ISO-97N90), in which the defined problem can be solved with visual tool, and the source code can be easily generated by using Raptor menu. From survey results, it is observed that total of 93% of the respondents is shown as the positive opinion for the usefulness of the Raptor. Under statistical analysis (Chi-square test), we also observe that the experienced respondents for coding show the more positive opinion for the Raptor rather than those of inexperienced. The another results show that the middle school is the proper beginning time to study, and to improve logical thinking capability is the most important factor in coding education.

Keywords: Raptor, coding education, computational thinking

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## Introduction

In the upcoming era of the fourth industrial revolution, the new products and services associated with artificial intelligence, internet of things, virtual or augmented reality, robot, *etc* will emerge in our everyday life (Jang & Kim, 2017). And, in that age, the main technology to make the products and services is the software engineering. For this reason, the coding educations have been operated in the regular curriculum courses all around the world. Until now, main countries have operated the coding education, so in our country Korea, since 2018, the coding education has been begun in the elementary, middle, and high school. However, in the most cases, a rule-of-thumb like coding education has been managed with relatively easy block-coding tool (Code studio, Entry, Scratch), even without the formal educational model. After all, that way of education will raise useless programmers in the fields of software development. In the future fourth industrial revolution, we need software developers with the capabilities of logical thinking and creativity to solve the defined complex problems. In this paper, to raise the desirable software developers, we propose a coding education model to improve computational thinking based on the processes defined in the regular programming education course (Hadfield *et al.*, 2018) of US Air Force Academy (USAFA). The model consists of the following four steps; (1) problem definition and understanding of mathematical concept, (2) problem solving and algorithm design, (3) Raptor flowchart development, and (4) understanding of source code. In particular, at the 3<sup>rd</sup> step, the Raptor platform is proposed to design procedural algorithm and make the source code. The Raptor platform is the software to make the visualized flowchart developed in USAFA using the international standard ISO-based symbols (ISO-97N90), and it is widely used for the education of algorithmic reasoning, coding, and basic programming (Cheng, 2013; Gaddis, 2015; Venit & Drake, 2015). In the following section, at first, the coding education model is introduced, and an example (giving Letter Grade for numeric score) by using the Raptor platform and block-coding is presented. Then, the survey results for 645 questionnaire are analyzed with the questions for the Raptor's usefulness, proper coding educational tool (or programming language), advisable education timeliness, and main emphasis on the education. Finally, using SPSS statistical package (Noh & Jeong, 2006), the frequency analysis and the test for significance are performed between the experienced and inexperienced respondents. These results indicate the observations such that, when we teach or learn the coding by using the proposed education model along with the previous block-coding and programming language, the efficient and desirable coding education will be realized to improve computational thinking capability.

## Coding education model

In general, as shown in Figure 1, the problem solving process (Gaddis, 2015) using computer is as follows; (1) algorithm design, (2) coding, (3) implementation on devices after analyzing the problem or customer's needs, and finally the products or services are developed as the shape of applications, games, ICT (information and communication technology) services, toys, *etc*. For the process, the education to make products or services is called as the maker education (coding and devices implementation), and coding education includes the training for the procedures of algorithm design and coding methods. From Figure 1, we observe that the academic area of science and mathematics can be applied in the algorithm design, and

technology and engineering domain is involved in the coding and device implementation tasks. On the other hand, as defined in the programming regular course in USAFA, to teach the algorithm design and coding procedures in Figure 1, the following four steps are defined; (1) understanding the goal to be accomplished, (2) design your solution, (3) implement your solution, and (4) test your solution (Hadfield *et al.*, 2018).

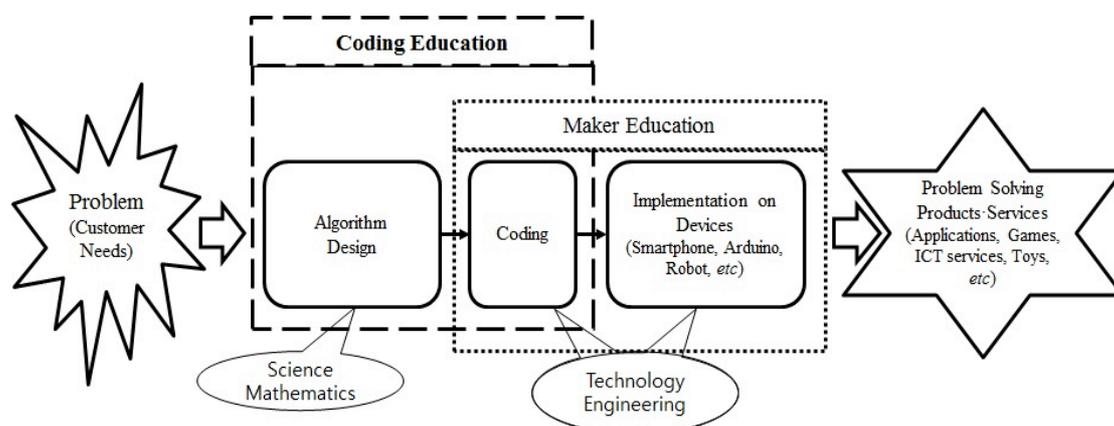


Figure 1. Problem solving process by computer

Based on the problem solving strategy explained in the textbooks of USAFA programming course, we propose the coding education model as shown in Table 1. The model is composed of 4 steps, and in particular, in the 3<sup>rd</sup> step, the Raptor platform can be efficiently used to develop visualized flowchart based on the procedural mathematical concepts, and generated source code by menu in Raptor is studied after modifying minor syntax errors.

Table 1. Coding education model

Process	Outline
Problem definition and understanding of mathematical concept	Define the descriptions and requirements of the problem. Make an answer for any conflicting questions and requirements. Understand the mathematical concept required to solve the problem. Make a storyboard to describe what the coding must solve.
Problem solving and algorithm design	Make a list of tasks that need to solve the defined problem. If needed, break complex tasks down into smaller sub-tasks. Design each algorithm to solve the sub-task. Make appropriate sequential, conditional, and iterative control logic.
Raptor flowchart development	Raptor flowchart is developed to solve the sub-task. Test the each implemented small part of flowchart. Run the whole flowchart from [Start] to [End] step by step. Using various inputs to make sure the flowchart does what we want.
Understanding of source code	Using the Raptor [Generate] menu, make source code. Correct syntax error, run, and understand the source code.

The Raptor platform is a flowchart-based programming environment, designed specifically to help students visualize their algorithms and avoid syntactic baggage, and it can be freely downloaded at <http://raptor.martincarlisle.com> (maintained by professor, Martin Carlisle).

## Letter grade example

For example, we present the letter grade problem introduced in Hadfield *et al.* (2018), and the Raptor flowchart and block-coding design steps in the proposed process are only explained, excluding the steps of problem definition and algorithm design that are described in the reference in details. Figure 2 shows the letter grade flowchart and C++ code developed by using Raptor menu.

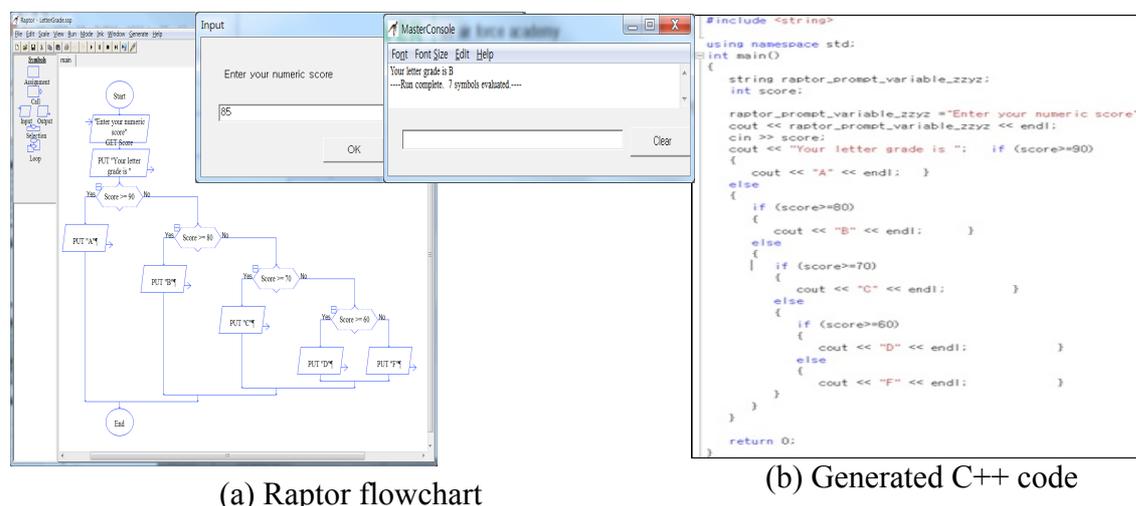


Figure 2. Raptor flowchart for letter grade

As shown in the Figure, if we are assigning a letter grade (A, B, C, D or F) based on a numeric score (variable, [Score]), we need to select one between five choices. That is, the letter grades are assigned such that, put “A” for numeric  $[Score] \geq 90$ , “B” for  $80 \leq [Score] < 90$ , “C” for  $70 \leq [Score] < 80$ , “D” for  $60 \leq [Score] < 70$ , and put “F” in case  $[Score]$  is less than 60 (that is,  $[Score] < 60$ ). In case of  $[Score] = 85$ , we take that the first “No” branch. Because we are on the “No” branch, we know that  $[Score] < 90$ . So, we need only test that  $[Score] \geq 80$  for the next selection decision in the flowchart. Therefore, as shown in the results in Figure 2, for  $[Score] = 85$ , the second “Yes” branch is taken, letter “B” grade will be put. This makes for an elegant and efficient algorithm to put letter grade given the numeric score.

The scratch block-coding for the letter grade is as shown in Figure 3. Using the blocks of sensing, looks, data, control, and operators, the letter grade is determined. The Figure 4 also shows the entry block-coding and python code generated by entry’s menu. The interface, menu, block name, and design process in entry are quite similar as scratch. However, as compared with the scratch, the entry provides the python code while we can’t get any code in scratch.



Figure 3. Scratch block-coding for letter grade

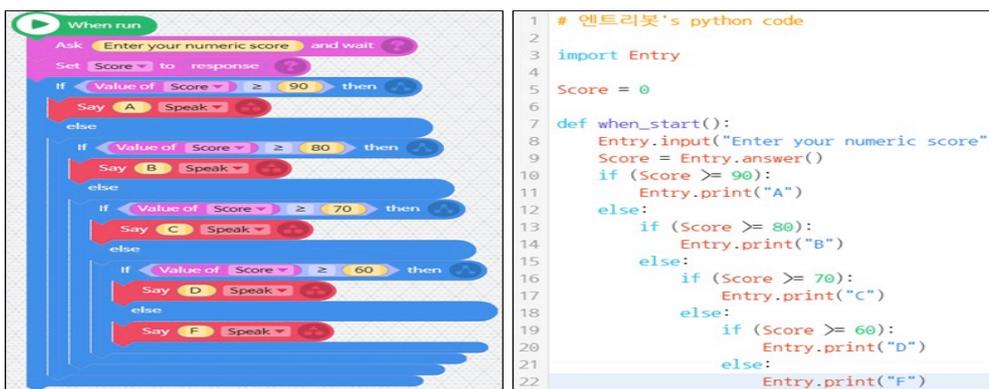


Figure 4. Entry block-coding for letter grade

Comparing those tools of Raptor and block-coding, we observe that

- (1) Not easy to understand and explain blocks (for example, the functions implemented in each block) to the students or programmers. On the other hand, the algorithm developed by the Raptor is relatively easy to understand, since the Raptor provides the visualized procedural function by using three symbols of logics, sequence, selection, and loop defined in structured programming method.
- (2) We couldn't get any programming source code from scratch, while the entry tool mainly used in Korea provides the python code. However, in the Raptor platform, the source code such as C++/C#, Java, VBA (visual-basic applications), and Ada are generated by Raptor's [Generate] menu.
- (3) The block-coding has its limitations to use the means as communication tool among learners, teachers, customers, software developers. But, we can use the Raptor flowchart as efficient communication tool since it is developed by using international standard ISO symbols.

From the observations, in the development step before coding tasks in the proposed model, using the Raptor flowchart is more desirable to express its algorithm, and is more successful in creating algorithms than using a traditional language (and block-coding) or writing flowcharts without Raptor. The other examples developed by Raptor can be found in Gaddis (2015), Hadfield *et al.* (2018), Jang (2018), Jang *et al.* (2017), Venit & Drake (2015), Raptor and Cosuda sites. In the next section, the survey results for the usefulness of Raptor including proper coding education tool, timeliness and main emphasis on education are analyzed.

### Survey results

Our survey for 645 respondents is performed for students (72%), teachers (professors, 17%), researchers (8%), and programmers (3%), and its ratio for gender is male 68%, and female 32%, respectively. And, the ratio of the respondents who have a coding education or experience to develop software is 58% (experienced), and 42% for inexperienced people. The analytic result for the reliability of the questionnaire indicates that the value of Chronbach’s alpha is 0.743, so it then shows the very high reliability (Noh & Jeong, 2006), and we analyze the survey by confidence level of 99% and allowable standard error of ± 5%. At first, the Figure 5 shows the proper coding education tool for each course. From the frequency (ratio) analysis, it is observed that;

- (1) In the elementary school, the most desirable tool is evaluated as block-coding method (43.4%) such as scratch, entry, and code.org.
- (2) For the middle school, the block-coding is also suitable. However, the ratio of block-coding is decreased to 15.7%, instead of it, C/C++ 15%, physical computing method 11.8% such as Arduino and raspberry are then selected.
- (3) In the high school, as different results, C/C++ 26.8%, Java 16.6%, and python 9% are recognized as the appropriate educational language. In addition to, the ratio of visual-basic (9%) are the same as python’s ratio.
- (4) Finally, in the university or college, as shown in the similar order of priorities in the high school, C/C++ 22%, Java 17.5%, python 11% are perceived as proper language. Note that the adoption ratio (5.3%) of visual-basic is decreased as compared with the high school.

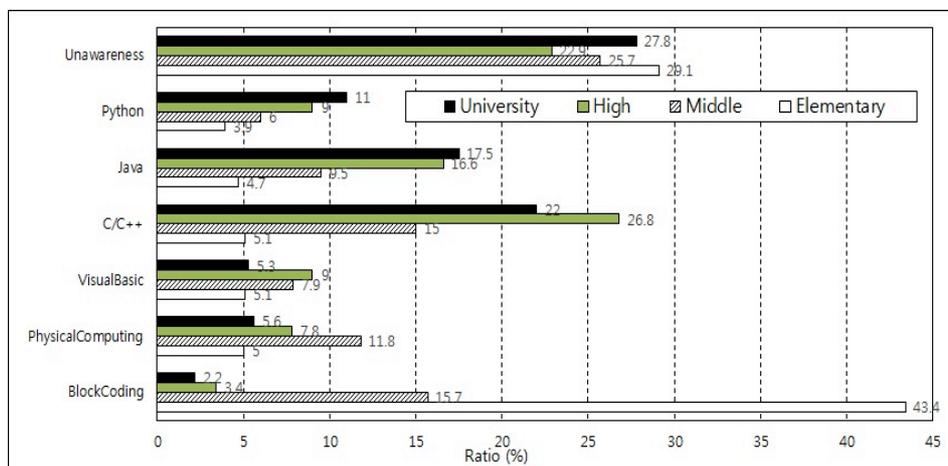


Figure 5. Proper coding education tool (programming language)

To compare the observations with the programming languages used in the industry’s fields for software development, we investigate the TIOBE index and Redmonk data which are presented in each company’s site. The Figure 6 shows TIOBE index, representing the utilization ratio of language in the market and software development. The results of Java 16.8%, C 14.4%, C++ 8.3%, Python 7.7% are shown in the Figure. Also, as shown in the annual results from 2001 through 2018, the order of priority with overall evaluation in recent trend are C/C++, Java, and then Python.

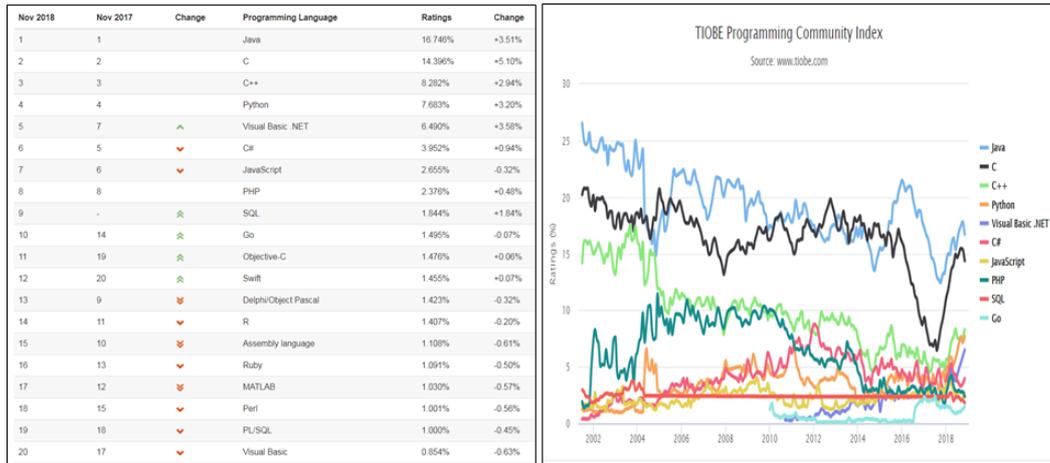


Figure 6. Utilization ratio of programming language (TIOBE index, November 2018)

We also observe that, from the Redmonk rankings in Figure 7, the order is as follows; Javascript, Java, Python, PHP, C#, C++, CSS, Ruby, C and Objective-C. The rankings in Redmonk company are extracted by analyzing the GitHub (number of projects) and stack overflow (number of tags), in which from the company’s notes, it is observed that the ranking is not to offer a statistically valid representation of current usage, but rather to correlate language discussion and usage in an effort to extract insights into potential future adoption trends. It is also observed from the Redmonk’s data that the programming languages (C#, C++, and Objective-C) for C type are popularly used, and then Javascript, Java, Python follow next. As compared with the results in the TIOBE index, the Javascript is included in the Redmonk rankings because the Javascript is mostly adopted to provide Web and mobile services as the interpreter language. By evaluating the results of TIOBE index and Redmonk rankings, we observe that the priority order used in the software industries is the same as the desirable coding education tool, and it is C/C++, Java, and Python.

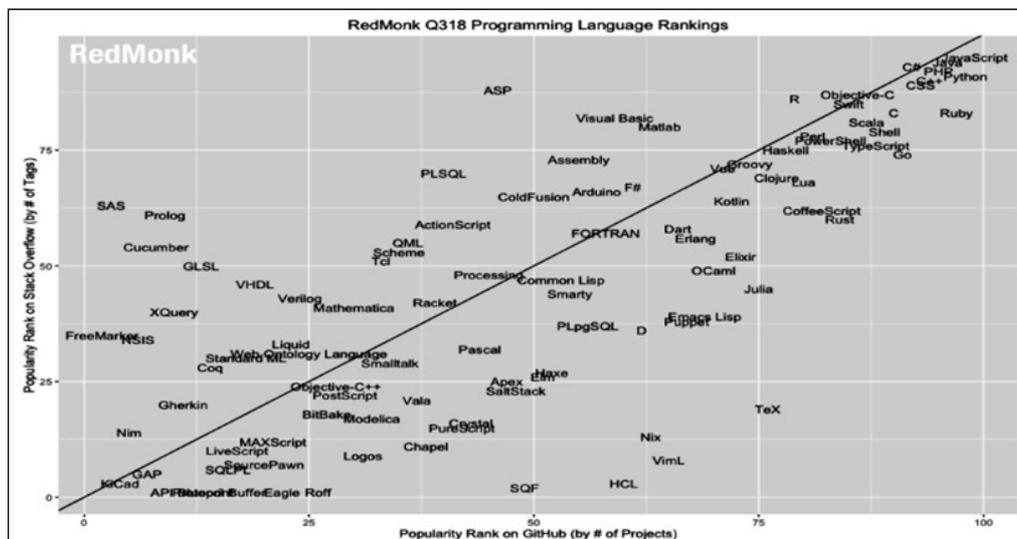


Figure 7. Programming language rankings (Redmonk, June 2018)

In addition to, to examine the deviation of the opinions for the coding education tool between the experienced and inexperienced respondents, the significance analysis by Chi-square test is performed with the null hypothesis ( $H_0$ : Selection trend is the same for experienced and inexperienced respondents). The result of Chi-square test for the

preference of coding educational tool indicates that the significance probability ( $p = 0.0$ ) is less than the previously determined significance level ( $\alpha = 0.05$ ), so the  $H_0$  is rejected, and there is proven to be the significant preference deviation between the responses for experienced and inexperienced people. For the preference of the educational coding tool, the results (ratio) for each group are shown as Figures 8 and 9, for elementary/middle and high/university schools, respectively. From the Figure 8, the most preferable tool is the block-coding method in the elementary and middle schools. At first, in the elementary school, the block-coding is mostly adopted for the experienced (greater than 50%) and 33% for inexperienced respondents. The results of elementary school indicate that, as the second coding tool, the selection ratios for physical computing, visual-basic, C/C++, and Java have the similar results (5%). In the middle school, even though the preference deviation for the block-coding are shown as quite small (13%~20%), the experienced people of year 1~16 mostly choose the physical computing and C/C++ as the second preferable tool. Unusually, the adoption ratio for the block-coding in the middle school for the inexperienced respondents is also decreased to 15% from 33% in the elementary school. As the natural results, note that the unawareness ratio for the inexperienced people is the highest among the respondents.

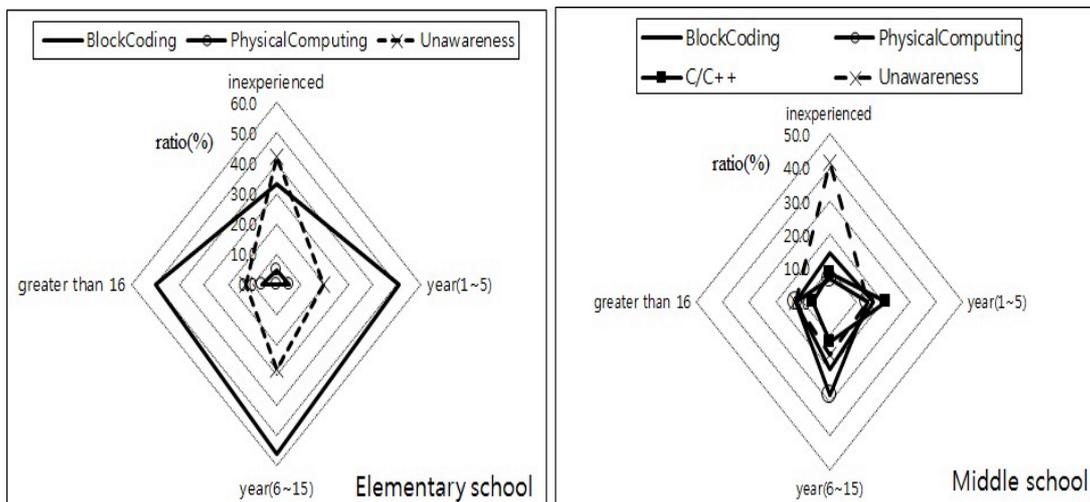


Figure 8. Preferable educational tool (Elementary and middle school)

For high and university (or college), as shown in Figure 9, the experienced respondents with career greater than 1 year mostly prefer the C/C++ language as desirable tool rather than other programming languages. In high school, 16%~44% of experienced people adopts the C/C++, Java (12%~21%), and then selects the visual-basic and python in similar ratio (6%~24%). Under the frequency analysis for all respondents, note that the selection ratio of visual-basic and python is the same (9%). Similarly, in the university or college, the experienced people select the language as same order as high school, C/C++ (25%~63%), Java (12%~22%), and python (8%~14%). However, the python's adoption ratio (11%) is overall greater than the ratio (5.3%) of visual-basic. On the other hand, by evaluating the responses for inexperienced people excluding the unawareness opinions (Note that the unawareness ratio for the inexperienced is the highest), the priority order is the same as C/C++ (14%), Java (13%), python (8%) in university, and C/C++ (19%), Java (12%), visual-basic (8%), python (7%) in high school.

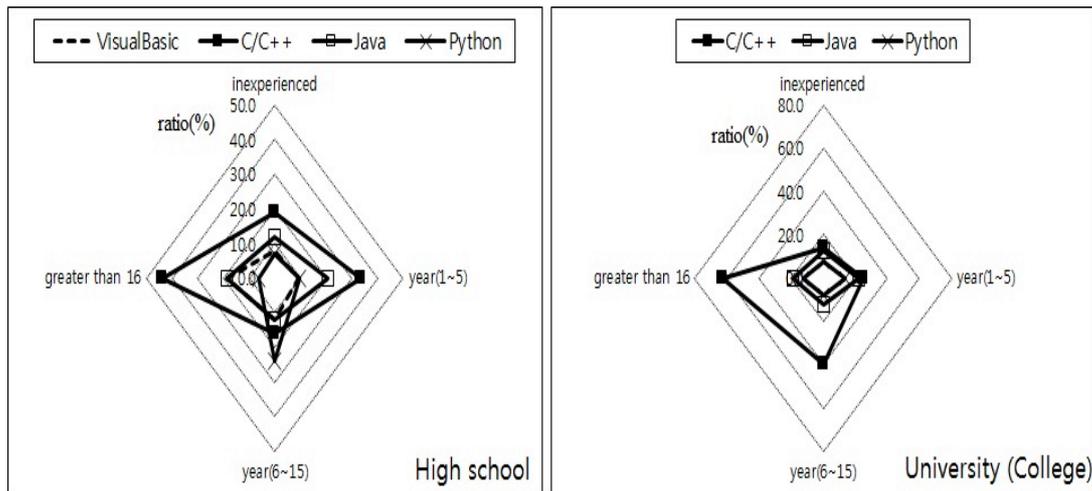


Figure 9. Preferable educational tool (High and university school)

Next, the results to investigate the usefulness of visual tools such as Raptor are as shown in Figure 10. From the results, it is observed that the respondents mostly have the positive agreements for the effectiveness of visual tools. For learning the Raptor flowchart, the responses are as shown as very good 10.4%, good 50.1%, average 32.2%, and overall positive opinions summing up the ratio are evaluated to be 93%. If the students could learn the UML (unified modeling language), IBM RSA (rational software architecture), and LG MDD (model driven development) visual tools in the school, it is very effective because those tools are practically used to develop the software. However, the visual tools are very expensive to learn, and another time and cost are also required to study the complex interface, function, and menus. On the other hand, the Raptor flowchart can be used free to download in Internet, and to easily learn when you only study the ISO-based basic 6 symbols. Note that the 6 symbols defined in the ISO are assignment, selection, loop, call, input and output. In conclusions, by using the proposed coding education model combining with the Raptor platform and other tools (block-coding and programming languages), the desirable coding education will be realized to improve computational and logical thinking capabilities.

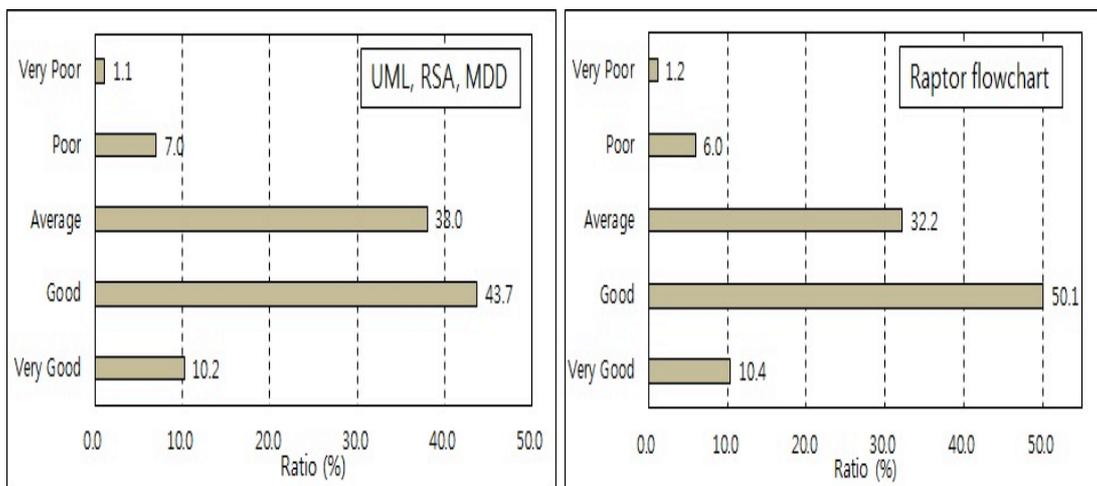


Figure 10. Usefulness of visual tools

The Chi-square test results show that,  $p = 0.269 > \alpha = 0.05$ , so the response trend is the same for the coding experience in the opinions for the effectiveness of UML, RSA, and MDD visual tools. In the Figure 10, we know that the positive view (92%) for the visual tools is much higher than the negative ratio (8%). However, the test results ( $p = 0.0$ ) for the Raptor platform show the significant deviation in the usefulness. As shown in the Figure 11, the ratio (20%) of the very good is the highest in the career's people of 6~15 years, and the experienced respondents of 1~5 years mainly show the good's opinions (54%). And, for the inexperienced people, the total ratio of very good and good is 54%, and ratio above average is 95%. However, the negative views (31%) for both poor and very poor for the programmers greater than 16 years is much higher than as compared with those of other people. Note that the ratio above average for the 16 years' respondents is 69%. From those survey results, we observe that, even though the person with lots of experience has a rather negative view on the Raptor flowchart coding education, the most respondents express favorable opinions for the Raptor tool.

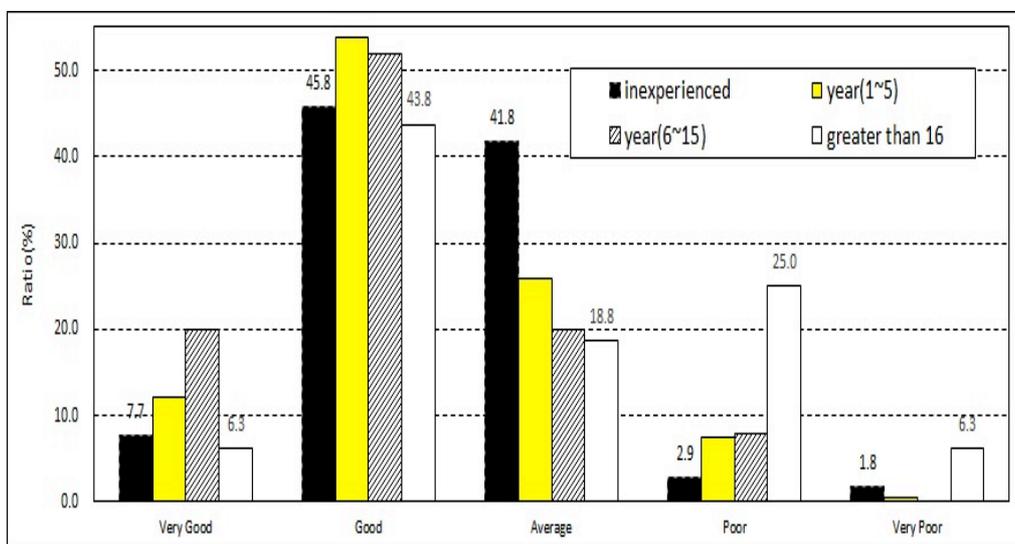


Figure 11. Usefulness of Raptor platform

Then, the Figure 12 shows survey results for the desirable timeliness of coding education. For the question of the proper beginning time to learn coding in the regular curriculum, the respondents select mostly the middle school (45%), and then elementary 23.4%, high school 19.1%, and university 8.5%. The results indicate that the proper educational coding tool in the elementary school is block-coding method, which is widely known easy to learn as compared with the other programming languages. The Chi-square test results show the  $p = 0.0 < \alpha = 0.05$ , so null hypothesis ( $H_0$ ) is then rejected, and the selection trend is not the same among the careers of respondents. As shown in the Figure 12, we know that more than 50% of programmers with careers greater than 16 prefer the elementary school for early coding education. However, considering the results such that the inexperienced respondents give an opinion for the middle rather than elementary school, we conclude the middle school as the desirable coding education timeliness. Note that 4% of respondents shows the unnecessary views for the coding education, and they are mostly inexperienced people.

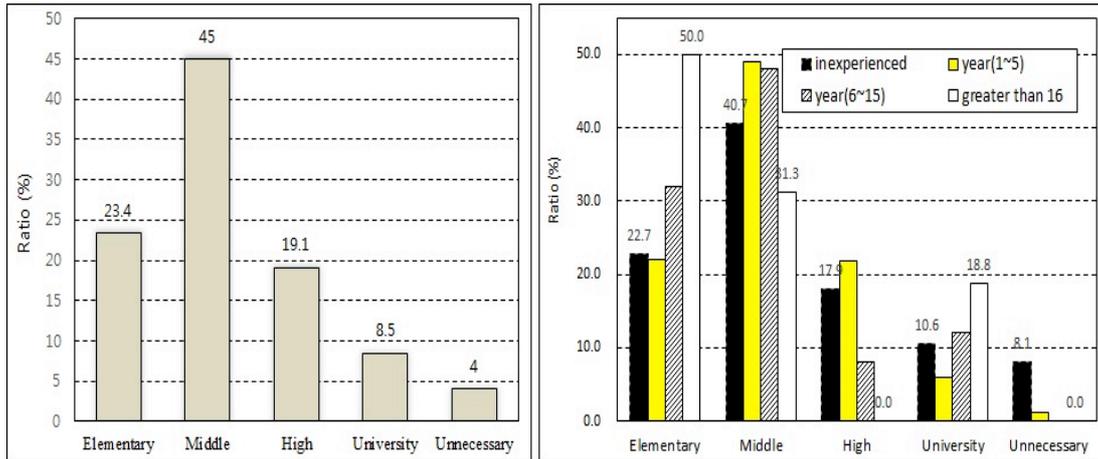


Figure 12. Desirable beginning time of coding education

Finally, through the survey results for the question, “What is the main emphasis on coding education?”, as shown in Figure 13, we observe that the logical thinking is mostly selected as the ratio of 28.2%, and then problem solving skill 24.5%, creativity 24.2%, coding syntax 14.9%, and to-follow codes written in text 1.2%. The Chi-square test results show the  $p = 0.053$  larger than the significance level ( $\alpha = 0.05$ ), so  $H_0$  is then accepted, concluding that the selection trend is not different between coding experiences. The Figure 13 indicates that, regardless of careers, the logical thinking capability is the most important factor in teaching coding. Therefore, using the Raptor platform can be very useful when we teach and learn coding in the manner of understanding procedural flowchart based on the mathematical algorithmic reasoning.

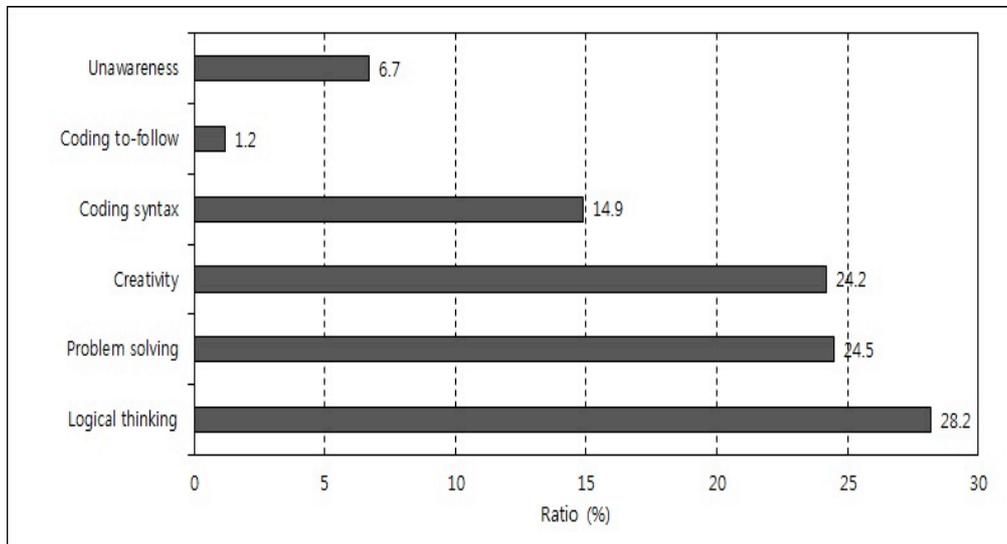


Figure 13. Main emphasis on coding education

## Conclusions

Globally, the early coding education has been becoming the important main factor to develop the new products and services in the upcoming fourth industrial revolution era. By complying with this world’s trend, our country Korea also has initiated the coding education in the regular curriculum courses of elementary, middle, and high school. However, in most cases, the teachers teach the coding by using relatively easy

block-coding or physical computing tools, without the education model, in the end, to raise useless manpower in the software fields. We need the software developers with logical thinking capability and creativity to solve the emerging complex problems in the fourth industrial revolution age. In this paper, a coding educational model was proposed to improve computational thinking. The model was developed based on the processes presented in the programming education course of the US Air Force Academy (USAFA). The steps in the model were defined as follows; (1) problem definition and understanding of mathematical concept, (2) problem solving and algorithm design, (3) Raptor flowchart development, and (4) understanding of source code. In particular, at the 3<sup>rd</sup> step, to improve the computational thinking, we propose the Raptor platform, that is a flowchart-based programming environment, using international standard ISO-based symbols, designed specifically to help students visualize their algorithms avoid syntactic baggage. Raptor programs are created visually and executed visually by tracing the execution through the flowchart, where the required syntax is kept to a minimum. Students prefer using flowcharts to express their algorithms, and are more successful in creating algorithms using Raptor than using traditional language or writing flowcharts without Raptor. To verify the usefulness of the Raptor, and investigate the proper coding tool in each educational course, timeliness of coding education, and main emphasis on education, questionnaire survey for 645 people were analyzed by using SPSS package. From the results, it was observed that the respondents mainly have the positive opinions (93%) for the effectiveness of Raptor education, in particular, the experienced peoples of 1~5 years mostly show the higher good's views as compared with inexperienced or lots of experiences greater than 16 years. Through the survey results for proper education timeliness, the respondents select mainly the middle school (45%), on the other hand, under the Chi-square significance test, it was observed that the people with more careers give the opinion on the earlier education in elementary school rather than inexperienced respondents. Finally, for the question of the main emphasis on coding education, regardless of experiences, the most important factor is the logical thinking. The results indicate that the Raptor platform can be used to improve computational logical thinking by implementing the visualized procedural flowchart based on the mathematical algorithmic reasoning. In conclusions, using the coding educational model proposed in this paper, when we teach and learn the Raptor flowchart along with the previous block-coding tool and programming languages, the efficient coding education can be realized to improve computational thinking.

### **Acknowledgements**

This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science and ICT (Grant Number: NRF-2017R1E1A1A03070134). The author would like to thank the professor, Martin Carlisle at Carnegie Mellon University whose efforts to develop the Raptor platform. Also thank to the professor, J.H. Baek at Chonbuk National University to give research motivations.

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## ***Purpose of Mindfulness in Teaching Learning Process: Perspective of Buddhism***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

### **Abstract**

Mindfulness is the mental awareness and practices as a tool for purification of mind for creative doings, ultimately which nurtures students' all-round development. It is beneficial to all age group as it helps to maintain the mental health with increased abilities/skills, efficiency and productivity. It develops insight and wisdom, eventually supports the best human qualities of kindness, empathy, compassion, and equanimity. As a new paradigm shift, the mindfulness approach in the education system is becoming crucial to reducing the possible mental health problems such as the depression, stress and anxiety disorder experienced by the youths around the globe. Therefore, the schools unquestionably have the mandate to offer such education which can help to create the students with a healthy mind. However, if the students do not receive the proper education to cultivate a healthy mind then the learning outcomes may go in wrong directions. In this regard, teachers can play a vital role to promote mindfulness curriculum and activities in schools through available practices. This paper discusses on conceptual understanding of mindfulness at first. Then it illustrates the purpose of mindfulness in the teaching-learning process. Afterwards, it describes the trend of Mindfulness schools with the role of teachers and ends with a conclusion.

Keywords: Mindfulness, Meditation, Teaching learning process, Mindfulness school, Teachers' role

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## Introduction to mindfulness

The term mindfulness is not as simple as we understand; it is very hard to define in a single word. Mindfulness in the English translation of the Pali word *sati* and *sati* is an activity (Bhante Gunaratna, 2011). It is the activities; those are associated with the mind or experience of our mental awareness. Further, “Mindfulness comes from the Pali word *sati* and the Sanskrit word *smirti*, which connotes awareness, attention, and remembering. The background and foreground of consciousness are, respectively, awareness and attention (Neale, 2006, p.3)”.

Gunaratna (2011) again stated as; Mindfulness is nonjudgmental observation. It is that ability of the mind to observe without criticism. With this ability, one sees things without condemnation or judgment. Thus mindfulness is originally derived from the Pali language from two words meaning awareness and clear comprehension (Grecucci et al., 2015 as cited Shoemaker, 2015). Smith (2002) argued; mindfulness and awareness appear the same. They may well be the closest friend and firmly linked but they are different. Awareness is fully alive but rather passive where mindfulness is the conscious act of bringing ourselves back to the state of awareness. Thus mindfulness is not just about meditation; it is also a way of living with awareness. It is an intrinsic process requiring effort and discipline ((Hassed& Chamber, 2015, p. 7, Siegel, 2007 as cited as Liu and Wang, 2016).

On the other hand, ‘Mindfulness’ is a kind of mental training that uses various methods of meditation as a means of mindfulness but these two terms are not synonymous with each other. Generally, there are two types of meditation; tranquility or *Samatha* meditation and insight or Vipassana meditation. Whichever we practice, the main factor in mental development is mindfulness (Ven. Sujiva, 2000; Sumedho, 1987). As one of the major teachings of Buddhism is the cultivation of mind, all Buddhists practice meditation for mental culture and for spiritual development. No one can attain Nirvana or salvation without cultivating the mind through meditation (Dhammananda, 2002).

Samatha meditation is that kind of meditation which is the practice on the basis of concentrating the mind on one particular object. One chooses an object such as the sensation of breathing and puts full attention on the sensations of the inhalation and exhalation (Sumedho, 1987). Samatha meditation is also known as calm meditation; mindfulness plays a very important role in Calm meditation. One of the most common objects of concentration in *samatha* is the breath; the foremost aim of this meditation is attention the breath, perhaps at the nostrils where we can feel it passing in and out of our body, and we sustain it there (Burnett,2009). Deep concentration is necessary for the perfect benefit of meditation and this is only possible when one has the ability to stay focused on a single object during meditation (Smith, 2002). Therefore, Samatha meditation requires one-pointedness of mind and it is one of the mental factors in wholesome consciousness. Tranquility is all unperturbed, peaceful and lucid state of mind attained by strong mental concentration (Ven.Nyanatiloka, 1980). It can be said, Samatha meditation is a kind of mental exercise which helps anyone for promoting inner consciousness through deep concentration. Venerable Nyanatiloka (1980) justified, if tranquility is developed then the mind will be developed and if the mind is developed then all the lust will be abandoned.

Similarly, another way of eradicating the mental evil is Vipassana or insight meditation. Vipassana Meditation was discovered by Buddha himself, and it is the path that leads the meditator with righteous practice to be gradually liberated from the influence of defilements. "Vipassana" is a combination of the two words "Vi" and "Passana". "Vi" means clear, true, superb, and "Passana" means seeing, direct perception and right view or wisdom (Sorado, 2009).

Nyanatiloka (1980) defines; insight or Vipassana is the penetrative understanding by the direct meditative experience of the impendency, unsatisfactoriness and impersonality of all material and mental phenomenon of existence. This meditation leads the person to enter into the supermundane states of holiness and final liberation. As taught by S.N. Goenka; Vipassana means seeing things as they really are. It is the process of self-purification by self-observation. One begins by observing the natural breath to concentrate the mind. With a sharpened awareness, one proceeds to observe the changing nature of body and mind and experiences the universal truths of impermanence, suffering and egoless. This truth-realization by direct experience is the process of purification. The entire path (Dhamma) is a universal remedy for universal problems and has nothing to do with any organized religion or sectarianism ([www.dhamma.org](http://www.dhamma.org)).

Literally, there are some differences between Samatha and Vipassana meditation. The true nature of Samatha is to create a peaceful mind and the true nature of Vipassana meditation is for wisdom. The characteristic of Samatha is restlessness, where Vipassana is doing for wisdom which reveals the true state of nature. The result of samatha is one-pointedness (ekaggata). The result of Vipassana is to have the right view or the true state of the nature of nama (mind) and rupa (material form or body). The benefit of Samatha meditation is, it helps to make a peaceful mind and the benefit of Vipassana meditation is the cessation of one's accumulation or defilements (Boonkanjanaram meditation centre, 1988).

In conclusion, Samatha is a Samadhi which is concentration or control of one's own mind and Vipassana is the Panna or wisdom or insight, which totally purify the mind. Thus, the first one covers right effort, right awareness and right concentration. Similarly the second one covers right thought and right understanding (Hart & Goenka, 1987). It can be sum up; there are two ways of practicing mindfulness (Sati) through concentration (Samadhi) and wisdom (Panna). Finally according to the oldest Buddhist text; meditation is not only sitting; it is a way of living. Therefore; whatever we are doing as daily work, for instance; eating, sleeping, walking, thinking or any task, it should be integrated within our day to day work in whole life. It is actually an education or training of art of living for how to see, how to hear, how to smell, how to eat, how to drink, how to walk with full awareness, which means everything should be done mindfully (Bomhard, 2015).

### **Purpose of mindfulness in teaching learning process**

There is no perfect health without good mental health which is proved by the Medical Science. Many physical health problems are associated with stress that brings anxiety, arthritis, constipation, depression, stomach ulcer, high blood pressure, dizziness, premenstrual syndrome, slow wound healing, heart problems (Angina-chest pain) and

many others (Harvard Medical School, 2016). As many research studies were conducted on the positive impact of mindfulness in teaching-learning process, one of the studies explored that a significant number of students reported positive impacts after performing mindfulness-based activities which increased different abilities, for instance, built the capacity of insight and creativity, engaged with the moment, engaged with the learning process, transition to the class, attune/attend, and be more reflective (Slavik, 2014).

Every individual needs to keep their body hygiene for maintenance of the physical health while every person needs to take care of their mental health for perfect health. No doubt, Mindfulness is an essential element of our daily life because it is an awareness or attention, avoiding a distracted and clouded state of mind. As a result, there would be fewer chances for any accident if everyone were mindful. Pointing on the importance of mindfulness, clear-minded or mindful people could do their tasks more effectively and mannerly than contaminated minds. It would also help to increase one's efficiency and productivity (Santina, 1984).

Mindfulness also strengthens the imperative skills which are necessary for present context, especially, requires among young generations that contributes to emotional balance. Further, the mindfulness supports the best human qualities of kindness, empathy, and compassion. Paying attention to these qualities improves mental focus and contributes to the academic performance of the children (Shoerberlein & Sheth, 2009). Ven. Mahathera (1988) believed; all evil prevalent in this deluded world. The whole world is stuck on lust, though the lust is the enemy of the human civilization and through the highly ambitious mentality, which all evils come to living beings. While the fact is that the People want to fulfil their desires at any cost, whilst when obstructed by some cause is transformed into wrath.

Naturally, the untrained mind is very elusive and persuades people to commit evil and become slaves of the senses. People like to live with imagination to be something and to accomplish something, indeed; imagination and emotions always mislead humans if their minds are not properly trained. Most of the troubles which we are confronting today are due to the untrained and undeveloped mind (Dhammananda, 2002). Teenager students have many dreams but not all dreams are achievable or possible when they have experienced about on futile, in that situation they are not able to cope themselves and even committed for suicide. If someone who knows how to practice meditation will be able to control the mind when it is misled by the senses. It is already established that meditation is the remedy for many physical and mental sicknesses (Dhammananda, 2002).

Basically, the time period of school going age students are the foundation for their whole life, in terms of their holistic development. As such, schools and parents should pay attention more for tracking them in the right way. Not only secondary or college student but the students of elementary level are also living with anxiety, depression and stress and no doubt there are several responsible reasons for that. There are many causes inside and outside the school that contribute to the everyday stressors of the children. The causes could be easy access to technology, and use of the internet and the material, even though, they are not suitable to use by according to their age factor. Similarly, some other causes might be exposure to the media (crime, murder, war and

environmental disaster etc.), family issues (financial, divorce, step-parents, separation, illness, homelessness, etc.), and school-related issues like pressure for high marks, parents expectations, peer interactions, bullying, etc.(Kusz, 2009).

Some experts such as Barnes et al. (2003) also justified; as there has been an increase in negative school behaviours in the United States (U.S.) for example; intentional injuries, physical fight and other aggressive behaviours, which is partly attributable to increased exposure to chronic psychosocial stress in the form of family breakdown, violence in media, information overload, and poverty. This has resulted in children and youth exhibiting increased anger and violence, which correlates to an increase in anxiety and stress levels. According to the centre for the mental health of the U.S department of health and human services, several key risk factors are associated with poor school behaviours. Such factors are; poverty, abuse and neglect, harsh and inconsistent parenting, drug and alcohol use by caregivers, emotional and physical or sexual abuse, modelling of aggression, media violence, negative attitude towards school, family transition (death and divorce), parent criminality (Johnston,2013). This is happening not in the U.S only, probably most of the countries facing the challenging, destructive and poor school behaviours. As such Nepal is also observing in an increasing trend.

The world is entirely connected from east to west and north to south due to the development of advanced technology. This development is creating various opportunities in every field of study and in professions. But, another side, children of today are facing many challenges simultaneously such as overload. This constant overload could challenge children's thinking capacity and make their learning difficult (Fisher, 2006). As a result, these stressors might increase the risk for a variety of negative outcomes in children and youth "including social-emotional difficulties, behaviour problems, and poor academic performance" (Mendelson et al., 2010, p. 985).

Mindfulness-based interventions show promise in helping children manage stress by improving self-regulation, mood, and social-emotional development (Mendelson et al., 2010). Therefore, the potential benefits of integrating mindfulness-based training into school settings are significant in regards to the effect on cognitive, emotional, interpersonal, and spiritual domains with performance skills and executive function. Many researches have been completed significantly on the actual impacts of mindfulness-based teaching-learning process and suggested the mindfulness-based practices which have a positive impact on academic performance, psychological wellbeing, self-esteem, and social skills in children and adolescents (Rempel, 2012, Weare, 2012).

It is found that mindfulness teaching-learning process can help young people pay greater attention and be more focused towards the learning, they can think in more innovative ways, can use existing or previous knowledge more effectively, improve working memory, able to enhance planning, problem-solving, and reasoning skills (Weare, 2012). There are several shreds of evidence that mindfulness-based training in schools is feasible and acceptable to those who have participated in it (Rempel, 2012). According to research from the University of Cambridge; the study which involved more than 600 Cambridge students; concluded

that the introduction of eight-week mindfulness courses in the United Kingdom (U.K.) universities could help prevent mental illness and boost students' wellbeing at a time of growing concern about mental health in the higher education sector ([www.theguardian.com](http://www.theguardian.com)). Therefore, it is a proven phenomenon that the mindfulness-based activities integrated into the teaching-learning process is the best way for preparing a student with a purified or a healthy mind and finally with healthy body.

According to Buddhism, meditation is the means for mindfulness and its aim is to develop insight and wisdom and the desirable states of mind like universal love (metta), compassion (Karuna), sympathetic joy (mudita) and equanimity (upekkha). These are the major tools and strategies for cultivation of non-greed, non-hatred and non-delusion (Jackson & Edwards, 2014). However, among the human society; greed, hatred and delusion are deeply rooted so the societies are in turmoil condition. Therefore, education system, especially, the school education system must prepare a student with four mental qualities of loving-kindness, compassion, sympathetic joy and equanimity through mindfulness practices.

### **The trend of Mindfulness schools**

The school is that place which has only one mandate of preparing the students with need of society and Nation. Nowadays, because of globalization and other many reasons, the role of school has been broadening. According to Huppert and Johnson (2010); in recent years there has been a growing acceptance that schools should not provide children with a formal education only but should also consider the well-being of the children as a whole. For the most important part, this new approach focuses on identifying and managing mental health problems related to student's aggressiveness, anxiety, stress, bullying to other, and anti-social behaviours within the school context, home and their own community. In this context, some of the schools in the world are evolving as a mindfulness school, for example; a school in Texas that has been incorporating mindfulness into their curriculum for 20 years and tracking the results (Kinder, n.d.).

As the example of mindfulness schools; hundreds of schools in California alone have mindful meditation programs where the educators see benefit from it. Mindfulness is said to help with focus, attention, calming the emotions and school performance. One of the reasons of its growth is because the kids are under the pressure, and with the testing culture and the pressure put on them by teachers and parents to be successful (MacVean, 2014).

The Cable News Network (CNN) also reported that at the beginning of the school year in Marblehead High School at Massachusetts, students started moving their desks out of the way, grabbing a mat and lying down on the floor for guided meditation. The guided meditations are all part of a fast-growing trend in education, where more schools are providing mindfulness exercises to the students and teachers in response to the enormous pressures that the students are facing. So, considering the positive impacts of mindfulness, more schools are offering mindfulness exercises to combat teen stress (Wallace, 2016).

These some examples also clarify that it is a new paradigm shift establishing the education system now where many schools in the east and west are converting the general schools into mindfulness schools. The mindfulness meditation is based on the Buddha's teaching and his tested experience which is benefitted for mental health management.

In some cases, the Government itself initiated for mindfulness school approach. For example, in Bhutan, mindfulness is currently being implemented across the country's education sector (Albrecht, Albrecht & Cohen, 2012). In Sri-Lanka, a naming of Satipasala or mindfulness is introduced in general school education system in 2016. Ministry of Education started a partnership with this program and endorsed the philosophy of mindfulness in schools. The aim of this program is to introduce mindfulness and share the practices among students, teachers, Principals and entire the school community in Sri-Lanka. The decision was taken by the Government for adopting a secular approach in launching Satipasala as a pilot project in the education system of Sri-Lanka (Introducing Satipasala, 2017, <https://www.youtube.com>).

### **Role of teachers in mindfulness school**

Most importantly, teachers are the vital player for the whole teaching-learning process, especially in the school education system. Probably, there are different approaches to prepare mindfulness teacher for mindfulness teaching-learning process. However, the mindfulness, as a discipline, can be integrated into the classroom using one of three basic approaches: indirect (the teacher develops a personal mindfulness practices and embodies mindfulness attitudes and behaviours throughout the school day); direct (programs that teach the mindfulness exercises and skills to the students); or a combination of direct and indirect approaches (Meiklejohn et al., 2010).

It is the view of many mindfulness practitioners that teachers and other users of mindfulness should work on a personal practice first before incorporating mindfulness into the classroom with children (Arthurson, 2015). As such, when teachers are fully ready for teaching, they teach better, and when students are fully ready for learning, they learn better. It's a "win-win" equation and strategy that can transform teaching-learning and the educational landscape in the right track. For this, the teacher should be the ideal person for their student. In this endeavor of the teaching-learning process, mindfulness helps teachers (to the students too) in multiple ways by supporting emotion management, reducing stress, and focusing the mind. These skills are essential for their successful professional career as well as the satisfaction of the job (Schoeberlein & Sheth, 2009).

It is also promising practices which are important to note that, for centuries, many individual teachers around the world actively incorporated techniques from their own personal meditation practices to elicit and encourage a mindfulness way of being (Fisher, 2006). Some other arguments also say that most of the teachers are already started to bringing mindfulness in the school without any professional training on the subject based approach. However, this can be effective, but first, it is important to gain familiarity with the experience of mindfulness by them. As they do so, they will naturally bring their heightened attention and awareness into the classroom and teach more mindfully (Schoeberlein & Sheth, 2009).

Another view is that it is better to use a more indirect approach of bringing mindfulness into the classroom by working with teachers first, to let them develop their own practices. The mindfulness could be incorporated into the teacher training or professional development program directly on a practical basis. The teachers will then bring this awareness into the classroom with the children who are embodied by the subject teachers in everyday classroom actions and instructional strategies (Meiklejohn et al. 2010). If formal curricula of teacher's professional development program typically include a mindfulness related components and its practices, then the enhanced training goes further by presenting new curricular content to the teachers, providing them with instructions in new skills, and offering opportunities for supervised practices and feedbacks (Schoeberlein & Sheth, 2009).

Many kinds of research have been conducted on mindfulness related matter. Now it has lent validity to mindfulness as a valuable tool to foster wellness; practices that were once considered to mainstream in the education sector by educators only a decade ago; are now being embraced and openly recognized as integral elements in running a successful classroom. Globally, there are a growing number of school-based mindfulness programs that involve varying degrees of teacher training (Black et al., 2009). The mindfulness is beneficial and proved to both the teachers and students as it is helpful to the teacher for improving focus and awareness, increasing responsiveness to students' needs, promoting emotional balance, supporting stress management and stress reduction, supporting healthy relationships at work and home (behavior management), enhancing classroom climate, and supporting overall well-being (Schoeberlein & Sheth, 2009). Some of the teachers also found that they were able to gain a holistic view of the curriculum and thus impart key concepts to the children (Albrecht, 2012).

Hence, stress in children is seen either caused by family associated issues or school-related problems. It is a quite common phenomenon for all the children both in the developed country and/or developing country. The children may feel some stress, anxiety or uneasiness one or many times during school life. The increase in the amount of homework, competition for good grades, and fear of failure, peer-pressure and bullying are some of the more common reasons for stress in the school (Allen & Klein, 1996). Some researchers also found that most of the time children are in stress condition which should be managed by preparing a mindfulness teacher or providing a mental based training course directly to the students, or in other words "train the brain" of the student by adopting the mindfulness approach from the schools. For the past 10 years, exploratory initiatives have been unfolding in the USA, the UK, Canada, Israel, and other countries to integrate the discipline of mindfulness into the field of K-12 education for the benefit of both the students' as well as teachers' physical, emotional, and mental wellbeing (Meiklejohn et al. 2010).

## **Conclusion**

Students of today are more knowledgeable, smart, and intelligent; they have more access in every field of study and in the global job market; as the world is connected because it has become a global village. In fact, the area of every field is broadened; they are not satisfied because of the highly competitive life, hence, challenges ahead.

This opportunities and challenges both putting them always in under pressure of study, good job, break up with boyfriend and girlfriend, parental divorce, the death of loved one, desired for lavish life and many other factors. Children are compelled to face and experience all the negative circumstances which increase more stress in their daily life. Increased stress is a risk factor for depression, even committed for suicide or performing criminal activities and the stressful life events are predictive of a less positive response to anyone (Parker & Roy, 2001).

A good practical example of the use of mindfulness was seen in Thailand in June/July 2018. The 12 Thai school boys and their coach were trapped almost 10 days in a cave. Ekapol Chantwong, the coach of the 12 boys, who had already lived as a Buddhist monk, using meditation while waiting for the rescue team. The meditation helped the coacher keep calm and boys also remained in a good spirit with good health (*au.news.yahoo.com*).

Thus, mindfulness is recommended and proved by the Neuroscience also that it is as a major tool or method for good mental health. It is a reasonably strong matter to manage the mental health associated problems for all aged group. For this reason, related authorities and educational institutions like schools should take initiation for developing a mindfulness environment.

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## ***Agile-Model Based Dynamic Curriculum Development and Refinement Approach***

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The IAFOR International Conference on Education - Hawaii 2019  
Official Conference Proceedings

### **Abstract**

This paper presents an Agile-Model based dynamic curriculum optimization approach, which contains a number of iterations each of which achieves one of the course learning objectives. The curriculum is dynamically refined and enhanced in each iteration to best suit the students' background and the current iteration learning objective. Each iteration is organized into four phases and the sample activities in each phase are specified in detail. A step-by-step easy-to-follow guidance, which leads to adaptive high quality curriculums, is also presented. It is expected that the teaching and learning outcomes will be promoted significantly by applying this system.

Keywords: Agile-Model, Dynamic Curriculum Development, Iterative Development

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## **Introduction**

Curriculum development is one of the mandatory tasks for every educator. The quality of curriculums plays a key role in the success of teaching and learning. Dysfunctional curriculums not only degrade learning outcomes but also result in students complains. A good curriculum, on the other hand, satisfies the requirements of teachers and students, helps them establish good learning environment, and promote good teaching and learning outcomes.

Realizing the importance of curriculums in the education, many educators and researchers are attracted to this field and significant efforts have been made on developing high quality curriculums (Hall, 2016; Gobbett, 2016; Riel, Lawless, Brown, & Lynn, 2015; Byrum, 2014; Kim, & Habibie, 2014; Pan, 2015; Delaney, Lee, & Bos, 2017). Universities and other educational organizations also provide assistances, including workshops and online guidance, to facilitate the curriculum development. Many institutions established rules and rigorous procedures of curriculum development and improvement. However, a curriculum is by no means static. No single curriculum can meet every student's requirements and suit for all situations. Curriculums should actually be under continuous refinement in order to adapt to the constantly changing environment, including the demographic of students. Thus, the effective method and guidance that assist dynamic curriculum optimization are required.

This paper proposes a dynamic curriculum honing system based on Agile model, which is a widely used software engineering model (Schach, 2010; Sommerville, 2015). The system is composed of a number of iterations each of which is divided into four phases. Different tasks and activities are conducted in each of these phases. It is the author's hope that this research will lead to dynamically adaptive high quality curriculums and the best teaching and learning outcomes. The rest of the paper is organized as the following. Section 2 briefly reviews the agile methodology. In section 3, an Agile-Model based curriculum optimization system is presented. Section 4 points out the future work. And section 5 concludes the paper.

## **Review of Agile Methodology**

Agile method requires that each project is handled in different way and the existing methods are tailored to best fit the project requirements. Agile model adopts iterative development and a project development is divided into iterations (small time frame) each of which goes through a number of phases: plan, analysis, design, implement, and test. Part of current iteration input is from the previous iteration outcomes which are refined in current iteration. A working software build is delivered at the end of each iteration which is composed of accumulative features implemented so far in all of the previous iterations. The final build includes all the features specified in the system requirements. Figure one illustrates how agile model works.

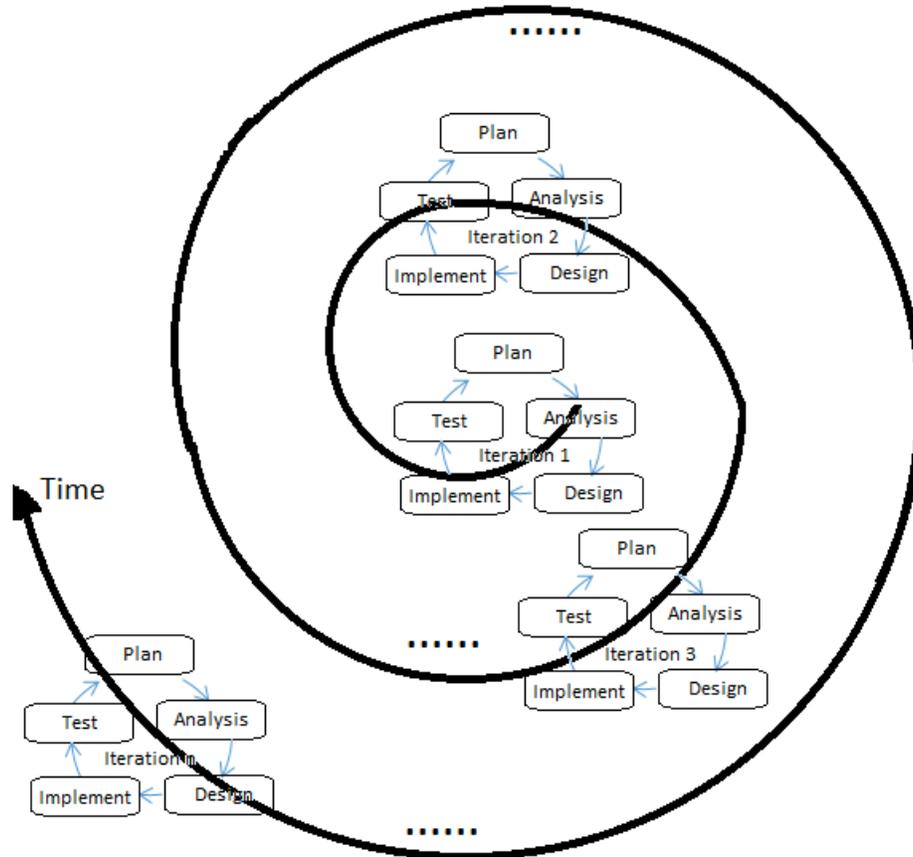


Figure 1: Agile Model: an iterative and incremental method

Agile model advocates adaptive planning, evolutionary development, early delivery, and continuous improvement and self-adaptive; and it encourages rapid and flexible response to change ([https://en.wikipedia.org/wiki/Agile\\_software\\_development](https://en.wikipedia.org/wiki/Agile_software_development), n.d). Because of these characteristics, it can be well applied in other situations, such as dynamic curriculum enhancement.

### **An Agile-Model Based Curriculum optimization System**

The proposed method, which adopts and extends the agile model, provides a way to dynamically optimizing new and existing curriculums in order to exert the teachers and students greatest potentials. A number of study iterations are designed each of which achieves a specific teaching and learning objective. Each iteration is divided into four phases: plan, design, implement, and test. Teachers and students are constantly optimizing the teaching and learning activities in these iterations. Students are now active participants rather than solely passive learner. This method is especially applicable to the passionate and devoted teachers and motivated students.

In the system, the initial course plan developed up-front is no long rigid. Instead, teaching objectives are better achieved by continuously adjusting and refining the teaching materials, including tasks (e.g. practice and assignments), activities (e.g. experiments, tests, and group discussions), and teaching method (e.g. lecture, hand-on demo, academic field trip) according to the teaching objective(s), students'

background, students' progress in the previous study iteration, and resources available. Figure two summarizes the method.

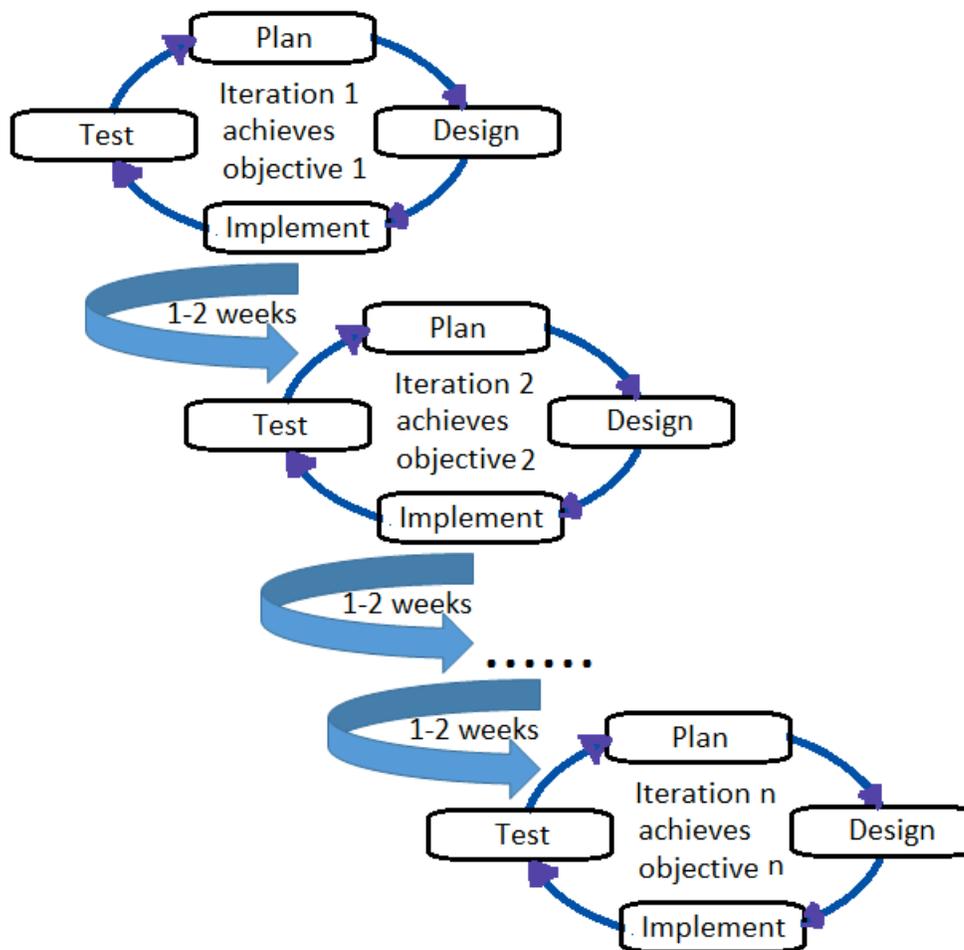


Figure 2: Agile-Model Based Curriculum Optimization System

The proposed method focuses on the teaching objectives which are achieved in a number of iterations. To promote the best teaching and learning outcomes, a curriculum is dynamically adapted in each iteration based on students' background and progress, learning objectives, and resources available. A test or other similar activity is performed at the end of each iteration which is used as the students' progress input of the next iteration. The recommended steps and activities in each of the four phases in every iteration are detailed as the following.

1. The sample activities in plan phase:
  - a. Determine the input for current iteration by
    - i. Performing survey or pretest at the beginning of the semester to get the students' background information (only for the first iteration)
    - ii. Getting the outcomes from the previous iteration(s) (Start from the second iteration)
    - iii. Performing end of iteration test or other similar activities to evaluate students' progress

- iv. Determining the weight of each of the course objectives: the current iteration objective weighs at least 60%; the longer in the future of an objective, the less weight of it.
    - v. Determining the resources availability.
  
- 2. The sample activities in design phase:
  - a. Refining the following teaching materials based on the input of plan phase
    - i. Lecture notes
    - ii. Suggested readings
    - iii. Practices, hand-on lab, and homework
  - b. Determining the best delivery methods:
    - i. Lecture
    - ii. Group project
    - iii. Educational field trip
    - iv. Self-study
    - v. Guest-speaker
    - vi. Lab demonstration
  - c. Finalizing evaluation measures
    - i. Exams and quizzes
    - ii. Oral test and presentation
    - iii. Homework
    - iv. Term project(s)
  
- 3. The sample activities in implement phase:
  - a. Delivery the course in an appropriate way
    - i. Online
    - ii. Hybrid
    - iii. Face-to-face
    - iv. Distance learning
    - v. Lab session
  
- 4. The sample activities in test phase:
  - a. Perform quiz or test
  - b. Perform oral test or presentation
  - c. Evaluate students homework and/project

Note:

1. The activities here are not exhaustive.
2. The test phase outcomes of the current iteration is partial input of the next iteration.

The guidance presented above is “agile” in the sense that the method itself can be adapted to meet the requirements of different teaching subjects and teaching styles. Additional steps and activities may be added while irrelevant ones can be removed. The system is aimed at dynamic high quality curriculums and the best learning outcomes. Nevertheless, responsible teachers and ambitious students are decisive factors of successfully applying this method.

## **Future Work**

The opportunities of applying software engineering models into new applications are endless. Software engineering itself as a young discipline is still developing rapidly in many directions. In the future, efforts will be made to explore the application of the new models developed in this field to further promote teaching and learning process. Also, experiments will be conducted to validate and refine the proposed method and more details will be added. In addition, computer-aided automatic curriculum development and refinement system will be explored, designed, and developed

## **Conclusion**

The proposed agile-model based system aims at providing teachers guidance to dynamically enhance curriculum. It is the author's hope that this system will result in adaptive high quality curriculums and promote teaching and learning significantly.

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***The Impact of a Literacy Strategies Course Taught in a Public-School Setting on Teacher Candidates and Students with Emotional Behavioral Disorders***

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The IAFOR International Conference on Education - Hawaii 2019  
Official Conference Proceedings

**Abstract**

This study describes the impact of a literacy strategies course taught at a local public school that involves special education teacher candidates working with students with emotional behavioral disorders (EBD) on literacy strategies that are taught in the classroom portion of the course. Within the framework of the course, participating students with EBD receive 45 minutes of small group literacy strategy instruction from special education teacher candidates each week as they implement the instructional strategies taught in the course. The teacher candidates work in pairs with groups of 2-3 students with EBD and teach literacy strategies within the context of a book that matches students' interests and reading level. The results show that EBD student participation in the reading strategies activities increased over time as relationships were formed with the teacher candidates. Data on the impact on teacher candidate growth include positive ratings on course evaluations on the school-based literacy strategies course when compared to sections of the same course taught on the college campus and the results of a questionnaire given to teacher candidates at the conclusion of the semester that show the positive impact of the course on their professional growth as well as their attitudes toward students with EBD.

**Keywords:** literacy strategies, school university partnerships, emotional behavioral disorders, teacher education

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## **The Impact of a Literacy Strategies Course Taught in a Public-School Setting on Teacher Candidates and Students with Emotional Behavioral Disorders.**

School-university partnerships have been among the most frequently recommended approaches to educational reform. From the university perspective, the goal of these partnerships is to bridge the disconnect between what teacher candidates are taught in on-campus courses and what they implement in P-12 settings with students. Effective partnerships have been shown to enhance the development of pre-service teachers with strong, applied classroom experiences, and increased opportunities to work with diverse students (Price, 2005). In-service teachers benefit from increased opportunities for on-site professional development, opportunities to put research into practice, and work in settings that reduce isolation and encourage collaboration, often with experts in their field (Price, 2005). The current study describes the impact of a literacy strategies course taught at a local public school that includes special education teacher candidates working with students with emotional behavioral disorders (EBD) on literacy strategies that are taught in the classroom portion of the course. Within the framework of the course, participating students with EBD receive 45 minutes of small group literacy strategy instruction from special education teacher candidates each week as they implement the instructional strategies taught in the course. With this collaborative effort, our teacher candidates benefit from implementing the strategies covered in the course in an authentic context with students with disabilities under the direction of a teacher in the field. In addition, the P-12 students with EBD benefit from needed individualized literacy strategy instruction.

Even in the best of situations, students with emotional or behavioral disorders (EBD) can be challenging, demanding, and frustrating for teachers (Bakken, Obiakor, & Rotatori, 2012). EBD affects virtually every aspect of a student's life. Students with EBD traditionally have difficulty developing and maintaining positive peer and adult interpersonal relationships as well as mastering academic skills (Farley, Torres, Wailehua & Cook, 2012; Otten & Tuttle, 2011). Academic performance has consistently been shown to be inversely related to problem behavior beginning early in a child's schooling (McEvoy & Welker, 2000) and severe problem behaviors have been found to correlate with long-term academic failure (Fleming et al., 2005). Approximately 38% of students identified as EBD have been retained by the time they reach secondary school (Wagner, Kutash, Duchnowski, Epstein & Sumi, 2005) with most 1.5 to 3 grade levels below same age peers (Coutinho, 1986). For these students, EBD will persist over time often disrupting social, academic, and community functioning (Wagner, Kutash, Duchnowski & Epstein, 2005). Students identified with EBD are consistently found to have the highest school dropout incidence rates in children and youth identified with disabilities (Reschly & Christenson, 2006).

Skills in reading and literacy serve as the fulcrum for a majority of other learning demands. However, approximately 60% of elementary/middle school children with EBD perform in the bottom quartile on reading measures with 85% making up the bottom two quartiles (Wagner et al., 2005). Conversely, students with poor reading skills are more likely to experience negative behavioral and or antisocial outcomes in the future (Good,

Gruba, & Kaminski, 2001). The early identification and prevention of academic deficits, particularly in reading, may even ameliorate the development of behavioral problems. If not overcome, these deficits in literacy development, which increase over time, place students with EBD at risk of failing to learn the necessary literacy skills that are important for future success in society (Griffith, Trout, Hagaman, & Harper, 2008). Adding to the problem, most elementary age students who struggle with reading respond positively to interventions, but students with or at risk for EBD appear to profit less from these supports (Al Otaiba & Fuchs, 2002; Benner, Nelson, Ralston, & Mooney, 2010). This unresponsiveness to literacy interventions may be the result of behaviors that interfere with learning, including inattention and child-teacher conflicts (Miles & Stipek, 2006). High quality classroom supports, particularly early in a child's schooling may help improve reading achievement by creating more time for learning and increasing student engagement (Farley, et al., 2012; Fruth, 2014) and counteracting the effects of behavior problems.

### **Statement of Purpose and Research Questions**

The purpose of this study is to investigate the effects of having teacher candidates work with students with EBD on evidence-based literacy strategies on an individualized basis on students with EBD as well as the teacher candidate's perceptions of the impact of the course on their teacher preparation. We investigated the following research questions in our study.

1. What was the impact of the literacy strategy instruction by the teacher candidates on the reading comprehension of the students with EBD as measured by pre, medial, and post intervention curriculum-based assessments administered by the teacher candidates?
2. What is the impact of the individualized literacy strategy instruction on the academic engagement of the students with EBD as relationships are formed with the teacher candidates?
3. What is the impact of the school based literacy strategies course and working with the students with EBD on teacher candidates as measured by course evaluations and a teacher candidate questionnaire in which they describe the course's impact?

### **Participants**

The participating teacher candidates were 20 undergraduate students enrolled in a special education Literacy Strategies class. The class met for three hours one morning per week for fifteen weeks. The weekly schedule consisted of the teacher candidates taking part in classroom literacy strategy instruction for approximately 140 minutes followed by 40 of working with students with EBD on select literacy strategies in small groups. Each small group consisted of 2 teacher candidates with 2-3 students with EBD. This configuration was chosen because the small groups could continue functioning even if a teacher candidate or a student were absent.

The participating school part of the Georgia Network of Educational and Therapeutic Supports (GNETS) program for students with severe EBD. GNETS is best described as a special school for students with EBD whose IEP has determined this setting to be their least restrictive environment. The school serves all grades. Each classroom has between 5 and 10 students and all of the students in the classroom are in the same grade level except for the high schoolers. The high school students, are provided instruction online and the classrooms consists of students from multiple grades in a computer lab setting. The participating students ranged in grade from second grade to twelfth grade and were chosen by the director of the school based upon having low reading ability.

### **Materials and Procedures**

A key component to the success to the program was a strategic pairing of students with teacher candidates in order to establish a positive mentor relationship. The school director, classroom teachers, a teacher candidate who had been to the school for an internship, and the researcher constructed one on one pairings of teacher candidates and students with EBD. These pairings were based upon common interests and personality traits. During the first meeting with the students with EBD, the teacher candidates carried on a conversation with their paired students in order to establish rapport and then conducted a reading interest inventory. Based on the student reading interest inventory, reading level, and age, groups were formed and appropriate books were chosen in collaboration with the students. and establish small groups that read the same book. Examples of books that were read by the groups included *Bud Not Buddy*, *Goosebumps*, and *Diary of a Wimpy Kid* and *Junie B. Jones*. Afterward, on a weekly basis, the groups read the books in their groups or one-on-one depending on which is most successful for positive student engagement. Examples of literacy strategies that were implemented within the context of reading the books were, partner reading, paragraph shrinking, prediction relay, story mapping, questioning the author, question answer relationships, directed reading and thinking activities, the LINC'S vocabulary strategy and the PATH writing strategy.

Class sessions were held in the cafeteria of the school and lasted three hours. The beginning of the class sessions were spent on literacy strategy instruction. The second portion of the class was spent in book groups preparing for the sessions with the students. The third part of the class sessions were spent working with the students with EBD reading and working on the chosen literacy strategy for the day. During the first class session, the director of the program gave the teacher candidates an orientation on how to effectively interact with students with severe EBD and how to de-escalate potential situations and what to do if a situation does occur. Curriculum based assessments on reading comprehension using *Easy CBM* were conducted with the students with EBD during the third session with the students before reading, during the eighth session before reading, and during the fourteenth session before reading. The fifteenth and final session was a celebration with food and music.

## Impact on Students with EBD

During the first reading session with the students, teacher candidates conducted curriculum based assessments to determine baseline reading comprehension levels. The grade level of the CBMs were determined by their classroom teachers and individualized for each student. The initial administration of the CBMs revealed very few valid scores. The students with EBD, for the most part, did not give adequate effort determine their baseline reading comprehension. Of the twenty-four students with EBD who took the assessment, only 18 completed the assessment and teacher candidates reported that several students attempted to answer the questions without adequately reading the paragraph. The classroom teachers reported that this was a common occurrence, even when taking high stakes assessment. In addition, during the initial three weeks of reading, several students refused to participate or read. On week one, 9 students, out of the 24 participating students, refused to read with many of the students refusing to read after finding out that peers were refusing to read. This possibility of this situation occurring was talked about in class in preparation for the first reading session after the classroom. The classroom teachers alerted us of problems with getting several students to read. In these situations, we were told by the director to not escalate the non-compliance into an adversarial situation and to just read aloud to the students. During the initial two reading sessions, several students were read to while the students often had their heads on their desks. However, by the fourth reading session, all but one student with EBD read at least some of the book and all students had their heads up. The one remaining student who refused to participate was attempting to disrupt the reading of others so he and his partner were moved to a nearby office to read on-on one. This student still refused to read but did agree to play the “hang man” game using vocabulary from the book with his mentor teacher candidate. This student expressed an interest in hunting so he was allowed to read from a hunting magazine for the remainder of the sessions instead of reading from a work of fiction. By the fifth session, all the students in every group were reading and participating in the strategy instruction. The second CMB administered on week 8 showed much greater effort and participation with 22 of the 24 students completing the assessment. For the remainder of the semester all students with very few exceptions, participated in the readings and activities. On the final CBM 22 out of the 23 participating students completed the CBM.

The first research question related to the impact of the literacy strategy instruction by the teacher candidates on the reading comprehension of the students with EBD as measured by curriculum-based assessments administered by the teacher candidates. With many students refusing to give their best efforts on the baseline assessment, no conclusions can be drawn relating to the increases in the CBM scores. Student scores increased significantly from the initial CBM to the medial and end CBM administrations. However, it cannot be concluded that these increases were the result of growth in reading comprehension and not the result of increased student effort. However, if the increase in CBM scores is due to increased effort, then these results provide further validation to research question two dealing with the impact of the individualized literacy strategy instruction on the academic engagement of the students with EBD. As the students with EBD established relationships with the teacher candidates, participation levels in reading,

participation in literacy strategy activities and participation in CBM assessments all increased. The director of the program and the classroom teachers were amazed at the level of engagement in the literacy activities replying “that’s hard to believe, I am thrilled” when walking down the hall and looking into classrooms of students reading with their mentor teacher candidates.

### **Impact on Teacher Candidates**

Research question three relates to the impact of the school based literacy strategies course and working with the students with EBD on teacher candidates. The previous year, this same course with the same content was taught as a traditional course on the college campus and involved no interaction with students. The course the previous year was taught by a different instructor, however, the instructor was a tenured associate professor. Student course assessments are given on a five point Likert Scale with 1 = Definitely False, 2 = False, 3 = Neutral, 4 = True, and 5 = Definitely True. One prompt states: “As a result of this course, I have more positive feelings about this field of study”. The School based section average was 4.6 while the campus section averaged 3.8 and the subject average for this question was a 4.0. In addition, this section of this course was significantly higher than the subject average of 3.8 for this question. Another prompt from the course evaluation was, “Overall, I rate this course as excellent”. The school based section average was 4.6 while the campus based section was 3.3. Finally, in the course evaluation prompt, “Overall, I rate this instructor as an excellent teacher”, the school based section average was 4.8 while the campus based section averaged 3.3. and the subject average for this question was a 3.8. The results make it clear that the teacher candidates recognized the benefit of learning and practicing the literacy strategies in an authentic context and recognized the benefit of the strategies and the benefit of working with the students with EBD at their school. In addition, at the end of the course evaluation survey, the instructor added qualitative open ended questions about the course and the way the course was delivered. The results included one teacher candidate replying, “I was initially very worried about going out to GNETS for this class. I had heard rumors. Now I look forward to meeting with my group each week. I have really bonded with them.” Another candidate wrote, “Although it was difficult at times, we benefitted from working with students as well. It is a much different learning experience to work with actual students than just talking about strategies in a classroom. Working in a school taught us more about applying strategies than we could have learned in a college classroom.” Other comments included, “It gave us a chance to be put in the field and experience things for ourselves, It also gave us a different perspective from placement because we were with our other classmates” and “I Loved having this class at GNETS – very interactive”. The only comment that could be perceived as negative was “I think we should spend more time in the classroom with the students. There were a few times we were rushing our student, so we might not have seen his full potential”. Again, based on these results, it is clear that the teacher candidates valued the hands-on experience of working with the students with EBD and applying what they learned in the classroom portion of the class.

## **Lessons Learned and Next Steps**

This method of instruction for teaching this class was done without any grant money or without any special material. When issues arose, such as the arrival of new students or other students being placed back in their local school, they were worked out. If a student was having a bad day and needed to be left alone, they were left alone. The biggest lesson learned by the instructor and the teacher candidates was to be patient. When the candidates reported back that the students refused to take the initial CBM and refused to read the book, I was thinking that this was an experiment that went wrong and that we were going to claim our classroom back on campus. However, the director assured me that this behavior was typical and that they were overall very responsive even in those initial weeks of uncertainty. When all of the students started reading and participating in activities, the teacher candidates realized the importance of relationships in teaching. They also realized that the students with EBD had academic potential and that it was possible for that potential to be actualized through planning and caring.

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***Students' Perceptions of Availability of Infrastructure and Resources in a Faculty of Education: A Transformative Agenda***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

The history of the South African education system, with its differentiated system during the apartheid era, is a thorny one. During this era, the government used different funding formula for White and Black universities, which meant that university per capita and concomitant infrastructure and resources were distributed unequally. After 1994, the country obtained its democracy. Consequently, there was a need to adjust funding so that universities could receive equitable distribution of infrastructure and resources. Nonetheless, literature suggests that it is a challenge for Black universities that were poorly resourced to catch up, in spite of the efforts of the State to close this gap. Ample research shows that infrastructure and resources influence teaching and learning. This study investigated students' perceptions of availability of infrastructure and resources in a Faculty of Education. The research question was: What are students' perceptions of availability of infrastructure and resources in a Faculty of Education? A purposive sample of 254 Bachelor of Education students was used. Quantitative data were collected through close-ended questionnaires using the Likert scale with five categories. For data analysis, descriptive statistics were performed on each question in the questionnaire to determine the mean score and the distribution of scores, which were presented in the form of bar graphs. Results revealed that the majority of students perceived availability of infrastructure and resources negatively. Since infrastructure and resources influence teaching and learning, transformation of the teaching and learning spaces needs to be prioritized to provide high quality education and success of all students.

Keywords: perceptions, infrastructure and resources, teaching and learning.

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## Introduction

Before 1994, South Africa had a differentiated higher education system in accordance with the four race groups: Whites, Coloureds (people of mixed race), Indians and Blacks/Africans. This differentiation meant that, depending on the race, the State per capita spending on universities was different, with historically White universities (HWUs) receiving a lion's share while historically Black universities (HBUs) were the least funded. University per capita spending for the other two groups (Coloureds and Indians) was in the middle. Bunting (2002) explains that in many cases, the funding formula for universities that was applied during the apartheid era did not address or overcome disparities. Instead, it ensured that the more advantaged institutions or HWUs (for example Universities of Cape Town, Stellenbosch and Pretoria) were provided with adequate infrastructure and resources (e.g. libraries, laboratories and computer facilities). Clearly, with this differentiation, the quality of teaching and learning that students received from different universities was fraught with disparities (Council on Higher Education (CHE), 2004). Evidently, it was Black students who attended HBUs who received inferior education.

When South Africa obtained democracy in 1994, the State, under the leadership of the first Black President Nelson Mandela and his Rainbow Government, sought to transform the higher education landscape. The release of the White Paper 3-Transformation in Higher Education in South Africa (Department of Education (DoE), 1997) had brought the hope of bringing equality of opportunity, access and success for all students in South Africa. One of the areas that the State had to prioritize was transformation of infrastructure and resources for especially HBUs that had been seriously under-resourced during the apartheid era. The assumption was that improvement of infrastructure and resources would invariably improve the quality of education in these institutions. The State has made great strides to improve infrastructure and resources in the universities that were severely under-resourced during the previous dispensation. However, because transformation of the higher education system brought about 'massification' of education (Kraak, 2001) to the Black masses of students who had previously had no access to the White universities, this meant that the previously advantaged White universities could not contain the number of students who flocked to them. The situation of poor infrastructure and resources in higher education has not improved much. The Department of Higher Education and Training (DHET) Green Paper for Post-School Education and Training (2012, 11) notes persistent apartheid effects as follows:

*While our leading universities are internationally respected, our historically black universities continue to face severe financial, human, infrastructure, and other resource constraints.*

Increased global access to higher education has not been matched with increased growth in resources and infrastructure in institutions of higher education (Hubball & Burt, 2004). Mohamedbhai (2008) reiterates the fact that 'massification in the [South African] institutions has occurred without an accompanying increase in resources – financial, physical and human – which has had a direct impact on the physical infrastructure, the quality of teaching and learning, research, quality of life of the students, etc.' In 2004, the South African government acknowledged that despite increasing appropriations, it was not succeeding in improving infrastructure and

resources to the level that was needed (Wangenge-Ouma & Carpentier, 2018). Consequently, the Government gave a mandate to the universities to introduce caps on student enrolments, as they were exerting pressure on the infrastructure and resources. The Government argued that,

*the [South African] higher education system has grown more rapidly than the available resources. The resultant short-fall in funding has put severe pressure on institutional infrastructure and personnel, thus compromising the ability of higher education institutions to discharge their teaching and research mandate (Department of Education, 2004, 3).*

Infrastructure and resources are integral in effective teaching and learning and creating friendly learning spaces, as well as for quality education to be afforded to a country's citizens. In addition, infrastructure has a tremendous influence on whom and what students become: their identity- after they graduate. Students tend to identify with the infrastructure of the institutions from which they studied long after they graduated. As an alumnus of Northern Illinois University (NIU) in Illinois State, I still talk about and identify with, for example, the Altgeld Auditorium, the Founders Memorial Library and the Martin Luther Statue as if I was a student there yesterday, yet I graduated from there two decades ago. These infrastructures are deeply ingrained in my mind and they a symbol of the quality of education I obtained from NIU. In fact, they are NIU to me. Therefore, graduates always relate to their past education by the infrastructure and resources that were provided to them as students. It is clear from above that the issue of disparities in the distribution of infrastructure in higher education is a political one that should be high on the transformation agenda. Research still needs to be done to investigate the current situation in relation to availability of infrastructure and resources in higher education institutions, in order to determine if transformation is/has taken place in this regard long after South Africa obtained democracy and after the implementation of the White Paper 3-Transformation in Higher Education in South Africa (DoE, 1997) that was released two decades ago.

Studies have been conducted in South Africa to investigate challenges in the South African higher education, especially as it related to the transformation of higher education after 1994 and in relation to infrastructure, as shown above. However, few have looked at the availability of infrastructure and resources in higher education from the perspective of students. This study purported to close this gap. The purpose of this study was to investigate student teachers' perceptions of availability of infrastructure and resources in a Faculty of Education. The research question was: What are student teachers' perceptions of the availability of resources in the Faculty of Education?

This study is significant. It will probably challenge university management and policymakers to rethink ways of putting infrastructure and resources high on the university agenda, especially if the findings of this study suggest that they are not adequately available.

## Literature review

### Relationship between infrastructure and resources and teaching and learning

Infrastructure and resources are critical for effective teaching and learning. Khumalo and Mji (2014, 264) argue that 'The lack of resources is a critical factor in education because it may negatively affect the learning and teaching processes within the classroom'. South African institutions of higher education are known for having increased access without a matched increase in infrastructure. In an effort to increase infrastructure and concomitant access to higher education, the Department of Higher Education and Training (DHET) opened two new universities in Mpumalanga and the Northern Cape provinces in 2016 (Mathebula & Kalitz, 2018). The assumption was that additional universities would reduce the burden of inadequate infrastructure and save citizens from these two provinces from traveling far away to receive education.

In their study on school infrastructure and resources and its impact on the academic performance of primary education students in Latin America, Murillo and Román (2011) found that availability of basic infrastructure and services, and of books in the library and computers in the school have an effect on the achievement of primary education students.

Mbembe (2016, 30) echoes Murillo and Román (2011), arguing that:

*To some extent, a good university education is impossible without an extensive material infrastructure/architecture. Intellectual life can be dependent on the sort of buildings in which conversations take place.*

There is some truth in this: in South Africa, some students tend to flock to some universities because of their external appearance and quality of infrastructure. When a student has to choose where they would like to study, it is common to mention the University of Cape Town, Stellenbosch University, Wits University or the University of KwaZulu-Natal. Coincidentally, the four universities are HWUs that students and parents know have all the facilities one can think of.

The State is dragging its feet to bring parity in relation to infrastructure and resources in the different universities. One of the reasons for this sluggish improvement is, as pointed out earlier, that increase of access to higher education did not match improvement in infrastructure and resources (Wangenge-Ouma & Carpentier, 2018). The second reason relates to the block grant that universities receive from the State, which do not make provision that HBUs were previously disadvantaged than their HWU counterparts. Clearly, this one-size-fits-all approach to funding is not serving the previously disadvantaged HBUs well.

Higher education institutions in South Africa have developed ways of coping with infrastructural and resource inadequacies. For example, in some parts of South Africa, public HEIs have established voluntary regional consortia. These take the form of, for example, shared academic programme offerings, and shared infrastructure in such areas as libraries and information and communications technology. Regional consortia include, for example, the Cape Higher Education Consortium (CHEC, Western Cape),

the Eastern Cape Higher Education Association (ECHEA), the Eastern Seaboard Association of Tertiary Institutions (ESATI); and the Forum of Tertiary Institutions in the Northern Metropolis (FOTIM) (CHE, 2004). There are other efforts to share infrastructure, such as using well-equipped infrastructure of one university by another during the holidays when students are away. Clearly, universities are not passively waiting for manna to fall from heaven but are acting as agents towards finding solutions to the infrastructural and resource dilemmas they are faced with.

### **Research Methodology**

This quantitative case study solicited students' perceptions of the availability of infrastructure (e.g. science and computer laboratories, library) and resources (e.g. ICTs, books, Wi-Fi, clinic and counselling services) in the Faculty of Education they were enrolled in. A Likert-scale with the categories: strongly disagree, disagree, neutral, agree and strongly agree was used to collect data. The questionnaire consisted of a 13 items (see Appendix 1).

The sampling procedure was convenient and purposive. It was convenient because students were easily accessible, as they were enrolled in the same Faculty from which data were collected. The sampling procedure was also purposive because participants were selected on the basis that they possessed the knowledge that was relevant to the study. A sample of 254 students from second and third year cohorts responded to the questionnaire. The first years were excluded because the researcher felt that they had not been in the program long enough to provide essential data. Similarly, the fourth years did not participate in the study because they were in the schools for teaching practice during data collection.

To avoid bias or effect on students, the researcher requested a colleague to collect data on her behalf. The colleague taught only four of the six groups of second and third year students. Consequently, the sample did not include all second and third year students enrolled in the teacher education program, but only those whom the colleague taught and had access to. The questionnaire was administered manually, because students tend to be reluctant to fill them out online. To avoid distracting students, questionnaires were administered before the lectures began. Before the questionnaire was administered, three colleagues in the Faculty of Education tested its validity and reliability. The researcher used feedback obtained from them to improve the quality of the original questionnaire.

The researcher followed several procedures in handling data. In the cases where participants had selected only one category (for example, 'Strongly Agree') throughout the questionnaire, those questionnaires were discarded. In the case where participants ticked off more than one category of the same question (for example, 'Strongly Agree' and 'Disagree'), that response was eliminated or discarded and not counted. Overall, ten questionnaires were discarded due to either of the two reasons. Data analysis involved performing descriptive statistics on each question in the questionnaire to determine the mean score and the distribution of scores for each one. Thereafter the questionnaire was divided into five components and an Item Analysis performed on each subset. This was to determine Chronbach's Alpha describing the overall relationship among the questions in the subset and the multiple correlation (Rsquared) of each question's scores with the other questions. A low Chronbach's

Alpha would indicate that the questions in that subset addresses different questions. Similarly, a low multiple correlation would indicate that the question addresses a different aspect than the others. All analyses were performed using the NCSS V11 statistical package (NCSS 11 Statistical Software, 2016). Data were presented in the form of bar graphs.

Ethical considerations were made. Students were informed about the purpose of the study. Verbal consent was solicited before the questionnaire was administered. Students were informed of their right not to participate in the study or to withdraw from participation any time if they felt uncomfortable. They were also informed about the anonymity clause and that the study did not involve harm. Information was shared with them that data will be used for only research purposes and that data will be stored safely for a period of three years, after which it will be destroyed.

## **Results**

### **Profiles of participants**

In the first section, profiles of participants are presented, followed by the presentation of the Chronbach's Alpha. The students who participated in this study were in their second and third year of the Bachelor of Education degree studies. They were studying to become secondary and high school teachers. Half of them were Coloureds while another half was Black. Their gender was also almost split into half and half, but overall there were twenty more females than males.

### **Cronbach's Alpha**

With regard to Cronbach's Alpha, correlations were low due to the different responses by different students to the questions asked. This makes it difficult to generalize the results to other similar contexts. There was an equal split in students' experiences but it did not mean that their experiences with each item were similar.

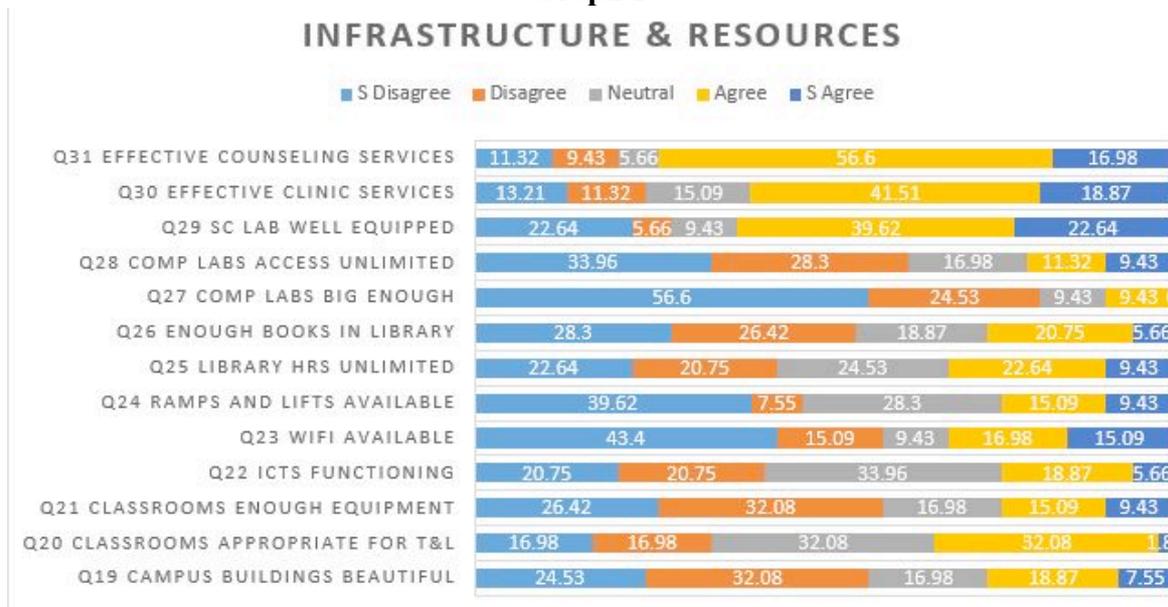
### **Students' perceptions of infrastructure and resources**

Infrastructure and resources are the backbone of education, partly because the teaching-and-learning process does not take place in a vacuum but is highly influenced by the environments in which it takes place. Overall, thirteen items were included in the questionnaire (Appendix 1). Results indicated that participants' perceptions of infrastructure and resources were not favourable. The highest number of participants (81%) perceived the size of the computer labs (Q27) as insufficient to accommodate students in their faculty. Except for the clinic and counselling services (Q30 and Q31) and well-equipped science laboratories (Q29), students generally perceived availability of infrastructure and resources as poor, as shown by the high numbers of those who disagreed, compared to those who agreed or were neutral. In fact, students tended to assert their voices and to be vocal about how they felt, as shown by low percentages of those who selected neutral. Nonetheless, participants were torn with regard to whether or not classrooms were appropriate for teaching and learning (Q20), with 34% disagreeing and agreeing, versus 32% who were neutral on this item. It would appear that participants' perceptions of the services rendered by the clinic and counselling services (Q30 and Q31) were generally good. This could mean

that their general welfare is well taken care of. In this era of digital technology, it is disconcerting that participants perceived availability of Wi-Fi (Q23) and functioning of ICTs (Q22) in a negative light. Similarly, their perceptions of insufficient computer lab spaces (Q27) is disappointing when weighed against the backdrop that universities should be preparing teachers for the 21<sup>st</sup> technology era.

Quite ironic was to note that in this day and age of inclusive education, the highest number of participants (47%) responded that ramps and lifts were not available while 28% were neutral and only a minority (25%) perceived them as available. Similarly, there was irony in the fact that while participants perceived the science labs as well-equipped ((Q29), as shown by 62% who agreed, they perceived access to them as limited (Q28), as revealed by 62% who selected disagree on the item ‘Lab access is limited’. Quite disheartening was to note that 43% of participants’ perceived the library hours (Q25) and 55% perceived availability of books (Q26) in a negative light. Limited books, coupled with limited library hours is serious cause for concern and spells disaster on relation to high quality teaching and learning. The graph below illustrates the graphical representation of participant’s responses to the questionnaire.

**Graph 1:**



**Discussion and conclusion**

The purpose of this study was to investigate students’ perceptions of the availability of infrastructure and resources in a Faculty of Education in a South African university. The argument raised was that infrastructure and resources are political in the context of the South African higher education landscape and should be high on the transformation agenda. This is particularly important in the South African context, where disparities created by the apartheid era still exist and where, during the old dispensation, differentiation of funding was dictated by race. The consequences were inequalities in the quality of education for White and Black students. Granted, literature shows that the State has made great strides to redress the inequalities of the past. Nonetheless, the results of this study paint a bleak picture, and have serious

implications for the transformation of higher education in South Africa, in as far as provision of infrastructure and resources for universities is concerned.

Evidently, students' negative perceptions of availability of infrastructure and resources reflect negatively on the quality of education provided to the students in this faculty. Literature has shown that there is a symbiotic relationship between infrastructure and resources and quality education (Murillo and Román, 2011; Mbembe (2016). Therefore, in order to uplift the quality of teaching and learning and to bring about transformation, policymakers and the management need to take a serious look at how to increase infrastructure and resources in this faculty. More studies need to be conducted to investigate the extent to which other universities, especially those that were disenfranchised by the apartheid system, are equipped with infrastructure and resources. Other studies would need to investigate the relationship between availability of infrastructure and resources and student performance.



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*How can We Encourage Students to “Interact” and “Produce” in English  
Classes?:  
Voices of Japanese EFL Teachers*

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The IAFOR International Conference on Education - Hawaii 2019  
Official Conference Proceedings

**Abstract**

The newly revised Course of Study for high school English education in Japan (MEXT, 2018) demonstrates the importance of fostering students' productive skills. Students will be expected to “interact” and “produce” in English by engaging in a variety of oral communication activities such as speech, presentation, debate and discussion. However, as great emphasis has long been placed on receptive skills in Japanese English education, the majority of high school EFL teachers lack experience in employing such oral communication activities (Benesse Educational Research and Development Institute, 2016). This qualitative study, therefore, aimed to investigate the teaching strategies utilized and explored by Japanese EFL teachers who have experience in teaching EFL courses focusing on such activities (e.g., presentation, discussion). In particular, it attempted to examine the difficulties they encountered and the strategies they used and explored in encouraging their students to “interact” and “produce” in English through such activities. In order to collect data, semi-structured interviews were conducted with five Japanese EFL teachers. Findings indicated that several serious obstacles tend to exist when implementing such activities in Japanese EFL context, including students' silence, speech anxiety, low motivation to speak English, unequal participation, and poor achievement. In order to overcome such obstacles and support students' learning, it was suggested that building rapport with students, praising students' efforts to communicate through English, designing activities flexibly, and providing clear learning goals and instructions were considered particularly crucial among the strategies shared as they help promote students' engagement in oral communication.

Keywords: teaching experience, oral production, student interaction, Japan, EFL

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## Introduction

Active Learning (AL), currently described as “independent, dialogical, and deep learning,” has become one of the key phrases of today’s educational reform movement in Japan (Matsushita, 2018). AL refers to “all kinds of learning beyond the mere one-way transmission of knowledge in lecture-style classes (=passive learning)” and it “requires engagement in activities (writing, discussion, and presentation) and externalizing cognitive processes in the activities” (Mizokami, 2014, 2018). In other words, students are expected to do more than just listening to a lecture and acquiring knowledge in class; they are encouraged to participate in activities involving production, interaction and communication (e.g., writing, discussion, presentation), using their learned knowledge and externalizing cognitive processes through such activities. In Japan, the ideas and methods of AL began to gain attention in the context of higher education at the beginning of 2000s (Matsushita, 2018). As a result of the increase in university enrollment rate and growing learner diversity on campus, university needed to consider not just how to “[equip] the students with knowledge” but how to “[train] them in a wide variety of competencies” in order to address an issue of how to ensure learning quality for diverse body of students with different academic abilities and learning motivation (Mori, 2018). Accompanied by this changing role and expectation of higher education, one-way, lecture-style classes traditionally existed in university-level education were called into question and AL began to spread widely in higher education as a recommended educational policy, particularly since 2012 when the ideas and methods of AL were proposed in a report named *Towards a Qualitative Transformation of University Education for Building a New Future* released by the Central Council for Education (Central Council for Education, 2012), the advisory body of Ministry of Education, Culture, Sports, Science and Technology (MEXT).

This new form of learning, as opposed to “passive learning,” is not confined to higher education today. In 2014 AL was also introduced to elementary and secondary education policies and, in 2018, MEXT announced the newly revised Courses of Study (the broad teaching standards and guidelines) for high school, which require implementation of AL (i.e., independent, dialogical, and deep learning) in all subjects, demonstrating the importance of cultivating students’ critical thinking, judgment and self-expression skills (MEXT, 2018).

Under this new policy incorporating AL, which is set to begin in 2022, some major changes are made in high school English subjects as well. One of them is the categorization of language skills. Instead of the four language skills listed in the previous guidelines (i.e., listening, reading, speaking, writing), there are five language skills based on Common European Framework of Reference for Languages (i.e., listening, reading, spoken interaction, spoken production, writing) as speaking skills are now divided into “spoken interaction” and “spoken production” to make the learning objectives and contexts for speaking more specific and clear. In addition, on the basis of these five language skills, one of the newly established courses officially starting in 2022 (“Logic and Expression”) will place great emphasis on fostering students’ interactive and productive skills in English. Fostering such skills has been traditionally less prioritized in Japanese high school English education. However, with the upcoming changes to the college entrance exams which assess not only receptive skills but also productive skills, high school students in Japan will be highly

expected to “interact” and “produce” in English classes by participating in a variety of oral communication activities, including, but not limited to, speech, presentation, debate and discussion. Students’ active participation in activities involving spoken interaction and spoken production is the key element of this new revision and high school EFL (English as a Foreign Language) teachers are now expected to prepare for this change.

However, most high school EFL teachers seem to be struggling to meet this new expectation today largely due to their prior learning experiences and teaching practices. As Borg (2003) claimed, teachers’ classroom practices or teaching beliefs are largely affected by their own learning experiences in school. In other words, they tend to teach the way they were taught by their teachers. Since Japanese English education has long focused on developing students’ receptive skills, most teachers in Japan did not have much experience of studying through oral communication activities such as presentation or debate when they were in school. As Nagamine (2017) claimed, “the lack of authentic in-class experiences” of such activities during their school days makes it difficult for most teachers to shift their teaching focus. In addition, the majority of them lack experience of teaching through such activities as they have been more expected to prioritize teaching grammar, vocabulary and reading until quite recently in order to prepare their students to succeed in the college entrance exams. The survey on 2134 Japanese high school EFL teachers (Benesse Educational Research and Development, 2016) revealed that while over 90% of the teachers considered students’ involvement with interaction and production crucial in English classroom, only a small number of them have employed such activities as speech, presentation, debate and discussion. The survey also showed that the majority of the teachers felt the need to learn more about how to teach speaking. Under these circumstances, most teachers seem to lack readiness to change their ways of teaching (Nagamine, 2017) and struggle to incorporate activities involving spoken interaction and spoken production in their classes. Therefore, there seems to be a huge gap between what has been proposed in the new Courses of Study and what high school EFL teachers are facing in their classrooms today.

The present study, therefore, aims to investigate the teaching strategies utilized and explored by Japanese EFL teachers who have relatively rich experiences of teaching EFL courses focusing on oral communication activities such as speech, presentation, debate and discussion. In particular, it attempts to examine the difficulties they experienced and the strategies they explored in encouraging their students to “interact” and “produce” in English through such activities.

### **Research Questions**

The main research questions to be addressed in this paper are as follows:

1. What benefits and difficulties are experienced by Japanese EFL teachers in engaging students in activities involving spoken interaction and spoken production in Japanese EFL classes?
2. What are the teaching strategies employed and explored by them in encouraging students to interact and produce in English?

## Methodology

### *Participants*

As AL has been implemented in higher education more widely than in high school settings, university EFL teachers were mainly recruited to participate in this study to address the research questions. They were selected based on the following criteria: (a) the teachers were native speakers of Japanese and (b) the teachers had relatively rich experiences of teaching EFL courses focusing on activities involving spoken interaction and spoken production. A total of five Japanese university EFL teachers who fulfilled the criteria participated in this study. All of them had relatively rich experiences of teaching a variety of EFL courses focusing on spoken interaction and spoken production. In particular, they have taught EFL courses focusing on presentation, debate and discussion many times. Additionally, all of them employed various speaking activities quite frequently in class.

Table 1. Participants' profiles

Participants	Teaching experience	EFL courses they have mainly taught	In-class activities they often conduct
Teacher A	10 years	Reading, Listening, Speaking, Writing, Academic English, English conversation, TOEFL, TOEIC, IELTS, Debate, Discussion	Think in pairs or groups, Student-led discussion, Group project, Presentation
Teacher B	5 years	Reading, Listening, Writing, English for tourism, PBL (mainly includes: Presentation, Debate, Discussion)	Read aloud in groups, TOEFL style speaking practice, Group project, Presentation
Teacher C	3 years	Reading, Listening, Writing, CALL, PBL (mainly includes: Presentation, Debate, Discussion)	Teach in pairs or groups, Peer feedback, Group project, Presentation
Teacher D	5 years	Reading, Listening, Speaking, Writing, English conversation, ESP, PBL (mainly includes: Presentation, Debate, Discussion)	Think in pairs or groups, Reproduction, Presentation, Group project
Teacher E	10 years	TOEFL, TOEIC, Essay writing, Debate	Think and/or teach in pairs or groups, Speak on reading materials, Reproduction, Group project, Presentation

(Notes: PBL refers to “project-based learning”)

### *Instruments*

In order to answer the research questions, semi-structured interviews were carried out with five Japanese university EFL teachers. There were nine interview questions in total and they were broadly divided into three sections. The first section (Q1-Q3) asked about the participants' teaching background (i.e., teaching experience, EFL

courses they have mainly taught, activities they often conduct in class). The participants' responses are summarized in Table 1. The second section (Q4-Q6) dealt with the participants' teaching experiences of spoken interaction, "a joint, here-and-now social activity which is governed by two main principles"—"speakers take turns" and "speakers cooperate" (Stenstrom, 1990). Spoken interaction involves at least two people speaking and responding to each other, for example in conversations or discussion. Since all of the participants had relatively rich experiences of teaching EFL courses incorporating discussion, debate and group project, they were mainly asked to talk about these courses, including the benefits and difficulties they experienced and the teaching strategies they employed. Lastly, the third section (Q7-Q9) asked about the participants' teaching experiences of spoken production, which, unlike spoken interaction, usually involves one person providing information, describing something, or giving opinion in public. The examples of spoken production activity include making a presentation to an audience. As all of the participants taught EFL courses focusing on English presentation tasks, they were mainly asked to describe the benefits and difficulties they experienced in teaching these courses and how they attempted to overcome teaching difficulties (i.e., strategies).

### ***Data collection***

In order to collect data, in-depth, semi-structured interviews were conducted during June and July 2018 at the participants' workplaces. Prior to the interviews, the participants were informed about the aim and the methods of the study, including recording their interviews, as well as their right to withdraw from the study at any time. They were also reassured that confidentiality of their responses obtained during the interviews would be guaranteed and their identities would not be revealed. All of the participants signed informed consent which would allow the researcher to record their interviews and to use the data for the study. Each interview lasted approximately 60 to 80 minutes in length; they were all recorded with both a digital video camera and a digital voice recorder to ensure that all data are obtained. The interviews were conducted in the participants' native language, Japanese; the recorded data were later transcribed and translated into English.

### ***Data Analysis***

The qualitative content analysis was carried out in order to analyze the interview data. For the purpose of analyzing the data efficiently NVivo 11 software was used. After the interview data were all entered, the participants' responses were carefully read multiple times by paying attention to the frequently emerging words, expressions, and ideas. The codes and categories generated through analysis were examined multiple times in order to clearly identify patterns and common themes regarding the research questions.

### **Findings and Discussion**

Based on the findings obtained from the interviews, the research questions are discussed below. Illustrated with some excerpts from their responses, the participants' teaching experiences of spoken interaction (e.g., discussion, debate, group project) and spoken production (e.g., presentation) are described, first focusing on benefits, followed by specific difficulties encountered by them. Then, the teaching

strategies explored by the participants in facilitating student interaction and production are discussed.

### **1. What benefits and difficulties are experienced by Japanese EFL teachers in engaging students in activities involving spoken interaction and spoken production in Japanese EFL classes?**

#### ***Common benefits***

Based on the analysis, three common benefits were identified regarding students' engagement in activities involving spoken interaction and spoken production. First, students can take initiatives in learning more when they are given opportunities to discuss, present or take part in a group project, rather than just listening to a lecture. For example, Teacher E explained, "Activities involving students' interaction and production can affect students' learning attitudes positively. It is a good opportunity for them to stop being 'passive' and start to become an 'active' and 'independent' learner."

Second, students can also find joy and develop interests in learning when they are actively engaged in such activities. For example, Teacher A talked about one of her classes in which she implemented student-led discussion activities every week. In the class evaluation survey conducted on the last day, she found a number of positive comments about the class. She said,

Most students wrote, 'I enjoyed thinking about topics' or 'Joining a discussion was a lot of fun.' And I felt, 'it's because they were the ones doing all the work!'...To be motivated to learn something, we need to have 'fun' one way or another and I think 'doing' is the key. If it's not fun, it'd be difficult to continue learning. (Teacher A)

Here we can see her positive perception of student active engagement in learning as she realized through her experience that it can affect student learning motivation positively.

Third, students can also learn a lot from each other, not just from their teacher, through these activities. For instance, Teacher C often employs small group activities in which students give feedback or teach an assigned part to each other. Recalling such activities, he said, "Rather than just studying by themselves or asking questions to a teacher, students can improve their abilities by interacting this way...I heard 'Teaching is the best way of learning' somewhere, and I think it's quite true." Other participants also described similar benefits in having students work together. Though a large portion of a lesson was long spent on teachers' lecture in Japan, the participants' responses suggested that students' collaborative learning leads to deep learning.

#### ***Difficulties: Spoken Interaction***

Despite numerous benefits, the data analysis revealed three critical difficulties associated with activities involving spoken interaction (e.g., pair work, group work, group discussion, group project) in English classes: a) students' silence, b) unequal participation, and c) poor achievement.

### **a) Students' silence**

In line with past research (King, 2013), the participants often faced issues related to students' silence when trying to have students engage in interactive activities in English. For example, Teacher A said, "Especially for the first few weeks a whole class often falls into complete silence during pair or group activities." As other participants shared similar episodes, classroom tends to be filled with silence in English classes in Japan when students are told to interact in English, often with no one initiating a conversation. Moreover, some participants said it is not uncommon that some class remain silent for the entire semester.

### **b) Unequal participation**

Another problem frequently shared by the participants was about contribution in group work. When students were assigned to work together as a group to do a discussion or a project in English, the participants often saw unequal participation among students. For example, Teacher B often faced this issue in her project-based learning (PBL) classes in which students were assigned to work in a group project throughout a semester. She said,

It was clear that students with good command of English didn't like this class. They had a lot of complains like 'if I could work alone, I could do better.' Because some low proficient students always depended on them...I think it demotivated them. When employing group work we need to think about this problem. (Teacher B)

As also reported in Mori (2018), the presence of free riders in group work has been one of the major issues in recent implementation of AL. As Teacher B indicated, it not only affects their final group product but also negatively influences other members' learning motivation

### **c) Poor achievement**

The participants also shared concerns about the quality of learning outcome of group work. Even when students were given excessive time to work together as a group, the participants often found that learning outcomes of group work turned out to be superficial—not deep enough. Many of them also found that some groups' final products were poorly integrated. Teacher E, recalling the time when he gave a group presentation task, said, "A group which ended up performing poorly...seemed to gather individual work for the first time on the presentation day. Their statement was not consistent at all." As he described, while students seem to work cooperatively—equally splitting their work at the beginning and being responsible for their own part, there are cases in which they fail to complete their work as a group.

### ***Difficulties: Spoken Production***

The interview data also revealed two major difficulties associated with activities involving spoken production (e.g., speech, presentation): d) speech anxiety and e) low motivation to speak English.

**d) Speech anxiety**

When asked about their experiences of implementing activities involving spoken production, every participant described issues related to students' speech anxiety, strong fear of speaking in public. Teacher C talked about a specific student who, despite her good reading and writing skills, always became extremely nervous in presentation tasks. He said, "While some students enjoyed presenting, she always stopped and cried in the middle of a presentation. Standing in front of a class, she said she couldn't remember what to say and panicked." As other participants also talked about similar cases, it is not uncommon to see students like her in Japanese EFL classroom; in fact, many Japanese students tend to have difficulties with speaking English in front of their classmates (Brooks & Wilson, 2014).

Also, some participants talked about students who had "Taijin Kyofusho," a type of social anxiety which has been long documented and prevalent in Japan. For example, Teacher D said, "The biggest problem I've had with student presentation was students with Taijin Kyofusho. Such students usually never show up on a presentation day." Research showed that people who have this anxiety have strong fear of embarrassing or offending others with their body or behavior (Essau, Sasagawa, Ishikawa, Okajima, O'Callaghan, & Bray, 2011). For students with this anxiety, a presentation task in which they need to face the whole class must be an intimidating and frightening experience.

**e) Low motivation to speak English**

The other issue frequently emerged was about students' motivation to speak English. The participants said that there is clearly a group of students almost in every class who like traditional, lecture-style classes better. Teacher D faced difficulty in motivating such students: "Some students want to have a lecture on grammar instead of a presentation task...Some get quite bothered by this type of task...Increasing students' motivation to present is important, but it's very difficult." The participants also found that some students are good at English but not comfortable with speaking English. Teacher A described one situation where she assigned students to work on interactive presentations in which audience were allowed to jump in and ask questions to presenters: "In one of the classes, the presentation contents were quite interesting, but the performance lacked enthusiasm. The presenters talked without intonation and the audience remained silent." She explained that the students usually worked hard, but somehow became less enthusiastic when it came to a speaking task. In spoken production, all participants highlighted the importance of considering the diversity of students' preference of learning style and increasing students' motivation to speak English.

As summarized in this section, we can see that in activities involving spoken interaction and spoken production in English classes, Japanese students seem to be having issues with "participation" in the first place as some remain silent, some do not show up, some rely on others and some do not work enthusiastically. Such situations would clearly lead to the lack of students' experience of externalizing knowledge. It is not exaggerating to state that without attempting to address the difficulties explained above students would not be able to achieve anything but mere knowledge acquisition.

## **2. What are the teaching strategies employed and explored by them in encouraging students to interact and produce in English?**

### ***Common Strategies***

The data analysis revealed two main strategies commonly observed in facilitating student interaction and production. One was to build rapport with students. As described earlier, Japanese students generally lack experience of studying through oral communication activities, and there also tend to exist a wide range of abilities, learning motivation and styles in a same class. In order to help students feel comfortable with speaking and motivated to interact and produce in English, therefore, it is crucial that teachers design activities, considering students' learning experiences, abilities and attitudes. For this purpose, all participants underscored the importance of learning about each individual through everyday lesson (e.g., observing student behavior, interacting with them, conducting a classroom survey) and building rapport with them so that they can reflect student interests and needs in designing activities. To this end, Teacher D said that she often adopts a conference-style desk arrangement, which enables her to observe and interact with her students more easily.

The other was to praise students whenever they try to communicate through English. The participants frequently mentioned that Japanese students tend to be too worried about grammatical accuracy when using English, preventing them from speaking and resulting in lack of practice. For such Japanese students, they found "praise" crucial as it helps build students' confidence to use English without fear. Teacher A said, "Because students fear making mistakes...especially for the first few weeks, it's important to show that they're not evaluated based on accuracy. So I focus on praising them not for being accurate but for their effort to communicate through English." The participants were confident that praising every single effort students make to use English makes a big difference in creating a supportive learning atmosphere.

### ***Strategies: Spoken Interaction***

The interview results revealed four major teaching strategies for specifically addressing issues with spoken interaction: a) provide clear instructions, b) provide clear learning objectives, c) evaluate individual contribution and d) provide sufficient time for knowledge acquisition.

#### **a) Provide clear instructions**

Particularly addressing an issue of students' silence, one effective strategy was suggested especially by Teachers A, C and D: to provide clear instructions on how to participate in discussion in English. By so doing they attempted to help build students' confidence to interact and increase their readiness to participate in English discussion. Teacher A said,

Students are shy and don't know how to take turns in English first. So I go in to each group and "control" their conversation by asking each student an easy question and helping students respond to each other. After every student spoke, I say, 'This is how you do it, do it!' and then I go to the next group. (Teacher A)

We can see that she intends to show her students how to take turns by actually joining their conversation. She further added that before she intervenes students are usually very silent; but after she shows how by actually controlling their conversation, most students immediately start to speak more to each other. As Yanagi and Baker (2016) stated, Japanese students do not have enough opportunities to practice English discussion in schools and are “likely unaware of how to successfully take turns in English.” It is therefore possible that many Japanese students tend to become silent and passive in English discussion because they do not know how to join in a discussion in English. As the attempt made by Teacher A, “showing how” not just with words but with action should be effective in this sense and adopting this strategy at the beginning of the semester should be particularly crucial in order to successfully help students get used to joining discussion in English.

#### **b) Provide clear learning objectives**

Regarding issues with unequal participation in group work, two strategies were mainly identified. One was to provide a clear explanation of learning objectives along with a meaning of group work when introducing a task. As reinforced by most participants, students’ lack of participation or reliance on group members are largely due to their lack of understanding of a learning objective or a significance of group work for achieving it. Though it may sound quite simple, lack of these explanations may lead to poor learning outcome as Teacher D said, “In the past some failed to do well...I didn’t explain enough...Now I make sure to explain not only a goal but also how and why I want them to achieve it.” Other participants also said that giving clear explanations had positive influence on changing students’ attitudes in group work.

#### **c) Evaluate individual contribution**

Another strategy suggested on unequal participation was to establish a system to evaluate individual contribution. In employing group work, the participants highlighted the importance of establishing a sense of responsibility and increasing students’ motivation to contribute to group work. In particular, they considered student involvement in evaluation process (=peer-assessment) crucial. Some participants, for example, distributed a group contribution sheet to each student when introducing a group project. Students were told that at the end of the project their individual contribution would be evaluated by their group members using this sheet and that the evaluation scores and comments given by group members would be part of their final grades. Knowing how their individual work would be evaluated at the beginning, they said that students took group work more seriously and positively than before. With each student equally provided with an opportunity to consider and explain each other’s work, implementation of peer-assessment seems to help reduce the act of free-riding in group work as also indicated by past research (Brooks & Ammons, 2003; Hall & Buzwell, 2012).

#### **d) Provide sufficient time for knowledge acquisition**

One important strategy particularly regarding poor achievement of group work emerged from the participants’ responses. It was to consider a balance between student activity engagement and knowledge acquisition. As Teacher E repeatedly pointed out, if students lack knowledge on a topic, it would be extremely difficult for them to think deeply in the first place, let alone achieving higher level of learning. This point was also clarified by Matsushita (2018). She stated, “in order to have the students engage in higher-order thinking, they must acquire knowledge (content)

appropriate for such thinking.” Mori (2018) also argued that without sufficient internalization of the content that students are expected to externalize, “a gap develops between thought and action.” Considering this issue, Teacher E claimed that before judging students’ achievement as superficial or not deep enough, we must make sure to provide enough time for students to acquire knowledge necessary for working on an assignment. Other participants also expressed similar concerns and, to ensure the time for students to acquire knowledge, they were all adopting flipped learning approach, which can “circumvent the gap between thought and action (Mori, 2018), in one way or another.

### ***Strategies: Spoken Production***

The data analysis identified two major teaching strategies for addressing issues with spoken production: e) give ample opportunities to present in English and f) provide alternative forms of performance.

#### **e) Give ample opportunities to present in English**

Particularly regarding students with speech anxiety, one common strategy was practiced and suggested by all participants: to provide ample opportunities to present in English. Their strategies are in line with King (2002), in which she stated that students’ nervousness to speak in public is often due to their lack of experience. Enough practice in classroom, therefore, should help build their confidence to present in class as past studies on English oral presentations reported similar outcomes (Fujita, Yamagata, & Takenaka, 2009).

#### **f) Provide alternative forms of performance**

Another strategy emerged from the analysis was to provide alternative forms of performance to a traditional, class-fronted presentation. During the interviews, the participants described students’ speech anxiety or low motivation to speak English mainly in a class-fronted presentation task where students give a presentation one at a time to the whole class. For students with speech anxiety or low motivation to speak English, this presentation style can be intimidating and overwhelming. Therefore, giving ample presentation opportunities is not the only thing we should consider when employing a presentation task as Teacher D said,

When we hear a word ‘presenting,’ we tend to think of class-fronted presentations using PowerPoint slides. But in order to express our ideas or opinions, we don’t always need to speak to the whole class, using slides. There are many other forms of presentation through which students can express themselves. (Teacher D)

Here she emphasized the importance of providing many “forms” for a presentation task. Considering learner diversity, she further added that any form of performance should be allowed as long as students can engage in communicating their ideas and suggested that we should design presentation activity more flexibly. For example, in teaching one of the low-level classes, Teacher D adopted YouTube filmmaking in which students presented and recorded their research findings using their smartphones outside of class and shared the recorded videos later in class. She said that the students seemed to enjoy this presentation task. Other participants also reported the effectiveness of poster presentation which enables students to present multiple times

to a small group of audience and helps reduce their speech anxiety (Prichard & Ferreira, 2014).

### **Conclusion**

Addressing the current issues surrounding the new educational policies of Japanese high school English education, this study aimed to investigate the teaching strategies explored by Japanese EFL teachers in encouraging students to interact and produce in English through oral communication activities. Based on the analysis, we found five major difficulties, most of which were associated with students' lack of involvement in activities (e.g., silence, unequal participation, speech anxiety). In order to address this issue in Japanese EFL context, a total of eight strategies (e.g., build rapport with students, praise, provide clear instructions, provide alternative forms of performance), mainly aiming to create a supportive learning environment for students to participate, were found to be particularly important. Lack of student activity engagement would lead to lack of their experience in externalizing cognitive processes, making it difficult for them to achieve more than knowledge acquisition. It is therefore crucial that teachers understand the principles of AL and create a supportive learning atmosphere in class where students can feel safe and motivated to interact and produce in English.

Lastly, though this study aimed to explore the teaching strategies for student engagement in spoken interaction and spoken production, several limitations should be noted. First, as the instrument of this study was limited to semi-structured interviews, other types of instruments, including classroom observations, should be included in order to learn more about how to encourage students to interact and produce in Japanese EFL context. Second, since the participants were all university teachers this time, the future study should also examine this topic in high school settings so as to consider practical suggestions for high school teachers more in depth.

### **Acknowledgements**

This work was supported by JSPS KAKENHI Grant Number JP17H07248. The author would also like to express her deep gratitude to the teachers who kindly participated in the interviews.

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*Diving into the Vortex: Examining Math Identity, Science Self-efficacy,  
Sex, and Race*

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The IAFOR International Conference on Education - Hawaii 2019  
Official Conference Proceedings

**Abstract**

As the global population increases to approximately 8.3 billion people, the United States National Intelligence Council (2012) predicts a 35% worldwide increase in demand for food, 40% increase in demand for water, and a 50% increase in demand for energy. Thus, educating and cultivating a workforce that can identify ways to meet these demands will be paramount; the U.S. Bureau of Labor Statistics' predicts that science, technology, engineering, and mathematics (STEM) jobs will be among the fastest growing fields. However, STEM fields continue to struggle to attract and retain men from historically underrepresented groups and women (NSF, 2017). The underrepresentation of women, Blacks, and Latinxs becomes even more pressing as demographic models of the US predict a future population that is majority-minority (Landivar, 2013; Ortman, & Guarneri, 2009). Therefore, identifying ways to make STEM accessible to all, and increase representation in STEM-related careers is vital to addressing future global needs (NSF, 2013; Committee on Underrepresented, 2010). Previous work has shown that mathematical identity and science self-efficacy are factors in choosing STEM disciplines (Boaler & Greeno, 2000; Chemers, Zurbriggen, Syed, Goza, & Bearman, 2011). Our presentation will explore how mathematical identity and science self-efficacy interact with each other and differ by sex and race. We draw on literature and multiple regression analysis to examine the complex interplay between these constructs and reflect on how our results may impact both current and future practitioners

Keywords: mathematics, science, STEM, identity, self-efficacy, race, sex

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## Introduction

While the United States faces an increased need for more STEM majors, STEM disciplines continue to struggle to attract and retain female, Black and Latinx students (Bureau of Labor Statistics, 2018; National Science Board, 2018; National Science Foundation, 2017). A significant amount of research has examined the reasons for this continued underrepresentation of women and minorities, largely centered around achievement. But the history of that literature has been critiqued as an “achievement gap gazing fetish” (Gutiérrez, 2008, p. 357) which has not yielded significant changes in STEM. Gutiérrez suggested that practitioners and researchers alike need to reconceive equity work to address three factors in addition to achievement: access, identity and power. Gutiérrez’s work is part of a larger sociocultural (or what some deem socio-political) turn in STEM education .

Mathematical identity is one of the socio-cultural constructs that researchers have studied in the context of STEM equity work (Boaler & Greeno, 2000). Identity is “being recognized as a certain ‘kind of person’” (Gee, 2000, p . 99) and is socially constructed. Sfard and Prusak wrote that identity is “man-made and as constantly created and re-created in interactions between people” (p. 15). This social construction means that identity represents “how individuals know and name themselves ..., and how an individual is recognized and looked upon by others” (Grootenboer, Smith & Lowrie, 2006, p. 612). Mathematical identity, as conceptualized in this work is made up of two components. First, do students see themselves as being a mathematical person, and second, do others consider that student a mathematical person.

A connected, though distinct construct is self-efficacy. Self-efficacy, first described and studied by Bandura (1977) is a person’s confidence that they can complete a task (Lent, Hackett, & Brown, 1999). When self-efficacy is studied in the context of science classrooms, we call that construct science self-efficacy, which is a student’s confidence in their ability to independently complete their science work. For example, a student with high science self-efficacy may feel completely capable of reading their science textbook on their own. These two constructs, science self-efficacy and mathematical identity, have been studied previously in a body of literature that has, as Gutiérrez noted, centered on how these constructs were connected to achievement.

The literature also routinely draws on two related constructs: math self-efficacy and science identity. We provide a brief review of that work here. Math identity has been linked to STEM career interest (Cass, Hazari, Cribbs, Sadler & Sonner, 2011). A similar study showed that math self-efficacy likewise was connected to STEM career interest (O’Brien, Martinez-Pons & Kopala, 1999) and several studies have included both as predictors to STEM career interest and examined how that prediction differed by sex and race (Cribbs, Piatek-Jimenez, & Mantone, 2015; Briggs, 2014; Kotok, 2017).

Science education researchers have performed similar work around the science constructs. For example, high science identity has been shown to be predictive of scores on a chemistry assessment (Robinson, Perez, Carmel, Linnenbrick-Garcia, 2019). High science self-efficacy has also been linked to higher levels of achievement

(Britner & Pajares, 2006). Further, high science identities combined with high science self-efficacy has also been shown to be predictive of science achievement (White, DeCuir-Gunby, & Kim, 2018). In research that included constructs from both math and science education, results suggest that strong math and science identities were linked to the pursuit of STEM careers, and the results there differed by sex (Lock, Hazari, & Potvin, 2013).

Few studies have considered how these individual constructs may depend on each other. In this study, we considered how mathematical identity might impact science self-efficacy. A conceptual map of our question is provided in Figure 1. We did not include science identity or math self-efficacy as variables in our regression analysis. Thus, our research aims to address the following research questions:

1. Controlling for socioeconomic status (SES), do mathematics identity, race, and sex predict science self-efficacy?
2. Does sex moderate the relationship between mathematics identity and science self-efficacy?
3. Does race moderate the relationship between mathematics identity and science self-efficacy?

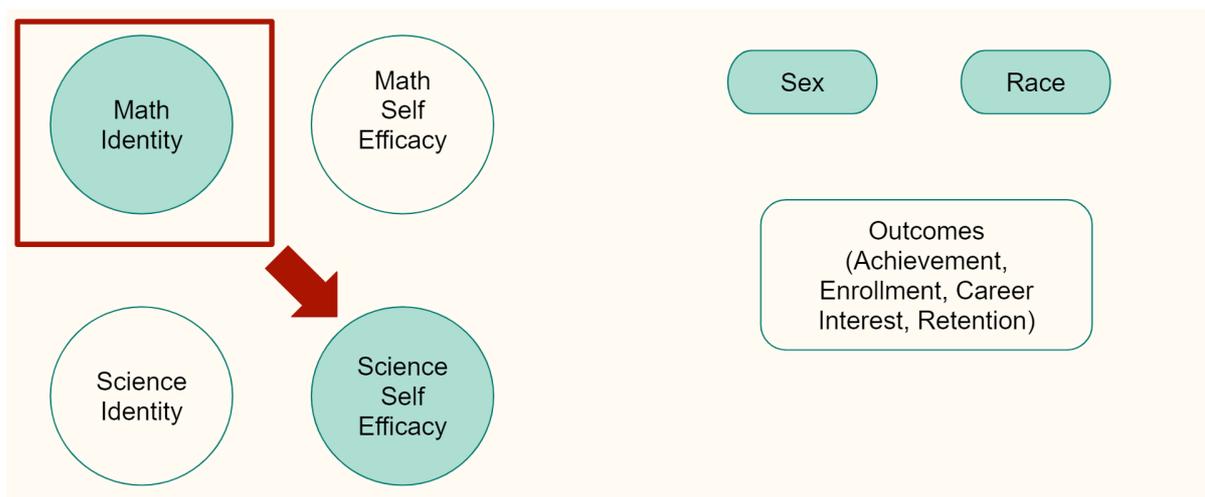


Figure 1. Concept map between math identity and science self-efficacy (Our framework)

## Conclusion

We used the High School Longitudinal Study of 2009 to run three regression analyses of approximately 17,000 ninth grade students within the United States (Ingels et. al, 2011). Our analysis suggest the following:

1. Math identity, sex, and race, are significant ( $p < .05$ ) predictors of science self-efficacy.
2. Sex significantly ( $p < .05$ ) moderates the relationship between math identity and science self-efficacy.
3. Race, significantly ( $p < .05$ ) moderates the relationship between math identity and science self-efficacy. It is important to note that although race was a significant moderator, there was only a significant difference between Black, White, and Latinx students.

From the knowledge gleaned from our results, we have more of an understanding regarding the ways in which socio-cultural constructs relate to each other. The results from this analysis also provide more insight into the cross-disciplinary relationship between mathematics and science. More research is needed to explore the longitudinal impacts these sociocultural factors have on each other.

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<https://doi.org/https://doi.org/10.1016/j.cedpsych.2018.11.006>

***Language Learning Strategies of Grade Viii Students in Tabuk City National High School, Tabuk City, Kalinga***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

Teacher's knowledge about his students is crucial in his effort of making learning meaningful in the lives of each learner. Moreover, knowing how students learn the English language could help English teachers plan activities suited them. This study generally determined the English language learning strategies of the grade VIII students in Tabuk City National High School, 2015-2016. It specifically found out the extent of dominant manifestation of the language learning strategies of the respondents along Memory, Cognitive, Compensation, Metacognition, Affective, and Social and its significant difference when respondents are grouped according to gender and the school program they belong. The descriptive survey method was used with the Strategy Inventory for Language Learning (SILL) (50-item version 7.0 ESL/EFL) of R. L. Oxford as the instrument. t-test and Analysis of Variance (ANOVA) were used to determine if there were significant differences in the extent of dominant manifestation of language learning strategies of the respondents when grouped according to the moderator variables. Results showed that grade VIII students moderately manifested the language learning strategies along the six categories. Both male and female grade VIII students perceived that the language learning strategies were somewhat true to them. Regardless of school program, the students employed language learning strategies at about the same frequency which bid them in developing the macro skills in communication arts. Recommendations included that language teachers should integrate language learning strategy trainings in their lessons to make students aware of the benefits of using these in learning the English language.

Keywords: Language Learning Strategy, English language, memory, metacognitive, affective, social, compensation, cognitive.

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## Introduction

Learning a certain language especially for practical application entails a very crucial process. Learners, in the same way, use varying strategies on how to learn a language especially if it is a foreign or second language. Submaraniam and Palanisamy (2014) posited that language learning strategies are among the main factors that help determine how well a student learns a foreign or second language. In public schools in the Philippines, English is one of the content area subjects as well as the medium of instruction in many subject areas except Filipino, Edukasyong Pagpapahalag (Values Education) and Araling Panglipunan (Social Studies). English language teachers, therefore, employ varying strategies in teaching the language. This is to ease their teaching and to make learners comprehend easier and better. Also, these teaching strategies would make the transfer of information faster with the English language as the medium of instruction.

Language learning strategies play a vital role on the part of the students in order to make their learning quicker and easier. O'Malley and Chamot (1990) as cited by Lessard-Clouston (1997) also suggested that effective second or foreign language learners are aware of the language learning strategies they use and why they use them. The problem is that, most learners today are not aware of their language learning strategies or preferences in learning foreign language.

This study on the language learning strategies of the grade VIII students belonging to the four programs in Tabuk City National High School would benefit the pedagogical society of the entire City Schools Division of Tabuk especially the language teachers in developing remedial instruction that would aid in the students' acquisition of effective strategies in learning the language. It would also give them significant information for them to re-visit, analyze, update and upgrade their teaching methods and strategies. Knowing the students' strengths and weaknesses, the teachers would give the much needed input about the students to be able to elevate the students' performance. Moreover, the result of this study would help the students. Being the direct recipient in the educative process, this would make them conscious of their English Language Learning Strategies, and would challenge them to make improvement and endeavour more to master the subject for their benefits. Finally, future researchers of related study would have a reference and spring board for discussion.

This study determined the English Language Learning Strategies of the grade VIII students in Tabuk City National High in the School Year 2015-2016. The researcher was guided by the null hypothesis, there is no significant difference on the manifestations of the language learning strategies of the grade VIII students according to the moderator variables. The descriptive method was used in the study. The respondents of the study were the 200 grade VIII students in Tabuk City National High School for the school year 2015-2016. The primary instrument used in the study was the Strategy Inventory for Language Learning (SILL) (50-item version 7.0 ESL/EFL) of R. L. Oxford. The strategy items on the questionnaire were required to be answered based on a Likert scale responses using a five-interval scale of "never or almost never true of me", "usually not true of me", "somewhat true of me", "usually true of me", and "always or almost always true of me". Part I consisted of the student's profile and Part II consisted of the 50-item language learning strategies in

six categories namely memory, cognitive, compensation, metacognitive, affective and social.

## Conclusions

### Extent of Dominant Manifestation of Language Learning Strategies of Grade VIII Students

Table 1a. Extent of Dominant Manifestation of Language Learning Strategies of Grade VIII Student along Memory

MEMORY	HM (5)	HM (4)	MM (3)	LM (2)	LM (1)	Weigh ted mean	D
1. I think of relationships between what I already know and new things I learn in English.	62 (310)	30 (120)	59 (177)	23 (46)	26 (26)	3.40	MM
2. I use new English words in a sentence.	31 (155)	41 (264)	45 (135)	47 (94)	36 (36)	2.92	MM
3. I connect the sound of the new English word and an image or picture to remember the word.	19 (95)	38 (152)	30 (90)	69 (138)	44 (44)	2.60	MM
4. I remember a new English word by using it in a situation.	20 (100)	23 (92)	49 (147)	67 (134)	41 (41)	2.57	MM
5. I use rhymes to remember new English words.	17 (85)	28 (112)	42 (126)	51 (102)	62 (62)	2.44	LM
6. I remember new English words by using flash cards.	11 (55)	14 (56)	37 (148)	53 (106)	85 (85)	2.25	LM
7. I review English lessons more often.	6 (30)	27 (108)	72 (216)	49 (98)	46 (46)	2.49	LM
8. I remember new English words by remembering where I saw them (in a book, on the board).	61 (305)	58 (232)	51 (204)	19 (38)	11 (11)	3.95	HM
9. I physically act out new English words.	45 (225)	53 (212)	39 (117)	36 (72)	27 (27)	3.27	MM
Average Weighted Mean						2.87	MM

As shown in Table 1a, grade VIII students used strategies that "aid in entering information into long-term memory and retrieving information when needed for communication" but not regularly and completely. Based on observation, grade VIII students did not focus on one type of language learning strategies in their effort to manage their learning in all the subjects for the whole day. This is also in conflict with the perhaps too common assumption that Asian students have strong preferences for memory strategies rather than communicative strategies such as working with others, asking for help, and cooperating with peers.

It could be recalled that during the last part of the 20th century, the “instructional delivery systems typically employed in many Asian countries (including the Philippines) are frequently didactic and emphasize rote memorization” (Hong-Nam and Leavell, 2006). However, while such “instructional delivery systems” are still being employed these days, approaches that bring about higher order thinking skills like synthesis, analysis, application and evaluation were also being employed that strikes balance in the teaching- learning process. Note however, that memory strategies in the SILL which was used in this current study is not just on rote memorization but were things like acting out new vocabulary, using rhymes, and creating a mental or spatial image.

Table 1a.1. Extent of Dominant Manifestation of Language Learning Strategies along Memory according to Gender

MEMORY	M (WM)	D	F (WM)	D
1. I think of relationships between what I already know and new things I learn in English.	3.54	HM	3.26	MM
2. I use new English words in a sentence.	2.80	MM	3.03	MM
3. I connect the sound of the new English word and an image or picture to remember the word.	2.61	MM	2.58	MM
4. I remember a new English word by using it in a situation.	2.64	MM	2.50	MM
5. I use rhymes to remember new English words.	2.53	LM	2.35	LM
6. I remember new English words by using flash cards.	2.24	LM	2.26	LM
7. I review English lessons more often.	2.69	MM	2.30	LM
8. I remember new English words by remembering where I saw them (in a book, on the board).	4.04	HM	3.86	HM
9. I physically act out new English words.	3.56	HM	2.99	MM
Average Weighted Mean	2.96	MM	2.79	MM

tcrit@.05: 2.12 tCom: 0.207 Accept the null hypothesis

The table shows that regardless of gender, the students moderately manifested memory language learning strategies. This could be because both male and female students had similar experiences under the same learning context. During discussion and activities in the English class, the teacher focused more attention to the male students since they were more difficult to control, they didn't do their assignment more often than the female students and they didn't participate in the discussion if they were not asked to answer questions. This left the females on their own initiative and innate motivation to participate in the activities and discussions and generally, they proved they could learn as much as the males did.

The computed value of 0.217 is lower than the critical value of 2.12 with 16 degrees of freedom at .05 level of significance. The null hypothesis was therefore accepted; hence, there was no significant difference in the extent of dominant manifestation of language learning strategies along memory according to the variable of gender.

Table 1a.3. Extent of Dominant Manifestation of Language Learning Strategies along Memory according to School Program

<b>MEMORY</b>	<b>REG</b>	<b>D</b>	<b>SPA</b>	<b>D</b>	<b>SPS</b>	<b>D</b>
1. I think of relationships between what I already know and new things I learn in English.	3.98	HM	2.76	MM	3.40	MM
2. I use new English words in a sentence.	2.75	MM	2.72	MM	3.56	HM
3. I connect the sound of the new English word and an image or picture to remember the word.	2.70	MM	2.28	LM	2.91	MM
4. I remember a new English word by using it in a situation.	2.84	MM	2.20	LM	2.69	MM
5. I use rhymes to remember new English words.	2.57	MM	1.99	LM	2.93	MM
6. I remember new English words by using flash cards.	2.27	LM	1.93	LM	2.73	MM
7. I review English lessons more often.	2.60	MM	2.16	LM	2.82	MM
8. I remember new English words by remembering where I saw them (in a book, on the board).	4.10	HM	3.68	HM	4.13	HM
9. I physically act out new English words.	3.62	HM	2.78	MM	3.42	MM
<b>Average Weighted Mean</b>	<b>3.05</b>	<b>MM</b>	<b>2.50</b>	<b>LM</b>	<b>3.18</b>	<b>MM</b>

F@0.05= 3.40

F ratio: 3.54

**Reject the null hypothesis**

Table 1a.3 shows that students belonging to all the three programs moderately manifested language learning strategies along memory. This finding implies that regardless of school program, the students manifested language learning strategies in the medium range of frequency. However, the figures imply that the school program where the students belong had an influence on how these students use memory strategies to learn the English as their second language. Students who belong to the special programs were expected to academically perform better than those in the lower sections of the regular classes since they have had undergone qualifying measures before they were enrolled in the said programs. These however did not yield influence on the way they use memory strategies as shown by their similar moderate manifestation. Students in the SPA classes did not manifest memory strategies as frequently as those in the two programs. This means that they employed other strategies in learning the English language as influenced by their inclination to performing arts.

The computed F-ratio of 3.54 is higher than the critical value of 3.40 with 26 degrees of freedom at .05 level of significance. The null hypothesis was therefore rejected; hence, there was a significant difference in the extent of dominant manifestation of language learning strategies along memory according to the moderator variable of program.

Table 2a. Extent of Dominant Manifestation of Language Learning Strategies of Grade VIII Student along Cognitive

COGNITIVE	HM (5)	HM (4)	MM (3)	LM (2)	LM (1)	Weighted mean	D
10. I say or write new English words most often.	27 <b>(135)</b>	46 <b>(184)</b>	56 <b>(168)</b>	46 <b>(92)</b>	25 <b>(25)</b>	3.02	MM
11. I try to speak like an English native speaker.	14 <b>(70)</b>	29 <b>(116)</b>	67 <b>(201)</b>	41 <b>(82)</b>	49 <b>(49)</b>	2.59	MM
12. I practice the sounds of English words.	56 <b>(280)</b>	38 <b>(152)</b>	47 <b>(141)</b>	29 <b>(58)</b>	30 <b>(30)</b>	3.31	MM
13. I use English words I knew in different ways.	24 <b>(120)</b>	41 <b>(164)</b>	56 <b>(168)</b>	50 <b>(100)</b>	29 <b>(29)</b>	2.91	MM
14. I speak to my friends in English.	24 <b>(120)</b>	32 <b>(128)</b>	49 <b>(147)</b>	64 <b>(128)</b>	31 <b>(31)</b>	2.77	MM
15. I watch English TV shows and movies often.	58 <b>(290)</b>	49 <b>(196)</b>	46 <b>(184)</b>	34 <b>(68)</b>	13 <b>(13)</b>	3.76	HM
16. I read English pocket books.	20 <b>(100)</b>	38 <b>(152)</b>	51 <b>(153)</b>	49 <b>(98)</b>	42 <b>(42)</b>	2.73	MM
17. I use English when writing or texting.	29 <b>(145)</b>	27 <b>(108)</b>	73 <b>(219)</b>	44 <b>(88)</b>	27 <b>(27)</b>	2.94	MM
18. I first skim an English passage before reading it.	21 <b>(105)</b>	43 <b>(172)</b>	56 <b>(168)</b>	47 <b>(94)</b>	33 <b>(33)</b>	2.86	MM
19. I associate new English words with my own language.	20 <b>(145)</b>	30 <b>(120)</b>	50 <b>(150)</b>	55 <b>(110)</b>	45 <b>(45)</b>	2.85	MM
20. I try to find patterns in English.	20 <b>(100)</b>	26 <b>(104)</b>	52 <b>(156)</b>	56 <b>(112)</b>	46 <b>(46)</b>	2.59	LM
21. I try to figure out the meaning of new English word by dividing it to parts that I understand.	17 <b>(85)</b>	39 <b>(156)</b>	65 <b>(195)</b>	55 <b>(110)</b>	24 <b>(24)</b>	2.85	MM
22. I do not translate word-per-word.	12 <b>(60)</b>	27 <b>(108)</b>	46 <b>(138)</b>	56 <b>(112)</b>	59 <b>(59)</b>	2.39	LM
23. I make summaries of what I heard and read in English.	41 <b>(205)</b>	33 <b>(132)</b>	42 <b>(126)</b>	45 <b>(90)</b>	39 <b>(39)</b>	2.96	MM
Average Weighted Mean						2.89	MM

The table shows that students moderately manifested the language learning strategies along cognitive which implies that the grade VIII students moderately manifested the cognitive strategies in the Strategy Inventory of Language Learning (SILL). This further implies that grade VIII students used strategies that "are used for forming and revising internal mental models and receiving and producing messages in the target language" but not regularly and completely.

The two regular classes of respondents did not compete for the honor roll while the Special Program in the Arts (SPA) and Special Program in Sports (SPS) classes had their respective honor list. It was mentioned in chapter 1 that SPA and SPS classes

had qualifying measures, the academic grades required from them were not as high as that expected from those who were in Special Science Program classes and the competition was not very stiff. This learning context could explain the neutral use of the grade VIII students of the language learning strategies along cognitive. So, while these students perform low to average in academics, they did not also regularly use cognitive strategies to learn English as their second language.

Oxford (2000) contradicts the finding. She found out that cognitive strategies were used more consistently compared to metacognitive strategies. It also did not agree with what he said that cognitive strategies were the most popular ones.

Table 2a.1. Extent of Dominant Manifestation of Language Learning Strategies along Cognitive according to Gender

COGNITIVE	M (WM)	D		F (WM)	D	
		ST	MM		ST	MM
10. I say or write new English words most often.	3.08	ST	MM	2.96	ST	MM
11. I try to speak like an English native speaker.	2.56	UnT	LM	2.62	ST	MM
12. I practice the sounds of English words.	3.49	UT	HM	3.13	ST	MM
13. I use English words I knew in different ways.	2.93	ST	MM	2.88	ST	MM
14. I speak to my friends in English.	2.94	ST	MM	2.61	ST	MM
15. I watch English TV shows and movies often.	3.87	UT	HM	3.55	UT	HM
16. I read English pocket books.	2.72	ST	MM	2.73	ST	MM
17. I use English when writing or texting.	2.91	ST	MM	2.96	ST	MM
18. I first skim an English passage before reading it.	2.87	ST	MM	2.85	ST	MM
19. I associate new English words with my own language.	2.78	ST	MM	2.91	ST	MM
20. I try to find patterns in English.	2.78	ST	MM	2.45	UnT	LM
21. I try to figure out the meaning of new English word by dividing it to parts that I understand.	3.05	ST	MM	2.66	ST	MM
22. I do not translate word-per-word.	2.44	UnT	LM	2.33	UnT	LM
23. I make summaries of what I heard and read in English.	3.06	ST	MM	2.86	ST	MM
Average Weighted Mean	2.96	ST	MM	2.82	ST	MM

tcrit@.05: 2.056 tcom: 0.279 Accept the null hypothesis

The table shows that grade VIII male and female students perceived language learning strategies along cognitive as somewhat true to them. This implies that regardless of gender, grade VIII students moderately perceived cognitive language learning strategies. This means that both male and female learners utilize analysis, reasoning, sending and receiving information with about the same frequency. The male students, however, obtained an area mean of 2.92 which was higher than the

females who obtained 2.82. This further implies that grade VIII male students manifested more cognitive language learning strategies than the females did. Based on observation, grade VIII male learners did better in critical thinking though had some problems on cooperation during whole class discussion or small group activities.

Though many studies found that females generally used more strategies as a whole than males do, this wasn't true to the finding of this study along this category of the Strategy Inventory Language Learning. Chang, (2007) contradicts the finding. He found that the females significantly used cognitive language strategies more than the males did.

The computed value of 0.279 is lower than the critical value of 2.056 with 26 degrees of freedom at .05 level of significance. The null hypothesis was therefore accepted; hence, there was no significant difference in the extent of dominant manifestation of language learning strategies along cognitive according to the variable of gender.

Table 2a.3. Extent of Dominant Manifestation of Language Learning Strategies along Cognitive according to School Program

<b>COGNITIVE</b>	<b>REG</b>	<b>D</b>	<b>SPA</b>	<b>D</b>	<b>SPS</b>	<b>D</b>
10. I say or write new English words most often.	3.09	MM	2.62	MM	3.56	HM
11. I try to speak like an English native speaker.	2.75	MM	2.47	LM	2.49	LM
12. I practice the sounds of English words.	3.38	MM	3.04	MM	3.60	HM
13. I use English words I knew in different ways.	2.74	MM	2.76	MM	3.44	MM
14. I speak to my friends in English.	2.79	MM	2.28	LM	3.53	HM
15. I watch English TV shows and movies often.	3.78	HM	3.65	HM	3.89	HM
16. I read English pocket books.	2.74	MM	2.42	LM	3.20	MM
17. I use English when writing or texting.	2.80	MM	2.69	MM	3.58	HM
18. I first skim an English passage before reading it.	2.79	MM	2.76	MM	3.16	MM
19. I associate new English words with my own language.	2.33	LM	2.53	LM	4.31	HM
20. I try to find patterns in English.	2.90	MM	2.08	LM	2.87	MM
21. I try to figure out the meaning of new English word by dividing it to parts that I understand.	3.01	MM	2.58	LM	3.00	MM
22. I do not translate word-per-word.	2.22	LM	2.47	LM	2.53	MM
23. I make summaries of what I heard and read in English.	3.07	MM	2.64	MM	3.29	MM
<b>Area Mean</b>	<b>2.89</b>	<b>MM</b>	<b>2.64</b>	<b>MM</b>	<b>3.32</b>	<b>MM</b>

Fcrit@0.05= 3.23      F ratio= 9.17      **Reject the null hypothesis**

The table shows that students in all the three school programs moderately manifested language learning strategies along cognitive. However, those in the SPS class obtained the highest area mean of 3.32. This implies that students in the SPS class employed these strategies more than those in the regular and SPA classes. This further implies that though the difference was not significant, those in the SPS performed better when using cognitive skills and strategies in learning the English language. This could be attributed to the fact that male students in the SPS class were twice the number of the female members of the class. It was also noted that under the variable gender, the males obtained higher area mean under this same category of language learning strategies. This could mean that grade VIII male learners were more intelligent when it comes to learning the English language than their female counterparts.

The computed F-ratio of 9.17 is higher than the critical value of 3.23 with 41 degrees of freedom at .05 level of significance. The null hypothesis was therefore rejected; hence, there was a significant difference in the extent of dominant manifestation of language learning strategies along cognitive according to the moderator variable of program.

Table 3a. Extent of Dominant Manifestation of Language Learning Strategies of Grade VIII Student along Compensation

COMPENSATION	HM (5)	HM (4)	MM (3)	LM (2)	LM (1)	Weigh- ted mean	D
24. I make guesses to understand new English words.	22 <b>(110)</b>	23 <b>(92)</b>	37 <b>(111)</b>	66 <b>(132)</b>	52 <b>(52)</b>	2.49	LM
25. I use gestures when I think of an English word during conversation.	16 <b>(80)</b>	20 <b>(80)</b>	50 <b>(150)</b>	64 <b>(128)</b>	50 <b>(50)</b>	2.44	LM
26. I make up new words if I do not know the right ones in English.	11 <b>(55)</b>	33 <b>(132)</b>	65 <b>(195)</b>	50 <b>(100)</b>	41 <b>(41)</b>	2.62	M M
27. I read English without looking to every new word.	19 <b>(95)</b>	23 <b>(92)</b>	39 <b>(117)</b>	65 <b>(130)</b>	54 <b>(54)</b>	2.44	LM
28. I try to guess other person's what to say next in English.	17 <b>(85)</b>	32 <b>(128)</b>	60 <b>(180)</b>	58 <b>(116)</b>	33 <b>(33)</b>	2.71	M M
29. I use a word or phrase that means the same thing.	17 <b>(85)</b>	29 <b>(116)</b>	69 <b>(276)</b>	45 <b>(90)</b>	40 <b>(40)</b>	3.04	M M
Average Weighted Mean						2.62	M M

The table shows that the students moderately manifested the language learning strategies along compensation which implies that grade VIII learners applied strategies "to overcome any gaps in their knowledge of the language" but not as much as they should or not least as they do. This further implies that the learners used varied strategies and not just on one category. Taking Multiple Intelligences into

consideration, these students used language learning strategies based on their inclinations, interest and nature.

On the other side, this could also mean that they were not so much bothered about their language acquisition. It was again a usual observation that these students didn't take learning the English language seriously. As teenage learners, they didn't see yet the importance of becoming good in the language so there was no much need of coping up with what they didn't know. They only dealt with the obstacles for them not to fail or to have a low grade. Moreover, it could also be that frequent hearing and using English in many of their subject areas made their strategy use so automatic that they no longer consciously manifested these strategies.

Table 3a.1. Extent of Dominant Manifestation of Language Learning Strategies along Compensation according to Gender

COMPENSATION	M (WM)	D	F (WM)	D
24. I make guesses to understand new English words.	2.44	LM	2.52	MM
25. I use gestures when I think of an English word during conversation.	2.53	MM	2.36	LM
26. I make up new words if I do not know the right ones in English.	2.71	MM	2.52	MM
27. I read English without looking to every new word.	2.59	MM	2.30	LM
28. I try to guess other person's what to say next in English.	2.64	MM	2.78	MM
29. I use a word or phrase that means the same thing.	2.92	MM	3.15	MM
<b>Average Weighted Mean</b>	<b>2.64</b>	<b>MM</b>	<b>2.61</b>	<b>MM</b>

$t_{crit@.05}=2.228$   $t_{com.}=0.130$

**Accept the null hypothesis**

As shown on the table, both male and female grade VIII students moderately manifested language learning strategies along compensation. It further shows that regardless of gender, the students manifested language learning strategies along compensation on the medium range of frequency. However, male grade VIII students obtained an average weighted mean of 2.64 which is higher than the 2.61 of the female students. This means that the males used compensation language learning strategies slightly more than the female students did. The slight difference could be attributed to females' being more cautious than the males in doing things especially in guessing. Based on observation, during activities in class when the students didn't have a clear understanding of what they were to do, the boys just do what they know while the girls spend more time pointing at each other to brave asking the teacher of what to exactly do. Similarly, when there were inconsistencies between the instructions and the answer sheets, the boys just guess the best remedy without asking the teacher while the girls needed to ask the teacher to make sure they were doing it the right way.

The computed value of 0.130 is lower than the critical value of 2.228 with 10 degrees of freedom at .05 level of significance. The null hypothesis was therefore accepted; hence, there was no significant difference in the extent of dominant manifestation of language learning strategies along compensation according to the variable of gender.

Table 3a.3. Extent of Dominant Manifestation of Language Learning Strategies along Compensation according to School Program

COMPENSATION	REG	D	SPA	D	SPS	D
24. I make guesses to understand new English words.	2.05	LM	2.45	LM	3.33	MM
25. I use gestures when I think of an English word during conversation.	2.43	LM	2.23	LM	2.80	MM
26. I make up new words if I do not know the right ones in English.	2.79	MM	2.15	LM	3.07	MM
27. I read English without looking to every new word.	2.62	MM	2.11	LM	2.67	MM
28. I try to guess other person's what to say next in English.	2.70	MM	2.55	LM	2.98	MM
29. I use a word or phrase that means the same thing.	2.77	MM	3.07	MM	3.47	HM
<b>Area Mean</b>	<b>2.56</b>	<b>MM</b>	<b>2.43</b>	<b>LM</b>	<b>3.05</b>	<b>MM</b>

$F_{crit@0.05} = 3.68$        $F \text{ ratio} = 6.50$       **Reject the null hypothesis**

Results showed on the table imply that students in the SPS class could cope regular and SPA classes. Considering their inclinations as with difficulties in learning English better than those in the defined by their specializations, students in the regular and SPA classes used varied strategies because their interests were also varied. While those in the regular classes did not have their own specializations, they were heterogeneous since they were sectioned at random. This could also imply that those in the SPS classes had a higher academic self-concept and perceived a more manifestation of compensation strategies than those in the other two programs.

The computed F-ratio 6.50 is higher than the critical value of 3.68 with 17 degrees of freedom at .05 level of significance. The null hypothesis was therefore rejected; hence, there was a significant difference in the extent of dominant manifestation of language learning strategies along compensation according to the moderator variable of program.

Table 4a. Extent of Dominant Manifestation of Language Learning Strategies of Grade VIII Student along Metacognitive

METACOGNITIVE	HM (5)	HM (4)	MM (3)	LM (2)	LM (1)	Weigh- ted mean	D
30. I try to find ways to use my English.	26 <b>(130)</b>	33 <b>(132)</b>	59 <b>(177)</b>	44 <b>(88)</b>	38 <b>(38)</b>	2.83	M M
31. I notice my mistakes in English but use it to improve my English.	28 <b>(140)</b>	48 <b>(192)</b>	56 <b>(168)</b>	39 <b>(78)</b>	29 <b>(29)</b>	3.04	M M
32. I try to find out how to learn English better.	43 <b>(215)</b>	53 <b>(212)</b>	55 <b>(165)</b>	28 <b>(56)</b>	21 <b>(21)</b>	3.35	M M
33. I pay attention when someone is speaking English.	51 <b>(255)</b>	41 <b>(164)</b>	51 <b>(153)</b>	33 <b>(66)</b>	24 <b>(24)</b>	3.31	M M

34. I plan my schedule for me to have time to study English.	20 (100)	29 (116)	50 (150)	45 (90)	56 (56)	2.56	M M
35. I look for people whom I can talk to in English.	17 (85)	18 (72)	49 (196)	53 (106)	63 (63)	2.61	M M
36. I grab opportunities to read English passages like journals and novels.	20 (100)	30 (120)	67 (67)	61 (61)	22 (22)	2.83	M M
37. I have goals for improving my English skills.	30 (150)	35 (140)	71 (213)	42 (84)	22 (22)	3.05	M M
38. I think of my progress in learning English.	30 (150)	43 (172)	58 (174)	41 (82)	28 (28)	3.03	M M
<b>Average Weighted Mean</b>						<b>2.95</b>	<b>M M</b>

The table shows that the students moderately manifested the language learning strategies along metacognitive. This implies that grade VIII learners applied strategies of "exercising 'executive control' through planning, arranging, focusing, and evaluating their own learning" about half the time they should exhaust in doing so for them to learn English better.

Based on the researcher's everyday observation, the respondents manifested more childish than mature behavior unlike attitudes observed from grades IX and X students. This explains their not being conscious of how they learned and how they managed their learning. The respondents also belonged to different school programs which means they are different kinds of learners based from their interests; hence, their varied use of language learning strategies.

Table 4a.1. Extent of Dominant Manifestation of Language Learning Strategies along Metacognitive according to Gender

<b>METACOGNITIVE</b>	<b>M (WM)</b>	<b>D</b>	<b>F (WM)</b>	<b>D</b>
30. I try to find ways to use my English.	2.60	MM	3.04	MM
31. I notice my mistakes in English but use it to improve my English.	2.92	MM	3.13	MM
32. I try to find out how to learn English better.	3.36	MM	3.33	MM
33. I pay attention when someone is speaking English.	3.10	MM	3.50	HM
34. I plan my schedule for me to have time to study English.	2.58	MM	2.54	MM
35. I look for people whom I can talk to in English.	2.62	MM	2.60	MM
36. I grab opportunities to read English passages like journals and novels.	2.80	MM	2.84	MM
37. I have goals for improving my English skills.	2.93	MM	3.16	MM
38. I think of my progress in learning English.	3.03	MM	3.03	MM
<b>Average Weighted Mean</b>	<b>2.88</b>	<b>MM</b>	<b>3.02</b>	<b>MM</b>

tcrit@.05=2.12

tcom=0.381

Accept the null hypothesis

The table shows that male and female grade VIII students moderately manifested language learning strategies along metacognitive. This means that regardless of gender, grade VIII students moderately manifested language learning strategies of controlling and managing their own learning. However, as shown by the area means of 2.88 and 3.02, the females obtained higher mean than the males did. This implies that grade VIII female students employed more metacognitive language learning strategies than did the males. This further implies that females were conscious, thought about and evaluated how they learned more than the males did. Chang, Liu and Lee (2007) and Hong-Nam & Leavell (2006) confirm this finding. They found out that females used metacognitive strategies slightly more frequently than did the males.

The computed value of 0.381 is lower than the critical value of 2.12 with 16 degrees of freedom at .05 level of significance. The null hypothesis was therefore accepted; hence, there was no significant difference in the extent of dominant manifestation of language learning strategies according to the moderator variable of gender.

Table 4a.3. Extent of Dominant Manifestation of Language Learning Strategies along Metacognitive according to School Program

<b>METACOGNITIVE</b>	<b>REG</b>	<b>D</b>	<b>SPA</b>	<b>D</b>	<b>SPS</b>	<b>D</b>
30. I try to find ways to use my English.	2.59	MM	2.73	MM	3.40	MM
31. I notice my mistakes in English but use it to improve my English.	2.88	MM	3.01	MM	3.36	MM
32. I try to find out how to learn English better.	3.33	MM	3.22	MM	3.58	HM
33. I pay attention when someone is speaking English.	3.19	MM	3.34	MM	3.49	MM
34. I plan my schedule for me to have time to study English.	2.65	MM	2.39	LM	2.67	MM
35. I look for people whom I can talk to in English.	2.53	MM	2.43	LM	3.04	MM
36. I grab opportunities to read English passages like journals and novels.	2.89	MM	2.68	MM	2.96	MM
37. I have goals for improving my English skills.	3.12	MM	3.01	MM	2.96	MM
38. I think of my progress in learning English.	3.31	MM	2.65	MM	3.16	MM
Average Weighted Mean	2.94	MM	2.83	MM	3.18	MM

$F_{crit@0.05} = 3.40$      $F \text{ ratio} = 3.02$     Accept the null hypothesis

The table shows students in all the three programs moderately manifested language learning strategies along metacognitive. The findings imply that regardless of school program the students belong as classified according to their extracurricular trainings and interests, they all employed metacognitive language learning strategies in the same medium range of frequency. These also imply that those in the SPS class who were sports oriented reflected and evaluated their language learning more than those in the other two programs. Also, these mean that grade VIII students, regardless of program, used varied strategies that fit their varied interests and trainings. It can be recalled that those in class SPS were supposed to perform academically good because

they were screened when they enrolled in grade VII as well as before they were retained in the program for grade VIII.

The computed F-ratio 3.02 is lower than the critical value of 3.40 with 26 degrees of freedom at .05 level of significance. The null hypothesis was therefore accepted; hence, there was no significant difference in the extent of dominant manifestation of language learning strategies along metacognitive according to the moderator variable of program.

Table 5a. Extent of Dominant Manifestation of Language Learning Strategies of Grade VIII Student along Affective

AFFECTIVE	HM (5)	HM (4)	MM (3)	LM (2)	LM (1)	Weigh- ted mean	D
39. I try to relax whenever I feel afraid of using English.	25 <b>(125)</b>	29 <b>(116)</b>	66 <b>(198)</b>	34 <b>(68)</b>	46 <b>(46)</b>	2.77	M M
40. I encourage myself to speak English even when I am afraid of making mistake.	29 <b>(145)</b>	43 <b>(172)</b>	63 <b>(189)</b>	30 <b>(60)</b>	35 <b>(35)</b>	3.01	M M
41. When I do well in English, I give myself a treat.	24 <b>(120)</b>	36 <b>(144)</b>	43 <b>(129)</b>	38 <b>(76)</b>	59 <b>(59)</b>	2.64	M M
42. I notice when I am tensed or nervous when using English.	23 <b>(115)</b>	29 <b>(116)</b>	44 <b>(132)</b>	57 <b>(114)</b>	47 <b>(47)</b>	2.62	M M
43. I write down my feelings in a language learning diary.	12 <b>(60)</b>	28 <b>(112)</b>	44 <b>(132)</b>	48 <b>(96)</b>	<b>68</b> <b>(68)</b>	2.34	LM
44. I talk to someone about my experiences in learning English.	24 <b>(120)</b>	20 <b>(80)</b>	61 <b>(244)</b>	52 <b>(104)</b>	43 <b>(43)</b>	2.96	M M
Average Weighted Mean						2.72	M M

The table shows that grade VIII students moderately manifested language learning strategies along affective which implies that lowering anxiety, encouraging oneself and taking emotional temperature were moderately manifested by the students. This means that in learning the English language, the grade VIII students still faced some difficulties applying affective strategies but not totally rare to them. Like the other strategies, the moderate use of affective strategies by the grade VIII students was attributable to the sociological context and their profile as well as their multiple intelligences.

Table 5a.1. Extent of Dominant Manifestation of Language Learning Strategies along Affective according to Gender

<b>AFFECTIVE</b>	<b>M (WM)</b>	<b>D</b>	<b>F (WM)</b>	<b>D</b>
39. I try to relax whenever I feel afraid of using English.	2.69	MM	2.83	MM
40. I encourage myself to speak English even when I am afraid of making mistake.	2.85	MM	3.16	MM
41. When I do well in English, I give myself a treat.	2.78	MM	2.50	MM
42. I notice when I am tensed or nervous when using English.	2.61	MM	2.63	MM
43. I write down my feelings in a language learning diary.	2.39	LM	2.29	LM
44. I talk to someone about my experiences in learning English.	2.97	MM	2.94	MM
Average Weighted Mean	2.71	MM	2.73	MM

$t_{crit@.05}=2.228$        $t_{Com}=0.041$       Accept the null hypothesis

The table shows that both male and female moderately manifested language learning strategies along affective. This further means that regardless of gender, grade VIII students employed language learning strategies about half the time. However, the average weighted means of 2.71 for males and 2.73 for females showed slightly higher mean by the female learners. Aside from the fact that both gender employed varied and not only one category of strategy, this also implies that the most common notion that females performed better on affective strategies was true to the grade VIII students though not significant in this study.

The computed value of 0.041 is lower than the critical value of 2.228 with 10 degrees of freedom at .05 level of significance. The null hypothesis was therefore accepted; hence, there was no significant difference on the extent of dominant manifestation of language learning strategies along affective according to the variable of gender.

Table 5a.3. Extent of Dominant Manifestation of Language Learning Strategies along Affective according to School Program

<b>AFFECTIVE</b>	<b>REG</b>	<b>D</b>	<b>SPA</b>	<b>D</b>	<b>SPS</b>	<b>D</b>
39. I try to relax whenever I feel afraid of using English.	2.56	MM	2.86	MM	2.98	MM
40. I encourage myself to speak English even when I am afraid of making mistake.	2.93	MM	3.01	MM	3.13	MM
41. When I do well in English, I give myself a treat.	2.72	MM	2.41	LM	2.89	MM
42. I notice when I am tensed or nervous when using English.	2.56	LM	2.38	LM	3.13	MM
43. I write down my feelings in a language learning diary.	2.47	LM	1.84	LM	2.93	MM
44. I talk to someone about my experiences in learning English.	3.00	MM	2.84	MM	3.07	MM
Average Weighted Mean	2.70	MM	2.56	MM	3.02	MM

$F_{crit@0.05}= 3.49$        $F \text{ ratio}= 4.11$       Reject the null hypothesis

The table shows that language learning strategies along affective were moderately manifested to all the three programs. This implies that regardless of program, grade VIII students moderately manifested effort on managing their emotions in relation to learning the English language. The findings concretized the common and usual observation that many students shied away from reciting when they were expected or asked to speak in English most especially in the SPA classes where students were inclined to performing physical arts rather than communication arts. Another observation was that most students in the regular and SPA classes seem to worry about making mistake, being laughed at by their classmates or incorrect pronunciation or grammar. Those who were known to be good in class fear criticism since they were trying to maintain a good impression from their classmates and teachers.

The computed F-ratio 4.11 is higher than the critical value of 3.49 with 17 degrees of freedom at .05 level of significance. The null hypothesis was therefore rejected; hence, there was a significant difference in the extent of dominant manifestation of language learning strategies along affective according to the moderator variable of program.

Table 6a. Extent of Dominant Manifestation of Language Learning Strategies of Grade VIII Students along Social

SOCIAL	HM (5)	HM (4)	MM (3)	LM (2)	LM (1)	Weigh- ted mean	D
45. If I don't understand a word in English, I ask the speaker to slow down or say the word again.	65 <b>(325)</b>	37 <b>(148)</b>	47 <b>(141)</b>	27 <b>(54)</b>	24 <b>(24)</b>	3.46	M M
46. I ask others to correct me when I talk in English.	38 <b>(190)</b>	43 <b>(172)</b>	32 <b>(96)</b>	49 <b>(98)</b>	38 <b>(38)</b>	2.97	M M
47. I practice English with other students.	35 <b>(175)</b>	36 <b>(144)</b>	48 <b>(144)</b>	43 <b>(86)</b>	38 <b>(38)</b>	2.94	M M
48. I ask for help from my English teacher.	29 <b>(145)</b>	27 <b>(108)</b>	40 <b>(120)</b>	62 <b>(124)</b>	42 <b>(42)</b>	2.70	M M
49. I ask questions using English.	22 <b>(110)</b>	39 <b>(156)</b>	72 <b>(216)</b>	44 <b>(88)</b>	23 <b>(23)</b>	2.97	M M
50. I try to learn about the culture of the native English speakers.	18 <b>(90)</b>	33 <b>(132)</b>	62 <b>(248)</b>	51 <b>(102)</b>	36 <b>(36)</b>	3.04	M M
Average Weighted Mean						3.01	M M

An average weighted mean of 3.01, the highest among the six categories of the Strategy Inventory of Language Learning, shows that grade VIII students moderately manifested language learning strategies. This implies that just like the rest of the strategies, grade VIII students employ social strategies in learning the English language but with some reluctance and irregularity.

Based on observation, the finding had perhaps something to do with the emphasis of collaborative and cooperative work in class activities through group work. This

encouraged students to work, discuss and solve problems among themselves with the teacher serving only as facilitator. This also gave the chance for the students to ask questions and clarifications when they needed. However, there were other strategies they could apply to suit their needs and preferences; thus, the average use.

Table 6a.1. Extent of Dominant Manifestation of Language Learning Strategies along Social according to Gender

SOCIAL	M (WM)	D	F (WM)	D
45. If I don't understand a word in English, I ask the speaker to slow down or say the word again.	3.31	MM	3.60	HM
46. I ask others to correct me when I talk in English.	2.72	MM	3.20	MM
47. I practice English with other students.	3.31	MM	3.60	HM
48. I ask for help from my English teacher.	5.00	HM	5.00	HM
49. I ask questions using English.	2.98	MM	2.89	MM
50. I try to learn about the culture of the native English speakers.	2.73	MM	3.05	MM
Average Weighted Mean	3.34	MM	3.56	HM

$t_{crit@.05}=2.228$        $t_{com}=0.189$       Accept the null hypothesis

Findings shown on the table imply that female learners performed better in social-based activities that help improve their English language skills. This finding confirms the common and usual notion that females were more sociable than the males were and the usual observation that female students were more expressive than the males did. Based on observation, inside the class the females recited more, talked about and expressed their feelings more than the boys did.

The computed value of 0.189 is lower than the critical value of 2.228 with 10 degrees of freedom at .05 level of significance. The null hypothesis was therefore accepted ; hence, there was no significant difference on the extent of dominant manifestation of language learning strategies along social according to the variable of gender. This means that gender did not influence the manifestation of the language learning strategies. This could be attributable to the number of participants in both genders but were distributed according to their inclinations which affected the way they applied strategies in learning the English language.

Table 6a.3. Extent of Dominant Manifestation of Language Learning Strategies along Social according to School Program

SOCIAL	REG	D	SPA	D	SPS	D
45. If I don't understand a word in English, I ask the speaker to slow down or say the word again.	3.37	MM	3.62	HM	3.36	MM
46. I ask others to correct me when I talk in English.	2.89	MM	2.97	MM	3.11	MM
47. I practice English with other students.	2.94	MM	2.70	MM	3.31	MM
48. I ask for help from my English teacher.	2.52	MM	2.84	MM	2.78	MM
49. I ask questions using English.	3.04	MM	2.82	MM	3.07	MM
50. I try to learn about the culture of the	3.25	MM	2.74	MM	3.16	MM

native English speakers.						
Area Mean	3.00	MM	2.95	MM	3.13	MM

$F_{crit@0.05} = 3.68$      $F \text{ ratio} = 0.64$     Accept the null hypothesis

The table shows that students in the regular, SPA and SPS classes moderately manifested the language learning strategies along social. This means that regardless of school program the students belong, they employed language learning strategies in a relatively the same frequency. However, the class SPS obtained the highest area mean of 3.13 followed by SPA and the regular classes with 3.00 and 2.95 area means. This suggests that those in the SPS class interacted and expressed themselves more when learning the English language.

This is a little bit surprising since the male members of the class were twice the number of the females who were known to be more interactive and vocal. This is therefore more attributable to the school program which affected the number of male and female members in each program. Based on observation, the boys in SPS class talked more than the girls did. They could say what they wanted and they even spoke in English but they did it in a joking manner. In the case of those in the SPA classes where the number of the girls was thrice the number of the boys, the boys were hardly heard since they were dominated by the girls. For the regular classes, boys were more than the girls but they rarely talked and expressed what they thought and felt unless forced by the teacher. The girls spoke to their classmates and teachers more openly than did the boys.

The computed F-ratio 0.64 is lower than the critical value of 3.68 with 17 degrees of freedom at .05 level of significance. The null hypothesis was therefore accepted; hence, there was no significant difference in the extent of dominant manifestation of language learning strategies along metacognitive according to the moderator variable of program.

This study was conducted at the middle of the school year; hence, it was not used as a guide for the teacher to plan activities that helped the students enhance their English language learning. It was not also preceded with series of activities that would have made the perception of the students in learning the English language more reliable.

## **Acknowledgements**

The researcher would like to express her deep gratitude to the following who in one way or another helped in the accomplishment of this humble endeavor.

Foremost, to the great Provider, the source of life, wisdom and knowledge, for all the blessings, guidance, courage, strength and everything that contributed to her realization of this study.

to Dr. Lily- Ann A. Fernando, her professor and adviser in Thesis Writing, for her invaluable scholarly guidance and her motherly support to the researcher for this study.

to Mrs. Lea Garming, MPA for her vital statistical contributions to this study.  
to her friend, Bobby S. Licudine, for his scholarly suggestions and patience in researching for helpful information for this study.  
to her dear husband, Jackson B. Esteban, for all his support.

s.b.e.

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***Facilitating Tabuk City National High School  
Employees Gender and Development Seminar-Workshop  
Through Cooperative and Collaborative Learning Approaches***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

Gender and development (GAD) is one of the Millennium Development Goals of the United Nations. Hence, the Philippine schools ensure gender-sensitive learning environments. The study focus on cooperative and collaborative learning approaches as the strategy in facilitating employees' GAD Seminar- Workshop. It assesses participants' awareness level on GAD laws, mandates, and issues before and after using cooperative-collaborative learning approaches in a training and their differences measured. Participants' perceptions on the extent of effect of the approaches in attaining training objectives is considered and correlation along sex and subject department affiliation is tested. The study involves 51 of the actual 92 seminar participants. Mean, T-test, and ANOVA are used to interpret data gathered through pre and post seminar survey questionnaires. Findings reveal that employees were aware of GAD information "to moderate extent" with responses mean of 2.78 before the seminar was conducted; this increases to "great extent" of 4.01 mean after the GAD training. Participants also perceive that the strategy has a "very great extent" of effect in attaining the training goals of the in-service training as reflected by a TAM of 4.20 on the training aspects with no significant differences associated along department affiliation but with significant one along sex variable; women perceive very great extent while men perceive great extent of the strategy's effect. The study recommends the cooperative and collaborative learning approaches to be sustained and promoted to other institutions as training methodology. Finally, researches on adult male learning approaches be conducted to raise GAD awareness level.

Keywords: Gender and Development; Employees, Cooperative and Collaborative Learning Approaches

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## Introduction

Gender and Development got the attention of the world for decades now. As a matter of fact, the United Nations agreed to have better situations of women throughout the world. As a State Party to the United Nations Millennium Declaration in 2000 that gave birth to the Millennium Development Goals, the Philippines is committed to ensure that the country's development planning efforts focus on an MDG-responsive policy framework and legislation to eradicate poverty and achieve sustainable human development. Hence, the creation of gender laws and mandates or policies and advocacy campaign of these to all the masses and government bureaus is now a priority to member countries.

In August 2009, Philippines marked a milestone with the passage of RA 9710 or the Magna Carta of Women (MCW), which is a comprehensive women's human rights law. This seeks to eliminate discrimination against women by recognizing, protecting, fulfilling, and promoting the fundamental rights of Filipino women as expounded by the United Nations Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).

It is the Department of Education's mission to ensure that students learn in a child-friendly, gender-sensitive, safe and motivating environment conducive to learning. Hence, school personnel themselves must be gender sensitive. This of course entails employees to live and model a culture of gender awareness and sensitivity. This would be impossible without the employees' awareness and deep understanding on gender laws, mandates, policies, and issues. Furthermore, the Department of Education identified Gender and Development as one of the areas in the Basic Education Research Agenda.

As one of the Gender and Development implementing institution, the school feels a moral obligation to find a better alternative to conventional lecture used in seminars to improve the level of employees' awareness on the gender laws mandates, and issues. Based on the preliminary survey conducted to 98 cooperating employees comprising 61% of the school employees, there is only slight awareness on: Statistics on gender issues in the Philippines; Gender Neutral languages; GAD Vision-Mission, Goals, and Objectives; and Primary Health Care Benefit Package for DepEd employees; Solo Parent's welfare act and parental leave. There is only "an awareness to some extent" recorded along the topics: Solo Parent's welfare act and parental leave; Magna Carta of Women; and Paternity and Maternity Leave CSC rulings. Also, employees only have moderate awareness on the following topics: Child Protection on Sexual Abuse; Difference Between Sex and Gender; and the Anti Violence Against Women and their Children Act. The proponent-researcher believes that full knowledge on these Gender Laws, Mandates and Issues is truly needed for employees to be able to truly live a gender sensitive life and set a gender-sensitive learning environment in the classroom. The previous year's GAD training generally attained a mean rating of 3.31 numerical value with a descriptive value of "excellent" based on a 4-point Likert Scale from the participants. However, it is undeniable that there were hearsays that the activity was exhausting as it took the participants almost 15 hours for a one-way trip and that there was information overload compared to "other GAD activities". Because of this, the proponent as per suggestion of one of the School Review and Evaluation Committee, personally asked honest opinions about the delivery of the GAD training 2016. As a

result, some commented that there was information overload, some speakers were boring, and some topics discussed were not appreciated.

Related literatures reflect the same need to enhance GAD programs. There is a need to strengthen advocacy on gender law to empower women by way of increasing their level of awareness of their rights and other gender issues. Viewing Philippines in the global arena, the Philippine Commission on Women (PCW) sees from the 2003 Human Development Report, that the Philippines' Human Development Index (HDI) is estimated at 0.654, placing the country in the 114th rank out of 186 countries. The country's HDI value is 0.040 lower than the world index, and 0.029 lower than the HDI of the East Asia and the Pacific region. HDI provides a composite measure of three basic dimensions of human development: health, education and income.

Women's development, health, and education truly need attention to help ensure the nation's development. Gender equality is the indispensable key to the nation's progress. And this requires above all the women's awareness of their rights and other gender relevant issues.

According to the Philippine Commission on Women, violence against women (VAW) appears as one of the country's pervasive social problems. In the 2008 National Demographic and Health Survey conducted by the National Statistics Office, one in five Filipino women age 15-49 has experienced physical violence since age 15. It is indeed alarming that despite efforts to address the concern, VAW still persists. This is just one angle of the whole picture which prompt every concern citizen to act immediately for women empowerment.

Palangdao et. al. (2015) studied "Gender Awareness of the Faculty, Staff and College Students of ASSIST. The study primarily aimed to assess the level of awareness and the perception of the faculty, staff and college students of ASSIST on gender equality. Specifically, it assessed the level of awareness of the male and female faculty, staff and college students of ASSIST on the gender law. The significant findings of the study reveal that in terms of the awareness level of the three groups of respondents whether male or female on the gender law, they do not vary significantly from each other. The researchers attributed this to the activities initiated by the College to acquaint its people regarding the gender law i.e. conduct of seminars and integration of gender and development in the subjects of the faculty especially those teaching the Social Science subjects. Due to this, the students are aware of the gender law. Also, among the respondents' personal profile found to affect significantly their level of awareness on the gender law is the age for the staff, which means that the older the employee he tends to be more aware of the law.

Overseas, Das (2011) researched on "A comparative study on the level of awareness about constitutional and legal rights among working and non-working women of Kokrajhar Town". He aimed to know whether the women folk of their society were aware of their constitutional and legal rights in India. He believed that it was necessary to know whether they realize the significance of empowerment for their own benefit. Even after 64 years from the commencement of Indian constitution the plight of women is still very pitiable. As a democratic country India gives priority on the principles of liberty, fraternity, equality and justice. Indian constitution provides various rights necessary for securing women's empowerment. Among his findings

were that highly educated women have more awareness and understanding of constitutional rights than the women with no education; majority of the respondents (122) have less awareness about government schemes for the development of children and women. Only 28 respondents are aware of these schemes; and, regarding the laws against sexual exploitation, majority of the respondents (100) does not know any laws. There are 30 respondents who have sufficient awareness about the laws. Only 20 respondents have a little bit awareness about the law against sexual offences.

Das (2011) reviewed in his paper the study which Sundaram (2011) conducted about the Socio-economic empowerment of women in Mizoram. In this study Sundaram tried to highlight the current status of women in Mizoram and the hindering factors in acquiring equal status with men. He concluded that effective implementation and utilization of women empowerment program will safeguard the interests of women.

Another foreign study was that of by Parveen (2007), which aims to determine the social status of rural women and their level of gender awareness in three villages within the Mymensingh district of Bangladesh. The findings of the study indicated that the majority of the rural women, based on sample investigated, were not aware of gender inequality experienced because traditional beliefs kept them in the shadow of their fathers, husbands and sons. To improve this situation, some practical steps should be done not only by the major intervening agencies. Strategies aimed at empowering women must address both their practical and strategic gender needs. The study recommended that efforts need to be made to arouse people's concern and create awareness of gender differences, with particular emphasis on poorer farm households. Needing much attention are the areas on education, income, nutrition, reproductive health, dowry, early marriage, son preference, legal rights and violence against women.

In the advent of the 21st century, cooperative and collaborative approach in the classroom and adult trainings became the trend as it is found effective in effecting learning to participants. According to Clare (2015) cooperative learning is an instructional strategy that simultaneously addressed academic and social skill learning by students. It is an instructional strategy and has been reported to be highly successful in the classroom because of its increasing need for interdependence in all levels, providing students with the tools to effectively learn from each other. Students work towards fulfilling academic and social skill goals that are clearly stated. It is a team approach where the success of the group depends upon everyone pulling his or her weight. While, collaborative learning is commonly illustrated when groups of students work together to search for understanding, meaning, or solutions or to create an artifact or product of their learning. Further, collaborative learning refines traditional student-teacher relationship in the classroom because activities can include collaborative writing, group projects, joint problem solving, debates, study teams, and other activities in which students team together to explore a significant question or create a meaningful project. She explains that there has been a shift from individual competencies to group competencies and a shift in both learning institutions and the workplace. Value is placed on how individuals can work as part of a team and this emphasis on team building should be an integral part of any learning environment.

In the study conducted by M. Prince (2004), by which he examined the evidence for the effectiveness of active learning encompassing cooperative learning, collaborative

learning, and problem-based learning, he found some of the evidence for active learning as compelling and should stimulate faculty to think about teaching and learning in non-traditional ways.

The proposed study is similar to the above cited one on using active learning approaches, only that the proposed study focuses on applying cooperative and collaborative learning approaches to effect learning. Also, the participants are school employees, instead of students.

As a main concern, the researcher is committed to find more effective approaches in delivering the mandated GAD topics or contents, hence this action research which ventured on the use of cooperative-collaborative approaches in conducting GAD activity this 2017.

The study focused on the facts attached to Facilitating Tabuk City National High School Employees Gender and Development Seminar-Workshop through Cooperative and Collaborative Learning Approaches.

The study aimed to answer the following specific questions: First, what is the level of awareness of the participants on GAD laws, mandate and issues before the conduct of the seminar? ; Second, what is the level of awareness of the participants on GAD mandate and issues after the conduct of the seminar using the collaborative and cooperative strategies?; Third, is there a significant difference between the Pre and Post-test Mean Scores on the Level of Awareness of the Employees on Gender and Development Related Laws, Mandates and Issues?; Fourth, what is the perceived extent of effect of the cooperative and collaborative learning approaches in attaining the training objectives?; and Fifth, is there a significant difference on the perceived extent of effect of the Cooperative and Collaborative Learning Approaches as a strategy in meeting the training objectives along the moderator variables of sex and department affiliation?

As an Action Research Methodology, the following were employed:

#### **A. Innovation, Intervention, and Strategy**

With the problems presented through feedback from the conducted Mid-year GAD Seminar 2016, the researcher as one consultant to the conduct of Mid-year GAD Seminar 2017 was directed by the school head to develop the training package; capitalizing on cooperative and collaborative approaches as methodology in facilitating the proposed GAD activity the proponent crafted the package. Upon approval of the action research the tapped proponent adopted the program for In-Service Training Proposal with the following objectives: to increase awareness level on gender laws/mandates and issues; to enjoy leisure time and enhance psycho-social skills through team building activities; and to have spiritual retreat and express renewal of commitment to the Department of Education's goals.

#### **Training Methodology**

To realize the In-Service Educational Training Workshop, the following methodologies were employed to address holistic development needs of employees on the intellectual /mental, physical, psycho-social, spiritual, and professional needs:

**Cooperative and Collaborative Learning Approaches.** The TCNHS Gender and Development Seminar-Workshop 2017 employed non-traditional methods in carrying out the identified topics. Maximizing the benefits of a seashore venue, delivery of content used cooperative and collaborative learning embodying group dynamics which were convenient to participants in an outdoor setting. This effected intellectual development as it creatively fed information on gender laws and issues to participants. Facilitation was done by a core group, and small groups were organized for the discussion and presentation of topics and carrying out the team building, physical wellness, and retreat activities.

**a. Coordination.** Close coordination was done with the school head and other consultants. Committees on the following were identified and were timely given copies of the memorandum: Program and attendance; Food; Accommodation; transportation; Medics; group facilitators; Lights and Sounds.

**b. Delivery of GAD topics.** During the workshop proper, the pre-identified eight groups with the lead facilitators were given one topic each to study together on a given 50- minute breakaway session. Each group came up with their topic presentation not exceeding 20 minutes. The employee-participants learned from one another by this strategy. Specifically, the assigned groups collaborated and resolved to use the following to deliver their respective topics: game for Statistics on Gender Issues in the Philippines; radio broadcasting with infomercials for Anti-Violence Against Women and their Children Act and Primary Care Benefit Package for DepEd employees; simulated television talk show for Solo Parent's Welfare Act and Parental Leave; skit for Child Protection Policy on Child Sexual Abuse; while speech choir with *Salidummay* and *Uggayam* (chant in the Cordillera) was used to deliver the topic Magna Carta of Women. From the presentation of each group, all other participants to the GAD training were expected to have learnt by raising their awareness level on the topics presented.

**c. Facilitation of Physical Wellness Program.** Physical exercise tailored for both men and women were employed for the first hour of second and third days in consideration to physical wellness of the employee-participants. Tips on caring for one's were given as participants do the physical exercises.

**d. Provision of Free-hours.** Free hours were part of the School Recreation Program to give employee-participants space to have peace with themselves as individuals. Self-assessment for the SY 2016-2017 and planning for the next SY 2017-2018 were also done at these hours. Those who maximized this had enough time for leisure.

**e. Facilitation of Team building activities.** Outdoor group games were aligned to develop the psycho-social skills of the employee-participants.

**f. Conduct of Spiritual Retreat.** Wellness wouldn't be complete without feeding the spirit. This 1 hour and 30-minute activity lead the employee-participants to reflect on their worth as men/women and their purposes on earth, and specifically in the Department of Education. This provided springboard to the last activity which was the commitment building.

**g. Facilitation of Commitment building.** To wrap up the event, renewal of commitment to the mission-vision-goals of the Tabuk City National High School was done by the employee-participants in a group presentation of their pledge of commitment. This hoped to encourage everyone to develop in their profession.

**B. Research Methodology**

**Participants.**

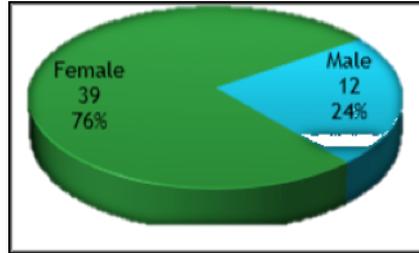


Figure 1. Participants as to Sex

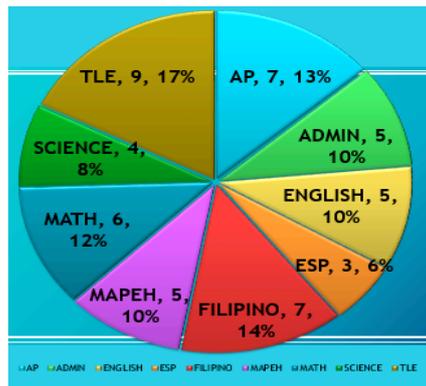


Figure 2. Participants as to Department Affiliation

The purposive sampling done resulted to the study’s inclusion of all the employees of Tabuk City National High School who committed and those who actually participated in the Midyear Gender and Development Seminar 2017. There were 92 employees who answered the pre-seminar survey questionnaires while only 51 of the actual 92 or employee-participants willingly answered and submitted the post-evaluation survey questionnaires. Among them were 39 female (76%) and 12 male (24%) employees. As to department affiliation, 7 (13%) were from the Faculty of Araling Panlipunan or Social Studies; 5 (10%) were from the administrative personnel; and from the Faculties of English -5 or (10%); Edukasyon sa Pagpapakatao or Values Education- 3 (6%); Filipino 7 (14%); Music, Arts, and Physical Education -5 (10%); Mathematics 6 (12%); Science 4 (8%); and Technology and Home Economics (TLE)- 9 (17%).

**Data Gathering Methods.** In order to come up with the needed data, the researcher coordinated with the tapped proponent for the midyear training for the conduct of pre-event survey to TCNHS employees who committed to attend the seminar and the post-event survey in the post evaluation of the training which was answered by the employee-participants before the closing program.

The researcher sought free prior and informed consent from the participants before the conduct of the study. Confidentiality was ensured to maintain the participants’ anonymity.

**Data Analysis.** To enlighten issues under study, the researcher used the Weighted Mean computation for Problems number 1, 2, and 4; and Analysis of Variance on problems 3 and 5.

The 5 -point Likert Scale was used to interpret responses mean on participants self-declared level of awareness on the Gender Laws, Mandates, and Issues; and on the extent of effectiveness of approaches applied in delivering the GAD Training topics. Class interval is computed by using the formula Highest Response Value (5)- 1, divided by number of response values; that is  $(5-1)/5= .80$ .

The 5-Point Likert Scale	
Scale Values	Description
4.21-5.00	Very Great Extent
3.41-4.20	Great Extent
2.61-3.40	Moderate Extent
1.81-2.60	Little Extent
1.00-1.80	Very Little Extent

This section presents the summary of findings pertaining to the research questions addressed through presentation of results in numerical and textual form.

**a. Level of awareness on the Gender and Development laws, mandates, and issues before the conduct of the GAD Seminar-Workshop**

The following table shows the employees' level of awareness on the Gender and Development laws, mandates, and issues before the conduct of the GAD Seminar-Workshop

Table 1. Summary of Employees' Awareness Level on GAD- related laws, mandates, and issues before the conduct of the GAD Outdoor Seminar-Workshop

Indicators	Mean of Numerical Response	Descriptive Value (Level of Awareness)
<b>no.</b> Selected Gender Laws and Mandates		
1. Magna Carta of women	2.67	Moderate Extent
2. Anti-Violence Against Women and their Children Act	3.60	Great Extent
3. Paternity and Maternity Leave CSC Rulings	3.24	Moderate Extent
4. Solo Parent's Welfare Act and Parental Leave	2.54	Little Extent
5. Primary Care Benefit Package for DepEd employees	2.43	Little Extent
6. Child Protection Policy on Child Sexual Abuse	3.45	Great Extent
7. Statistics on Gender Issues in the Philippines	2.35	Little Extent
8. Gender Neutral Languages	2.38	Little Extent
9. Difference between "Sex" and "Gender"	3.52	Great Extent
10. Gender and Development Vision- Mission-Goal of the Philippines	2.43	Little Extent
11. Appropriate physical wellness exercises for men/women	2.00	Little Extent
<b>Total Average Weighted Mean (TAWM)</b>	<b>2.78</b>	<b>ME</b>

Table 1 shows that the employees' awareness on the Gender and Development laws, mandates, and issues before the conduct of the GAD Seminar-Workshop is TO SOME EXTENT with a Total Weighted Average Mean of 2.78. The employees possessed awareness to great extent along Anti-Violence Against Women and their Children Act with a mean of 3.60; Difference between "Sex" and "Gender" with a mean of 3.52; and Child Protection Policy on Child Sexual Abuse with a mean of 3.45. While a mean of 2.0 was reflected on other related gender laws and mandates. This shows that there is also a need to advance the GAD awareness advocacy just what Parveen (2007) recommends based on his findings on the low awareness level of women on the gender laws.

**b. Employees' level of awareness on the Gender and Development laws, mandates, and issues after the conduct of the GAD Seminar-Workshop facilitated through cooperative and collaborative learning approaches**

The following table shows the employees' level of awareness on the Gender and Development laws, mandates, and issues before the conduct of the GAD Seminar-Workshop

Table 2. Summary of Employees' Awareness Level on GAD laws, mandates, and issues after the conduct of the GAD Outdoor Seminar-Workshop

Indicators	Total No. of Respondents (N)	Mean	(Level of Awareness)
A1 Magna Carta of women	51	4.00	Great Extent
A2 Violence Against Women and their Children Act	51	4.19	Great Extent
A3 Paternity and Maternity Leave CSC Rulings	51	4.15	Great Extent
A4 Solo Parent's Welfare Act and Parental Leave	51	3.87	Great Extent
A5 Primary Care Benefit Package for DepEd employees	51	4.06	Great Extent
A6 Child Protection Policy on Child Sexual Abuse	51	4.21	Very Great Extent
A7 Statistics on Gender Issues in the Philippines	51	3.71	Great Extent
A8 Gender Neutral Languages	51	3.83	Great Extent
A9 Difference between "Sex" and "Gender"	51	4.25	Very Great Extent
A10 Gender and Development Vision- Mission- Goal of the Philippines	51	3.83	Great Extent
11 Appropriate physical wellness exercises for men/women	51	3.98	Great Extent
<b>Total Average Weighted Mean (TAWM)</b>	<b>51</b>	<b>4.01</b>	<b>GE</b>

The result reflected on Table 2 above shows that there is an awareness among employees on the Gender and Development laws, mandates, and issues to a great extent after the conduct of the GAD Seminar-Workshop with a Total Weighted Average Mean of 4.01. A group total average weighted mean difference of 1.19 is revealed when awareness level of employees is compared before and after the facilitation of GAD Seminar workshop through cooperative and collaborative learning approaches. awareness to very great extent is reflected along topics on Difference between "Sex" and "Gender" with a mean of 4.25; and Child Protection Policy on

Child Sexual Abuse with a mean of 4.21. While awareness to great extent is revealed among the rest of the topic, with Violence Against Women and their Children Act recording a mean of 3.60; and Statistics on Gender Issues in the Philippines with the lowest mean of 3.71.

The improvement can be partly attributed to the cooperative and collaborative approaches employed in facilitating the GAD Seminar Workshop.

**c. Significance of the difference between the pre and post-test Mean Scores on the Level of Awareness of the Employees on Gender and Development Related Laws, Mandates and Issues**

Table 3. Paired Samples Test Result on Significance of the Difference Between Pre and Post Test

	N	Correlation	Sig.
PRETESTMEAN & POSTTESTMEAN	51	0.064	0.653

	Differences Mean	Std. Deviation	t	df	Sig. (2-tailed)
Pre-Test & Post Test	-1.23	0.666	-12.633	50	0.000

The obtained significance value is 0.00 which is lower than 0.05, this means that there is a significant difference between the Pre-test and Post-test. In conclusion, the level of awareness of the employees increases after the seminar-workshop facilitated through Cooperative and Collaborative approaches.

**d. The extent of effect of the Cooperative and Collaborative Learning Approaches among the Employees in attaining the training objectives**

Table 4. The perceived extent of effect of the cooperative and collaborative learning approaches in attaining the training objectives

	Aspect Indicators	Sub Means	Description
A	Coordination and Organization of Training Committees	4.15	GE
B	Facilitation of GAD Seminar Topics	4.13	VGE
C	Enjoyment of Leisure Time and Enhancement of Psycho-Social Skills	4.32	VGE
D	Conduct of Spiritual Retreat and Renewal of Commitment to DepEd	4.21	VGE
	Total Average Mean	4.20	GE

The table shows that the obtained total average weighted mean is 4.20, which means that the cooperative and collaborative learning approaches were perceived to have A GREAT EXTENT of effect in the attainment of the Gender and Development Training objectives among TCNHS employees.

e. **The significance of the difference on the perceived extent of effect of the Cooperative and Collaborative Learning Approaches as a strategy in meeting the training objectives along the moderator variables of sex and department affiliation**

Table 5.1. Correlation of employees' level of awareness on GAD laws, mandates, and issues in terms of sex

<b>ANOVA of Sex Groupings</b>					
	Sum of Squares	df	Mean Square	F	Sig.
<b>Between Groups</b>	1.0414	1	1.0414	4.4458	0.04
<b>Within Groups</b>	11.4777	49	0.2342		
<b>Total</b>	12.5191	50			

The p-value which is 0.04 is lower than 0.05, it means that there is a significant difference in the perceptions of the participants on the extent of effect of the GAD Seminar-Workshop facilitated through cooperative and collaborative learning approaches along sex. This can be further explained by the obtained means of the two groups which is reflected below. The female group has obtained the higher mean of 4.361 while the male group has 4.045 mean. In conclusion, the female employees perceived a greater degree of effect to VERY GREAT EXTENT than their male counterparts of GREAT EXTENT of the cooperative and collaborative learning approaches in attaining the training objectives.

Table 5.2. Correlation of employees' level of awareness on GAD laws, mandates, and issues in terms of departmental affiliation

<b>ANOVA of Department Affiliation</b>					
	Sum of Squares	df	Mean Square	F	Sig.
<b>Between Groups</b>	1.4961	8	0.1870	0.7126	0.679
<b>Within Groups</b>	11.0230	42	0.2625		
<b>Total</b>	12.5191	50			

The p-value which is 0.679 is higher than 0.05, which means that there is **NO SIGNIFICANT DIFFERENCE** in the perceptions of the participants on the extent of effect of the cooperative and collaborative learning approaches along Department Affiliation on the attainment of GAD training objectives.

## Conclusions

In conclusion, the awareness of TCNHS employees on the Gender and development-related laws, mandates, and issues was to a moderate extent before the facilitation of the GAD seminar-workshop through cooperative and collaborative learning approaches, which signifies need for improvement. It improved to a great extent after the seminar-workshop which was facilitated by cooperative and collaborative learning approaches. This signifies increased awareness level among employees. It also presumes that employees' sex, and departmental affiliation have nothing significant to do with their level of awareness on GAD- related laws, mandates, and issues. Furthermore, the employee-participants perceived extreme level of effectiveness of the cooperative and collaborative learning approaches applied in facilitating the Gender and Development Seminar-Workshop in meeting the program objectives. And finally, the cooperative and collaborative learning approaches were perceived to have **a great extent** of effect in the attainment of the Gender and Development Training objectives among TCNHS employees; there exists a significant difference along sex with the **female** employees perceiving a **greater degree of effect** of the cooperative and collaborative learning approaches in attaining the training objectives as compared to their male counterparts; while department affiliation has no significant correlation on the employees perceived extent of effect.

It is then recommended that the school shall continue to conduct Gender and Development Seminar-Workshops and other related activities for TCNHS employees aimed at raising their awareness level on GAD laws, mandates and issues using cooperative and collaborative learning approaches. Similarly, other schools and institutions should consider adopting the cooperative and collaborative learning approaches as methodology in conducting their GAD and other training-workshops. Moreover, the School GAD Focal person and the committee must continue finding ways to enhance the approach especially on the delivery of Gender and Development-related content topics. And finally, research on male adult learning approaches should be undergone.

## Acknowledgements

The researcher is indebted to the members of the School's Review and Evaluation Committee, likewise to the City Schools Division Review and Evaluation Committee for their shared expertise in improving this study. Likewise, she is forever grateful to Pinky Larcelle Lang-ay and Engr. Lope Buen for gladly extending their help by statistically treating data to address some of the research problems. Furthermore, she is deeply moved by the involvement of the participants and everyone who in one way or another contributed to the completion of this paper. Above all, she praises God for sustaining her health and making time possible for this work through sleepless nights amidst career and other life's concerns.

The Researcher

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*The Self-Management System Standard for a Prosper Lifestyle  
An Educational Module for Dependencies Interface Management: from the  
Teachings of Islam*

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

Born orphan. Right after birth, his mother passed away. Nurtured by another mother of the same tongue (Arabic), and living at the countryside (a Bedouin), the prophet Mohammad PBUH (Peace Be upon Him), was consequently taken care of by his grandfather and uncle. Mohammad PBUH, gifted with the Quran for Humanity, and the messenger of Islam, said: “Every baby is born with adherence to the instinct. The parents either raise him to be a Jew, a Christian, or a Buddhist”. Islam; the religion whose name is derived from the term “Salam”, which translates to peace—in today’s common perception—, and surrendering to “Allah” in Arabic linguistics, is the teachings system Mohammad (PBUH) was sent with for all people. An early childhood breakthrough experience resulting in a timeline full of precious learnings—to preserve and reflect on—of how prosper communities are built, is the drive of this study. Not only in a form of a book that luckily had the chance to be written and reach us today after 1400 years; but also and indeed in a form of a teachable practical practices succeeding him eternally. This paper is introducing an answer to the researcher for an answer of the following question: What needs to be in place as a nucleus of transformation for the absolute state of “Al-Salam”? How would this result in curriculums serving nowadays’ and tomorrow’s prosper lifestyle? Especially, while noticeable is the result of incongruities of today’s practitioners of the teachings of this comprehensive naturally conceived system covering a transparent curriculum and set of methodologies and teachings.

Keywords: Prosperity, Salam, Self-Management System, Lifestyle, Islam Teachings, Allah, Dependencies, Interdependencies, Independency.

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## Introduction

Between the two main questions of why and what of practices stands a body of knowledge called the teachings of Islam. This set of teachings existed to serve prosper living of communities. It exists in a form considerate of both dimensions of a relationship: one's relation with oneself, and one's relation with other ones. This other ones could be anyone of a set category of classifications such as family members, co-workers, contractor, or neighbor; where for each category there is a body of guidelines of those best practices for each classification. Whereas one's relation with oneself is about the relation between a person and (Allah). (Allah) being the name usually referred to—in English—as almighty known to have ninety nine inclusive adjectives called (Al-Asma'a Al Hosna). Each of those is a descriptive word of an adjective of (Allah). In this paper, the relation with Allah is guided through what Islam teachings calls it (Ibadat). Where (Ibadat) is the term referring to the set of practices a Muslim, performs as a way of surrendering worship to Allah and only to Allah. On the other hand, the relationship with others is guided through what Islam teachings calls it "Moa'amalat". In the body of this paper, the author is reflecting on the set of each of the two teachings with examples on each set relying on one reference that provides a generic overview of various resources of the subject (Al-Tuwaijry, 2010). Those are quoted from the reference, as they exist with no refining or revision on the content from any narrative other than that mentioned in the reference such as historical narrative, scientific, linguistic, or other explanatory ones.

To start with, herein the author shares her perspective on the transliteration of few terms as follows—from a basic linguistics narrative:

- Instinct: the Arabic term of: (Fitra). (Fitra) is the instinct and it means the blueprint of original being.
- (Allah): The state of ultimate un-conditioning. The study of the last letter meaning isn't included herein.
- (Islam): the surrendering to (Allah) thru common teachable timely practices.
- Independency: Is the state when an individual is in full surrender to (Allah) with appropriate practice of the teachable teachings of Islam and is driven forward by the force of goodwill, good deeds, and honest prayers.
- Dependency: The practices occurring as interface between any two individuals or more.
- Interdependency: The practices occurring within an individual: physical and metaphysical.

Whereas the constituting teachings of each section is split thoroughly to include performance standardization for each of the two aspects: (Ibadat), and (Moa'amalat). Other competitive criteria are inclusive in either or both of the two aspects; ethics, for illustration.

Therefore, in the light of the definitions above, the relationship between (Ibadat), and (Moa'amalat) and the concepts of dependency, independency, and interdependency, Figure 1 below summarizes it.

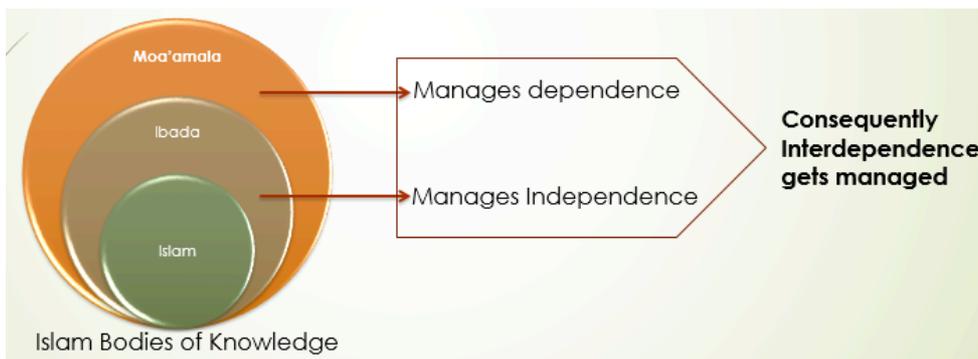


Figure 1: relationship between Islam body of knowledge and dependencies types.

(Ibada) as stated herein in figure 1 is a singular of (Ibadat), as (Moa'amala) is of (Moa'amalat). The main items falling down from each (Ibadat), and (Moa'amalat), are presented in figure 2 hereafter.

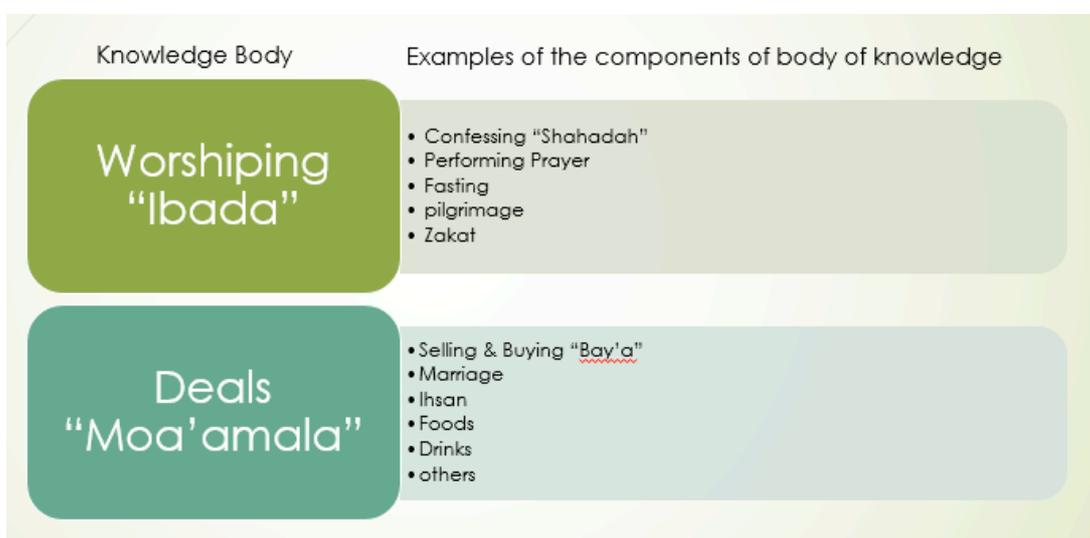


Figure 2: items falling down from the two bodies of knowledge of Islam: Ibadat, Moa'amalat.

Each item in the list of (Ibadat) and (Moa'amalat) has a set of guidelines that clarifies best practices of this same item. Not as a practice only, but also the rights and the activities details that would assure each person involved in this is performing per this standard and is aware of the terms and conditions of each deal.

As an illustration of the ongoing other research the author is carrying on, is the meaning of each term per original classic Arabic before 1400 years, when Islam practices first were born in its most recent form brought to humanity by the prophet Muhammad (PBUH). The term (Salah) or (Salat), for example. Where it refers to a physical (body and speech), and nonphysical (heart belief system) practices accompanied in certain way that was taught by the prophet Muhammad (PBUH) for people as a guideline. (Salat) as a term means in simple words: creating connection. The amount of research articles that have shown the measurements of how the (Salat) taught by Muhammad (PBUH) is the best practice for its purpose, does not fall in the scope of this paper. Of essence, though, is to mention that this example is similar to many other ones that fall in the scope of illustration on how the linguistic meaning of terms of each item in the two main bodies of knowledge are self-explanatory of the

“how” of the practices brought up to humanity by the prophet Muhammad (PBUH). This, concluding a long journey of prophet ships in a form teachable to people-by-people.

The original body of the knowledge referred to herein in figure 1 is the one titled “Islam”, and this is where the conceptual linguistic and definitive knowledge of the words exist such as, (Allah), (Islam), (Salat), (Falah), etc. This is also a chapter of the academic and literature product which production is undergoing by the author in her research journey commitments and studies.

The author herein summarizes the initiatives required to be in action for this program (mega project) to take place and following is this representation:

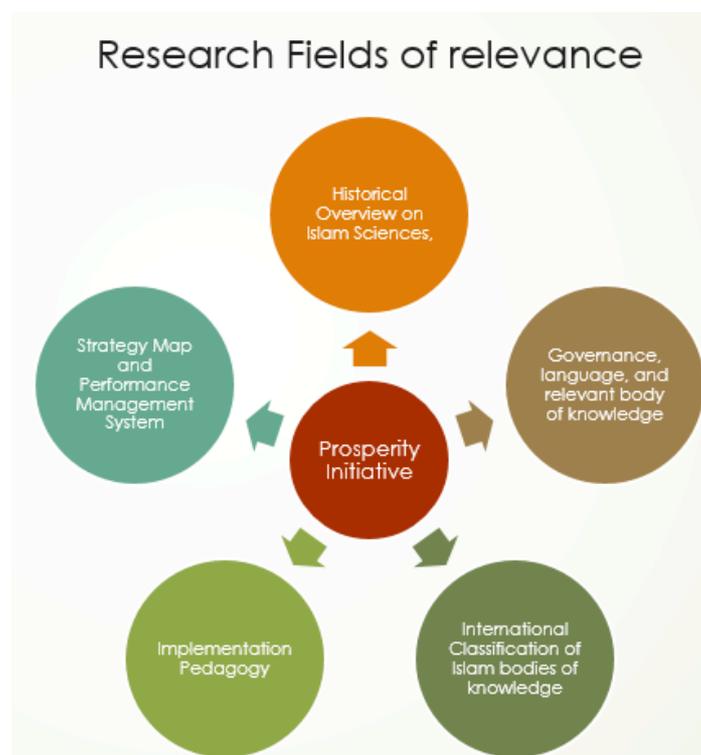


Figure 3: research areas undergoing by the author

Where, “Prosperity Initiative” in this figure is the continuous momentum of the nucleus of transformation referred to in the introduction – for a sustained peace— For “Salam”.

## Conclusion

This paper sheds light on how prosperity flourishes over decades and centuries to come; by introducing the framework of prosperity curriculums to the strategic bodies and decision makers in academic institutions around the world at both the cause and the effect sides in a curriculum-ized approach. Where as far as “Salam” is the destiny, governance at its absolute perfect design stands. Moreover, where “Falah” is the subject of education and knowledge, governance achieves perfectionism in performance. Self-designed. Self-standardized. Self-performed. Self-assessed. And, self-corrected. That is for the fact that the core of any successful governance that leads to prosperity and wellbeing for nations is the introduction to “Salam” seekers of

the knowledge context that explains the identity of existence in its most accurate presentation and in equal opportunity for seekers of “Falah”. To “Salam” seekers by “Salam” makers. The core of any successful governance moreover, identifies on the same basis the relation between this knowledge and each individual, in addition to the relation between the individuals—the dependence, independence, and interdependence referred to in the title of this paper. Where governance here is an individual practice and an organizational one. The author is working on various fields of research and academic commitments through which she is already delivering the recommendations of this research findings, summarized in this paper. The findings that states the answer to the question within the title in a practical, deliverable, and tangible way.

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\*Please note the reference statement is an English translation by the author from the original Arabic name of the book.

***The Effect of Instructor Intervention on the Usage of Mobile Devices for Informal Language Learning***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

The purpose of this action research study was to investigate the effect of a 10-week instructor intervention focusing on usage of informal mobile-assisted language learning (MALL). The research took place in a required English-language course in the Economics faculty at a major Japanese university. Prior to the intervention, the researcher administered an established survey instrument regarding informal MALL, which was modified and translated into Japanese with the permission of the authors. Over the course of four class sessions, the researcher introduced new resources that could be used for informal MALL. Every other week, students completed a reflective writing assignment regarding their usage of these resources. The informal MALL survey instrument was administered again at the end of the 10-week period in order to examine any changes that might have occurred due to the intervention. The results of paired sample *t*-tests indicated no significant difference in pre- and post-usage of mobile devices for informal language learning. However, the qualitative data gathered provided valuable insights to improve future interventions and obtain a favorable result.

Keywords: informal learning, mobile-assisted language learning, instructor influence, classroom intervention

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## Introduction

Mobile devices have become ubiquitous in the lives of most people. Almost every task today, from socializing to shopping, is undertaken with the aid of smartphones and tablets. As educational tools, mobile technology provides students with 24-hour access to educational content no matter where they are. While mobile learning can take place in both formal or non-formal educational settings, the unique characteristics of the technology makes it particularly suitable for informal learning tasks (Chen, 2013; Jones, Scanlon, & Clough, 2013; Kukulska-Hulme, 2010). For language learners, there is an ever-growing library of applications that are available to facilitate self-directed study, and an unlimited supply of authentic materials as well as speakers of the target language that can be used for incidental acquisition (Demouy, Jones, Kan, Kukulska-Hulme, & Eardly, 2016). Although autonomy and self-initiation are essential to informal language learning, previous research has shown that instructors can have an influence on students' propensity to engage in both self-directed and incidental language learning (Mills, 2016). To this end, it is important to examine in what ways instructors can intervene in their classrooms in order to assist in bridging formal language study with informal learning. This is essential, since the amount of time students come in contact with the target language in the classroom is rarely sufficient for high levels of proficiency to develop.

## Literature Review

**Mobile-assisted language learning.** In recent years, mobile devices, such as smartphones and tablet computers, have become increasingly integrated in our lives. According to the Pew Research Institute (2018), 77% of US adults own a smartphone, and 95% own a mobile phone of some kind. That percentage of smartphone ownership is even higher among respondents aged 18-29 (94%). The ECAR Study of Undergraduate Students and Information Technology, 2018 (Galanek, Gierdowski, & Brooks, 2018) showed that 95% of students around the world possessed smartphones and used them regularly for educational activities. Due to the access university students have to these devices, as well as their portability and flexibility, there is an interest among researchers and educators in mobile learning in general and mobile-assisted language learning (MALL) in particular (Viberg & Grönlund, 2012). Developing a high-level of proficiency in a foreign or second language requires extensive exposure to comprehensible input (Krashen, 1981, 1985, 1992) and opportunities for interaction (Long, 1996) in the target language. Both of these are facilitated by mobile technologies that can provide the learner with 24-hour access to target language content and the ability to access these resources in any place with a wi-fi or cellular connection.

While mobile devices can be used in classroom settings, they are particularly valuable for informal learning that takes place outside of the classroom. Yet, studies focusing on informal MALL are underrepresented in the literature (Demouy et al., 2016). This is most likely due to the difficulty in gathering accurate data from students outside of controlled environments who are often utilizing their personal devices. Due to these limitations, studies focusing on informal MALL tend to rely on self-reported data from the participants. In one query of Japanese university students' usage and acceptance of mobile devices for informal language learning (Mills, 2016) participants reported using their mobile devices for both incidental and self-directed

language learning outside of the classroom. However, they were more likely to engage in passive activities such as listening to music or using dictionary applications, rather than active tasks like making posts on social media sites or playing interactive digital games. Lai and Zheng (2017) found in their study of Hong Kong university students that learning activities associated with the construct of personalization (e.g. dictionary and translation applications) were engaged in to a greater degree than activities associated with the constructs of authenticity (e.g. watching videos) or social connection (e.g. social networking sites). Both Mills (2016) as well as Lai and Zheng (2017) asserted that further research needed to be conducted on the factors that influence usage and task selection in informal MALL. One such factor identified by Mills (2016) was the influence of instructors on student engagement in informal MALL.

**Action research.** Action research is a method of investigation which focuses on giving agency to practitioner/researchers to explore practical solutions to problems they face in the context in which they teach. This is in contrast to more formal research inquiries, which are conducted by impartial observers in order to maintain the validity and reliability of the results of the study. According to the “Glossary of Educational Reform,” the general goal of action research is “to create a simple, practical, repeatable process of iterative learning, evaluation, and improvement that leads to increasingly better results for schools, teachers, or programs” (para. 1).

The practice of action research can be visually represented by a series of steps laid out in a cyclical pattern (Figure 1). The process of working in such a cyclical manner, constantly reflecting and improving upon interventions has been identified by Burns (2005) as one of the benefits of the methodology. The action research cycle, as laid out below, encompasses four steps. The first is planning the intervention to solve an instructional problem identified by the practitioner-researcher. Second, the intervention is implemented in the action stage over a set period of time. Third, the results of the intervention are observed and measured through various quantitative and qualitative means. Finally, the practitioner-researcher reflects on the results and evaluates how to move forward either in adopting the intervention or improving upon it (Burns, 2010).

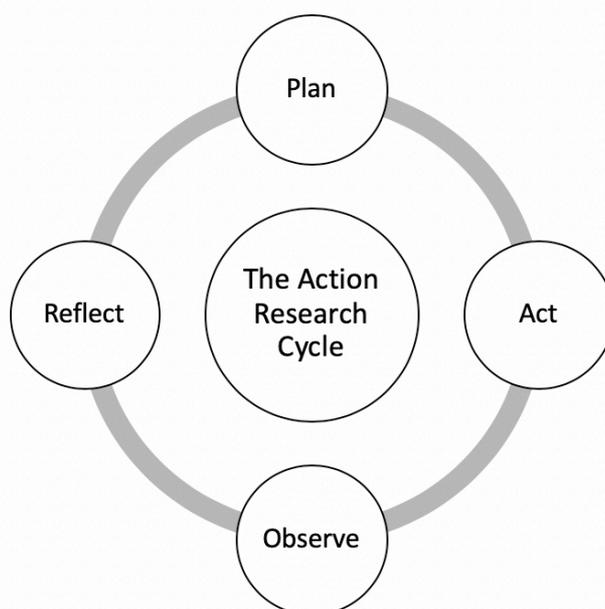


Figure 1: The action research cycle (Burns, 2010)

## Purpose and Research Questions

The purpose of this action research study was to examine how a 10-week instructional intervention affected student engagement in informal MALL. The following research questions guided the investigation:

1. What changes to usage of informal MALL, as measured by a quantitative survey, occurred following an intervention by the instructor?
2. To what extent did participants use the learning applications presented during the intervention?
3. What reasons did participants give for non-usage of the learning applications presented during the intervention?
4. How could the intervention be improved to increase attitudes towards and usage of informal MALL?

## Methodology

**Setting and sample.** The setting of this action research project was a required information and communications English course held at a private, Japanese university. The course is offered in three levels; pre-intermediate, intermediate, and upper-intermediate. Sixty-six students were enrolled in the course; 57 students participated in the pre-survey and 46 in the post-survey. Engagement in the bi-weekly reflective writing assignment depended on the students' attendance that day.

**Participants.** All participants were first-year Economics students who identified as ethnic Japanese. The students in this course were placed at the intermediate level based on the results of a standardized test of English called the Communication Assessment System for Global Communication (CASEC.) The majority of students enrolled in the class were male (73.9%). Female students represented 26.1% of the class.

**Intervention.** The instructional intervention, including quantitative and qualitative data collection, took place over a 10-week period. The quantitative instrument was administered in weeks one and ten. In weeks two, four, six, and eight, students were presented with a PDF document that defined informal MALL and then introduced a learning application or website that could be accessed by mobile device. In weeks three, five, seven, and nine participants were asked to answer several questions regarding their usage of the application or device introduced in the previous week. Figure 2 gives a graphic representation of the 10-week intervention.

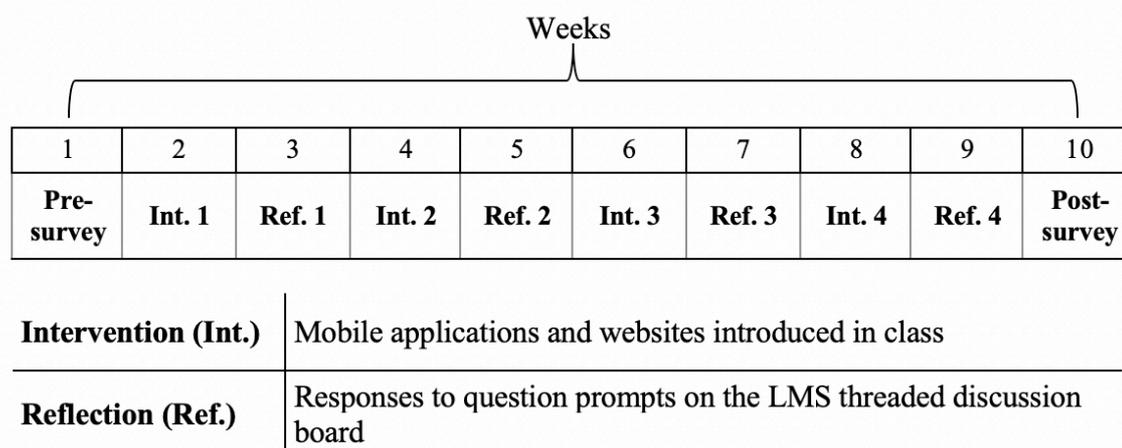


Figure 2: Overview of the intervention

The PDF document that described the informal MALL applications and websites was made available to the students on the course's learning management system (LMS). The PDF was uploaded at the start of the class and was available for the students to view and download throughout the semester. In weeks two, four, six, and eight, the instructor gave a brief explanation and provided about 15-20 minutes of class time for the students to use the application/website. He then reminded the students that they were under no obligation to use the resource presented after class, but it would be beneficial to do so if they wished to improve their English proficiency. The PDF documents used in the intervention phase can be found in the Appendix 1 of this article.

**Quantitative instrument.** The quantitative instrument was administered on Google Forms via a link posted on the course's LMS. The survey consisted of three sections: (1) dimensions of MALL usage, (2) frequency of informal MALL usage of devices and activities, and (3) demographics. The Dimensions of MALL scale was developed by Lai and Zheng (2017) and was translated for use in this study by permission of the authors. This scale is divided into three dimensions of MALL usage: (1) personalization, (2) authenticity, and (3) connectivity. Responses were based on a six-point Likert-scale where 1 represented "strongly disagree" and 6 indicated "strongly agree." A three-step method was used to translate the instrument. First, the researcher, a native English speaker with a high-intermediate Japanese-language ability, did an initial translation of the items. Then, two Japanese native speakers with advanced English-language ability checked the translation against the original English and made suggestions for improvement. Finally, two native Japanese speakers who are educational technology experts examined the translation and made their recommendations. The original items as well as the final translations can be found in the table below:

Construct	Original	Translation
<b>Personalization</b>	Mobile learning gives immediate support to my language learning	モバイルラーニングは、即時に私の英語学習をサポートしてくれる
	Mobile devices enable me to learn the language at any time and any place	モバイル機器を使うことで、いつでもどこでも英語学習ができる

	Mobile devices help me comprehend and use the target language whenever and wherever I need it	モバイル機器は必要な時や場所で英語を理解すること、使用することを助けてくれる
	Mobile devices enable me to have self-paced, personalized language learning outside the classroom	モバイル機器を使うことで、自分のペースで自分に合った英語学習ができる
	Mobile learning is a flexible method of learning, as it can be done anytime, anywhere	モバイル学習は柔軟性のある学習方法で、いつでもどこでも学習ができる
	Mobile devices help extend my language learning experience beyond the language class	モバイル機器は英語学習経験を、英語の授業よりもさらに伸ばしてくれる
	Mobile devices increase my autonomous learning of the language	モバイル機器は英語の自主的な学習の増やしてくれる
	Mobile devices provide opportunities to act independently in learning the target language	モバイル機器は英語を独学で学ぶ機会をあたえてくれる
<b>Authenticity</b>	Mobile devices make my language learning experience more authentic	モバイル機器は英語学習経験をさらに現実的にしてくれる
	Mobile devices enhance my willingness to participate in social events hosted in the target language	モバイル機器は英語で開催される交流イベントに参加する意欲を高めてくれる
	Mobile devices increase my participation in target language social communities	モバイル機器は英語のソーシャル・コミュニティーへの参加に参加することを増やしてくれる
	Mobile devices enhance the authenticity of my language learning resources and activities	モバイル機器は英語学習のリソースやアクティビティーの現実性を高めてくれる
<b>Connectivity</b>	Mobile devices enhance my interaction with others in the target language	モバイル機器は英語言語での他者との交流を高めてくれる
	Mobile devices enhance my connection with peer learners of the target language	モバイル機器は他の英語学習者とのつながりを高めてくれる
	Mobile devices connect me with speakers of the language	モバイル機器は英語のネイティブまたは英語上級者をつなげてくれる
	Mobile devices enhance my connection with the target language community	モバイル機器は英語のネイティブまたは英語上級者とのつながりを強めてくれる

Table 1: Dimensions of MALL usage (original and translated items)

The frequency scale used in the study was created by the researcher (Mills, 2016). The scale was based on research regarding mobile learning (Cheung & Hew, 2009; Patten, Arnedillo-Sánchez, & Tangney, 2006), a scale developed to measure informal MALL activity (Santos & Ali, 2011), and the personal experience and observation of the researcher. The participants reported their frequency in using mobile devices to engage in activities such as playing video games, surfing the internet, and listening to music in English. The frequency scale contained five points including 1 (*never*), 2 (*rarely*), 3 (*occasionally*), 4 (*frequently*), 5 (*very frequently*). Respondents were also asked which devices they used to engage in these activities and whether they mainly

did so consciously (self-directed learning) or unconsciously (incidental learning). To ensure participants' responses were uniform, they were provided with definitions of the key terms, mobile devices and informal English-language learning, in Japanese.

Below is an English translation of those definitions:

*Mobile devices* are smartphones, tablet computers, MP3 players and other portable, hand-held, electronic devices that can be used for the learning of languages.

*Informal English-language learning* is any activity that has the potential to improve your proficiency in English but is not directly related to structured classes like the ones you take at university or at a private language school. Informal English-language learning can occur consciously (i.e., watching an English-language movie for the purpose of study) or unconsciously (i.e., watching an English-language movie for entertainment).

**Reflective writing activity.** In the class following each intervention, students were asked to reflect on their usage of the application/website that had been introduced. The reflective activity was completed using the “threaded discussion” section of the course’s LMS. First, the students were reminded of the previous week’s intervention and then asked several questions regarding their usage or non-usage. Below (Figure 3) is an example of the bi-weekly reflective activity. The questions were the same each week, only the name of the resource changed.

Figure 3: Example of reflective writing activity prompt

Figure 4 shows a typical response of one of the students. As can be seen, responses were usually quite short.

Figure 4: Example of a student response to the reflective writing activity

**Data collection and analysis.** Data collection was conducted over a 10-week period that included a pre- and post-survey, four intervention activities, and four reflective writing activities. Both pre- and post-surveys were created using Google Forms. A link to the survey was prepared and delivered to the students through a post in the “announcements” section of the course LMS. In the class scheduled for the survey, the researcher pointed out the link and asked students to complete the survey. However, the researcher explained that participation in the study was voluntary and would not affect the students’ grades. Once the survey link was opened, participants were able to read an explanation of the study as well as a letter addressing their rights as research subjects in Japanese. Completion of the survey signified consent to participate in the study. The link for both pre- and post-survey were accessible for one week. After the data was collected, it was input to a SPSS worksheet. Frequencies were calculated for all items. Missing values in the data set were replaced by the series mean. Descriptive statistics were calculated for all scales and sub-scales, and a paired sample *t*-test was computed to examine differences that occurred in the pre- and post-survey responses.

The reflective writing activity was conducted over four classes during the 10-week period. After all the writing activities were completed, the responses were placed in an Excel. Open-coding was used to analyze the patterns that emerged in the responses. Themes were created and the responses were sorted based on category (Bogdan & Biklen, 1998; Flick, 2006).

## Results and Discussion

**Research question 1.** The data revealed that the highest mean values were associated with the personalization sub-scale and the total scale in both the pre- and post-survey. However, it was surprising that the means of the total scale and all sub-scales decreased after the intervention. One possibility is that by the time the intervention was finishing, students were entering the final few weeks of the semester. The pressure of preparing for final exams and the excitement of the upcoming holiday may have led them to see informal MALL activities as less important in their lives at that time. Table 2 below shows the means and standard deviations of the total scale and sub-scales both before and after the intervention:

Scale	Pre		Post	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Dimensions of MALL (Total Scale)	4.20	.903	3.98	1.15
Personalization	4.55	.940	4.43	1.11
Authenticity	3.86	1.24	3.54	1.38
Connectivity	3.83	1.20	3.50	1.49

*Note.* Likert-scale where 1 = strongly disagree and 6 = strongly agree

Table 2: Means and standard deviations of total scale and sub-scales

The results of paired sample *t*-tests indicated that there was no significant difference between pre- and post-survey results in terms of the total scale or sub-scales.

Similarly, data regarding the usage of particular mobile devices and activities showed that there was little change before and after the intervention. The greatest change in device usage was seen with an increase in mobile phones and a decrease in portable game consoles. In general, mobile devices were the most used device for informal MALL. The least used device was portable game consoles.

Device	Pre	Post	Change
Mobile Phone	94.7%	97.8%	+3.1%
MP3 player	17.5%	17.4%	-0.1%
Reader	15.8%	17.4%	+1.6%
Tablet	19.3%	17.4%	-1.9%
Game	5.3%	2.2%	-3.1%

Table 3: Percentage of students who use a particular device for informal MALL

In regard to activities, participants reported the greatest positive change in usage of games. The largest reduction in usage was seen with English-language news. While listening to English-language music was the activity participants said they engaged in the most, using dictionary applications, watching movies, TV, and videos (e.g. YouTube) was also ranked highly. These findings corroborate earlier work by the researcher (Mills, 2016) as well as Lai and Zheng's 2017 study which showed that students tend to engage in passive activities rather than ones that require more active use of the target language such as social networking sites and English-language games.

Activity	Pre	Post	Change
Websites	24.5%	21.8%	-2.7%
SNS	24.5%	21.7%	-2.8%
Apps	29.8%	23.9%	-5.9%
Games	14.0%	17.4%	+3.4%
Music	58.6%	60.8%	+2.2%
Audio	28.1%	21.7%	-6.4%
Video	40.4%	43.4%	+3.0%
Movies/TV	43.9%	43.5%	-.40%
Dictionary	45.7%	43.5%	-2.2%
Translation	36.8%	39.1%	+2.3%
News	17.6%	6.5%	-11.1%

Table 4: Percentage of students who engage in a particular informal MALL activity frequently or always

The total usage scale measure had a mean score of 2.80 in the pre-survey and 2.89 in the post survey. A paired sample *t*-test showed not significant difference between the results.

**Research question 2.** The second research question looked at participants' usage of the specific applications and websites introduced in the intervention. It was quite disappointing to see that engagement with these resources was low, even when students expressed great interest in the classroom session. This was the case with Lyrics Training, which the students seemed to really enjoy. The data regarding

informal MALL collected to answer question one demonstrated that listening to English-language music was the most engaged in activity. However, when asked to do so in a more active way, like filling in an interactive gap-fill while listening, only eight out of 43 did so in the week following the intervention. The website which was least used after the intervention was Talking English, which is a site specifically for Japanese learners of English.

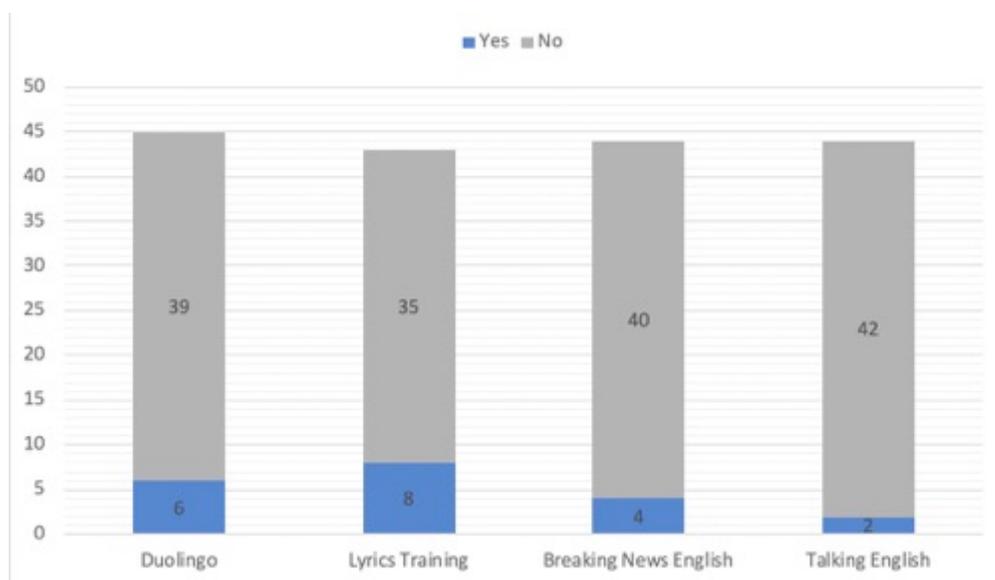


Figure 5: The number of students who used the resource is in blue, while the number who did not use it are in gray

**Research question 3.** In order to improve future interventions, the researcher queried participants regarding the reason why they did not use the resources which were introduced. By far, most participants stated that their reason for non-usage was being too busy. This is unsurprising since Japanese university students often take 10 classes each semester, about double of a student in the US. English classes actually earn less credit than the courses in their field of study, so this might make study of core subjects more important. Many students also reported forgetting about the applications and websites after leaving the class. Fifteen percent described other reasons for not using the resources. Some of these reasons were that the resource was too easy or too difficult, the student was absent from the class, they did not receive class points for using it, or they simply were not interested in it. Figure 6 provides percentages associated with each response category:

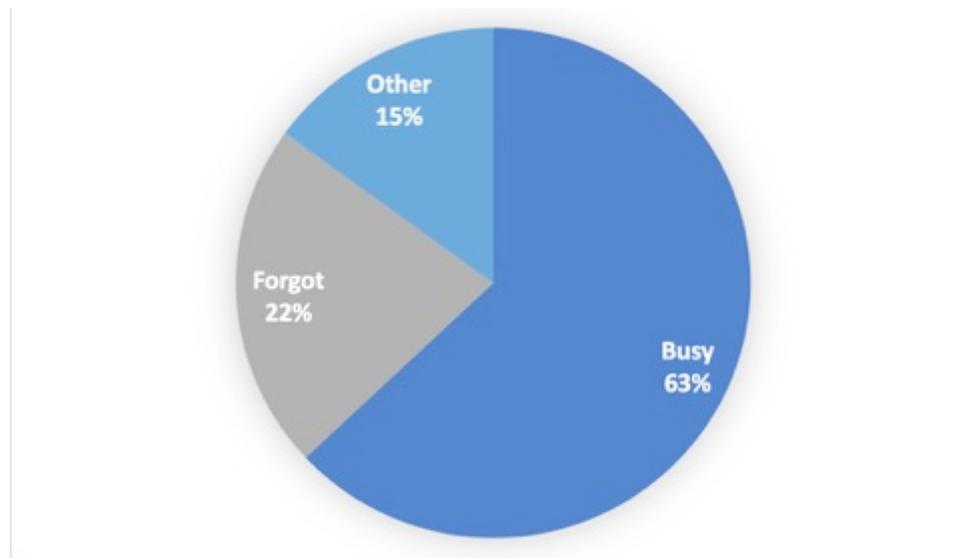


Figure 6. Student responses as to why they did not use the resources introduced during the intervention

**Research question 4.** Based on the results of questions one to three, it became apparent that the intervention would need to improve in subsequent iterations. To that end, the researcher identified several ways that such a project could be modified based on his own experience and the advice of other researchers and educators. First, the resources were chosen for the intervention solely by the instructor. Students were not queried about their learning needs or the types of websites/applications that they preferred. In addition, information about these resources were delivered from the top down. It may have been more beneficial to adopt a student-centered approach when presenting the resources to the class. For example, small groups of students could have worked together to choose and then present their selection for informal learning resources.

Another issue that could have been improved was for the instructor to provide more instruction regarding informal learning and its benefits for language learning. Further, while the focus of this study was informal learning, which is characterized by student volition and autonomy, it might have been advantageous to require usage of the intervention resources for a period of time, so that they could see how helpful they were. The hope, of course, would be that students would then adopt these resources for informal study based on the previous positive experience. Finally, in order to properly execute a follow-up study with the above suggestions, a longer time horizon is indicated.

## Conclusions

The purpose of this research was to investigate how a 10-week instructional intervention affected students' usage of mobile devices for informal learning. However, responses to a post- and pre-survey showed that there were no significant differences, and in some cases, mean scores were actually reduced in the post-survey. In addition, the majority of students did not use the mobile applications and websites introduced during the intervention after leaving the class. Responses in reflective writing activities revealed that the main reasons that participants did not use the

intervention resources outside of the class were because they were too busy or forgot about them. Based on these results and through conference with other educators and researchers, it was determined that several changes need to be made in order to achieve a better result with a redesigned intervention.

The researcher has decided to create a plan of implementation that will encompass two fifteen-week semesters. The first semester will be dedicated to planning and the second semester will focus on the intervention. In the first semester, the researcher will utilize the SAM (Successive Approximation Model) 1 (Allen Interaction, n.d.) of instructional design in order properly assess learning needs and preferences of learning resources. In the second semester, a modified action research model will be applied to implement the modified intervention. In addition, for the purpose of increasing the integrity of the study, it is the researcher's plan to recruit participants from several ICT classes. In this way, one class will receive an instructor-centered intervention, the second will feature an intervention which is more student-centered, and the final class will serve as a control. Figure 7 offers a visual representation of the planned improvements to the intervention:

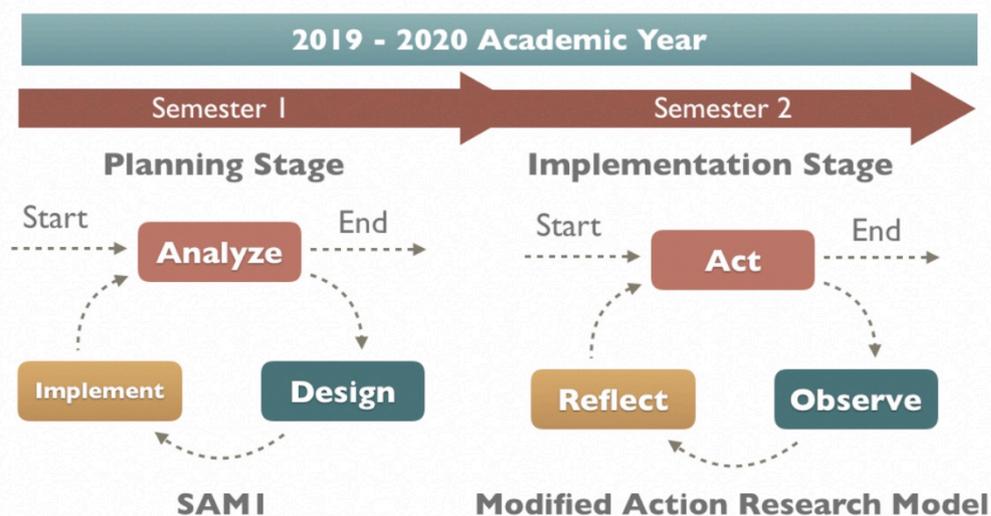


Figure 7: Second iteration of the informal MALL intervention

While a positive result was not achieved in the current study, the researcher continues to believe that interventions leading to increased student engagement in informal language learning will lead to better educational outcomes in EFL and ESL classrooms. The preliminary study featured here revealed important information regarding the struggles of students to engage in out-of-class learning related and hopefully shed some light on how those struggles can be addressed.

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## Appendix 1

### Informal MALL Resource Example

#### モバイル機器とは

モバイル機器とはスマートフォン、タブレット、MP3プレーヤーのような携帯することができ、手に持って操作ができる電子機器で、言語教育に利用可能なものです。

#### インフォーマル英語学習とは

インフォーマル（非公式）英語学習とは、構造化された授業、例えば大学の英語の授業や英会話スクールのレッスンなどに直接関わりのない学習で、英語の上達につながる可能性がある活動全てを意味します。

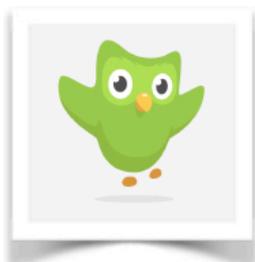
インフォーマル英語学習は意識的に、また無意識に行われます。

例え) 意識的とは・・・英語の映画を英語の勉強のために観ること  
無意識的とは・・・英語の映画を娯楽のために観ること

#### Informal Mobile Learning Resource #1: Duolingo

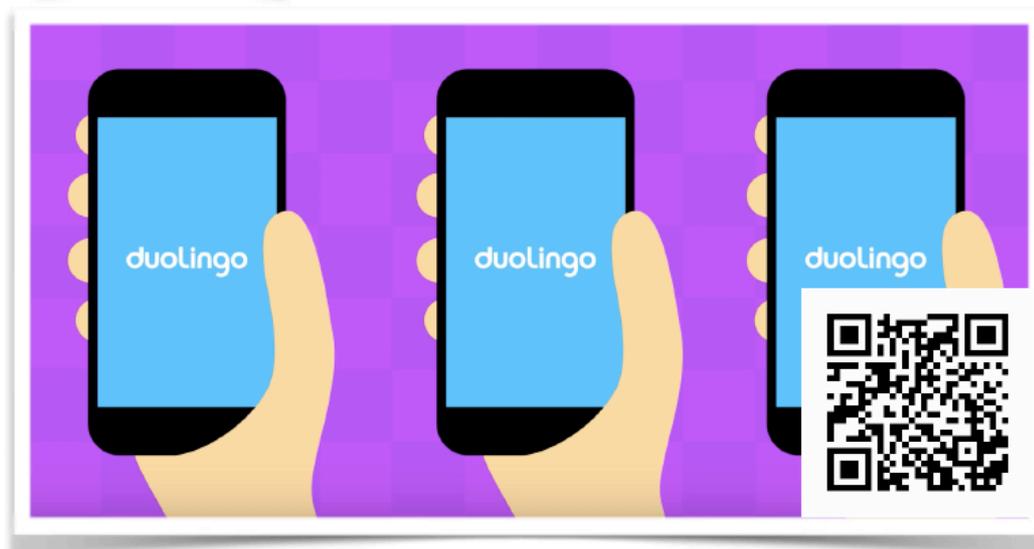
##### What is it?

Duolingo is a freemium language-learning platform that includes a language-learning website and app, as well as a digital language proficiency assessment exam. Their goal is to give everyone access to a private tutor experience through technology. As of November 2016, the language-learning website and app offer 68 different language courses across 28 languages, with 8 additional courses in beta and 15 additional courses in development. The app has about 200 million registered users across the world. - Wikipedia



**Website:**

<https://www.duolingo.com/>





## ***Self-Selection and Mathematics: Racial Equity and Appropriate Placement***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

### **Abstract**

This study explores the relationship between appropriate class placement and minority demographics, in relation to advanced mathematics classes. We study this relationship under the self-selection program model at an urban middle school in the Midwest. We define self-selection as a student's ability to choose his or her level of course regardless of test scores and other academic criteria. At this specific school, students have the choice of selecting their mathematics class level (double-advanced, advanced, or standard). While parental influences may play a role in students' course selections, we highlight that under this model the course for which a student registers for is up to the student. The purpose of the self-selection program model is to promote equal opportunities and access to advanced courses, especially for those students that may not have been tracked into higher-level classes earlier in their academic careers. Specifically, this model aims to increase the number of minority students that enroll in advanced classes, as we know that advanced classes are comprised mostly of White and Asian students. Through this study, we investigate how the self-selection program model affects the demographics of leveled classes. We also assess students' accuracy in choosing appropriate classes under this model. While we found no indication that self-selection increases minority enrollments in advanced classes, we did find that under this program model, fewer "misplaced" White and Asian students chose to pursue double-advanced classes. Therefore, there is evidence that self-selection contributes to appropriate choices per students and families, negating the need for school input.

Keywords: self-selection, racial equity, placement, advanced classes, tracking

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## Introduction

Today, students across the nation are facing unequal education opportunities. Whether students live in rural, suburban, or urban districts, equity may be sparse within the walls of their respective schools. While a variety of factors contribute to education inequity, research shows that race and socioeconomic status (SES) are amongst the highest contributors that limit the opportunities available for students (Brown Center Report, 2013). Furthermore, when we specifically look at mathematics classrooms, we see blatant inequities and racial disparities that are deep rooted and stem from our nation's history (Walker, 2007).

While various forms of inequity exist within schools, we will focus on the inequity that is associated with tracking in mathematics. Tracking refers to a wide variety of ability grouping models that have existed, and still do exist, in many American schools (Oakes, 2016). Both historically and currently, Black and Hispanic students represent the majority of students in lower-level tracks, while White and Asian students represent the majority of students in higher-level tracks (Hanushek & Wobmann, 2006; Walker, 2007). Students in lower-level tracks are taught less challenging material, have less experienced teachers, are less prepared for college entrance exams, and in turn have less success after high school compared to students in higher-level tracks (Newfield & Mcelyea, 1983). This means that because Black and Hispanic students are typically tracked into lower-level classes at an early age, they are educationally disadvantaged compared to their White and Asian peers. Therefore, it is clear that tracking continues to promote unequal education opportunities.

There have been several de-tracking movements throughout history to combat the inequities associated with tracking, yet schools continue to implement this practice. Currently, tracking is most prevalent within each subject, and in some districts, this begins as early as elementary school (Oakes, 2016). While completely de-tracking students has its own cons, some schools have implemented what is called self-selection. This model hopes to restructure traditional tracking and increase the number of opportunities available to all students, such that students can choose which level of classes they take (Corbett Burris, Heubert, & Levin, 2016).

In this study, we will focus on self-selection pertaining to mathematics classes at the middle school level. In short, self-selection is meant to focus on student-choice and allow students to self-select into higher-level courses without having to "make the cut". For example, a student that is currently taking standard-level sixth grade mathematics may choose to take advanced seventh grade mathematics the following year. While teachers and counselors may not endorse a student's course selection, a student's test scores and/or classroom performance can no longer prevent him or her from choosing to take a higher-level class. This is contrary to traditional tracking, and thus, self-selection is intended to help all students better prepare themselves for secondary and post-secondary education (Klopfenstein, 2004). Lastly, self-selection is also meant to eliminate the political aspect associated with advanced tracks. Since all students are given equal access to these higher-level classes, schools believe there is less room for parental influence and teacher discretion. Because certain parents typically interfere with traditional tracking, schools identify the self-selection

program model as a means to even the playing field for all students (Corbett Burriss et al., 2016).

### **Purpose of Our Study**

The purpose of this research study is to determine the effectiveness of self-selection relevant to its promotion of equal opportunities and its effect on appropriate class placement for middle school students. We believe that tracking does create unequal education opportunities; however, we are skeptical that self-selection is the answer. We question if this program model is increasing the number of minority students in advanced classes, and we question whether middle school students are able to choose an appropriate mathematics class based on their mathematical abilities and needs. Additionally, we wonder if only certain students are taking advantage of this program model such that the student populations that self-selection is intended to best serve are not benefitting from its implementation.

### **To address our wonderings, we proposed the following research questions:**

- (1) How effective is the self-selection program model in increasing minority enrollments in advanced classes?
- (2) How accurate are students in placing themselves in an appropriate mathematics class under this model?

Depending on our findings, we may recommend that more schools implement the self-selection program model. On the other hand, our findings may prompt us to recommend that schools move away from the self-selection model. For example, if our study shows that self-selection is effective in increasing the number of minority students enrolled in higher-level mathematics classes, then we will support self-selection and encourage more schools to adopt it. However, if our doubts about self-selection are confirmed, we will suggest that schools consider alternatives to combat the inequity associated with tracking.

### **Literature Review**

As we stated in our introduction, education opportunities are unequal for students in the United States. These inequities can take many forms such as old facilities, limited extracurricular activities, inexperienced teachers, outdated textbooks, and so on. These inequities intersect with race and socioeconomic status, and for that reason we will utilize the theoretical framework of Critical Race Theory throughout our study. By showing that educational inequities are the product of historical segregation in schools, we hope to illustrate the importance of increasing access to rigorous learning opportunities for all students. In our study, we specifically focus on the history of tracking and demonstrate how other factors, such as parental influence and cultural characteristics, have allowed traditional tracking to continue over time and perpetuate segregated mathematics classrooms.

**Tracking** has remained a common practice in the United States' public education system, yet much criticism surrounds this topic. While tracking is intended to group students based on their ability levels so that teachers can effectively tailor instruction, researchers have observed a strong correlation between tracking and inequity

(Gamoran, 2009). Tracking is intended to decrease the amount of differentiation that would otherwise be needed; however, the majority of the research shows that the students who are tracked into high-achieving classes continue to widen their achievement advantages compared to students tracked into standard-level and remedial classes (Gamoran).

Additionally, research has shown that there is a strong correlation between a student's race and socioeconomic status and the track in which the student is placed (Oakes, 1992). While a student's socioeconomic status more directly effects his or her track placement, the student's race/ethnicity has an indirect effect on placement (Gamoran, 2009). Students of color, namely Black and Hispanic students, typically have lower test scores than White students; this means that students of color are typically placed in lower level tracks, especially when they begin high school (Hanushek & Wobmann, 2006). These students' lower test scores limit which classes they can take, and therefore may hinder their preparedness for post-secondary endeavors. This being said, several studies have concluded that students in high-achieving classes encounter more challenging tasks and curriculum compared to students in standard-level and remedial classes (Newfield & Mcelyea, 1983). This means that standard-level and remedial students are not being given the same opportunities, nor are they exposed to the same level of difficulty as their higher-tracked peers.

Furthermore, higher-level classes tend to be taught by more experienced and more highly educated teachers, whereas standard-level and remedial classes tend to be taught by new, less experienced teachers (Gamoran, 2009). This trend can either limit or enhance students' opportunities based solely upon what teacher some students have compared to others. Even more concerning is that low-income and/or majority minority schools generally have far fewer experienced and highly educated teachers compared to historically white schools (Oakes, 2016). This means that even students who are enrolled in higher-level courses at low-income and majority minority schools are still disadvantaged.

In general, we summarize that the majority of research is in favor of de-tracking students; however, one recent study used a new approach to study tracking and found no evidence that tracking is detrimental to standard-level and remedial student outcomes (Figlio & Page, 2002). This study considered the possibility that school choice, whether parents and/or students decide what school is best for them, depends on the tracking programs that a school does or does not have. Per this study, high-ability students typically chose schools that did have tracking, while standard-level and remedial students typically chose schools that did not have tracking. With this consideration, further research was conducted such that unobservable factors correlated with tracking were controlled. With this approach, researchers concluded that de-tracking would not help close the achievement gap, and instead this study discussed the possibility that tracking programs may help lower-ability students reach adequate academic goals.

**Parent involvement** is another factor that has been linked to classroom segregation, and therefore has contributed to the perpetuation of tracking. Several researchers have shown that parent-involvement can lead to less diverse classrooms and potentially influence the amount of access students have to equal opportunities. When parents become overly involved in their children's schools, they often focus solely on the

advancement of their own children without keeping other students in mind (McGrath & Kuriloff, 1999). Involved parents tend to be White and are typically from upper-middle class households; these parents typically have more pull at schools because, “They carry an implicit threat of flight from public schools”, which administrators fear (McGrath & Kuriloff, 1999, p. 605).

Even if parents are not directly involved with their children’s classrooms, they may be involved with committees such as the Parent Teacher Associate (PTA), Sports Booster programs, etc. Even with this more indirect involvement, researchers have shown that these parents still have more pull when it comes to their child’s class placement compared to less involved parents (McGrath & Kuriloff, 1999). Again, the historically White aspect of parental involvement contributes to unequal opportunities.

Lastly, there is also a strong correlation between parents’ level of education and the track placement of their children (Useem, 1992). Highly educated parents understand how the American public school system works, and thus they will heavily involve themselves in their students’ course selections (Useem, 1992). Additional research has shown that highly educated people tend to be of higher socioeconomic status, and thus a higher proportion of advanced students come from more affluent households (Davis-Kean, 2005). This too perpetuates tracking, as more highly educated parents will not only push for schools to offer advanced courses, but they will also fight for their children to be enrolled in such classes.

**Cultural Characteristics** is the last factor we will discuss that has been studied in relation to classroom segregation and the inequities associated with tracking. More specifically, we bring up this factor to address why high-achieving minority students do not always stay in advanced tracks, even if they were originally placed there. One idea that is commonly referenced when discussing this factor states that high achieving minority students experience “the burden of acting white” (Tyson, William, Darity, & Castellino, 2005). While researchers have not found empirical evidence to support this, it is believed that a strong public belief in this assertion still exists today (Tyson et al.).

In terms of education, this theory suggests that high achievement is viewed as a White cultural norm, and thus high achieving minority students are viewed as “acting White” should they demonstrate academic achievement. Because of this, high-achieving minority students are thought to struggle with identity and acceptance of their high potential (Bergin, 2002). Similarly, Tyson et al. (2005) determined that high achievement is not always recognized in minority cultures because it is perceived as a successful White cultural norm (p. 584). The negativity associated with “acting white” prevents some minority students from taking higher-level classes even after they have been recognized as being gifted; this is because they feel too isolated from their minority peers (Ford, 1998). In turn, the stigma of “acting white” limits the number of other minority students that pursue higher-level classes. This contributes to the severe underrepresentation of minority students in advanced tracks, and in turn, this contributes to the classroom segregation that is so prevalent today.

**To summarize**, we recognize that tracking, parent involvement and cultural characteristics contribute to racial inequity and unequal opportunities for students.

Thus, we aim to further investigate the self-selection program model, as we hope to determine whether or not this implementation can help overcome the deep-rooted causes of segregation in the mathematics classroom. If self-selection does promote racial equity, then this research can support other schools in their decision to adopt the self-selection program model. On the other hand, if self-selection is determined to be ineffective, then it is our hope that schools will move away from this particular model and commit to finding other means for promoting equal opportunities.

### Methods and Data Collection

In order to study the effectiveness of the self-selection program model, we identified an urban Minnesotan middle school that recently implemented self-selection. We requested historical and current registration records along with students' standardized state test scores from the district. This school was in their second year of its self-selection implementation, so they provided us with three years of data prior to the implementation and one year of data post-implementation. We had hoped to have a fifth year of data; however, the standardized exam scores that we would have needed were not published at the time of our initial research. The identified middle school is a 6-8 building and is the only middle school in the district. Additionally, this school is classified as a low-income school according to the Teacher Cancellation Low Income Directory. Demographics for the school are shown below.

Race	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
White	61.6%	61.2%	60.8%	58.3%	56.3%
Black	22.8%	22.7%	22.3%	23.9%	24.6%
Hispanic	9.5%	9.8%	9.9%	11.3%	12.5%
American Indian	0.7%	0.6%	1.1%	0.6%	1.0%
Asian/Pacific Islander	5.4%	5.8%	5.9%	5.9%	5.6%

Table 1: *Student Population Demographics by Academic Year*

Because our research pertains to a Minnesota state test, let us take a moment to share some background information on what is called the Minnesota Comprehensive Assessment (MCA). The MCA is a standardized exam given to all students each spring that measures students' performance relative to the Minnesota grade-level state standards. Note that Minnesota has its own state standards, as it does not adhere to the Common Core State Standards.

Based on a student's MCA score, he or she is categorized into one of the following sets: Does Not Meet Standards (D), Partially Meets Standards (P), Meets Standards (M), and Exceeds Standards (E). Scores for middle school students have three digits. The first digit indicates grade level, and the second two digits indicate the student's position within a category. The table below shows numerical scores that indicate each category.

Grade	D	P	M	E
6 <sup>th</sup> Grade	601-639	640-649	650-659	660-699
7 <sup>th</sup> Grade	701-739	740-749	750-759	760-799
8 <sup>th</sup> Grade	801-839	840-849	850-860	861-899

Table 2: *MCA Scoring Ranges for Grades 5-8*

The students included in our sample met the following criteria: (1) Had a seventh and/or eighth grade registration record, (2) Were enrolled in a mainstream mathematics course offered at the middle school, (3) Had a previous year's Minnesota Comprehensive Assessment (MCA) score.

For seventh grade students that met this criterion, we cross-referenced their seventh-grade mathematics courses with their sixth grade MCA scores. We did the same for eighth grade students such that we cross-referenced students' eighth grade mathematics courses with their seventh grade MCA scores. Unfortunately, we were not able to do this for our sixth-grade students because the middle school was not able to release students' fifth grade MCA scores, as those were considered to be property of the elementary schools. There are six elementary schools in the district, so at the time of our research, we chose not to seek approval from each elementary school. Also, we did not cross reference students' ninth grade mathematics courses with their eighth grade MCA scores, and thus eighth grade MCA scores were not of concern to us.

Students excluded from our sample were those that were new to the district such that the school could not provide us with a previous year's MCA score. Also, we did not include students that had opted out of the MCA exam because again, we did not have a previous year's score for such students. Finally, we did not include students that took special education self-contained mathematics classes, nor did we include certain gifted students that only took mathematics through the University of Minnesota's Talented Youth Mathematics Program (UMTYMP).

After the implementation of self-selection, students completed online registration for the following academic year. Registration took place in February and was held during a science class session. No parents were present at registration, and students were able to select their courses independently at this time. We do speculate that parent-involvement occurred prior to registration and impacted the selections students made. However, during the actual registration period, students were able to select all of their own courses including core and elective classes.

Language and literature and mathematics were the only subjects that offered leveled courses at this middle school. Students could choose between standard or advanced language and literature, and they could choose between standard, advanced, or double advanced mathematics. Note that students were highly recommended not to register for a double-advanced mathematics class unless they had started on that track in 6<sup>th</sup> grade or had the support from their mathematics teacher and school administrators. In the end though, course selections were still up to each student.

<u>Grade</u>	<u>Standard Level</u>	<u>Advanced</u>	<u>Double-Advanced</u>
6	Math 6	Advanced Math 6	Advanced Math 7
7	Math 7	Advanced Math 7	Advanced Math 8
8	Math 8	Advanced Math 8	Geometry Honors

Table 3: *Mathematics Course Options by Grade*

As a reminder, our first research question asked how effective the self-selection program model is in increasing minority enrollments in advanced classes. To answer this question, we studied the demographics of each leveled class before and after the

implementation of self-selection. This information was readily available per the data that the school provided. We were able to look at the change in minority demographics holistically and by individual races. Once we summarized this data, we were able to perform a proportions comparison test using Minitab software to identify if any changes in the demographics were significant.

Furthermore, our second research question asked how accurate students are in placing themselves in an appropriate mathematics class under the self-selection model. Answering this question was more involved, as we had to do more extensive work to make sense of the data that we were provided. To begin, we compared the mathematics classes that seventh and eighth grade students enrolled in with their previous year's MCA score. By doing this, we were able to see if students chose classes that were appropriate for them under this model. Based on the mathematics classes offered at this school, we expected students who scored in the D, P and M categories on the previous year's MCA to register for standard level mathematics the following year. We expected students who scored in the E category to register for either advanced or double-advanced mathematics depending on their category score position. More specifically, students who scored between 60 and 69 (inclusive) were expected to register for advanced mathematics, and students who scored at 70 or above were expected to register for double-advanced mathematics. We made this distinction for the Exceeds Category based on the MCA proficiency level guidelines.

As stated earlier, the Principal and administrators provided us with the middle school's registration records for the past five years and historical MCA data for individual students. Before giving us access to these records, all student names were removed, and instead each student was coded with a seven-digit id number. We had no knowledge of which student was coded with which id number, and thus the privacy of all middle school students was maintained.

The data consisted of five different races: White, Black, Hispanic, American Indian, and Asian/Pacific Islander. There were five different classes: Math 7, Advanced Math 7, Math 8, Advanced Math 8, and Geometry. The MCA Scores consisted of a three-digit number, where the first number corresponded to a student's grade level and the last two digits corresponded to a student's performance on the test.

Initially, there were approximately 3,200 registration record entries to sort through. In order to handle this batch of data, we created a Java application that would cross reference our input files and generate subset percentages pertinent to our research questions. Because our class registration and MCA score records were separate files, our application was able to match each student's respective information and then output whether or not the registration was appropriate or not.

Once we obtained a comprehensive data set from our application, we parsed out the records we deemed to be invalid. First, students that did not have previous MCA scores were removed from the comprehensive data set. This instance could occur for transient students or students that opted out of the previous year's MCA exam. Additionally, we did not include students that did not have a class record, even though they had an MCA score. This would include UMTYMP students and students that were enrolled in self-contained special education mathematics classes.

Once we had all summarized data and valid entries, we utilized Minitab to perform multiple proportion tests to see if any changes in enrollment, by class and by race, were statistically significant. We predominantly used alpha levels of 0.05; however on a final test we used an alpha level of 0.10.

## Results

Per our research study, we identified the following major results: (1) The implementation of self-selection did not increase minority enrollments in advanced classes, (2) The implementation decreased the number of misplaced students in double-advanced mathematics, and (3) The implementation decreased misplaced White and Asian students in advanced and double-advanced mathematics classes.

First, we found no evidence that indicated minority enrollments increased after the implementation of self-selection. In fact, we observed decreases in advanced enrollments for Black, Hispanic, Asian, and American Indian students. We tested the percentage percent change in Black, Hispanic, and Asian student populations for significance using Minitab's two proportions test. We used an alpha level of 0.05 and constructed our two hypotheses as follows:  $H_0: p_1 - p_2 = 0$  and  $H_A: p_1 - p_2 > 0$ . Our hypothesis tests produced p-values that indicated these decreases were not statistically significant. Also, note that because so few students identified as American Indian, we were not able to perform a test for this particular population.

<u>Race</u>	<u>Before Self- Selection</u>	<u>After Self- Selection</u>	<u>P-Value</u>
White	71%	71%	N/A
Overall Minority Enrollment	36%	32%	0.139
Black	31%	30%	0.402
Hispanic	37%	29%	0.158
Asian	53%	45%	0.226
Am. Ind.	50%	33%	N/A

Table 4: *Percent Changes: Student Enrollment in Advanced Classes by Race*

Next, we found that the implementation of self-selection did decrease the enrollments of misplaced students in double-advanced mathematics. We also tested whether or not the decrease of misplaced students in advanced mathematics was significant; however, it was not. Again, we used Minitab's two proportions test with the same requirements as above.

<u>Leveled Class</u>	<u>Before Self- Selection</u>	<u>After Self- Selection</u>	<u>P-Value</u>
Advanced	81%	79%	0.192
Double-Advanced	74%	60%	0.005

Table 5: *Percent Changes: Misplaced Student Enrollment in Advanced Classes*

Lastly, we found that certain student populations (by race) enrolled in more appropriate classes after self-selection was implemented. In part with self-selection's goal to increase minority enrollments in advanced classes, we would also argue that decreasing the enrollment of White and Asian students goes hand in hand. This being

said, these results were particularly interesting. Again, we utilized Minitab's two proportion test; however, this time we set our alpha level to 0.10, as we were less concerned with a Type 1 error in this scenario.

<u>Race</u>	<u>Before Self-Selection</u>	<u>After Self-Selection</u>	<u>P-Value</u>
White	55%	50%	0.074
Black	28%	26%	0.363
Hispanic	28%	21%	0.113
Asian	46%	32%	0.099
Am. Ind.	50%	17%	N/A

Table 6: *Percent Changes: Misplaced Student Enrollment in Advanced Classes by Race*

## Conclusion

To summarize what we did in this study, let us revisit its purpose. This study sought to determine whether or not self-selection was effective in combatting traditional tracking. To do this, we studied a specific middle school and analyzed the changes in enrollment patterns both before and after self-selection was implemented. We studied both the changes in overall student demographics, namely by race, and the changes in misplaced student enrollments before and after self-selection. Through our study, we found that minority enrollments in advanced classes did not increase post-self-selection. Even though all students can enroll in higher-level mathematics classes under the self-selection model, we do not feel that self-selection overcomes the factors we discussed in our literature review that contribute to low minority enrollments in advanced classes.

To note the limitations of our study, let us first acknowledge that our data set is relatively small. It is our hope to continue analyzing this middle school's registration records and test scores, as the school is still implementing self-selection today. Because we only had one year of post-self-selection data, we are curious to learn more about the changes in enrollment patterns that occur in the future. Additionally, we only identified students as misplaced or correctly-placed based on their previous year's MCA score. We understand that this is only one data point, and we also realize that there are other factors at play in regard to students' performance on that specific test. Thus, previous MCA's score may lack some validity in terms of what classes are most appropriate for students.

In the future, we would like to study more data from this middle school and potentially conduct a more in-depth longitudinal study about self-selection and the themes that emerge per its implementation. While conducting such a study, we would seek to obtain student's NWEA scores in addition to MCA scores to determine which mathematics classes are most appropriate. We would also like to collect two more years' worth of data post-self-selection so that we had more similar sample sizes between our two groups. Additionally, we would be interested in approaching this study through a mixed-methods approach, such that we would interview students and parents about the registration process and the factors that influenced their course selection. Lastly, we would like to obtain MCA data from each elementary school and include sixth grade students in our study as well.

We would like to offer the following recommendations for the identified middle school after completing our study: (1) Self-selection should be more advertised and promoted, especially to minority students and their parents. We learned that the advertisement of self-selection was lacking, and we wonder if more students would have been interested in pursuing advanced classes had they known about this option. (2) Some sort of summer “fly-up” program should be offered to students who want to move from a standard level to an advanced class the following year so that these students can be better prepared for more rigorous coursework. We also believe this may help entice students to pursue advanced coursework because they will not feel as if they are behind compared to other students who have already taken advanced classes. At this specific school, a high percentage of minority students attend summer school programs anyways, so we predict that more minority students may choose to pursue an advanced summer school option over a general one. In this case, these students could be pre-exposed to advanced coursework and become more familiar with the difference in expectations prior to starting the next school year. (3) Because this school has committed to continuing self-selection, we also suggest that more individual student counseling take place before registration. We feel it would be beneficial for teachers to consult with students before they register for classes, as we predict that only some students are having conversations about course selections at home. If teachers could reach more students and discuss students’ options individually, then more students might be interested in pursuing classes that are most appropriate for them. Together, these recommendations could help increase minority enrollments in advanced classes while also decreasing the high numbers of misplaced students as well.

## Appendix 1: Historical Information

*Number of Students Enrolled in Each Leveled Class for Each Academic Year (By Race)*

	Course	White	Black	Hispanic	Asian	Am. Ind.	Total
<u>2012-2013</u>	Math 7	47	39	21	4	0	111
	Adv. Math 7	134	22	10	6	2	174
	Math 8	43	27	11	6	2	89
	Adv. Math 8	51	8	3	1	0	63
	Geometry	15	1	0	1	0	17
	<b>Total</b>	<b>290</b>	<b>97</b>	<b>45</b>	<b>18</b>	<b>4</b>	<b>454</b>
<u>2013-2014</u>	Math 7	49	31	15	9	1	105
	Adv. Math 7	64	6	5	6	1	82
	Math 8	41	30	17	3	0	91
	Adv. Math 8	137	20	16	6	0	179
	Geometry	50	6	2	3	0	61
	<b>Total</b>	<b>341</b>	<b>93</b>	<b>55</b>	<b>27</b>	<b>2</b>	<b>518</b>
<u>2014-2015</u>	Math 7	49	31	12	7	0	99
	Adv. Math 7	71	11	7	7	1	97
	Math 8	55	40	19	9	2	125
	Adv. Math 8	120	12	6	11	1	150
	Geometry	65	3	7	2	0	77
	<b>Total</b>	<b>360</b>	<b>97</b>	<b>51</b>	<b>36</b>	<b>4</b>	<b>548</b>
<u>2015-2016</u>	Math 7	50	38	22	10	3	123
	Adv. Math 7	81	20	7	6	0	114
	Math 8	54	40	12	7	1	114
	Adv. Math 8	123	11	6	8	2	150
	Geometry	45	2	1	0	0	48
	<b>Total</b>	<b>353</b>	<b>111</b>	<b>48</b>	<b>31</b>	<b>6</b>	<b>549</b>

## Appendix 2: Hypothesis Testing Data

### Question 1: Is the decrease in minority enrollment in advanced classes statistically significant?

- For all individual tests, use the following hypotheses with  $\alpha = 0.05$ :
  - $H_0: p_1 - p_2 = 0$
  - $H_0: p_1 - p_2 > 0$
- No decrease in minority enrollments were statistically significant.

#### I. Test and CI for Two Proportions: Overall Minority Enrollment

##### Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	529	193	0.364839
Sample 2	196	63	0.321429

##### Test

Null hypothesis	$H_0: p_1 - p_2 = 0$
Alternative hypothesis	$H_1: p_1 - p_2 > 0$

Method	Z-Value	P-Value
Normal approximation	1.09	0.139
Fisher's exact		0.159

The pooled estimate of the proportion (0.353103) is used for the tests.

#### II. Test and CI for Two Proportions: Black Student Enrollment

##### Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	287	89	0.310105
Sample 2	111	33	0.297297

##### Test

Null hypothesis	$H_0: p_1 - p_2 = 0$
Alternative hypothesis	$H_1: p_1 - p_2 > 0$

Method	Z-Value	P-Value
Normal approximation	0.25	0.402
Fisher's exact		0.452

The pooled estimate of the proportion (0.306533) is used for the tests.

#### III. Test and CI for Two Proportions: Hispanic Student Enrollment

##### Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	151	56	0.370861
Sample 2	48	14	0.291667

##### Test

Null hypothesis	$H_0: p_1 - p_2 = 0$
Alternative hypothesis	$H_1: p_1 - p_2 > 0$

Method	Z-Value	P-Value
Normal approximation	1.00	0.158
Fisher's exact		0.205

The pooled estimate of the proportion (0.351759) is used for the tests.

#### IV. Test and CI for Two Proportions: Asian Student Enrollment

##### Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	81	43	0.530864
Sample 2	31	14	0.451613

Test

Null hypothesis	$H_0: p_1 - p_2 = 0$
Alternative hypothesis	$H_1: p_1 - p_2 > 0$
Method	Z-Value P-Value
Normal approximation	0.75 0.226
Fisher's exact	0.295

The pooled estimate of the proportion (0.508929) is used for the tests.

**Question 2: Is the decrease in misplaced students in advanced classes statistically significant?**

- For all individual tests, use the following hypotheses with  $\alpha = 0.05$ :
  - $H_0: p_1 - p_2 = 0$
  - $H_0: p_1 - p_2 > 0$
- The p-values indicated that the decrease in advanced classes was not significant; however, the decrease in double-advanced classes was significant.

**I. Test and CI for Two Proportions: Advanced Classes**Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	587	477	0.812606
Sample 2	214	168	0.785047

Test

Null hypothesis	$H_0: p_1 - p_2 = 0$
Alternative hypothesis	$H_1: p_1 - p_2 > 0$
Method	Z-Value P-Value
Normal approximation	0.87 0.192
Fisher's exact	0.219

The pooled estimate of the proportion (0.805243) is used for the tests.

**II. Test and CI for Two Proportions: Double-Advanced Classes**Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	313	231	0.738019
Sample 2	98	59	0.602041

Test

Null hypothesis	$H_0: p_1 - p_2 = 0$
Alternative hypothesis	$H_1: p_1 - p_2 > 0$
Method	Z-Value P-Value
Normal approximation	2.58 0.005
Fisher's exact	0.008

The pooled estimate of the proportion (0.705596) is used for the tests.

**Question 3: Is the decrease in misplaced students (by race) statistically significant?**

- For all individual tests, use the following hypotheses with  $\alpha = 0.10$ :
  - $H_0: p_1 - p_2 = 0$
  - $H_0: p_1 - p_2 < 0$
- The p-values indicated that the decrease in misplaced students was significant for White and Asian students.

**I. Test and CI for Two Proportions: White Students**Descriptive Statistics

Sample	N	Event	Sample p
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Sample 1	991	544	0.548940
Sample 2	353	178	0.504249

Test

Null hypothesis	$H_0: p_1 - p_2 = 0$	
Alternative hypothesis	$H_1: p_1 - p_2 > 0$	
Method	Z-Value	P-Value
Normal approximation	1.45	0.074
Fisher's exact		0.083

The pooled estimate of the proportion (0.537202) is used for the tests.

**II. Test and CI for Two Proportions: Black Students**Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	287	80	0.278746
Sample 2	111	29	0.261261

Test

Null hypothesis	$H_0: p_1 - p_2 = 0$	
Alternative hypothesis	$H_1: p_1 - p_2 > 0$	
Method	Z-Value	P-Value
Normal approximation	0.35	0.363
Fisher's exact		0.414

The pooled estimate of the proportion (0.273869) is used for the tests.

**III. Test and CI for Two Proportions: Hispanic Students**Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	151	45	0.298013
Sample 2	48	10	0.208333

Test

Null hypothesis	$H_0: p_1 - p_2 = 0$	
Alternative hypothesis	$H_1: p_1 - p_2 > 0$	
Method	Z-Value	P-Value
Normal approximation	1.21	0.113
Fisher's exact		0.152

The pooled estimate of the proportion (0.276382) is used for the tests.

**IV. Test and CI for Two Proportions: Asian Students**Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	81	37	0.456790
Sample 2	31	10	0.322581

Test

Null hypothesis	$H_0: p_1 - p_2 = 0$	
Alternative hypothesis	$H_1: p_1 - p_2 > 0$	
Method	Z-Value	P-Value
Normal approximation	1.29	0.099
Fisher's exact		0.141

The pooled estimate of the proportion (0.419643) is used for the tests.

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## ***Comparing Vocabulary Profiles of L2 Asian Written English in the ICNALE Corpus***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

### **Abstract**

This brief study examines the vocabulary profiles of Asian EFL students' written English in the International Corpus Network of Asian Learners of English (ICNALE; Ishikawa, 2018). The ICNALE corpus is a collection of written and spoken texts from 2600 learners of English across 10 different Asian countries. The texts included in this corpus were composed under controlled conditions (content and length) and are grouped by CEFR level (A2, B1-1, B1-2, B2+). The corpus also includes samples of native-speaker English. In this study, vocabulary profiles were constructed for written essays from the corpus along three bands - GSL1, GSL2, and AWL - using AntWordProfiler (Anthony, 2013). It was found that: 1) while there appeared to be a slight difference in AWL type percentages between low and high CEFR levels, these percentages varied much more greatly by country; 2) there was no statistical difference between the AWL type percentages of native speakers and those of CEFR levels B1-2, and B2+; and 3) when compared with the essays written by native speakers, those written by learners from Singapore and Hong Kong had higher percentages of AWL types, while those written by learners from the Philippines, Pakistan, and China showed no significant difference at all.

Keywords: AWL, corpus linguistics, ICNALE, GSL, vocabulary profiles

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## Introduction

Over the years, a large number of learner corpora have been constructed based on the written and spoken texts of non-native learners of English (Centre for English Corpus Linguistics, 2019). Generally, the purpose of these corpora is to give researchers access to larger amounts of authentic learner-produced English that can be analysed in place of, or compared with, their own students' English text collections. These corpora are useful in the study of error production as well as in grammar and structure analysis. They are also useful in the area of vocabulary research. Vocabulary profiles, a convenient way for instructors to evaluate the lexical development of their students, can be readily constructed from these corpora.

This study examines the vocabulary profiles - primarily Academic Word List (AWL; Coxhead, 2000) usage - of Asian EFL students' written English in the International Corpus Network of Asian Learners of English (ICNALE; Ishikawa, 2018). It shows that: 1) while differences in AWL type usage may seem to vary somewhat by CEFR level, they vary so much more dramatically according to country; 2) the AWL type usage of learners with CEFR levels B1-2, and B2+ was not significantly different from that of the native speakers; and 3) there was no significant difference between the AWL type usage in essays written by native speakers and learners in the Philippines, Pakistan and China, while learner essays from Singapore and Hong Kong had much higher AWL type usage scores.

## The ICNALE Corpus

The ICNALE corpus is a collection of written and spoken texts from 2600 learners of English across 10 different Asian countries. It was developed by Dr. Shin Ishikawa of Kobe University, Japan, and is particularly valuable because of the great attention paid to both topic- and length- control during the production of the student texts it includes. Table 1 below shows the number of students per country in the corpus.

<i>Country</i>	<i>Texts</i>	<i>Country</i>	<i>Texts</i>
China	400	Pakistan	200
Hong Kong	100	The Philippines	200
Indonesia	200	Singapore	200
Japan	400	Thailand	400
Korea	300	Taiwan	200

Table 1: ICNALE composition

The corpus also includes 200 samples of native-speaker English texts (primarily from USA, UK, Australia, and Canada) for comparative purposes. Texts included in this corpus were composed under controlled conditions (content and length) and are grouped by CEFR level (A2, B1-1, B1-2, B2+; Figure 1).

This short study focused on the written English corpus and on just one of the two topics provided, namely the short essay relating to whether students should be permitted to have part-time jobs or not.

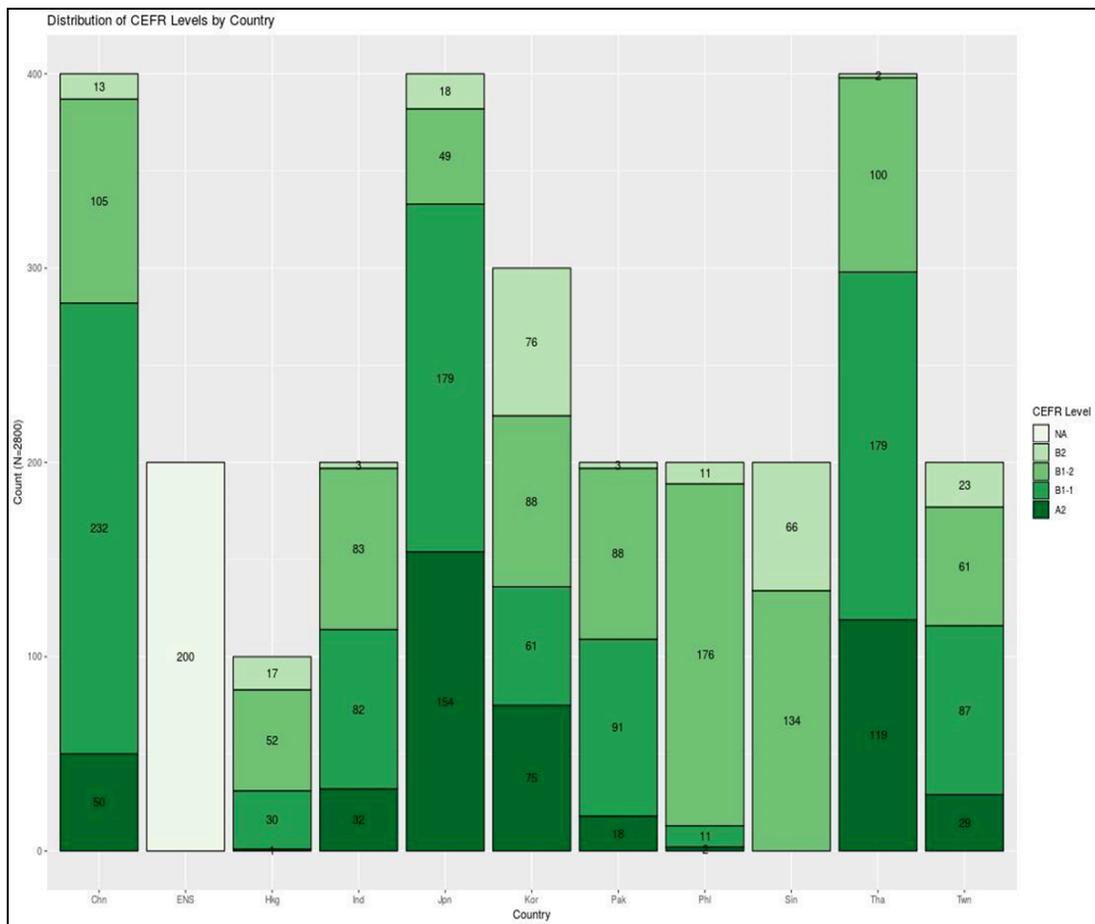


Figure 1: Distribution of CEFR levels across countries

## Procedure

In this study, vocabulary profiles were constructed for each of the 2600 learner written essays, as well as the 200 native speaker written essays, using AntWordProfiler (Anthony, 2013). Three bands – GSL1, GSL2, and AWL – were used in the profile construction. The essays were then compared by CEFR level and by country.

The R scripting language was used to conduct a pairwise ANOVA test (with post-hoc Games-Howell) on the data and to build a boxplot for analysis. The data for the AWL was the main focus of this preliminary study.

## Results and Discussion

### *AWL usage by CEFR level*

The profiles were first compared by CEFR level. Tables 2 and 3 show the AWL type percentage means by CEFR level and pairwise ANOVA post-hoc results respectively. Figure 2 shows the same data graphically.

<i>CEFR</i>	<i>n</i>	<i>Means</i>	<i>Variances</i>
ENS	200	7.02	9.06
A2	480	4.52	6.62
B1_1	952	5.17	6.65
B1_2	936	6.75	10.62
B2+	232	7.82	14.35

Table 2: AWL type percentage means by CEFR

<i>CEFR</i>	<i>Diff</i>	<i>t</i>	<i>df</i>	<i>p-value</i>
B1_2-ENS	-0.266	1.12	307	1
B2-ENS	0.798	2.44	427	1
B2-B1_2	1.064	3.93	321	0.01
B1_1-A2	0.652	4.52	963	0.001
A2-ENS	-2.498	10.27	326	<.001
B1_1-ENS	-1.846	8.07	264	<.001
B1_2-A2	2.232	14.08	1181	<.001
B2-A2	3.296	11.98	337	<.001
B1_2-B1_1	1.58	11.67	1778	<.001
B2-B1_1	2.644	10.08	285	<.001

Table 3: ANOVA post-hoc

As can be seen, there was a statistically significant difference between the means of all levels with the exception of the highest two B levels and the native speaker group. At first glance, this seems to indicate that CEFR level does have some bearing on degree of AWL usage. However, according to the ICNALE supporting material:

The ICNALE team has required all the learners to take a standard L2 vocabulary size test (VST) covering the top 5K word levels (Nation & Beglar, 2007), and also to present their scores in the high-stake English proficiency tests such as TOEFL and TOEIC. Then, all the learners have been classified into four kinds of CEFR-linked proficiency bands: A2, B1\_1 (B1 low), B1\_2 (B1 high), and B2+, based on their scores in the proficiency tests *or in the VST*. (Ishikawa, 2018, para 2.4; emphasis added)

It is then difficult to claim that CEFR level influences AWL type with any certainty when it may be that vocabulary level was what influenced the corpus designers' CEFR level assignment to individual students in the first place. Further investigation into the degree to which the VST influenced CEFR assignment, as well as the relationship of the VST to the AWL, is warranted.

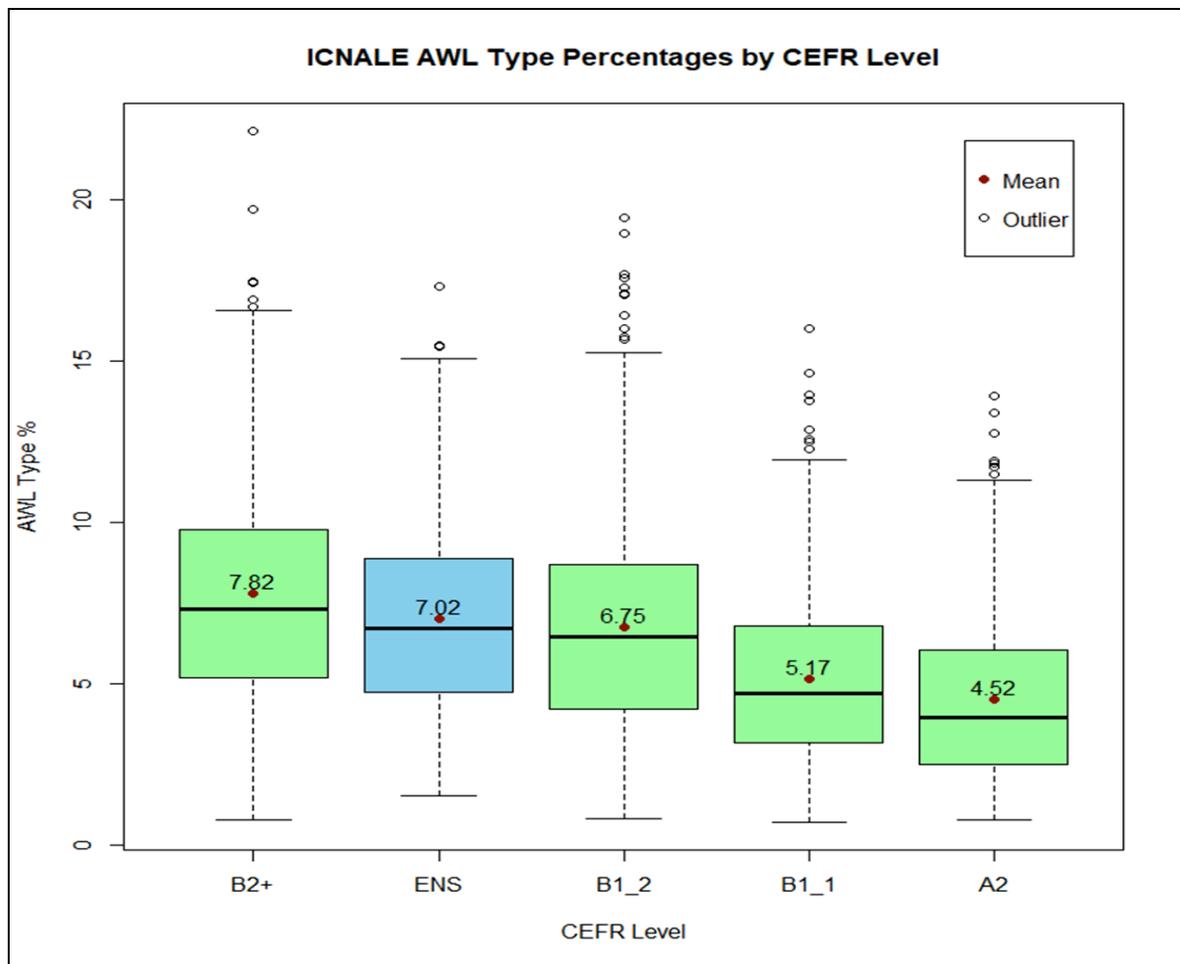


Figure 2: AWL usage by CEFR level

*AWL usage by country*

Next, AWL type usage was compared by country. Tables 4 and 5 show the AWL type percentage means by country and pairwise ANOVA post-hoc partial results (non-statistically-significant only) respectively. Figure 3 shows the same data graphically.

<i>Country</i>	<i>n</i>	<i>Means</i>	<i>Variances</i>
Chn	400	6.12	6.09
ENS	200	7.02	9.06
Hkg	100	8.73	9.25
Ind	200	5.57	7.38
Jpn	400	3.43	2.94
Kor	300	5.45	7.06
Pak	200	6.59	6.58
Phl	200	7.17	6.79
Sin	200	10.62	10.91
Tha	400	4.55	6.03
Twn	200	5.43	6.92

Table 4: AWL type percentage means by country

<i>Countries</i>	<i>Diff</i>	<i>t</i>	<i>df</i>	<i>p-value</i>
Ind-Chn	-0.5493	2.4055	366	1
Kor-Chn	-0.666	3.3834	617	1
Pak-Chn	0.4768	2.1728	385	1
Twn-Chn	-0.6883	3.0827	376	1
Pak-ENS	-0.4226	1.5107	388	1
Phl-ENS	0.1506	0.5352	390	1
Kor-Ind	-0.1167	0.4747	420	1
Twn-Ind	-0.139	0.5195	398	1
Twn-Kor	-0.0222	0.0923	429	1
Phl-Pak	0.5732	2.2169	398	1
ENS-Chn	0.8993	3.6552	336	0.723
Pak-Ind	1.0261	3.8826	397	0.311
Twn-Tha	0.8757	3.9282	375	0.264
Twn-Tha	0.8757	3.9282	375	0.264
Phl-Hkg	-1.5641	4.3994	173	0.052

Table 5: ANOVA post-hoc, non-statistically-significant differences only

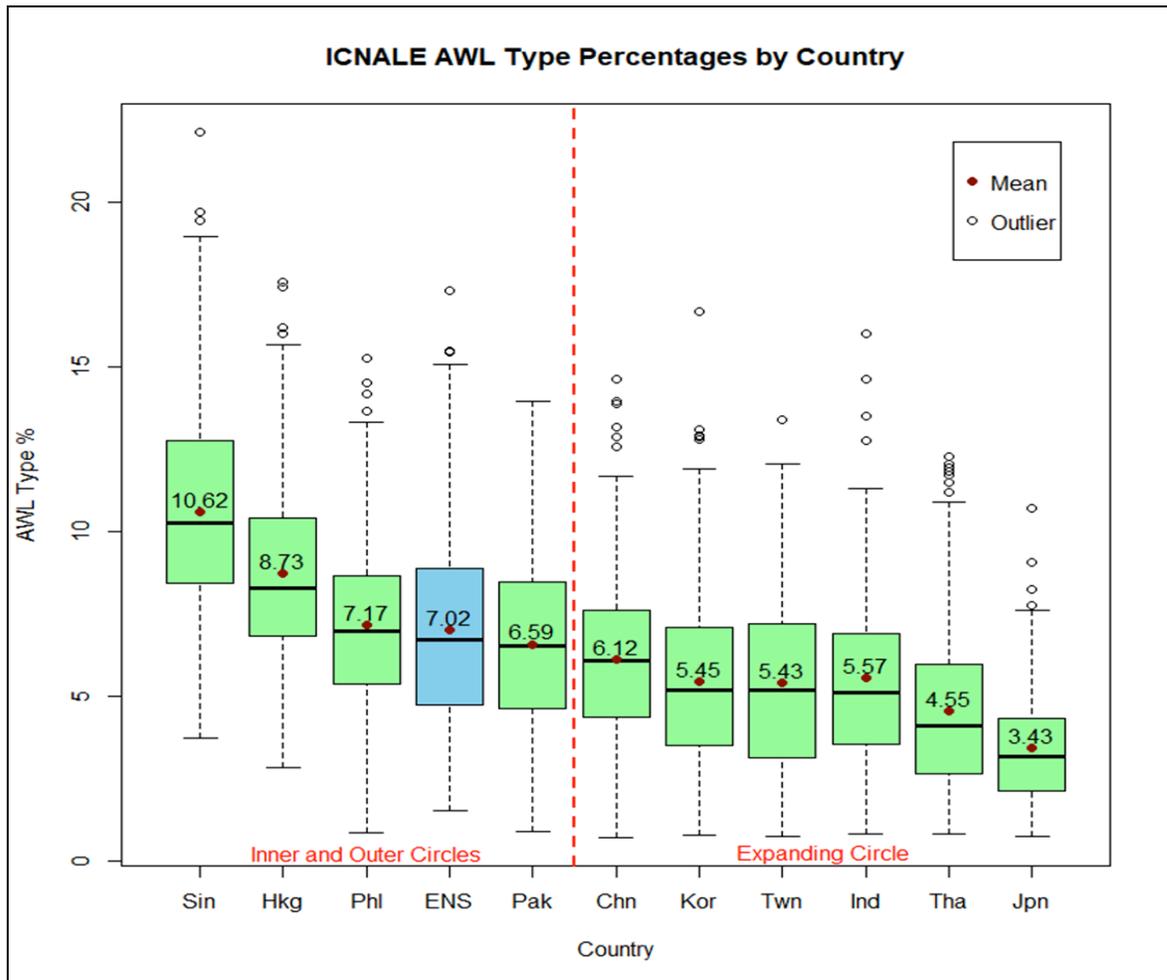


Figure 3: AWL type percentages by country

As can be seen, the boxes for each country arrange themselves neatly, with those from Inner and Outer Circle countries falling on the left side of the plot (higher AWL type usage) and those from the Expanding Circle countries falling on the right side (lower AWL type usage). Also of note, is that the essays written by Japanese learners had the lowest percentage of AWL types in the entire corpus while those written by learners in Singapore had the highest.

It is interesting to discover that the students from Singapore and Hong Kong had higher AWL type usage percentages than the native speakers. At this stage, it is unclear why this is the case, but one might speculate that it may relate to the essay writers' understanding of the essay register. It could be that the writers in Singapore and Hong Kong took a much more formal approach to the essay (thus including more AWL vocabulary) while the native speakers took a somewhat more casual approach. Degree of formality is something that should be marked for future study.

Finally, there was no significant difference between native speaker data and those of Pakistan, Philippines and China. This is an unexpected result but, as above, may be caused by the writers' understanding of what was expected in terms of the essay's register.

## **Conclusion**

This preliminary study looked at the vocabulary profiles – primarily the use of AWL vocabulary – of Asian EFL/ESL learners' written essays in the ICNALE corpus. AWL type percentage means were compared by CEFR level and by country. It was found that, while there was some possible difference in AWL usage by CEFR level (complicated by the method of assigning CEFR scores to learners), there seemed to be a much clearer difference in usage when compared by country. The AWL usage percentages ranged from the highest in Singapore and Hong Kong, to the lowest in Thailand and Japan, and scores from some countries were higher or equal to those of native speakers.

Future study should look more closely at the relationship between the CEFR leveling criteria and the AWL, as well as at the specific register of the individual essays, as both of these may have an effect on AWL type usage.

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***Chinese Immigrant and European American Parents’  
Emotional Expressions in Childrearing Activities:  
Cultural Norms of Emotions***

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IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

Both European Americans and Chinese immigrants value emotional expressions that are true to inner feelings, and adhere to social norms dictating appropriate expressions for different situations. However, the two groups differ in how they coordinate the values of being faithful to inner feelings and to social norms. The European American culture values an individual’s genuine expressions of emotions over allowing social norms to unduly dictate one’s behavior. The Chinese culture values social norms over explicit, individualized expressions of inner feelings. This study hypothesized that Chinese immigrants may be less likely to express inner feelings in social situations that are heavily regulated by cultural norms, and more likely to express feelings in lightly regulated situations. European Americans may differ less in emotional expressions across social situations due to the greater emphasis on self-consistency. Parent interviews about their childrearing practices were conducted, and two childrearing activities, sleeping and privacy-related activities, were selected for analysis according to cultural norms. Findings indicated that the two ethnic groups had different patterns in how their emotional expressions changed according to situation, and the patterns fit their respective cultural norms. Contrary to prediction, while the self-consistent orientation of European Americans was supported in that they were more likely to voluntarily express feelings in both activities, the parents also changed their emotional expressions to fit social situations through variations in positive versus negative expressions. The discussion centered on the interactions among social situations, measures of emotional expressions, and cultural norms.

Keywords: emotion, culture, Chinese immigrants, European-American, parent, childrearing

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## Introduction

Both European Americans and Chinese value emotional expressions that are true to the self's inner feelings. Also, both ethnic groups value emotional expressions that adhere to social norms dictating what expressions are appropriate in different social situations. However, the two groups differ in how they coordinate the values of being faithful to inner feelings and social norms. In European American culture, expressing genuine emotions typically entails making inner feelings as explicit as possible, employing individualized styles, and not allowing social norms to unduly dictate behavior. The independent self is valued, where the individual is viewed as "an independent, self-contained, autonomous entity" who "comprises a unique configuration of internal attributes" and "behaves primarily as a consequence of these internal attributes" (Markus & Kitayama, 1991:224). The independent self expresses emotions to enhance individuality, and "feels good" when emotional expressions assert the uniqueness of individuals. In comparison, Chinese are more concerned about social relationships than explicit, individualized expressions of inner feelings. The interdependent self is valued, and the focal in the individual's experience is "the self-in-relation-to-other (Markus & Kitayama, 1991:225)." The interdependent self expresses feelings to promote the harmony of interpersonal relationships. Individuals "feel good" when relationships are strengthened through emotional expressions (Markus & Kitayama, 1991). For the Chinese, emotional expressions are part of an intricate social system in which inner feelings, timing, situational demands, and other people's view are ideally in balance. This holistic view leads Chinese to be relatively less concerned with explicit expression of inner feelings and more reliant on social situations for cues regarding appropriateness when expressing emotions.

Moreover, cultures differ in how much emotions are expected to be consistent or specific to social situations. The Eastern view is one of balance, and the Western is one of consistency (Kitayama & Markus, 1999). The consistency view leads to an emphasis on "genuine" emotions that maintains the view of a consistent-self across situations. The balance view leads to an acceptance of emotional expressions that fit the social situation, even though to Westerners, it may seem compromising to one's personal feelings. The consistency versus balance view is related to the different ways individuals conform to social pressure in individualistic versus collectivistic cultures (Triandis, 1989; 1990). The public self, or one's generalized view of others, is different in these cultures. In collectivistic cultures, conformity to others in public settings is valued, and the public self behaves accordingly. Whereas in individualistic cultures, it is assumed that the public self values autonomy, independence, and self-reliance. Therefore, individuals behave in ways that distinguish themselves and impress others in public settings (Triandis, 1989).

This study views emotions as sociocultural constructs that are situated in the context of activities. Cultural researchers (e.g. Cole, 1995; Goodnow, Miller, and Kessel, 1995; Lave & Wenger, 1991; Rogoff, 1990, 2003; Shweder, 1991) have long argued that psychological processes are interwoven with context and can not be analyzed in isolation. Rather than focusing on the interaction of individual and environment, one should look into a "supra-individual unit of analysis (Cole, 1995)" that is called *practice, activity, event, context, or situation* by different researchers. This unit of analysis refers to "meaningful actions that occur routinely in everyday life, are widely shared by members of the group, and carry with them normative expectations about

how things should be done (Goodnow, Miller, and Kessel, 1995:1).” Cross-cultural research has shown that situation has an important impact on emotions (Frijda, 1988; Mesquita, 2001; Mesquita & Frijda, 1992; Triandis, 1989). Frijda (1988:349) stated that the first and most important law of emotions was “the law of situational meaning: Emotions arise in response to meaning structures of given situations; different emotions arise in response to different meaning structures.”

Sleeping arrangements, researched in past studies (e.g. Shweder, Jensen, & Goldstein, 1995; Rothbaum, Morelli, Pott, & Liu-Constant 2000) as well as the present study, are an example of an *activity*. European Americans commonly believe that parent-child cosleeping leads to problems, including interference with children’s independence, disturbance in parents’ relationship with one another, and creation of bad sleeping habits that are difficult to break. Therefore, European American families emphasize the importance of training young children to sleep in their own beds and bedrooms. In contrast, cosleeping is a common practice in Chinese culture, and it is acceptable for young children to sleep by themselves, with their siblings, parents, or other family members. The differences in sleeping arrangement practices are related to parents’ *cultural belief systems* (Harkness & Super, 1996) that vary in emphasis on autonomy versus interrelatedness as well as “sacred couple” versus “respect for hierarchy” (Shweder, Jensen, & Goldstein, 1995; Wolfson & Montgomery-Downs, 2013).

In this paper, *activity* refers to childrearing practices, such as sleeping arrangements, bathing, and nudity. These activities are windows into *cultural norms*, which are rules and assumptions shared by a community regarding what constitute appropriate behavior in different situations. Cultural norms are comparable to cultural belief systems. *Situation*, refers to how activities are regulated according to cultural norms. Cultural norms dictate that some situations are *heavily regulated*, meaning that more rules are involved and a smaller range of behavior is deemed appropriate. Other situations are *lightly regulated*, meaning that fewer rules are set and a broader range of behavior is acceptable. Sleeping arrangement is an example of a *heavily regulated* situation in the European American culture, while the Chinese regard it as *lightly regulated*.

Recent studies comparing Chinese and European American parents and children support cultural differences in observed emotional expressions (Camras, Chen, Bakeman, Norris, & Cain, 2006; Chen, Zhou, Main, & Lee, 2015), discussion of emotions (Chen, Kennedy, & Zhou, 2012; Sims, Tsai, Jiang, Wang, Fung, & Zhang, 2015; Tao, Zhou, Lau, & Liu, 2013; Tsai, Simeonova, & Watanabe, 2004; Tsai, Knutson, & Fung, 2006; Tsai, Louie, Chen, & Uchida, 2007) and emotion situation knowledge (Wang, 2003; Wang & Fivush, 2005; Yang & Wang, 2016). Based on past research, this study explores two main hypotheses: first, emotional expressions are related to whether the situation is heavily or lightly regulated, which, in turn, is dictated by cultural norms. Second, there are cultural differences in the degree to which situation influences emotional expressions. Since Chinese are more situational oriented, their emotional expressions are more influenced by the situation than European Americans, who are more self-consistent oriented. Instead of direct observation of parent-child interaction, parents’ discussion of emotions was used as the source of data because it would better capture cultural norms of emotional expressions. The sociologist Arlie Russell Hochschild (1983, 2012) studied “feeling rules” through discussing the situations in which her participants’ feelings did not fit

the expected norm, and suggested that the richness of feeling management lies in the discrepancy between the emotions experienced by individuals and the expressions expected by the cultural norm. This discrepancy is better revealed in discussion than by observation. According to Affect Valuation Theory (Sims, Tsai, Jiang, Wang, Fung, & Zhang, 2015; Tsai, Knutson, & Fung, 2006; Tsai, Louie, Chen, & Uchida, 2007), culture has a greater impact on *ideal affect* (how people ideally want to feel) than *actual affect* (how people actually feel). A study on Chinese immigrant parents with various acculturation experiences found that cultural orientations were primarily associated with parents' self-reported expressivity rather than observed emotional expression, and that higher American orientations were associated with higher expressivity (Chen, Zhou, Main, & Lee, 2015). These studies point to the context of parents' use of emotional words as an effective tool to capture how cultural norms influence emotional expressions.

## METHOD

The interviews were originally conducted in a study on cultural differences in the meaning and expressions of physical closeness between parent and young children (Rothbaum, Morelli, Pott, & Liu-Constant, 2000). I participated in developing the interview instrument, constructing coding schemes, conducting the interviews, analyzing the data, and co-authored the paper. Findings of the original study indicated that sleeping activity (such as cosleeping) was deemed lightly regulated by Chinese immigrant but heavily regulated by European American parents, while privacy-related activities (such as co-bathing and nudity) was deemed lightly regulated by European American but heavily regulated by Chinese immigrant parents. The contrast in cultural norms of regulation regarding these two childrearing activities set the stage for exploring the influence of situation on emotional expressions by analyzing the use of emotion words in the parent interviews.

### *Participants*

Forty Chinese immigrant and 40 European American parents of children age 3 to 7 ( $M = 4$  years, 10 months) were interviewed. In each ethnic group, 50% of the participants were mothers and 50% were fathers. All the participants were from intact families and lived in the Greater Boston area. They were predominantly middle-class and highly educated (30 Chinese immigrant parents and 28 European American parents had graduate degrees).

The Chinese immigrant parents were born and spent at least the first 12 years of their lives in Taiwan (50%), Hong Kong (15%), or Mainland China (35%). At the time of the interview, the number of years that Chinese immigrant parents lived in the United States ranged from 2 to 27 ( $M = 12$ ). Fourteen of the Chinese immigrant parents intended to return to their country of origin, 15 of them did not, and 11 were unsure. Most of the Chinese immigrant parents' English language facility was rated by the interviewers as very fluent (50%) and generally fluent (44%); only 2 parents (6%) were not fluent. Almost all of the Chinese immigrant parents spoke Chinese at home – 69% spoke it most of the time and 26% spoke it about half of the time. When asked whether the interview would be different if conducted in Chinese, 68% of the Chinese immigrant parents said no and 32% said yes. The European American participants, as well as their parents, were born and raised in the United States. The

participants' grandparents were of European origin and had been living in the United States since they were 12 or younger.

The interview was a semi-structured instrument that assessed parents' practices and beliefs about physical closeness and family relatedness. Informants from Taiwan, China, Hong Kong and the United States were consulted to ensure that the questions were appropriate for members of both cultures. The interviewers were advanced undergraduate and graduate students taking a year-long seminar on cultural differences in parent-child relationships. Training for the interviewers consisted of listening to 25 hours of tapes of pilot interviews, conducting practice interviews, and receiving supervision. Training focused on how to probe for detailed responses regarding feelings about and reasons for the participants' childrearing practices.

### ***Hypotheses***

The hypotheses regarding participants' emotion words and utterances while discussing childrearing activities predict two levels of differences – between subject and within subject differences.

*Between subject differences.* Between subject differences reflect Chinese immigrant and European American cultural norms of situational regulation of emotions. The predictions are as follows:

1. In sleeping activity, which is lightly regulated for Chinese immigrants but heavily regulated for European Americans, Chinese immigrant parents would have more positive emotion words than negative words compared to European American parents. Also, Chinese immigrant parents would have more voluntary utterances than absent-when-solicited utterances compared to European American parents.
2. In privacy-related activity, which is heavily regulated for Chinese immigrants but lightly regulated for European Americans, European American parents would have more positive than negative words compared to Chinese immigrant parents. Also, European American parents would have more voluntary than absent-when-solicited utterances compared to Chinese immigrant parents.

*Within subject differences.* Within subject differences reflect the self-consistent orientation of European Americans and the situational orientation of Chinese immigrants. The predictions are as follows:

1. When comparing emotion words in the two activities, Chinese immigrant parents would have more positive than negative words in sleeping activity than privacy-related activity. European American parents would have some differences in the two activities, but the differences would not be significant.
2. When comparing emotion utterances in the two activities, Chinese immigrant parents would have more voluntary than absent-when-solicited utterances in sleeping activity than privacy-related activity. European American parents would have some differences between the two activities, but the differences would not be significant.

### ***Measures***

The interviews yielded two types of main measures: (1) words, and (2) utterances.

**Words** Positive versus negative has been a commonly used dimension to assess cultural differences in emotion word meanings (e.g. Camras, Kolmodin, & Chen, 2008; Frijda, 1988; Kitayama, Markus, & Kurokawa, 2000; Kitayama, Markus, & Matsumoto, 1995; Shaver, Wu, & Schwartz, 1992; Sims, Tsai, Jiang, Wang, Fung, & Zhang, 2015). The purpose of this measure was to test if parents' positive or negative direction of emotional expressions was associated with the positive or negative connotation of their cultural norms.

**Coding categories.** In this analysis, emotion words referred to both inner feelings, or the conventional meaning of emotions (such as happy, sad, and angry), and behaviors that were a direct expression of emotions (such as cry, laugh, and smile). Coding categories of emotion words were based on Shaver, Wu, & Schwartz' (1992) study of emotion word prototypes as well as definitions from the Webster Collegiate Dictionary and were defined as followed:

- Positive: included positive words, such as 'happy', 'glad', or 'smiling,' and negation of negative words, such as 'not sad', 'not mad', or 'not crying'.
- Negative: included negative words, such as 'sad', 'angry', or 'crying,' and negation of positive words, such as 'not happy', 'not glad', or 'not smiling'.
- Mixed or unclear: words that could be either positive or negative, such as the underlined words in the following -- "mixed feelings", "a range of emotions", or "it depends on his mood."

**Word scores.** T-tests showed that European Americans had more total words in both sleeping ( $t(77) = 2.25, p < .05$ ) and privacy-related activities ( $t(78) = 4.45, p < .001$ ) than Chinese immigrant parents (see Table 1 for descriptive statistics). Given the difference in total number of words, it was likely that an ethnic group might have more number of emotion words simply because they had more total words in that activity. To account for the possible bias, the number of emotion words were converted into emotion word scores, which were computed separately for the two activities. In each activity, emotion word scores were computed by dividing the number of emotion words by the total number of words, then multiplying it with the mean number of total words of all the participants. For example, a participant had 568 words in sleeping activity, 5 of which were positive emotion words. The mean number of total words of all the participants in sleeping was 455.48. The score of positive emotion words would be  $(5 / 568) \times 455.48 = 4.01$

The analyses in this study were based on emotion word scores and results reported accordingly.

**Utterances** The purpose of the emotional utterance measure was to capture emotional expressivity - how parents chose to withhold or to express feelings while discussing childrearing activities. Research has shown that European Americans express emotions more verbally and explicitly than Chinese immigrants (Chen, Zhou, Main, & Lee, 2015; Gao, Ting-Toomey, & Gudykunst, 1996; Tobin, 1995; Wang, 2003; Wang & Fivush, 2005).

**Coding categories.** An utterance referred to a set of an uninterrupted interviewer's question and an uninterrupted parent's response. An emotion utterance referred to an

utterance with one or more emotion words. The three types of emotion utterances were defined as followed:

- (1) Voluntary/Unsolicited: Emotion words were found in the parent's response but not in the interviewer's question.
- (2) Present when solicited: Emotion words were found in both the parent's and the interviewer's speech.
- (3) Absent when solicited: Emotion words were found in the interviewer's question but not in the parent's response.

**Utterance scores.** T-tests showed that Chinese immigrant parents had more total utterances in both sleeping ( $t(77) = 2.92, p < .01$ ) and privacy-related activities ( $t(78) = 2.27, p < .05$ ) than European Americans parents (see Table 3 for descriptive statistics). To account for the possible bias resulting from differences in total number of utterances, the number of emotion utterances were converted into emotion utterance scores. Emotion utterance scores were computed separately for the two activities by dividing the number of emotion utterances by the total number of utterances, then multiplying it with the mean number of total utterances of all the participants. In other words,

Emotion Utterance Score = (Number of Emotion Utterances / Total Number of Utterances)  $\times$  Mean Total Utterances

For example, a participant had 21 utterances in privacy-related activities, 4 of which were voluntary emotion utterances. The mean number of total utterances of all the participants in privacy-related activity was 20.56. The score of voluntary emotion utterance would be

$$(4 / 21) \times 20.56 = 3.91$$

The analyses in this study were based on emotion utterance scores and the results reported accordingly.

### ***Coder and Reliability***

One rater (the author) coded all 80 parent interviews, and another rater coded 20 randomly selected interviews (25% of the total) for inter-rater reliability. Both raters were researchers in the field of psychology, and represented the two cultural groups studied – the author was a Chinese immigrant who grew up in Taiwan, and the other rater was European American. The raters were trained to agree on which emotion words to analyze before coding formally began. All reliabilities were computed using Cohen's Kappa. Reliability for word measure was  $\kappa = .90$  in sleeping activity and  $\kappa = .90$  in privacy-related activity. Reliability for utterance measure was  $\kappa = .98$  in sleeping activity and  $\kappa = .93$  in privacy-related activity. Reliability for emotion words in self-statements was  $\kappa = 1.00$ .

## **RESULTS**

### ***Words***

Repeated-measures analysis of covariance was conducted to compare positive and negative emotion words between Chinese immigrant and European American groups. The independent variable was ethnicity and the covariate was parent

gender. Both of the repeated measures factors included two levels: activity (sleeping or privacy-related) and word (positive or negative). Results showed a significant three-way interaction between ethnicity, activity, and positive-negative words,  $F(1, 79) = 7.96, p < .01, \text{partial } \eta^2 = .12$ . Significant interactions were not found between activity and ethnicity,  $F(1, 79) = 2.58, p > .05$ , or between positive-negative word and ethnicity,  $F(1, 79) = .04, p > .05$ . See Table 2 for descriptive statistics.

The significant Ethnicity  $\times$  Activity  $\times$  Word interaction effect showed that the interaction of activity and positive-negative words for Chinese immigrants was significantly different than the interaction of activity and positive-negative words for European Americans. The interaction for Chinese immigrants indicated that the difference between positive and negative words was greater in sleeping activity (difference in  $M = .42$ ) than privacy-related activity (difference in  $M = -1.32$ ). The interaction for European Americans indicated that the difference between positive and negative words was smaller in sleeping activity (difference in  $M = -1.01$ ) than privacy-related activity (difference in  $M = -.13$ ).

To test the hypotheses of within subject differences, follow-up repeated-measures analyses of covariance (with parent gender as covariate) were conducted for each ethnic group separately to examine the Activity  $\times$  Word interaction. Analysis of European Americans' use of emotion words revealed no main effects of word or activity but a significant interaction effect,  $F(1, 79) = 8.54, p < .01, \text{partial } \eta^2 = .18$ . The interaction effect reflected a significant difference between the two activities in the use of positive versus negative words. In heavily regulated situations (sleeping activity), European Americans used more negative than positive words ( $M = 2.81$  and  $1.80$  respectively), and this difference was significantly larger than the difference between the negative and positive words ( $M = 3.24$  and  $3.12$  respectively) in lightly regulated situations (privacy-related activity). Analysis of Chinese immigrants' use of emotion words showed no main effect of word or activity, but a borderline significant interaction effect,  $F(1, 79) = 3.82, p < .06, \text{partial } \eta^2 = .06$ . In heavily regulated situations (privacy-related activity), Chinese immigrant parents had more negative than positive words ( $M = 4.04$  and  $2.72$  respectively), and this difference was borderline significantly more than the difference between negative and positive words ( $M = 3.37$  and  $3.79$  respectively) in lightly regulated situations (sleeping activity).

### **Utterances**

Repeated-measures analysis of covariance was conducted to compare voluntary and absent-when-solicited utterances between Chinese immigrant and European American parents. The independent variable was ethnicity and the covariate was parent gender. Both of the repeated measures factors included two levels: activity (sleeping and privacy-related) and utterance (voluntary and absent-when-solicited). Results revealed significant interactions between activity and ethnicity,  $F(1, 79) = 10.70, p < .01$ , utterance and ethnicity,  $F(1, 79) = 17.79, p < .001$ , and a three-way interaction between activity, utterance, and ethnicity  $F(1, 79) = 13.32, p < .001$ .

The significant Ethnicity  $\times$  Activity  $\times$  Utterance interaction effect showed that the interaction of activity and voluntary-absent utterances for Chinese immigrants was significantly different than the interaction of activity and voluntary-absent utterances for European Americans. The interaction for Chinese immigrants indicated that the

difference between voluntary and absent-when-solicited utterances was greater in sleeping activity (difference in  $M = 2.02$ ) than privacy-related activity (difference in  $M = .79$ ). The interaction for European Americans indicated that the difference between voluntary and absent-when-solicited utterances was smaller in sleeping activity (difference in  $M = 2.88$ ) than privacy-related activity (difference in  $M = 4.15$ ).

The significant Activity  $\times$  Ethnicity interaction effect reflected a tendency of all participants to have a greater difference between voluntary and absent utterances in sleeping activity ( $M = 5.80$  and  $.90$  respectively) than privacy-related activity ( $M = 7.59$  and  $2.65$  respectively). The significant Utterance  $\times$  Ethnicity interaction effect was not interpretable because it combined opposite measures (voluntary and absent-when-solicited utterances) and reflected the interactions involving one of these measures. Both interaction effects could also be explained by the higher order, three-way interaction between activity, utterance, and ethnicity.

To test the hypotheses of within subject differences, follow-up repeated measures analyses of covariance (with parent gender as covariate) were conducted for each ethnic group separately to examine the Activity  $\times$  Utterance interaction. Analysis of Chinese immigrants' emotion utterances showed no main effects of utterance or activity, but a borderline significant interaction effect,  $F(1, 79) = 3.26, p < .08, \text{partial } \eta^2 = .08$ . For Chinese immigrant parents, the difference between voluntary and absent-when-solicited utterances ( $M = 2.61$  and  $.59$  respectively) in lightly regulated situations (sleeping activity) is borderline significantly larger than the difference between voluntary and absent-when-solicited utterances ( $M = 2.35$  and  $1.54$  respectively) in heavily regulated situations (privacy-related activity). Analysis of European Americans' emotion utterances found significant main effects of activity,  $F(1, 79) = 6.89, p < .01, \text{partial } \eta^2 = .15$ , and utterance,  $F(1, 79) = 8.96, p < .01, \text{partial } \eta^2 = .19$ . The significant effect of utterance showed that European Americans had more voluntary than absent-when-solicited utterances in both activities. The significant effect of activity was not interpretable, since it was not meaningful to combine voluntary and absent-when-solicited utterances. The results did not show significant interaction between utterance and activity, which indicated that the differences in voluntary versus absent utterances between the two activities were similar. See Table 4 for descriptive statistics.

## Conclusion

To summarize the results, the first main hypothesis was supported by significant three-way interactions among measures of Emotions, Situation, and Ethnicity. The interactions suggest that emotions, situation, and culture are inter-related. The second hypothesis was partially supported by the results. Chinese immigrants' situational orientation was supported by borderline significant results, and the self-consistent orientation of European Americans was supported in that they were consistently more likely to voluntarily express feelings than to avoid providing emotional information across situations. Contrary to prediction, it was found that European Americans varied in their positive versus negative emotional expressions across situations.

In interpreting findings related to the first hypothesis, the emergence of interaction effects in the opposite direction in the two groups clearly indicates that culture and situation cannot be looked at independently if we wish to understand emotional

expressions. Saying that one cultural group expresses emotions more, or that one situation elicits more emotional expressivity than another, is too simplistic. The embeddedness of situation in cultural context is well known in learning activities (e.g. Lave & Wenger, 1991; Rogoff, 1990, 2003; Shweder et al., 1995). Now it has been shown to apply to emotional expressions as well.

In interpreting the findings of the second hypothesis, measures used to assess emotions emerged as an important factor in understanding cultural differences in emotional expressions. It is possible that the two ethnic groups regulated emotions in different ways, and that the measures of emotional expressions in this study tapped into these differences. The study found that European Americans changed only their positive versus negative expressions but stayed consistent in voluntarily providing information. If the borderline significant situational differences of Chinese immigrants are taken into consideration, an interesting possibility emerges. Perhaps European Americans choose to regulate their emotional expressions only through variations in “positive versus negative talk,” while Chinese immigrants choose to regulate emotional expressions through both variations in “to talk or not to talk” and “positive versus negative talk.” The findings regarding European Americans’ emotional expression styles converged with Tobin’s theory of cultural differences in self-expressions (Tobin, 1995; Tobin, Wu, & Davidson, 1991; Tobin, Hsueh, & Karasawa, 2009). He argues that self-expression is emphasized in the United States mainstream pedagogy, but most educators operate under the false belief that self-expression is equivalent to free-expression. Instead, European American children learn from a young age what is or is not an appropriate topic for self-expression at “show and tell” or in writing assignments such as “A Book About Me”. In other words, European American children are encouraged to express their feelings voluntarily, but the content of expression is highly controlled (Tobin, 1995). To apply Tobin’s theory to the findings of this study, it is possible that European Americans learned to voluntarily express themselves in all situations, but to be selective about the positive versus negative content of expression. When the cultural norms dictate clear standards or rules (i.e. heavily regulated), European Americans tended to follow cultural norms dictating the expressions of negative feelings.

The findings bear important implications for children’s emotional development in the context of home and school cultures. Results of this study suggest that cultural differences in emotional expressions can be found in daily interactions between parents and their children aged 3 to 8, which are the formative years for understanding the relations between emotions, situations, and cultural norms. When children from Chinese immigrant families, as well as other minority families, go to school, they encounter a mainstream cultural norm that is likely to assume that voluntary expressions of feelings are the basis for “sharing” or “show and tell”, storytelling, writing, and conflict resolution. It is important for educators to be sensitive to the diversity of children’s and families’ cultural norms of emotional expressions.

### ***Limitations and Suggestions for Future Research***

There are several methodological factors that limit the generalization of the findings. First, the study measures emotions by analyzing emotional expressions in parent interviews of childrearing practices. This method has advantages: the data are collected in the context of childrearing, which reflect more spontaneous responses

about emotions than would be the case if the study focused on emotions. The interview format also capture how voluntarily or positively participants are to verbally express feelings, and provide opportunities for participants to talk about emotions that may not be observable. This method has disadvantages: the participants may have revealed more feelings if they had known that emotions were a focus of the study. Also, the method may have limited the types of emotional expressions to verbal discussions. With the use of multiple methods of data collection, such as observations, scenarios or interviews with other family members, more measures of emotional expressions would likely emerge.

Second, heavily versus lightly regulated situation is a new construct that needs further clarification. The construct is based on differences in the cultural practices of Chinese immigrants and European Americans. More Chinese immigrants practice cosleeping than European Americans, and thus in this study, sleeping activity is categorized as lightly regulated in the Chinese immigrant culture but heavily regulated in the European American culture. More European Americans accept nudity than Chinese immigrants, and thus privacy-related activity is categorized as lightly regulated in European American culture but heavily regulated in Chinese immigrant culture. However, specific rules or perspectives that constitute cultural norms was not studied. Future research that focus on how the two ethnic groups view sleeping and privacy-related activities would further clarify the construct of heavily versus lightly regulated situations.

Third, the participants were mostly middle-class and highly educated, and all lived in the Greater Boston area. The European American parents were at least third generation, and Chinese immigrants were first generation that were born and lived in their native countries for at least 12 years. Chinese immigrants and European Americans are both diverse populations, so it is unclear how well the results of this study apply to European Americans or Chinese immigrants of different socioeconomic status, Chinese Americans who have lived in the United States for several generations, or Chinese in China and Taiwan. Future studies that include participants representing the socioeconomic and geological diversity of Chinese and European Americans would further the understanding of the two groups.

In conclusion, this study finds parents' emotional expressions to be situated in childrearing activities and interwoven with cultural beliefs of appropriateness. The study focuses on two elements of culture and emotions: (1) situation, which is a unit of analysis in the study of culture, and (2) emotional expressions, which was analyzed by two measures in this study of emotions. Future research comparing more heavily and lightly regulated childrearing activities with multiple methods of data collection would further our understanding on this topic.

Table 1: Total Words

	Chinese immigrant			European American		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Sleeping	388.97	201.99	39	520.33	304.31	40
Privacy	447.80	333.94	40	803.60	379.75	40

*Note.* The values represent means (*M*), standard deviations (*SD*), and number of participants (*n*).

Table 2: Positive and Negative Emotion Words

		Chinese Immigrant		European American	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sleeping	Positive	3.79	3.29	1.80	1.93
	Negative	3.37	2.68	2.81	2.48
Privacy	Positive	2.65	3.00	3.11	1.97
	Negative	3.97	3.92	3.24	2.75

*Note.* The values represent means (*M*) and standard deviations (*SD*) of emotion word scores.

In sleeping activity, Chinese immigrant  $n = 39$ , European American  $n = 40$ . In privacy-related activities, Chinese immigrant  $n = 40$ , European American  $n = 40$ .

Table 3: Total Utterances

	Chinese immigrant			European American		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Sleeping	12.21	4.66	39	9.25	4.35	40
Privacy	22.47	8.35	40	18.65	6.65	40

*Note.* The values represent means (*M*), standard deviations (*SD*), and number of participants (*n*).

Table 4: Voluntary and Absent-when-solicited Emotion Utterances

		Chinese Immigrant		European American	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sleeping	Voluntary	2.61	1.70	3.19	1.93
	Absent-when-solicited	.59	.77	.31	.65
Privacy	Voluntary	2.34	1.73	5.25	3.64
	Absent-when-solicited	1.55	1.03	1.10	1.02

*Note.* The values represent means (*M*) and standard deviations (*SD*) of emotion utterance scores.

In sleeping activity, Chinese immigrant  $n = 39$ , European American  $n = 40$ . In privacy-related activities, Chinese immigrant  $n = 40$ , European American  $n = 40$ .

## APPENDIX: Narrative Examples from Parent Interviews

The two ethnic groups' patterns of emotional expressions that differ across situation can be illustrated by the following narrative examples from parent interviews. Four examples from parent interviews are presented in the following order: (1) European American parent discussing privacy-related activity (lightly regulated); (2) European American parent discussion sleeping activity (heavily regulated); (3) Chinese immigrant parent discussing sleeping activity (lightly regulated); and (4) Chinese immigrant parent discussing privacy-related activity (heavily regulated).

In the first example, the European American parent was in agreement with the common European American cultural practice of allowing young children's nudity, while very much aware of how it might affect other people's feelings. In this lightly regulated situation, the parent had no difficulty voluntarily talking about her own, other people's, and her child's positive as well as negative feelings. Emotion words are underlined in the following examples.

Interviewer: Is it okay for [your child] to be around the house naked when not bathing?

Parent: Keeping her in clothes is a challenge. We do have rules about what furniture she can be on without clothes. If we have other people coming over, we certainly encourage her to put on clothes, unless it is people that we know that are comfortable with her being naked. She has some friends that they end up walking around naked together, and no one cares. We certainly do not encourage it around people who do not feel very comfortable about that. We just tell her it is private and it is okay to do that around people who are comfortable with that, but if not, she needs to put on clothes.

Interviewer: Any reasons why you set it up like this?

Parent: For me, I would not really care. But I just know certain people who would be uncomfortable with that. Probably more not to make people coming into our house feel uncomfortable. She runs around the yard sometimes naked, and I do not know how much longer we will let her do that either. At the beach, she wears a bathing suit. I do not think that she would want to go naked in front of a lot of people she did not know, at this point. She is also starting to develop that period where she likes clothes. She has tons of dress-up clothes. I guess she is growing out of that period of liking to be naked. I think it is just kind of evolving.

In the second example, the European American parent talked about sleeping arrangements, a heavily regulated situation in European American culture. Although cosleeping was not commonly practiced in European American culture, the parent had no difficulty voluntarily expressing her feelings. However, the feelings she expressed were more negative than positive.

Interviewer: Why did you decide to have [your daughter] sleep in your bed?

Parent: Because we wished we had done it for [my older son]. Everyone was telling us that kids need their own crib, and if you sleep with your kids they will never get

out of your bed, so we fought our instinct. I would put him in his crib, he would wake up, and he never slept well. He was up every night for three or four year. We lost a lot of sleep because he was up crying – I felt so sad. If I had put him in bed with me and let him nurse, it probably would have been better. So with [my daughter], even in the hospital, she was in my bed. She stayed right with me. Sometimes she would nurse when I was asleep, and I would not even wake up! I was getting a ton of rest with her. I never fought these instincts because things went much more smoothly with her. We were not letting our kids cry it out to teach them, which I do not like.

Interviewer: Were there any disadvantages to this sleeping arrangement?

Parent: No, it never bothered us. It worked out really well.

Comparing the two examples above, European American parents voluntarily spoke about emotions in both situations, but they expressed more negative than positive feelings when talking about cosleeping (heavily regulated) than nudity (lightly regulated). The following are two examples of Chinese immigrant parents talking about the same activities. Chinese immigrant parents differed not only in how voluntarily they discussed feelings, but also in their positive versus negative expressions. When speaking about sleeping arrangements (lightly regulated), this Chinese immigrant parent, whose child slept in a separate bed in her bedroom, voluntarily spoke about both her positive and negative feelings.

Interviewer: Why did you decide to have [your child] sleep in your room?

Parent: Because, first, it is convenient. And also, I was afraid that if something should happen, I would not be able to hear him cry, and he would be scared.

Interviewer: What are the advantages and disadvantages to having him in your room?

Parent: I would love him to sleep in my bed if I can, because it is such a joy. Even now, like the other night, in the middle of the night, he woke up and came into our bed, and I let him sleep in our bed under our blanket. I just held him, his little feet. Oh, it is such a wonderful feeling.

Interviewer: Did you ever consider having him sleep with you in your bed all the time?

Parent: I would like to, but both my husband and I work, so if we cannot sleep well... we just could not do it every night.

In contrast, when discussing children's nudity, a heavily regulated situation, Chinese immigrant parents were typically in agreement with the cultural norm, and provided reasons such as not wanting the child to catch a cold, teaching the child to "be polite," or simply state that "it is not right." Most Chinese immigrant parents were reluctant to express feelings even after the interviewer's solicitation, for example:

Interviewer: Is it okay when not bathing, for [your child] to be around the house without clothing?

Parent: No.

Interviewer: Why do you feel that way?

Parent: It is not appropriate to walk around the house without any clothes on. It just seems wrong.

While explaining how she planned to teach her 3-year-old child to keep clothes on, a Chinese immigrant parent expressed these feelings:

Maybe I would say to [my child], “It feels shameful to go without clothes. It is not good”. Later on she will feel, “Oh, it is not good.”

This example illustrates features of Chinese immigrant parents’ emotional expressions in a heavily regulated situation – when Chinese immigrant parents do express emotions, the feelings are negative and in accordance with the cultural norm.

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## ***Research as Assessment for Learning vs Assessment of Learning at Higher Education***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

### **Abstract**

At higher education, students are terminally assessed through a research output that demonstrates their originality, creativity, innovativeness, and contribution to knowledge and problem solving in society. However, the assessment process, unlike the traditional pencil-and-paper and other performance assessments which are thoroughly proctored by the examiner, is one that is loosely structured. Depending on whether the student engrosses in undertaking research as an assessment by mastery orientation or performance orientation or both will determine whether the research process serves as an assessment for learning rather than assessment of learning. In this article it is argued using a critical review of literature that higher education students who use mastery orientation to research will pursue a deep learning of both the theoretical and practical demands of their research, in which case what is learned is enduring. Hence research as a terminal assessment will serve as an assessment for learning. On the other hand, students engaged in research through performance orientation are likely to engage in surface learning of taking ethical shortcuts in the pursuit and just wanting the work done, presented, and passed. In this case, what is learned from the research process is not enduring, and hence the process serves as assessment of learning for a short while. It is recommended among others that institutional policies and faculty practices on research conduct should engender deep learning through mastery orientation as opposed to surface learning through performance orientation so as to foster research as an assessment for learning rather than assessment of learning.

Keywords: assessment of learning, assessment for learning, deep learning, surface learning, mastery orientation, performance orientation

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## Introduction

Postgraduate students are often terminally assessed using research outputs. The students are usually taught research methodology courses in preparation for research engagement. These courses are examined once off and it is assumed that the students are ready for field work once they pass the examinations. Often times, the field work experience requires continuous constructive learning, unlearning, and relearning. Drawing from the theoretical models of learning by Hodge (1990) and Kolb (2014), the best way to learn research is when the student engages actively and collaboratively in conducting research. The student should start small at foundation learning involving concrete experiences, then move through intermediate learning involving reflective observation and abstract conceptualization, to capstone learning when the student is proficient enough to conduct a research study on his or her own. The role of the faculty in the process should be one of formative intervention by meddling constructively in the activities and strategies through which the student learns to do research systematically from scratch. Here, research then serves as assessment for learning.

Previous research (*e.g.*, Stokking, Schaaf, Jaspers, & Erkens, 2004) has shown that majority of graduate students are older, engaged in working part or full time, and juggling work, financial, and family duties. The multiple stresses on these students hinders successful completion of postgraduate study. Their academic goal orientation is often biased toward achieving the ultimate end, a degree, as quickly as possible (described as a performance goal orientation) as opposed to concentrating on the academic journey to comprehend the content and process (described as a mastery goal orientation).

Performance orientation takes two forms: performance-approach and performance-avoidance orientation. In case the student is predisposed to performance-avoidance goal orientation, he or she may choose to withdraw from participation in learning activities, professional activities, and research, but rather tend towards negative coping behaviors in the face of setbacks. Students of this nature are said to be engaged in surface learning characterised by taking ethical shortcuts such as employing someone else to do the research for them; they only wait to be coached to present the work during the final *viva voce* examination. In this case, what is learned from the research process is not enduring, and hence research as assessment of learning serves the student for a short while. This strongly propounds the need to shift from pursuing research using surface learning approach to using deep learning approach in which research is undertaken as an assessment for learning.

## Theoretical Framework of Goal Orientation in Postgraduate Research

The achievement goal theory of motivation, originally proposed by Dweck and Leggett (1988), is conveniently used to explain learners' cognitive, affective, and behavioral dispositions toward achievement related processes and outcomes. The theory looks at how students' goals can influence their beliefs and actions, subsequently affecting their achievement, relationships, and self-concepts (Dweck & Molden, 2000). Dweck (1996, 2000) emphasizes the importance of self-theories (also called implicit theories) in motivation. Self-theories describe how individuals view

their own personality characteristics and attributes. The theories can be domain specific, situation-sensitive, and influenced by environment and time (Soltani, 2007).

Implicit theories are also thought to be developed early in life, before most children begin formal schooling (Soltani, 2007). According to Hong, Chiu, Dweck, Lin, and Wan (1999, p. 588), “implicit theories and goals create a motivational framework that (a) guides the individual’s strivings prior to an outcome and (b) creates a meaning system within which attributions occur.” This implies that by the time a person enrolls for a postgraduate study, they are already deeply entrenched with a self-concept. However, as already noted above, this perception can get altered with experience of extrinsic moderating factors.

Dweck and Leggett (1998) distinguish between two types of goal orientation within implicit theory, that is, entity and incremental. Each type of orientation leads to a different set of beliefs, values, and resulting behaviors. Soltani (2007, p. 30), basing on the work of Dweck and Leggett, argues that students aligned to entity theory see intelligence as fixed, uncontrollable, and stable whereas those siding with incremental theory believe that intelligence is malleable, changeable, and controllable. In the former case, the students’ study skills are generally superficial, aimed at returning the information as presented without deeper probing or metacognition involved in the process. In the face of setbacks, students who emphasize entity theory adopt a helpless pattern of coping, that is, they give up rather than risk looking less intelligent if the new strategy fails to deliver success. They also display lower intrinsic motivation and self-esteem.

On the other hand, students who ascribe to incremental theory tend to focus on mastery goals. Here they emphasize effort over ability or skill and try to seek mainly negative feedback in order to invest more effort to improve. Rather than engaging in negative competition with the peers, the students will seek their peers’ support in order to gain more knowledge and skills from them. Such students will exhibit deep learning characterized by metacognition. When faced with setbacks, the students will adopt positive coping, in which case they mobilize more effort for the task at hand until they succeed. Hence incremental theory students display higher intrinsic motivation and self-esteem.

Elliot and Dweck (2005) posit that self-theories determine if an individual is focused on competence validation (performance goals) or competence acquisition (mastery goals). They define ‘competence’ as “a condition or quality of effectiveness, ability, sufficiency, or success” (p. 5). This has enabled conceptualization of achievement in terms of competence which is measurable in behavioral terms, in daily activities, and across the lifespan. In light of this, Elliott and Harackiewicz (1996) postulated the revised achievement orientation theory in which performance goals were distinguished into two categories: performance-approach and performance-avoidance goal orientations. Students positioned in performance goal orientation define success in relation to others in a normative, competitive viewpoint. Performance-approach goals aim for favorable judgment of competence while performance-avoidance goals are focused on avoiding unfavorable judgments of self. Studies by Harackiewicz, Barron, Pintrich, Elliot, and Thrash (2002) and Midgley, Kaplan, and Middleton (2001) have demonstrated that a combination of mastery and performance-approach goals facilitates increased motivation and interest as well as academic achievement.

With regard to postgraduate research, it can be argued that students who follow entity theory of intelligence and consequently performance-approach goal orientation will demonstrate a mastery orientation pattern when the research process is smooth. However, when faced with challenges, they are likely to adopt the maladaptive performance-avoidance, helpless pattern. Their self-effort will slacken, their active and collaborative participation in research activities will become wanting, their student-faculty interaction will become more of grumbling and bickering, and they will always stage complaints about the inadequacy of institutional support. Soltani (2007) avers that performance-approach goals are associated with surface learning, short-term achievement and grade point average, and persistence with positive feedback; while performance-avoidance goals are associated with lack of persistence, low achievement, self-handicapping behaviors, and cheating.

To the contrary, postgraduate students who employ mastery orientation, facilitated by incremental implicit theory, will invest energy in coping with the different challenges that inevitably arise in the research process. They will strive to engage in active and collaborative undertaking of their research, be the engineers of healthy student-faculty interaction through regular consultations with their research supervisors, and make maximum use of the available institutional resources in order to accomplish their research projects. In other words, the mastery-oriented students will see success in relation to accomplishment of their research. Such students are more likely than their performance-oriented counterparts to reap positive benefits including deep processing/learning, increased motivation and self-efficacy, and persistence in the face of challenges facing them in research (Soltani, 2007), with an aim of long term achievement.

As argued by Weiner (2005), if an individual attributes failure to progress to an unstable factor such as effort, he or she will be more likely to believe in trying again and put in more effort. If, however, failure is blamed on stable, unchangeable factors such as intelligence, then the person is more likely to give up future efforts since this will not improve their performance. Given that goal orientation is not static but changes situationally, the way research is popularly construed in the university and by the individual student (as a summative assessment – of learning, or formative assessment – for learning) is likely to reorient the student towards performance or mastery goal orientation. Summative assessment of research has its own dangers.

### **Dangers of Summative Assessment of Postgraduate Research**

For long, educationists have hailed assessment as a vital tool in the education process. Research conducted by the Organization for Economic Cooperation and Development/Centre for Educational Research and Innovation ([OECD/CERI], 2008) indicates that the most visible assessments are summative. At postgraduate level, the students are expected to conduct research as their summative assessment which bears the same high stakes as the pencil-and-paper assessments. In the research process, students are often assessed in a stepwise manner. As argued by Hodson (1992), the stepwise assessment of progress in research imparts challenges; first, the steps are not fully differentiated, and second, they are dependent on both the subject matter and the context in which the research is carried out.

Van Tilburg and Verloop (2000) argue that many of the research supervisors have little knowledge of research, little experience of conducting research, and little experience in constructing and assessing research assignments for students. In addition, Stokking et al. (2004) observe that supervisors vary greatly in the amount and type of assistance and feedback they give students as a result of the summative assessment model of conducting research. It is not uncommon for supervisors to demand their students to tailor their research to suit the supervisors' own research interests or to be in line with what the examiners will score, thus diverting the students from pursuing their own passions. When the students meet challenges in the process, their goal orientation is likely to shift from mastery to performance-avoidance orientation. Therefore, the summative assessment model of research limits creativity and innovation, and is often a precursor of unethical research conduct among the students.

Assessment of postgraduate research is the task domain receiving the least support from textbooks, departments, and from staff (Stokking et al., 2004). In some cases, examiners are drawn from across disciplines due to lack of personnel in the student's field of specialization to examine the work. In this case the examiner will end up laying heavy emphasis on the cross-cutting issues such as research questions and the corresponding conclusions which are cross-disciplinary at the expense of developing the student's competence in the area of specialization.

Similarly, because the costs of summative examination of postgraduate research theses and dissertations are so prohibitive to higher education institutions, often only one examiner is hired to handle the works of several students at one go. The assessment thus lacks in reliability, objectivity and equality which should have been fostered through using more than one assessor (Stokking et al., 2004). In addition, a candidate may be unfairly referred to start the whole process all over afresh. This leads to frustration and anxiety even among the other students. This could have been abated if a formative assessment model was used to guide the research process.

On the other hand, another candidate may produce a substandard research output but because he or she is gifted in the art of oral presentation, will unfairly pass the examination. Ultimately, the students begin to twist their goal orientation from mastery to performance-avoidance orientation with the resultant negative coping strategies of unethical practices such as soliciting the services of someone else to do the research for them. The essence of grounding the student in research methodology and practice is thus lost.

With regard to research-based promotion of faculty in most universities where the number of candidates supervised and successfully completed as well as the number of publications are considered for ascent to the next rung of the career ladder, faculty begin to indulge in intrigue. Students will be segregated and labelled as low, moderate, or high ability. Some staff will decline to supervise students in the low and moderate categories because those will stall their career progress when they fail to complete in time. Staff who take on such students often get riddled with a large number of students who do not accomplish their research projects in time. New students assigned to such supervisors tend to relapse into performance-avoidance orientation and get entangled in negative coping strategies.

In addition, the ranking of universities and provision of research funds to faculty very much hinges on the number and quality of research outputs; grants won, publications, citation impact, and so on. As such, some faculty prefer concentrating on their own research to supervising students who will 'waste' their time that would otherwise be profitably used for writing grants and papers, and building their own *curriculum vitae* for more funding. This is a case where research as a summative assessment of staff performance undermines the research progress of postgraduate students. It must be acknowledged that supervisors also benefit from the feedback they give to students. This conversely implies that staff who refuse to participate in the research formation of the students will not understand the needs of the students and so continue to impart knowledge in ways that elicit surface learning among the students.

It can be concluded that summative assessment of research is inimical to research engagement among postgraduate students as it engenders mastery-avoidance orientation and hence surface learning. It would be better to adopt formative assessment of research so as to focus the students on mastery orientation with the hope of generating deep learning that entrenches the students in high level research engagement.

### **Positing Formative Assessment as Ideal for Postgraduate Research Engagement**

Formative assessment (also known as assessment for learning) is argued as ideal for informing and guiding students in a desired direction (Sadler, 1998). The ultimate aim of formative assessment of research is to guide the student toward developing his or her own skills to tackle the demands of their research work. These include skills of learning to learn and deep learning within their fields of investigation – hence the reason it is termed assessment for learning. A plethora of research has shown that formative assessment is one of the most effective interventions for promoting high-performance among students chiefly because it focusses the student on mastery orientation rather than performance orientation. Some of the strategies advanced by OECD/CERI (2008) for formative assessment that elicit mastery orientation and hence deep learning enhance postgraduate students' progress in research are discussed below.

- Establishment of a culture of interactive, active, and collaborative approach to research.

In a formative assessment framework, students are encouraged to work in groups and offer critique to each other's work. The outcome is a learning community where every individual feels responsible first of all for his or her own success, but overall for the success of every other individual. Regular critiques obtained from colleagues in such a setting focus the individual towards improvement and challenge the individual to make a contribution towards the success of the other colleagues. The aversion for feedback is overcome in such a setting. In this case, instead of many students each waiting for feedback from one supervisor, which may not be forthcoming due to the heavy volume of work the supervisor has to handle, there is prompt feedback provided within the group. This way, students feel safe to take risks and reveal what they do and don't understand, and hence can be helped appropriately.

- Establishment of learning goals, and tracking of individual student progress toward those goals.

In most cases, there are virtually no overlaps in research goals and objectives among postgraduate students of the same cohort. This eliminates situations of comparison in which weaker students would absorb the idea that they lack ability, and thus lose motivation and confidence, and so turn to performance-avoidance orientation. The supervisor's role is to demonstrate to the students that he or she believes in their effort rather than in their ability. According to Ames (1992), a supervisor's belief in the importance of a student's effort, rather than ability, plays an important role in the student's beliefs about himself or herself. Appropriate reference to an individual student's progress and opportunities to improve work based on feedback can help counter the negative impact of social comparisons.

- Use of varied instructional and learning strategies to meet diverse student needs. According to Soltani (2007), formative assessment promotes professionalism among postgraduate students through provision of differentiated learning approaches such as encouraging participation in research groups, presentations, conferences, and publishing among others. As noted by Weidman and Stein (2003), formative strategies taken by departments and faculty to encourage student participation in professionalism building activities are critical for successful orientation of the students into the culture mastery rather than performance-avoidance.

- Offering psychosocial support to the students  
Postgraduate students generally require more time and effort from faculty and departments because of their uniqueness of being involved in multiple roles. Support systems from cohort and collaborative groups, faculty, and peers are important to assist the graduate students in evolving into professionals in their own disciplines of specialty as well as into professional researchers. In the wake of internationalization and 'massification' of education, there is increased diversity of students and increased numbers of part-time students and distance learning programs. Oftentimes the students experience physical, proximal, professional, and psychological alienation in their new settings. Effective research engagement using a formative assessment framework would cater for their psychosocial needs by provision of financial aid, flexible schedules, and personal encouragement among other strategies.

- Effective supervisor feedback on student performance and adaptation of instruction to meet identified needs.

Acton and McCreight (2014) posit that apart from students working collaboratively in small groups and offering each other feedback, generally supervisors and faculty operating in a formative assessment framework give seminars to provide feedback to the students so that the students get a deeper understanding of some of the practical and theoretical issues raised about their work. The seminars provide an ideal opportunity for assessment for learning as there is the potential for collaborative group work where students can benefit from tutor and peer feedback.

- Provision of richer institutional support and encouraging active engagement of students in building critical research skills.

Through formative assessment, it is easy to identify gaps in students' critical research skills. Faculty can then organize workshops, seminars, and trainings to enrich the students with the critical skills. Steele and Aronson (2005) have proved that

formative use of interventions can change mind-set from entity to a more incremental pattern to successfully improve performance among minority students. Non-traditional postgraduate students who believe that they are unable to perform computer tasks can be helped to decrease anxiety and increase sense of efficacy along with displaying better skills.

- Offering apprenticeship through research assistant and research tutor positions  
To facilitate mastery goal orientation, postgraduate students are offered assistance with employment opportunities and assistantships for work support and planned faculty and cohort support to address issues and promotion of their research progress. These are strategies of formative assessment. Here the student is trusted and assessed as a potential future employee of a higher education institution.
- Sequencing the research process  
One of the principles of formative assessment is that the learning process should be structured sequentially from foundational through intermediate to capstone learning. Students at the foundational level are encouraged to start the research process from an external point of view as they examine and link research articles to see how different authors build and refine methods and knowledge. They then advance to gain experience of the research process by conducting a pilot study to pretest and improve on a research instrument at the intermediate level. At the capstone learning stage, the students are made to participate in assessments that allow them to develop and become aware of themselves as researchers.

### **Conclusion and Recommendation**

It can be concluded from the discussion above that formative assessment or assessment for learning is the most effective way to help promote research engagement among postgraduate students. Students who are guided in research using formative assessment strategies will adopt mastery as opposed to performance goal orientation. Mastery orientation focusses the students on deep learning and learning to learn by way of enabling students to view research as a process rather than a series of research products.

It is recommended that the students need to be inducted stepwise into the process of research, starting from the foundational level through the intermediate level to the capstone level. The formative assessment strategies should be structured into the curriculum, incorporating support in textbooks and other instructional materials, and giving the faculty sufficient time and explicit responsibilities in the research process. The faculty need to be regularly retooled in interactive strategies for enhancing constructivist based pedagogies for assessment of research engagement among a diverse conglomerate of postgraduate students.

### **Acknowledgements**

The author is grateful to the University of Johannesburg for the postdoctoral research fellowship grant that enabled him to write this paper.

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## ***Tough Situation of Teachers for Informatics in Japanese Junior and Senior High Schools***

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The 4th IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

### **Abstract**

Japan played a major economic growth after the World War II, which could be realized with high industrial skill because of engineering education such as mechanical engineering and electrical engineering. However, in recent years, everyone agrees that the importance of information technology is rapidly increasing, while the industrial technology is also inevitable. Currently in Japan, IT education is responsible for the subject "Technology" in junior high schools and the subject "Informatics" in senior high schools. It is self-evident that excellent education relies heavily on excellent teachers. The recruitment of teachers in Japan is conducted for each prefectural board of education. The authors asked all the boards of education throughout the country to disclose information and investigated the present situation of hiring teachers. As a result, despite the fact that the number of faculty members in "Technology" in junior high schools and "Informatics" in senior high schools is much less than the required number, almost no faculty recruitment has been conducted, and as a result, It is clear that teachers of unrelated subjects doing classes or letting people without teacher's license temporarily take charge of classes. Because such an environment, class content is far from computer science in many cases, education is almost not done such as programming. Fulfilling the teacher recruitment and in-service teacher training and improving Japan's information technology capabilities, the authors are very worried about the future of Japan.

Keywords: Informatics, Recruitment of Teachers, Teachers' License

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### Educational System in Japan

Figure 1 shows the educational system of Japan. Elementary school (ES) and Junior High school (JHS) are mandatory. Most of the students of JHSs go to Senior High school (SHS). Then over half of the students of SHSs go to university or college.

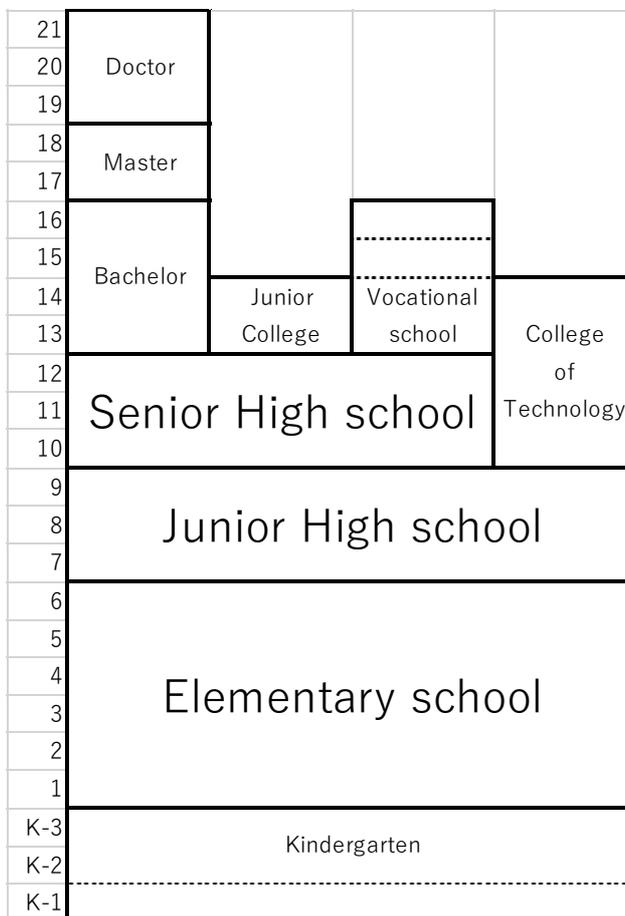


Figure 1: the educational system of Japan

Informatics education in Japan is played in a part of “Integrated Studies” at ES, a part of “Technology” at JHS and “Informatics” at SHS.

#### in Elementary school

“Integrated Studies” is inter/multi-disciplinary subject and it is about 4.8% of all class hours in ES. (Figure 2)

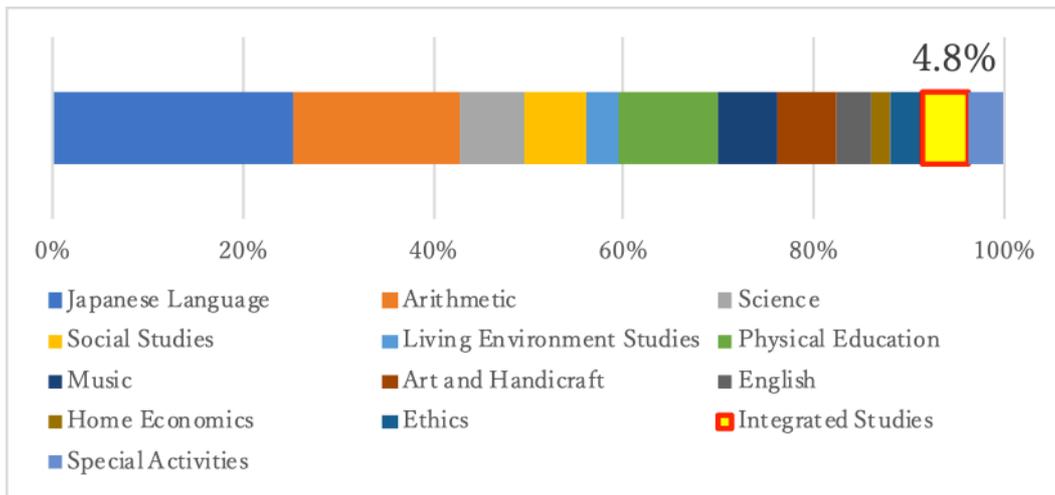


Figure 2: class hours in ES

It consists of various contents such as:

- International understanding
- Informatics
- Environment
- Welfare and Health
- etc.

In ES, the pupils can study for Informatics about at the most only 1% of total class hours. And the contents are follows:

- Basic operations of computer such as keyboard operation
- Logical thinking skills by experience using computer

**in Junior High school**

In JHS, “Technology” covers Informatics education and it is about 2.9% of all class hours in JHS. (Figure 3)

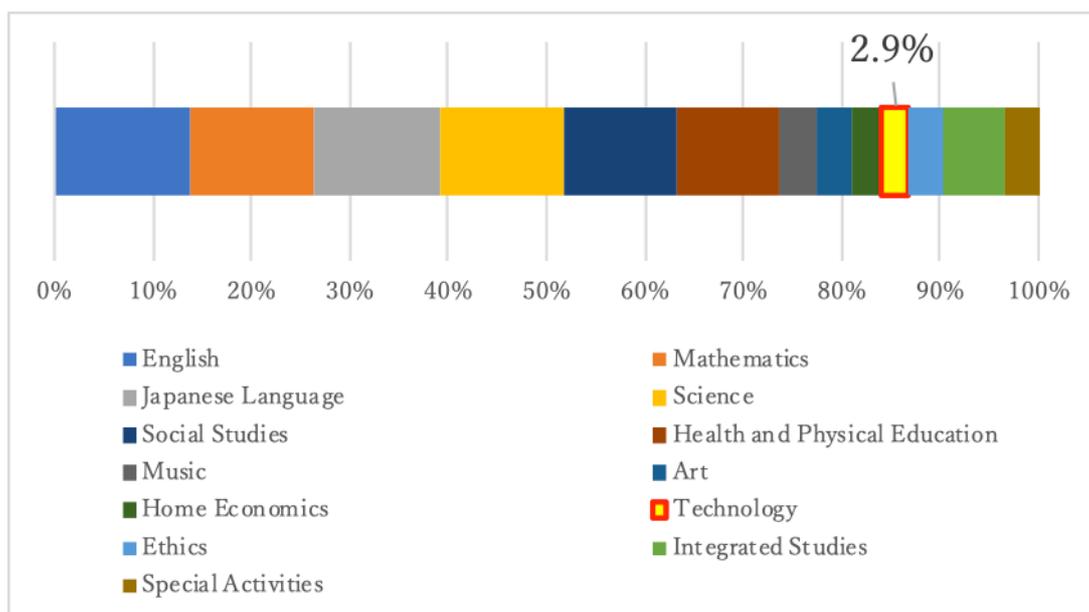


Figure 3: class hours in JHS

“Technology” consists of 4 major parts:

- Materials and their Processing
- Energy Conversion
- Biological Breeding
- Informatics

In JHS, the students can study for Informatics about at the most only 0.7% of total class hours (about 20 hours in 3 years).

The domain of Informatics treats follows:

- IT to support our life and society
- Interactive content by computer programs
- Measurement and control by computer programs
- Development of society with IT

The students of JHS have to study all these contents in just 20 hours.

### **in Senior High school**

The curricula are very different from each school, however there is up to 2% of total class hours in SHS for Informatics at every school.

Current subject “Informatics” is started from 2013. This subject handles the follows:

- Active use of information and its expression
- The Internet and communication
- Issues of today’s information-laden society and information ethics
- Construction of desirable information societies

There is no programming.

But, the next subject “Informatics” will be shifted to computer science from 2022.

- Problem solving for information society
- Communication and information design
- Computer and programming
- Utilization of information communication network and data

### **Teachers**

Teachers of ES are in charge of a classroom. This means that they have to teach all subjects. They are almost based on Liberal Arts never science or technology.

Teachers of JHS and SHS are specialty of their subject. But, many teachers in charge of “Technology” in JHS or “Informatics” in SHS are not specialized in Technology or Informatics. They are:

- in charge of OTHER subjects without license for “Informatics” (only have other subjects)
- Temporary licensees (no teachers license)
- Part-timers

Teachers for “Home Economics” and “Technology” in JHS are extremely many no licensees. (Figure 4)

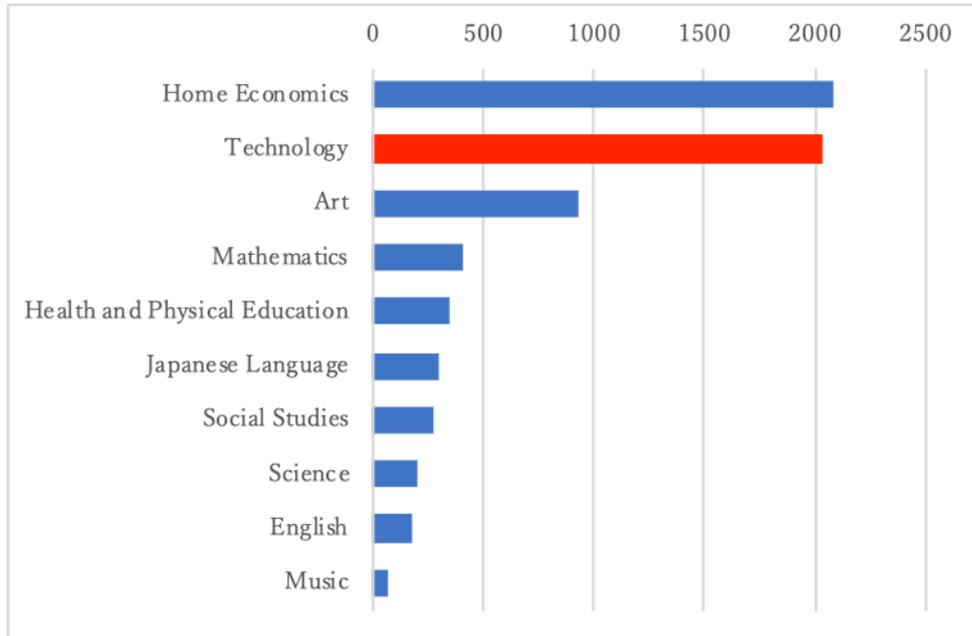


Figure 4: Teachers without license for the subject in JHS

The most teachers who teach “Technology” are for “Health and Physical Education”, which is far from Technology. Teachers for “Social Studies” are same. (Figure 5)

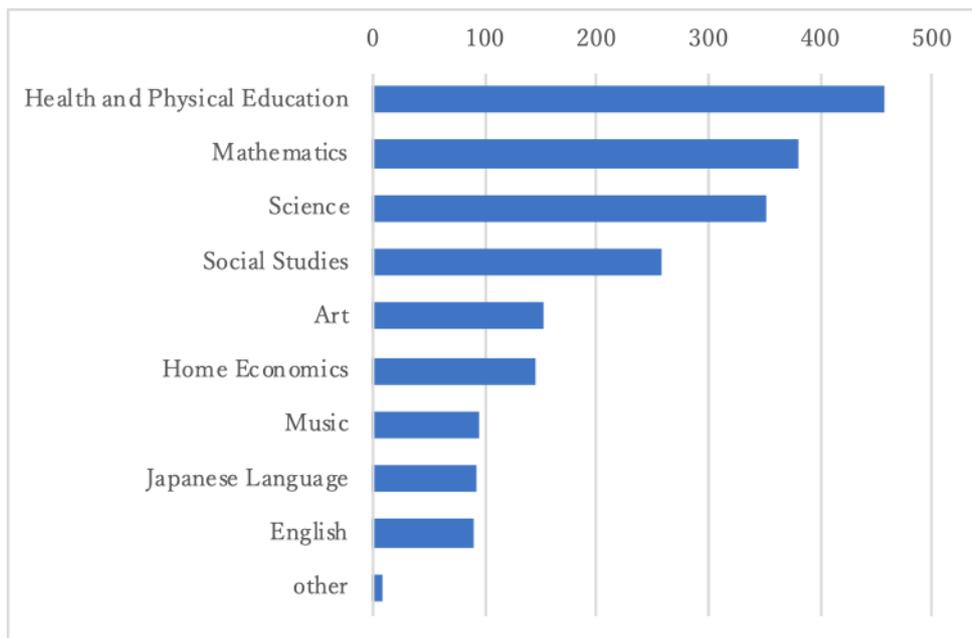


Figure 5: Teachers for “Technology” in JHS

Teacher employment for “Technology” is about 2.7% of total. (Figure 6)  
 This is similar to the rate of the class hours. This means that this tough situation cannot be changed and will be continued.

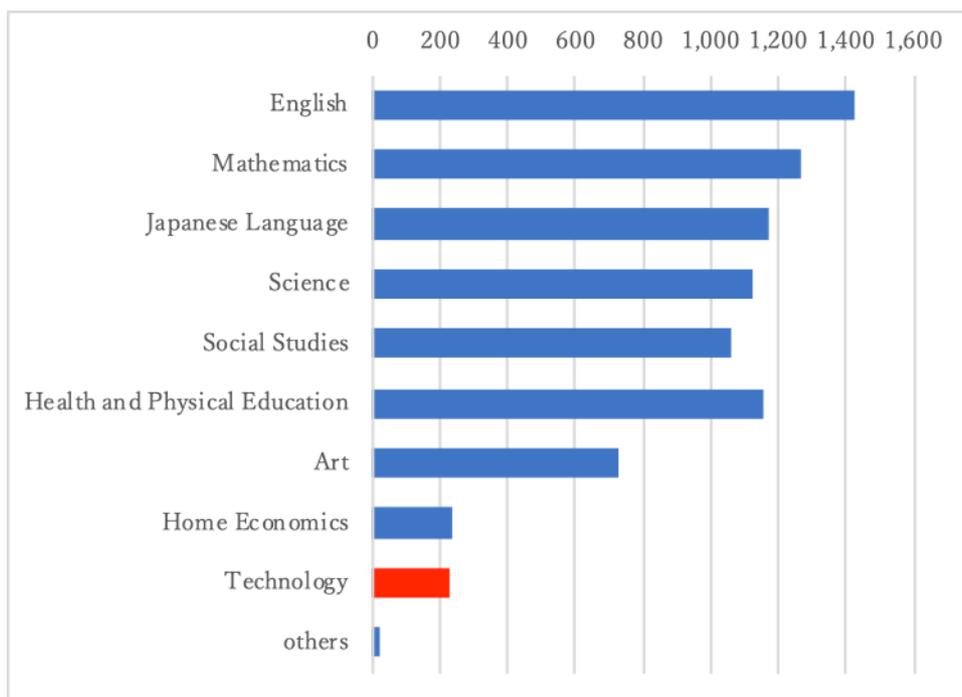


Figure 6: Teacher Employment for JHS

Teachers for ONLY “Informatics” in SHS are extremely many no licensees. (Figure 7)

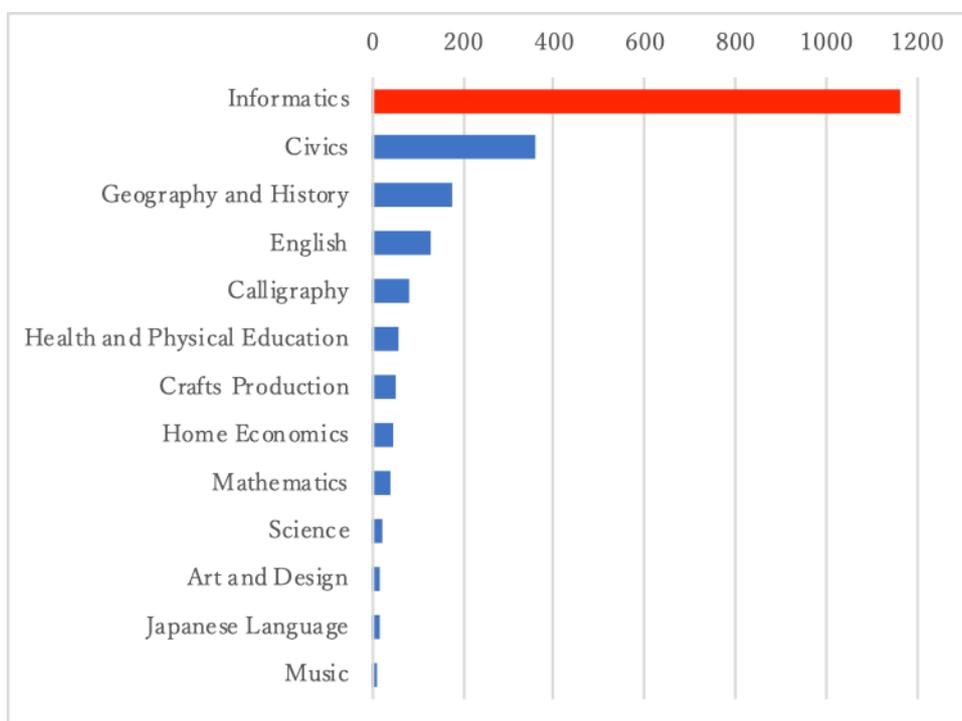


Figure 7: Teachers without license for the subject in SHS

The most teachers who teach “Informatics” are for “Commerce”. (Figure 8)

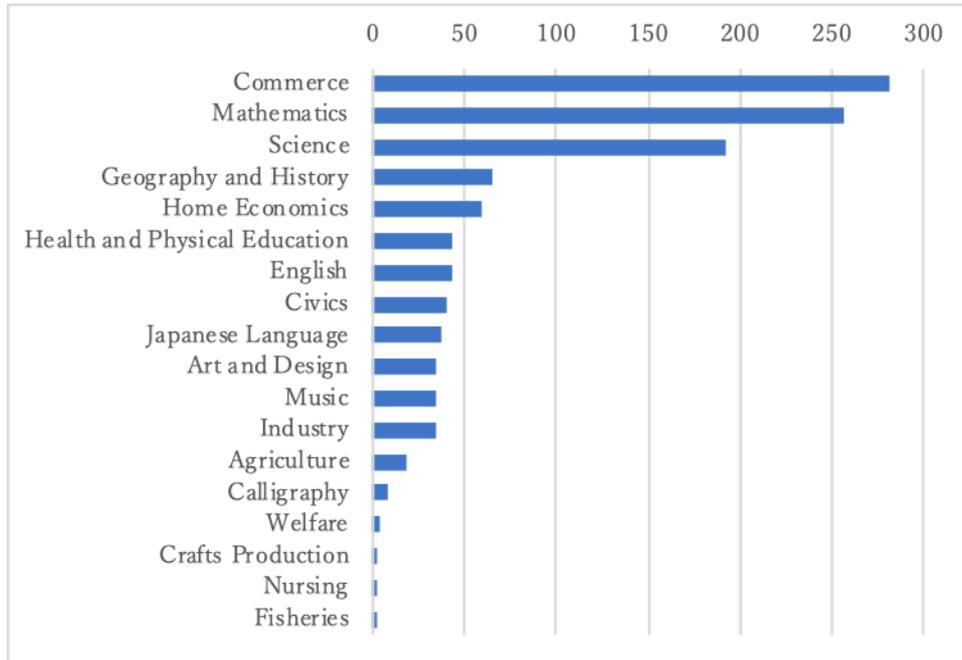


Figure 8: Teachers for “Informatics” in SHS

Teacher employment for “Informatics” is about 1.1% of total. (Figure 9)  
 This is very small rate rather than the class hours. “Art” and “Home economics” are almost same class hours in SHS to “Informatics”. However, the employment is about 4.2% and 3.3%. They are 4 or 3 times of “Informatics”. Only "Informatics" gets a raw deal.

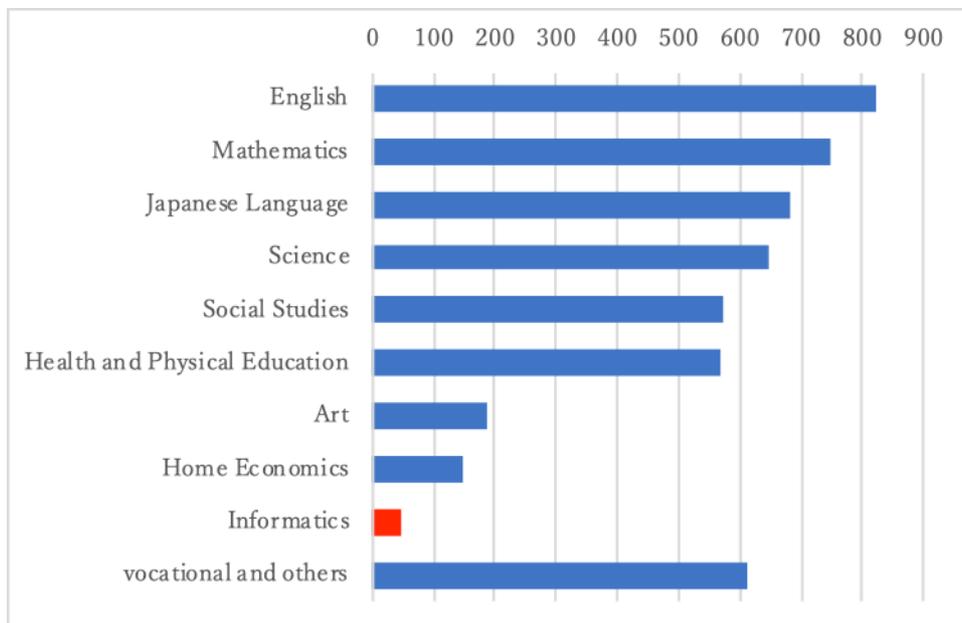


Figure 9: Teacher Employment for SHS

Only 20% is exclusive teaching Informatics, and 50% is teaching another subject concurrently. Remaining 30% is no license for “Informatics”. (Figure 10)

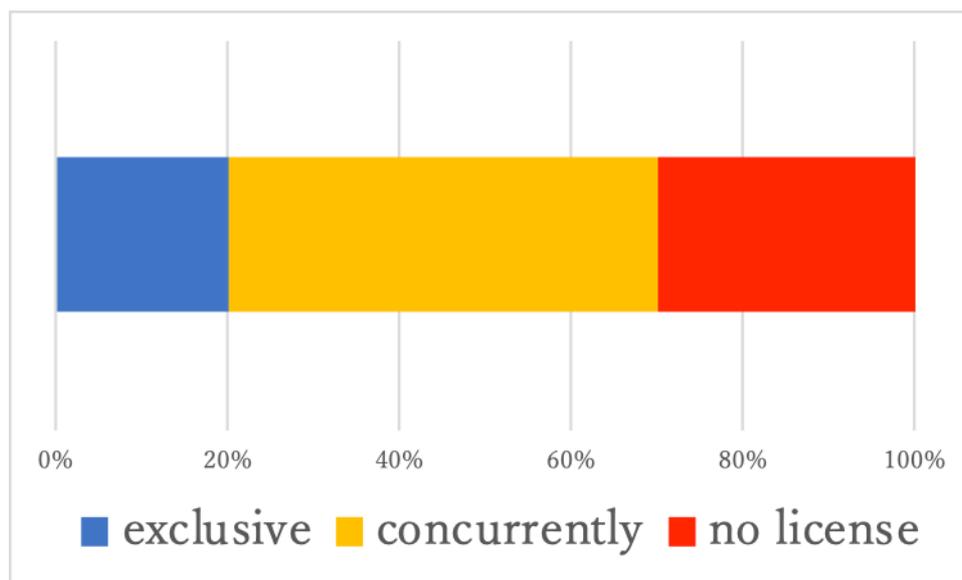


Figure 10: Teachers for “Informatics” breakdown by the license

Table 1 shows the usage of Social Networking Services compared with the students of SHS and the teachers for “Informatics”. As for the messaging service of Japan, LINE is supported predominantly. I think Twitter is the media which is important of the immediate sending message. In Japan, many teachers are in their school from 7:00 a.m. to 10:00 p.m. And they are in charge of club activities on every weekend. They must not do personal communication during business hours. So, they cannot use such as Twitter. However, even the teachers for “Informatics” don’t use these services, the authors think that this is an awkward position.

Table 1: the usage of Social Networking Services

	Students	Teachers
LINE	100%	90%
Facebook	5%	20%
Twitter	100%	5%
Instagram	100%	1%

(Only in my surrounding case)

Additionally, the most schools prohibit

- Students use their smartphone in their class
- Students (even teachers) bring their PC into their class

They can use only paper textbooks and notebooks.

The Japanese government is trying to promote informatics education by the policy “World’s Most Advanced IT Nation Creating Manifesto” and “Future Investment Strategy”. And at all schools, highly specialized teachers are required. However, the situation is in the opposite side.

**Conclusion**

In Japan, Informatics education is responsible for the subject “Technology” in JHS and the subject “Informatics” in SHS. Teachers of unrelated subjects doing classes or letting people without teacher license temporarily take charge of classes. So, class content is far from computer science in many cases, there are no programming.

Fulfilling the teacher recruitment and in-service teachers training and improving information technology capabilities of Japan, the authors are very worried about the future of Japan.

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## *The Impact of Culture on the Usage of SNS for English-Language Learning in Japan*

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The IAFOR International Conference on Education 2019  
Official Conference Proceedings

### **Abstract**

Like many technologically proficient and wealthy countries, the usage of social-networking sites (SNSs) is becoming increasingly popular in Japan. This is especially true among young people who use these services not only for communication but also entertainment through the numerous features they provide like photo editing and adding character figures to video. While Japanese people enjoy using SNSs, some individuals struggle to share personal information due to cultural reasons. For example, many Japanese hesitate to share pictures of trips abroad or even posts written in English as it can be seen as flaunting. This can pose a problem for Japanese students of English, who want to utilize SNS for informal learning. In order to explore this phenomenon, the researcher examined the effect of Japanese culture on SNS usage and its impact on informal English-language study. The researcher collected data at two Japanese universities by means of a survey instrument. Four dimensions of culture and SNS usage were explored: (1) self-confidence and flaunting, (2) cultural contradictions and tensions, (3) perceived barriers to usage, and (4) perceived advantages of the platform for language learning. The goal of this research was to identify various aspects of cultural tension in SNS usage and utilize this information to reduce barriers to adoption of the medium for English-language study.

Keywords: English as a foreign language, Social networking sites, Culture, Japan,

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## Introduction

As technology develops, access to the Internet increases and this has a large influence on our lives. In particular, social networking sites (SNSs) have become popular; this has changed how people make friends and how they connect with people. People can share their ideas or their experience on SNSs easily. The number of SNS users in Japan is increasing like it is in other countries. Globally popular SNSs such as Facebook and Twitter are used in Japan in addition to domestic SNSs such as LINE and MIXI. Since the growing popularity of SNSs is a global trend and these platforms allow users to access information or connect with people in other countries, they have a great potential for language learning. However, while users around the world use the same platforms, they might use them in different ways depending on their cultural tendencies. In this study, the researcher investigated cultural differences that exist among Japanese university students when using SNSs. In addition, the researcher explored whether these differences serves as a barrier of using SNSs in English. The researcher conducted a survey of Japanese university students and analyzed the data quantitatively and qualitatively. The result showed that there are several factors that act as barriers for Japanese university students when using SNSs in English.

## Literature Review

Japan is known throughout the world as country with advanced technology. People use computers and smartphones regularly for work and daily life. In 2017, the adoption rate of cell phones reached 94.8% and the smartphone adoption rate was 75.1% (Ministry of Internal Affairs and Communications (MIC), 2017). In the same year, the adoption rate of smartphones overtook the rate of computer adoption for the first time since smartphones were introduced in 2010 (MIC, 2017). As the smartphone adoption rate goes up, the platform for using the Internet has changed. Among the people who use the Internet, 59.0% of them use smartphones and 52.5% of them use computers (MIC, 2017). It shows that people have easy access to the Internet at any time and place.

**SNS usage in Japan.** As SNSs are getting popular in many countries, their popularity is also expanding in Japan. According to the MIC (2017), the percentage of people using SNSs in Japan increased about 30% from 2012 to 2017. Surprisingly, the percentage of people in their 20s who used SNSs in 2016 was 97.7 % (MIC, 2017). The most popular SNSs in the world are Facebook or Instagram, however, the most popular SNSs in Japan is LINE followed by Twitter and Instagram. LINE was created in 2000 as a subsidiary of a South Korean Internet content service company. It is mostly used in Japan and some other Asian countries. The functions are similar to other SNSs such as sending texts, as well as making phone and video calls. The unique function of LINE is that users can send animated character images called “stamps” in text messages. The variety of images as well as the design has attracted many Japanese users and it has become the most used SNS in Japan. There are several studies that explain the reason why Facebook or other prevalent SNSs in the world did not become as popular in Japan. Ishii (2008) found that the reason why Facebook was not popular among Japanese people is because of issues related to privacy. Japanese people tend to be highly concerned about sharing their personal information online. Facebook users are supposed to use their real name, on the other hand, LINE,

Twitter, and Instagram allow users to use pseudonym which is more appealing to a Japanese audience.

In addition, Japanese SNS users tend to use them passively, which means they prefer to view other user’s posts rather than posting their own content. This tendency can be seen clearly when comparing Japanese and American SNSs users. Figure 1 shows the survey result conducted by MIC (2018) that asked how people use SNSs. The original chart contained results from several countries but the researcher extracted the data for Japan and the U.S. The participants of the study ranged in age from 20 to 69. The results illustrated that the percentage of Japanese actively using SNSs was much lower than American users, especially Facebook. The percentage of Japanese LINE users who use it actively is also higher, however, the user environment of LINE and Facebook has an important difference. In Facebook, users can choose to share their information publicly or among friends who they have approved. On the other hand, on LINE, information is only shared with direct contacts. When users update their status, it is only made public to their friends, and users can choose specific friends who will see it. LINE users tend to friend people they already know in real life (Nishimura, 2017). This might be because there is no function to search for people unless you know specific personal information such as their phone number or user ID. Alternatively, you can ask the person you want to add to send a quick response code that can be scanned on your phone. Therefore, it makes it difficult to be friends with somebody you do not know. For these reasons, users can share information on LINE in an environment where they do not need to worry about their personal information getting in the hands of strangers. This might be the reason why LINE is used more actively than other SNSs in Japan.



Note.

- Series 1: actively posting information
- Series 2: view other users post more than actively posting information
- Series 3: only view other users post, rarely post information
- Series 4: almost not using it
- Series 5: not using it at all
- IG – Instagram
- TW – Twitter
- LINE – LINE

Figure 1: Comparison of SNSs usage between Japan and the U.S. (Retrieved from MIC 2018)

**SNS and language learning.** There are a number of research studies that have been conducted related to language learning and SNSs. These studies show mixed results regarding the effectiveness of using the platform for language learning.

Alm (2015) investigated how students who were learning a language at a university in New Zealand used Facebook to improve their language skills outside of the classroom. The participants in the research were categorized as beginner, intermediate and advanced. Depending on the level of language skill, the participants used different functions and with different frequency. Advanced students frequently used Facebook in their target language to send messages and post updates. The frequency of use for beginners was lower compared to advanced students; however, the researcher found that beginners felt more comfortable communicating on Facebook in their target language because they were under less pressure. Participants stated that they had time to think before replying to questions. One of the positive effects is that for beginners, using SNSs to chat with friends or send messages produced less anxiety than communicating in the classroom. Also, they felt less time pressure compared to when they were in the classroom where they needed to answer questions quickly.

Another case using Facebook for language learning was a study conducted by Bailey, Park and Haji (2017). They used Facebook as one of the activities in an English-language class in a South Korean university. The students were assigned to participate in Facebook discussions to improve their writing skills. The researchers pointed out a positive effect in mixed-level classrooms where students learned from each other. In their study, they could see that lower-proficiency students borrowed sentence structures and vocabulary that higher-proficiency students were using in their Facebook comments. This environment encouraged lower-proficiency students to post comments.

On the other hand, there is some research that did not find a positive effect regarding SNS usage for language learning. Colpitts (2017) tried to use LINE in his English as a foreign language classroom in a Japanese university in addition to or as a replacement of an existing learning management system (LMS). The researcher found that students did not like using their LINE in class because they preferred to separate their learning environment and their daily life. They liked to use LMSs for learning and LINE only for contacting their friends or family. This result indicated that they might not want to share their personal information, not only to strangers, but also with their classmates.

### **Purpose and Research Question**

The purpose of this research is to identify various aspects of cultural tension in SNS usage and utilize this information to reduce barriers to adoption of the platform for informal English-language study.

The following research questions guided this investigation:

1. What are participants' overall perceptions regarding cultural tensions and SNS usage as measured by a quantitative scale?

2. What do participants perceive as the advantages and disadvantages of using SNSs for informal English-language learning?
3. How do participants use SNSs in English?

## **Methodology**

This research was conducted using a quantitative approach, though some qualitative analysis was used for the open-ended question responses. The data was collected through a paper-based questionnaire at two universities in Japan. The survey was conducted in five classes in two universities where the researcher teaches. A letter about their rights as a research subjects as well as an explanation of the survey was provided to participants before they answered the questionnaire. All the materials were written in Japanese. The number of participants was 121 and there was a 100% response rate. The participants were first-year undergraduates and they majored in environmental science, human cultures, medical and social studies, nursing, and child education. There were no students who majored in the English language.

The survey instrument that was used in this research was created by Kitano, Mills and Kohyama (2018). The survey was created based on several previous instruments that examined perceptions of SNSs among university students (Toland, Mills, & Kohyama, 2016; Vasilopoulos, 2015). The survey had 4 dimensions, (1) self-confidence and flaunting (2) cultural contradictions and tensions (3) perceived barriers to usage (4) perceived advantages. Open-ended questions were also included.

## **Results and Discussion**

Figure 2 shows the mean value of each dimension. The sub-scale of barriers had the highest mean value among the four dimensions. Some items in barriers were highly rated, for instance, 81.8% of participants agreed or strongly agreed with, "I worry about sharing personal information when using SNS." This result matched previous research conducted by Ishii (2008) that showed that Japanese students preferred not to share their personal information online. Another item with a high rating was, "I don't have non-Japanese friends on SNSs," to which 66.9% of the participant agreed or strongly agreed. This is understandable because the participants are not English majors, therefore, they might not have many opportunities to be friends with non-Japanese. Also, 65.3 % of participants agreed or strongly agreed with, "I don't use SNSs in English because I lack the language ability to do so." Their lack of English-language skills was also significant barrier on using SNSs in English.

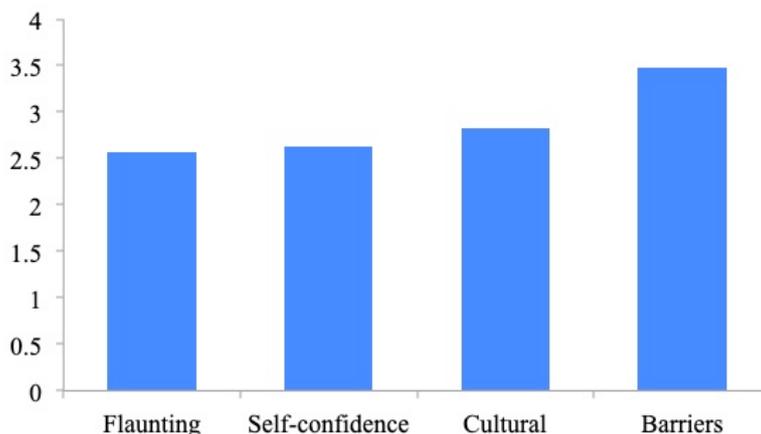


Figure 2: Mean value of each dimension

Figure 3 shows the mean value of the advantages and disadvantages of using English on SNSs. There were no significant differences between the advantage and disadvantage, which means that the participants experienced both when using SNSs in English. The item that the participants mostly agreed or strongly agreed with was, “Using SNSs in English will improve my ability to communication in the language,” which received 67.8%. They found SNSs are a good platform to improve their communication skill. On the other hand, as a disadvantage, 56.2% of participants agreed or strongly agreed with the statement, “The English used on SNSs is not proper.” Some participants clarified the meaning of “not proper” in the open-ended questions, which they states was slang and net abbreviations. They believed that slang and net abbreviations were not proper English, so they did not want to learn them.

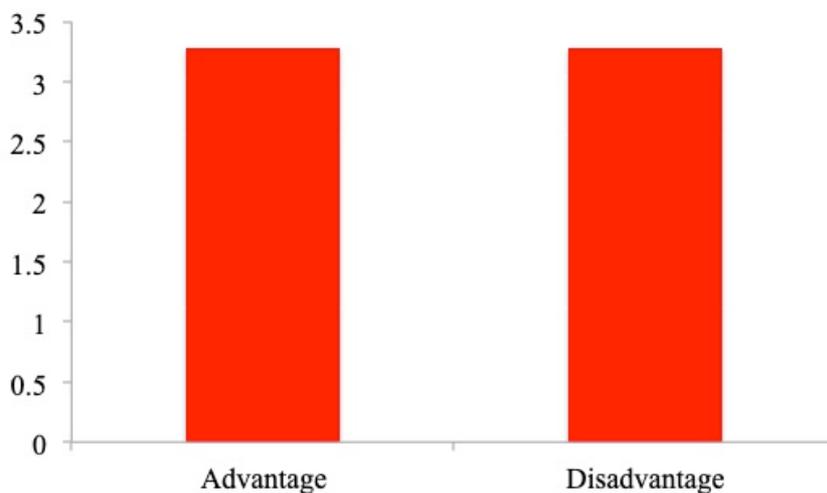


Figure 3: Mean value of advantage and disadvantage

Figure 4 shows the mean values of active usage and passive usage. Active usage is defined as using SNSs by posting or sharing contents that are written or spoken in English and uploading original status updates in English. Passive usage is defined as using SNSs by viewing other user’s posts that are written or spoken in English. The results showed that most of the participants did not use SNS in English, either actively or passively. Among the participants who used SNSs in English, they predominantly used the sites passively. This result corresponds with MIC (2018) research, which demonstrated that Japanese tend to use SNSs passively, even in their own language. It showed that the usage of SNSs in Japanese and English have a similar tendency. In

addition, the most passively used SNS was Instagram, followed by Twitter and LINE. The most actively used SNS was LINE, followed by Twitter, and Instagram. These results also matched to the MIC (2018) survey result.

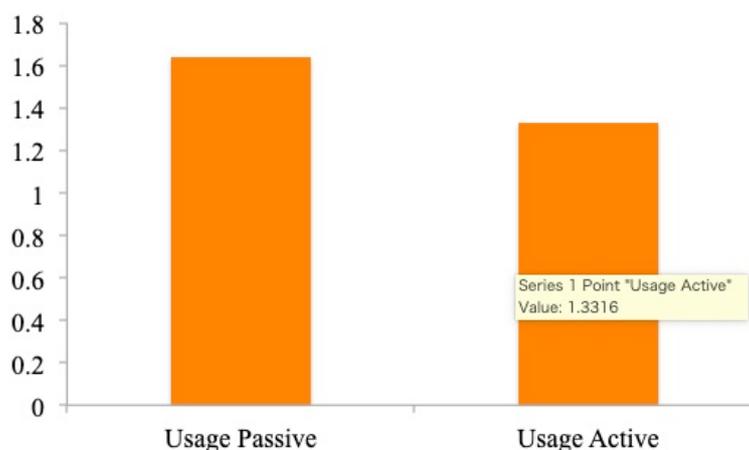


Figure 4: Mean value of passive and active usage

### Open-ended questions

The open-ended questions asked what were the advantages and disadvantages of using SNSs in English. The results were mixed with participants' identifying both advantages and disadvantages, similar to what was found on the quantitative questionnaire. For example, many of the participants believed using SNSs in English provided an opportunity to learn about culture in other countries. Also, it allowed them to communicate with people around the world and through these experiences, they could improve their language skill. Even though there were not so many participants who were actually using SNSs in English, they had a positive image of the practice.

In contrast, participants identified several disadvantages. Many were concerned with misunderstandings between other users due to their poor language skills. They were afraid of making grammatical mistakes and that their statements might be offensive to other people or might not accurately represent what they wanted to say. They were concerned that misunderstandings might lead to trouble between them and other users. Furthermore, many students worried about criticism regarding their language skills that they might receive from other users.

### Conclusion

This study investigated Japanese university students' perception of using SNSs in English and what prevents them from engaging in this form of informal learning. The questionnaire consisted of four dimensions; (1) self-confidence and flaunting, (2) cultural contradictions and tensions, (3) perceived barriers to usage, (4) perceived advantages. Barriers had the highest mean value among the subscales and one of the most strongly agreed or agreed with items was their anxiety regarding posting their personal information. This phenomenon was explained by previous researchers, which showed that Japanese people have a higher level of anxiety than many others with regards to sharing personal information on the Internet (Ishii, 2008). Therefore, this question is not just about writing English on SNSs. Other significant items were

associated with having a lack of non-Japanese friends and a lack of English-language ability to properly use SNSs.

Among the participants who used English on SNSs, they tended to be more passive and engage in activities such as viewing other user's comments or posts. This also matched previous research regarding the Japanese tendency of using SNSs in a more passive manner, even in their native language (MIC, 2018).

In the open-ended questions, there were many opinions regarding flaunting. Participants were worried about showing off their English skills and afraid that other users would make hurtful comment about it. In addition, they were worried about misunderstandings between other users, so they believed that they should use correct English. This tendency creates a negative spiral where they do not want conflicts with other users, so they need to use correct English, but they do not have the language ability to do so. For this reason, they do not use SNSs in English.

Despite the effort to conduct a valid study of this subject, there are some limitations. The researcher collected data on how Japanese university students use SNSs in English. However, it would be better if there were data on how they use SNSs in Japanese and then a comparison of the results. In a future study, both of these data will be collected. In addition, some students stated that they were using LINE in English. LINE is mainly used in Japan and some other Asian countries; therefore, it would be interesting to find out with whom they are communicating on this application. In future projects, adding interviews with participants might also expand the understanding of students' usage of SNSs. Lastly, the data collection was conducted in the classroom where the researcher teaches. The purpose of the study, their rights as participant, and the irrelevance between participation and their grade were explained to the students, however, there is a possibility of the unequal power relationship effecting the results. This should be acknowledged, and ideally, corrected in a future study.

SNSs are a useful platform for language learning; however, there are many barriers to its use. The result of this research and previous research on the subject showed that students are concerned about privacy. When using SNSs for language learning with Japanese students, lecturers need to be aware of this behavior and provide an environment where students can use a pseudonym or make a group page where only invited people can join. These privacy protections might make students more comfortable to use SNSs for language learning. Also, explaining the cultural differences present in SNS usage to students might ease their fear of misunderstanding between other SNSs users. For example, teaching students some useful phrases that can be used to make comments to other user's posts would be helpful. Lastly, instructors could introduce current trends with SNSs in other countries. For example, lecturers could SNS influencers and trending topics. This information might be difficult to find for students, especially lower proficiency learners. In this way, students might get interested in using SNSs in English and experience greater exposure to the target language through informal learning.

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## Appendix

### Survey questions

1. I feel great when my English ability is better than other non-native speakers when using SNS.
2. I use English on SNS sites in order to show off my ability.
3. I worry that people will think I am showing off when I use English on SNS.
4. When I have trouble using English on SNS, I doubt my proficiency.
5. It is easy for me to interact in English on SNS.
6. I am nervous when I use English on SNS.
7. I feel embarrassed to use English on SNSs.
8. Japanese people use SNS in a different way than people from other countries.
9. The purpose of using SNS sites in Japan is different than from other countries.
10. I have experienced difficulties when using SNS in English due to cultural misunderstandings.
11. I have trouble understanding some of my non-Japanese friends' posts because of cultural differences.
12. I don't use SNS in English because I lack the language ability to do so.
13. I worry about sharing personal information when using SNS.
14. My use of SNS is limited by my lack of technical knowledge.
15. I get upset when I see certain types of posts on SNS.
16. I don't have non-Japanese friends on SNSs.
17. Using SNS in English will improve my ability to communication in the language.
18. SNS are a distraction to studying.
19. The English used on SNSs is not proper.
20. SNS gives me the opportunity to communicate naturally with native speakers of English.
21. I can make friends with native or advanced speakers of English on SNS.

			Never	Rarely	Sometimes	Often	Always
22	Facebook	Passive					
		Active					
23	LINE	Passive					
		Active					
24	Instagram	Passive					
		Active					
25	Pintarest	Passive					
		Active					
26	Snapchat	Passive					
		Active					
27	Twitter	Passive					
		Active					
28	Other (_____)	Passive					
		Active					

29. How many hours each week do you use SNS in English passively?
30. How many hours each week do you use SNS in English actively?
31. What is the advantage of using SNS in English?
32. What is the disadvantage of using SNS in English?



### *Food Apartheids and the Curriculum that Saves it*

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The IAFOR International Conference on Education-Hawaii 2019  
Official Conference Proceedings

#### **Abstract**

Health is wealth! Unfortunately, everyone does not have access to healthy food. We are facing a new apartheid, and this one deals with food access. The lack of access to healthy foods puts individuals at risk for more severe health conditions such as heart disease, type 2 diabetes, high cholesterol, cancer, and sleep apnea all of which can lead to death. Areas that have high food inequality are areas that have high poverty rates, a deteriorating education system, and an overwhelming amount of food deserts. To solve the food apartheid that is plaguing African Americans in the District of Columbia, we will use Geographic Information Systems (GIS) to locate schools in areas that are considered food deserts and develop curriculums for after school agricultural programming for students and their families. It is critical, to begin with, K-12 students so that they can live to be healthy adults. Students will be encouraged to engage their families by sharing knowledge and participating in community efforts to rebuild their neighborhoods. This will provide a creative alternative to solving the food apartheid crisis and creating a new health care delivery system that is built within the community.

Keywords: GIS, Curriculum Development, Food Deserts, Washington DC, Food Access

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## Introduction

Analyzing empirical data on solving the food apartheid crisis is important for identifying what solutions are necessary for ending the food disparity gap amongst black and white communities. This pervasive problem within low-income communities is complex and a part of a larger intersectional social structure that has been established long before the transatlantic slave trade. According to Satia, the mortality rate for white and black men across the United States between 1983 and 1998 has increased from 6.4% to 6.9% with white males having a 10.2% greater expected life expectancy rate (2009). This has been a consistent problem according to CDC reports when comparing the mortality rates of white and black populations. Since then, in 2015 it was reported that the age-adjusted mortality rate among black and white populations increased 1.2 times greater since 2008 after having reached a record low in 2014 (CDC, 2015). Between the sexes, female life expectancy rates have been 4.9 years higher than their male counterparts and have narrowed since 1979. In 2015, life expectancy decreased for the entire population; however, the data were consistent in showing that this rate was still disproportionate among racial groups with black and Hispanic males and females having a lower life expectancy rate than their white counterparts.

One of the leading causes that contribute to the imbalance in mortality rates is the disproportionality of diseases that affect each population with diet being one of the main contributors. In 2016, the CDC reported that out of the entire population within the United States, the number one leading cause of death for the entire population was heart disease but was greater in Hispanic populations and greatest in non-Hispanic black populations. Along with heart disease, non-Hispanic black populations along with Hispanic populations have a greater mortality rate in cancer, diabetes, stroke, kidney disease, homicide and Septicemia (CDC, 2016). This data showed that the greatest mortality rates are due to chronic illnesses that can be prevented through a lifestyle change that largely includes one's diet. Willett et al. reported that medical experts have recognized the relationship between diet and chronic diseases, along with many other variants and has provided solutions for how to reduce those diseases. Unfortunately, these solutions do not address the health disparity along with lifestyle differences that disproportionately affects black and Hispanic communities.

Satia argues that because race is a sociological construct, the health disparity among white, black and Hispanic populations is not due to genetics and that if we adjust the income and demographic variables between blacks, Hispanics and whites the health gap would be narrowed. Unfortunately, Satia claims that there isn't enough empirical data that proves that this is true and that socioeconomic status in relation to income and demographics negatively impacts black and Hispanic communities. In opposition, Fish, and colleagues, research states otherwise. Fish and colleagues research on, "African American and Latino Low-Income Families," found that socioeconomic and cultural factors affected how individuals purchased and interacted with their food environments. Fish and colleagues research also found that due to personal experience and cultural differences, populations make conscious decisions about which food suppliers they choose to frequent. The study also reviewed food shopping behaviors, fruit and vegetable consumption and healthy food options by strategically analyzing a sample subset of low-income minority women in Forsyth County, North Carolina.

## **Statement of the problem**

Food Insecurity according to Vaccaro and Huffman is the lack of access to nutritious food for an active, healthy lifestyle that is greatly affected by a lack of access to monetary capital and resources. Similarly, the USDA defines “Food Desert/Apartheid” as parts of a country lacking nutritional resources such as fresh fruits and vegetables, as well as whole foods. Food Apartheid is largely prevalent in impoverished communities due to a lack of grocery stores, farmer’s markets, and health food providers. A lack of monetary capital and resources is known as “social inequality,” and it creates a lack in access to supermarkets that supply fresh produce, which contributes to lower consumptions of fruits and vegetables (Produce for Better Health Foundation, 2018). Fish and colleagues sample study provided evidence that confirmed Vaccaro and Huffman’s research by stating that they learned that among the population of women they interviewed the consumption of fruits and vegetables from their respected families were below the recommended average for the United States. The Behavioral Risk Factor Surveillance Survey of the United States including D.C. provided information in 2015 showing that blacks and Hispanics consumed more fruits than vegetables in relation to their white counterparts creating a diet that is higher in sugar and lower in nutrient intake. Within the scope of research, data also stated that this greatly affected youth and young adults within black and Hispanic communities aged 6 – 24 years old. Overall, young adults aged 18-24 only consumed 20.9% of vegetables compared to the recommended intake, while the intake among children ages 6-9 years increased. Though there was an increase from 2014 in young children, unfortunately, it was not enough to reach the recommended consumption rate. This is specifically relevant because one of the major vulnerable groups affected by food apartheid is children from low- income minority neighborhoods and communities.

## **Purpose of the study**

This paper is a continuous study that focuses on providing a solution for closing the food disparity gap that exists between minority and white communities by analyzing a sample subset of the District of Columbia. By creating a culturally relevant curriculum for schools and after-school programs based on data obtained using GIS Data Analytics, low-income communities will become healthier, as well as knowledgeable in ways that they can help prevent and decrease the food apartheid crisis within their own communities. Fast food restaurants located in low-income communities produce more marketing than middle to high-income communities. The marketing of these advertisements largely consists of food that is high in calories and sugar content. Satia acknowledged that “education benefits blacks more than whites along with educational attainment, income, net worth, and demographic variables.” Schools are one of the largest institutional structures within low- income communities and are responsible for educating the minds of those who live within the community they serve. By educating children and creating opportunities for learning and growth for their families, the community gains autonomy of their resources especially as it relates to food options and accessibility. A 2015 study by Ohri-Vaschapti et al., proved that U.S fast food was the second largest supplier of energy in the diets of children and adolescents. This is due to several sociological structures including

media and marketing that disproportionately affects the neighborhood in which these children frequent (Ohri-Vaschapti et al., 2015). Children and adolescents spend on average 7 hours per workday in school, for an average of 179 school days not including holidays and summer school according to the National Center for Education Statistics. With this data, it is important to educate children in environments that they frequent the most.

This study utilizes Geographic Information Systems (GIS) to show the decline in grocery stores as the African American population increased in Washington, D.C. and analyzed trends, historical implications, and policies that attributed to this decline. Specifically, this study uses the data collected to understand how to begin creating a culturally appropriate, diverse and relevant curriculum to the most vulnerable populations affected by the food apartheid crisis within the District of Columbia.

### **Literature Review**

In 1930, “Washington DC total population was 486,869. The African American population was 27%, and the white population was 73 %”( Asch, 2017). Majority of the African American residents were either poor or of the working class. Despite their socioeconomic status all African Americans struggled to find decent housing. “Shut out from new suburban housing developments; black residents sought homes in older predominantly white neighborhoods” (Asch, 2017). Once blacks started moving in predominantly white neighborhoods whites with the financial means to do so moved to other segregated parts of the city. This departure signaled to the white residents that remained that their neighborhood was worsening. “Many white residents assumed that black neighbors would bring crime and blight thereby depreciating property values” (Asch, 2017). White residents that refused to leave enforced restrictive racial covenants that were written into their housing deeds forcing blacks to move to majority black areas that were already overcrowded.

When public housing was created mid-twentieth century, its original purpose was not to house the poor. Specifically, public housing was designed for “working white lower and middle-class families who could afford decent housing but couldn't find it because none was available. It was not heavily subsidized, and tenants paid the full cost of operations with their rent”(Rothstein, 2017). Before President Roosevelt signed the new deal black and white families faced a severe housing shortage, forcing families to “double up with relatives, stay in apartments too small for their growing families, or remain in emergency Quonset huts that had been put up towards the end of [World War I]” (Rothstein, 2017). Not only was housing unavailable, but jobs were not available either. During the great depression, unemployment was at an all-time high. In DC “more than 75% of the city’s unemployed were black” (Asch, 2017).

As a response to the housing shortage and high unemployment rates, President Roosevelt signed the new deal to create a series of programs and projects aimed to restore the American dream. Under the new deal, the Public Works Administration (PWA) was created to “alleviate [the] national housing shortage while creating jobs in construction” (Rothstein, 2017). Under PWA African Americans were able to occupy units in segregated neighborhoods because PWA developments were not integrated. In areas where neighborhoods were integrated the PWA decided if the neighborhood was white or black. Once a decision was made the PWA used public

housing to finalize the decision by “installing white only projects in mixed neighborhoods, it deemed white and black only projects in deemed colored” (Rothstein, 2017).

In 1934, Congress and President Roosevelt created the Federal Housing Administration. The FHA “insured bank mortgages that covered 80% of purchase prices had terms of twenty years and were fully amortized”(Rothstein, 2017). To qualify, the FHA did an appraisal of the property to ensure there was a low risk of default. Properties that were racially mixed or all white properties that were near black neighborhoods were considered too risky for insurance. Properties that were in all white neighborhoods were considered low risk and were insured. Since “the FHA’s appraisal standards included a whites-only requirement, racial segregation now became an official requirement of the federal mortgage insurance program” (Rothstein, 2017).

The FHA also encouraged banks to make loans for newly built suburbs. According to the underwriting manual used to appraise properties in 1935 stated that “natural or artificially established barriers proved effective in protecting a neighborhood [from infiltration of lower class occupancy]” (Rothstein, 2017). The FHA discouraged banks from making loans in urban areas stating in the underwriting manual that “older properties tend to accelerate the rate of transition to lower class occupancy” (Rothstein, 2017). The FHA also discouraged school integration. Writing in their manual that children “are compelled to attend school where the majority or a considerable number of the [students] represent a lower level of society or an incompatible racial element the neighborhood under consideration will prove far less stable and desirable if this condition does not exist”(Rothstein, 2017), mortgage lending in these neighborhoods were considered high risk.

To limit government intervention in public housing president Roosevelt signed the Housing Act of 1937. The Housing Act of 1937 ended the Public Works Administration (PWA) direct construction of public housing and left states to create their own local housing authorities. Under the Housing Act of 1937, the United States Housing Administration (USHA) was created to provide federal subsidies to states that created local public housing authorities. “Under the terms of the act, public housing properties would be built and owned only by state-chartered or locally governed public housing authorities. This gave states and localities the right to choose whether or not to participate in the program by deciding whether or not to create Public Housing Authorities ” (McCarthy, 2014).

Also, decisions about operations, location, design, and who could live there would be left up to the PHA. No federal funds were given for operations and maintenance so “public operations would be sustained primarily on tenants rent, [meaning] families would be required to have an income to pay the rent charges for public housing units” (McCarthy, 2014). To prohibit competition with the private housing market, a very low maximum income requirement was set for public housing residents meaning that earlier residents could no longer live there because their income exceeded the low maximum requirement. The act also required “for each new unit [created] an unsafe or unsanitary unit had to be eliminated” (McCarthy, 2014). With location up to the local housing authorities, the USHA recommended that “the aim of the local housing authority should be the preservation rather than the disruption of community social

structures which best fit the desire of the groups concerned” (Rothstein, 2017). With this recommendation, local housing authorities ensured communities that they would not force public housing on communities that did not want it. However, the communities that did want public housing were able to decide where it will be located thus guaranteeing that public housing would remain segregated.

By 1940, The African American population increased from “27% to 28% and the white population decreased from 72% to 71%” (Asch, 2017). In 1941, after President Roosevelt declared war on Germany, he signed executive order 8802 prohibiting discrimination in defense industries based on “race, creed, color, or national origin”(Hirsch, 2000). With hopes of better economic opportunity, blacks and whites migrated from the rural south to Washington DC increasing the total population “from 486,689 to 663,091” (Asch, 2017). Although jobs were available for southern black migrant families housing was not. Due to discrimination and restrictive housing covenants, southern black migrant families were forced to move to areas in the city that were already overcrowded while southern white migrant families were able to move to the suburbs.

In 1945 Congress passed the District of Columbia Redevelopment Act, its purpose was to “aid city officials in slum clearance and urban reconstruction.”(HISTORIC AMERICAN BUILDING SURVEY, n.d.) Under the Redevelopment Act, the DC Redevelopment Land agency was created and granted power to use eminent domain to acquire blighted areas for the use of redevelopment. This initiated the process of urban renewal in the district. The agency called for the demolition of homes of 1,345 families 97% of them black” (Hill, n.d.) and businesses some of which were black-owned.

In 1948 President Truman signed executive orders 9980 and 9981. Executive order 9980 banned racial discrimination in the federal government, and executive order 9981 banned racial discrimination in the armed forces. Executive orders 9980 and 9981 made it possible for African Americans to receive better-paying jobs by working in the federal government and armed forces. As a result, Washington DC African American population “increased from 28% to 35%” (Asch, 2017) (CC).

To achieve better housing conditions for all Americans President Truman signed the National Housing Act of 1949. The act “financed slum clearance under urban redevelopment (later renewal) programs, [expanded the] Federal Housing Administration (FHA) mortgage insurance, committed the federal government to building 810,000 new public housing units, and allowed the Farmers Home Administration to grant mortgages to encourage the purchase or repair of rural single-family homes”(Freeman, 1996). At the same time, the VA “began to guarantee mortgages for servicemen. It adopted FHA housing policies, and VA appraisers relied on the FHA underwriting manual”(Rothstein, 2017). To condemn integration the FHA and the VA “imposed conditions these suburbs be all white” (Rothstein, 2017). In 1949, the federal government took segregation a step further by “guaranteeing bank loans to mass production builders who would create [these all-white utopias known as the suburbs]” (Rothstein, 2017). By the end of 1949 people that didn't want to conform to integration and had the financial means to do so started to leave the city. By 1950, “the FHA and the VA were insuring half of the mortgages

nationwide”(Rothstein, 2017). As a result, the white population in DC “decreased from 71% to 64%”(Asch, 2017). This mass exodus continued until the 1970s.

Under the Housing Act of 1949 cities were able to receive funds to renovate neighborhoods that were deemed uninhabitable and unsafe to live. The federal government would put up money to buy property using eminent domain to condemn and clear blocks, redevelop areas and build housing on a modern scale which made it possible for people to live in better housing. Southwest, Washington DC where a large number of African Americans lived was the first neighborhood to be renovated under this act. In 1950, “The National Park and Planning commission published a comprehensive plan which identified Southwest as a problem area in need of redevelopment”(HISTORIC AMERICAN BUILDING SURVEY, n.d.). In 1954, the redevelopment of Southwest had begun. “Over the next two decades, the urban renewal of Southwest displaced approximately 1,500 businesses [most of which were black owned] and 23,000 residents” (HISTORIC AMERICAN BUILDING SURVEY, n.d.). From 1954-1970 Southwest and other parts of the city that were considered slums were redeveloped.

Also, under the Housing Act of 1949 public housing started to house more black families that have been displaced by urban renewal. By the end of the 1950s “the percentage of [black] families living in public housing increased from 36% to 46%” (McCarthy, 2014). The rise of black families living in public housing led to the disapproval of new public housing developments in predominantly white communities. As a consequence by the end of 1957, “the goal of 810,000 units was not met. Only about 210,000 of the 810,000 were under management” (McCarthy, 2014).

In the 1950s white supremacy being known as the law of the land started to crumble as the civil rights movement started to pick up momentum. In 1954 the groundbreaking Supreme Court case *Bolling v Sharpe* prohibited school segregation in Washington DC, *Brown v Board* was soon to follow which prohibited school segregation nationwide. As a result, many white teachers left DC public schools to teach in the suburbs, or private schools and white families either moved to the suburbs or sent their kids to private schools. The birth of full integration caused a massive demographic shift, and by 1957 Washington dc became the nation’s first major city with a black majority.

While the white population started to decrease in dc, the suburb population increased by “nearly 330 percent reaching more than 1.3 million people by 1960” (Asch, 2017). According to the 1962 special report titled the Negro in Washington stated that nine years after the Supreme Court case Brown v Board DC schools were segregated again.

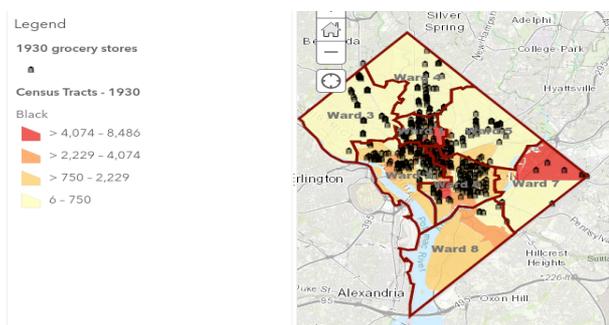
## **Methodology**

Geographic Information Systems (GIS) was used to gather and analyze the decline of grocery stores as the black population increased in DC. GIS was also used to locate schools that are in food deserts. Qualitative and Quantitative data were collected to measure the impact of the lack of grocery stores in the black community. Concurrently, extensive research was conducted in order to review already existing

culturally inclusive curriculum. From that research it was found that there is a significant lack in curriculum programs that are culturally inclusive along with incorporating elements from different subject areas such as math and science. Based on this research, a culturally inclusive content based curriculum began to develop (Appendix A,B,&C).

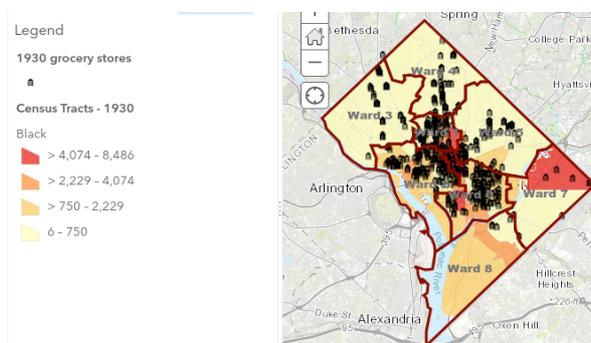
**Study findings- Impact on Food Access**

Before government policies resulting in white flight African Americans in DC were likely to live in predominantly white neighborhoods. These neighborhoods tended to be densely clustered with smaller grocery stores giving African Americans access to food.



*Map of the population in 1930. Upper ward seven where the area was predominately black had grocery store access.*

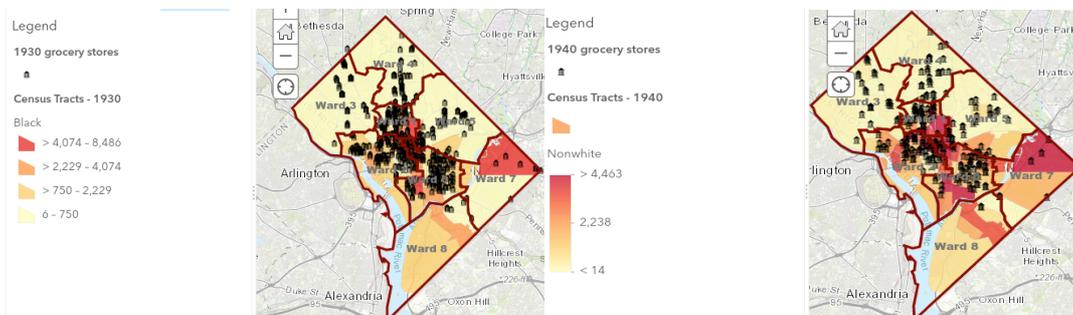
In 1934 the government instituted a national appraisal system where race held just as much weight as property values. Low-interest home loans were offered to middle-class white families to move to the suburbs but, Due to redlining, restrictive housing covenants, government policies, and discrimination African Americans were unable to have access to the same loans that advanced white families to the suburbs and were driven to areas that were already overcrowded. As a result, white flight started to take place, and the number of grocery stores started to decrease as well. By 1940 the white population decreased slightly from 73% to 71 while the black population increased from 28% to 35% (Asch, 2017).



*From 1930-1940 the number of grocery stores started to decrease as the black population started to increase.*

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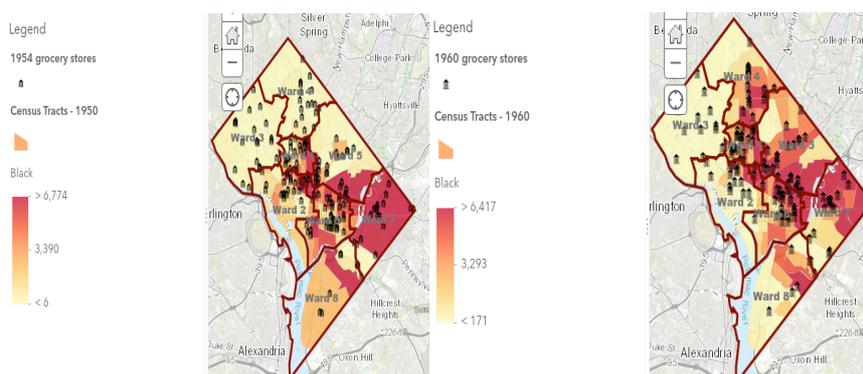
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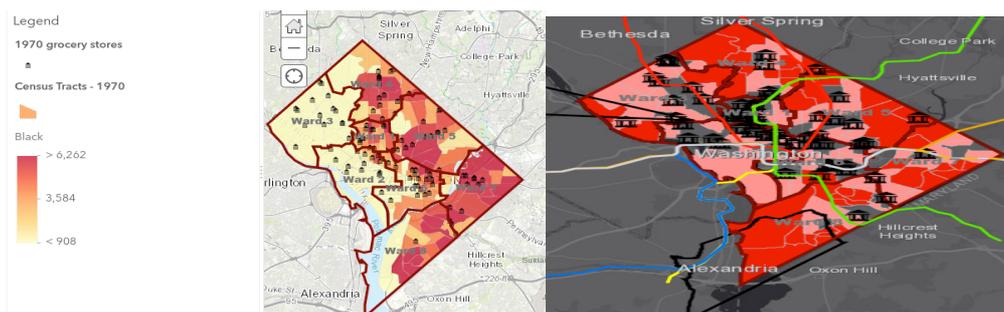
The housing act of 1949 financed Slum clearance causing African American families to become displaced. Since there was a growing need for high-density low-income housing, The Housing Act “created a class called public housing that would be constructed through government financing and have low rents”(Friedman, 1966). The first housing Project built in DC under the housing act of 1949 was Barry Farms. Opened in 1954 Barry Farms was located in Far Southeast a predominantly white area at the time. Also in 1954 the groundbreaking supreme court case brown v board of education prohibiting segregation in public schools. In response, a mass exodus of white families fled to the suburbs.

However, DC wasn't always a food desert from 1954-1960 every ward in DC had access to grocery stores. However, ward eight had the least amount of grocery stores.



*Map of DC from 1954-1960 when everyone had access to food*

Since many public goods are locally financed, white flight in DC generated disparities in food access leaving dc a food desert by 1970.



*Map on the left is when DC became a food desert. Map on the right is DC today. The dark pink are the areas that are food deserts.*

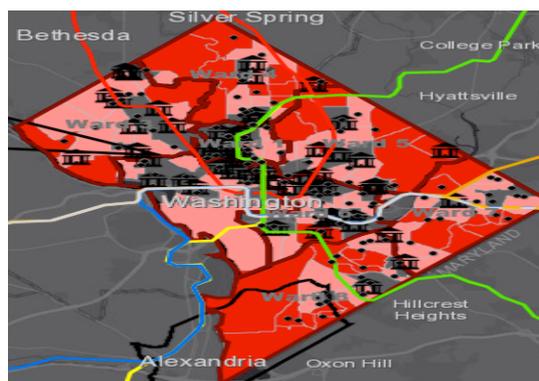
In conclusion, as the black population increased in Washington DC the number of grocery stores decreased leaving areas with a high concentration of African Americans without access to food. This left those areas vulnerable to become oversaturated with fast food chains. This trend of declining grocery stores started in 1934 and lasted until the seventies. Today these areas are still considered food deserts.

### **Limitations**

There are several limitations to this ongoing study that is relative to data. The first limitation of this study has been the lack of empirical data that analyzes the intersection between access to capital, racism, sexism, xenophobia and other social constructs. There is also a lack of curriculum development analyses and effectiveness. Another limitation was in the inconsistency of the census data collected over time. For example, the census data collected in 1930 referred to African and African Americans as black, and in the year 1940, the census included non-white. This means that they could have been discussing a wide variety of racial and ethnic groups. Lastly, a limitation was in trying to gain access to impactful and meaningful data that has been released to the public and analyzed for qualitative and quantitative impact. Due to the need for funding, the process of testing within the Maryland and District of Columbia region has been delayed.

### **Conclusion**

To solve the food apartheid crisis plaguing the African American community in Washington DC, it is imperative to create curriculums that will teach students and their families that live in food deserts how to create their own sustainable food models, i.e., maintain a garden. In order to know what schools should be targeted for outreach, GIS was used to identify schools that are located in food deserts.



*The black dots are the schools that have been identified as being located in food deserts*

These programs would provide a hands on experience that would help students become more involved within their communities. Parmer et al., and Castro et al., provides useful data on the impact of a Nutrition based Education Program in school and community based environments. Parmer et als., research focused on school-based gardening and hypothesized that a nutrition based education program would increase the consumption of fruits and vegetables among second graders and their families. The curricula used was “Pyramid Cafe & Health” and “Nutrition from the Garden”. They studied 3 treatment groups, one group of students received instruction time along with a hands on gardening experience, another group only received the nutrition education curricula and the final group did not receive the curricula or the gardening experience (Parmer et al., 212). Castro et als., research focused on the use of community based gardens as a resource for an obesity prevention program. The program provided weekly gardening work sessions for 3 years in low income communities with families who had at least one child that was 6 years old. The basis of this study was to also increase fruit and vegetable consumption amongst the participants and their families. Both Parmer et al., and Casto et als., study yielded positive results. Both proved that by providing opportunities for hand on experiential learning opportunities with gardens and a nutrition based instruction, consumption of fresh fruits and vegetables increase, as well as knowledge of how to grow and sustain fresh food sources. By combining school based nutrition education programs with community based gardening it shows great promise for eradicating the food apartheid crisis. Neither method must be used in schools or community gardens, however these are the areas that would be most frequented. It will not only create a sustained method of healthy food access, but would also assist with creating greater opportunities for economic growth and would harness the gifts and talents of the children within these communities. Healthy people juice is an organization in Baltimore that has begun to engage students by creating an entrepreneurial model that combines nutrition with economics. Students create healthy juices to sell within their neighborhoods, while receiving nutrition based instruction. The organization also provides nutrition based instructional cooking classes to members within the community which creates unity and opportunities for access to healthier food options. Expansively, by introducing children and their families to healthier food options on a consistent basis, it will increase awareness in the community and among policy makers.

## Appendix A: Sample Culturally Inclusive Activity

### Sample Math Examples (Culturally Inclusive)

Lesson: Word Problems

Grade Level:

Standards:

Directions: Read each word problem carefully and solve for the answers by sharing your work.

#### Example 1:

1. Timothy went to the local corner store with \$5.00. At this store he bought 2 apples for \$2.50, 1 pack of gum for \$.25 and a bag of chips for \$1.00. After paying for his items with the \$5.00 he was given, how much money should he have left over?

#### Example 2:

1. Emilio worked on his grandfather's farm in Brazil every summer for 5 years. Every summer he spent on the farm in Brazil, he walked 3.0 miles to and from the farm to his grandparent's house. One day on his walk to the farm he decided to stop and purchase flowers at a flower stand that was 1.5 miles away from his grandparents' house. How many miles did he walk that day?

#### Fun Facts Corner:

- Did you know that 14% of the Brazilian population is vegetarian?
- Did you know that one of the ingredients in mumbo sauce is soy sauce?

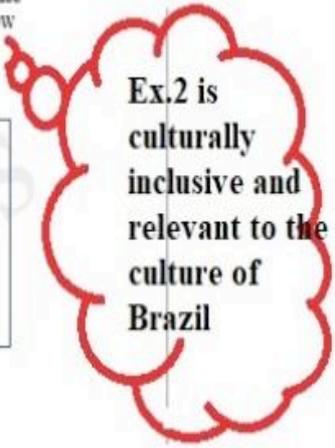
#### Activity (Optional)

- Find out where the nearest farm is in your community
- With your parent/guardian make your own mumbo sauce

\*\*Note: All work and samples created are the work and study of the author. \*\*



Ex.1 is culturally inclusive and relevant to the culture of D.C.



Ex.2 is culturally inclusive and relevant to the culture of Brazil

**Overall, if this sample learning tool was given to students in DC or Brazil each group of youth's would not only learn math in a way that is culturally relevant to them, but also will learn about other cultures in the world.**

## Appendix B: Sample Math Lesson Plan

Example Math Curriculum

### Sample Lesson Plan

Grade Level:

Objective(s): 1. Students practice addition and subtraction with decimals 2. Students understand how to make proper money management decisions 3. Increase student exposure to a variety of fruits and vegetables.

SWBAT:

Standard(s):

Time

Monitor/Feedback

	<p><b>Hook:</b> Your mother sends you to a community garden and gave you only \$10.00 to spend on fresh fruits and vegetables. You are already aware that it will cost \$2.75 to purchase five tote bags to carry the fruits and vegetables in, but you don't know how much fruit and vegetables you can get with the remaining amount. You eventually begin to choose a variety of fruits and vegetables, but now you have to decide what food you can purchase with the amount of money you have in order to also purchase the five tote bags.</p>	
	<p><b>Introduction of Activity (I do)(We Do):</b>                  (Teacher): ask, "What operation(s) can be used to help us figure out how much we can spend so that we will have enough money left over to purchase the five tote bags?"</p> <p><b>Then...</b>                  (Teacher): ask the entire class to choose at least two fruits or vegetables from the ziploc bags (<b>*prices are already written on the cutouts</b>) on their desks/tables. ( Seating Chart: 4 Students to a table or 4 connected desks)</p> <ul style="list-style-type: none"> <li>- Assuming, that the students have chosen subtraction and addition as their operation(s), the teacher will then tell the class that she/he will do the calculation(s) for the two fruits or vegetables that she/he has chosen..</li> <li>- The teacher then begins to find how much change she/he will receive by subtracting the price of the tote bags and the chosen fruit(s)/vegetable(s) and will write the answer on the board.</li> <li>- The teacher will then ask the entire class to calculate how much change they will receive from potentially purchasing the fruit(s) and/ or vegetable(s) they chose. ( The person who finishes first will be given the opportunity to share their answer)</li> </ul>	<ul style="list-style-type: none"> <li>-Ask the question</li> <li>-Receive answers from students</li> <li>-If they give various answers steer them towards the correct answer</li> <li>- A variety of food including Fruit and vegetable cutouts with prices on them should already be placed on student tables in a ziplock bag</li> <li>- Remember to ask students if they may have</li> </ul>

	<p>- As a class they will then compare prices and decide which would have been the best fruit(s) and/or vegetable(s) to purchase. Teacher:  “ Which fruits and vegetables can we purchase so that we have enough money left over to purchase the tote bags?”</p>	<p>gotten another answer (for clarification purposes)</p> <p>- As you are calculating your chosen fruit(s) and vegetable(s) remember to talk through each step of the process, especially if more than one action is required</p>
	<p><b>Whole Class Activity (You do):</b></p> <p>- The entire class will be split into teams. Depending on class size that may vary and on their desks they will find a worksheet that has a word problem on it, various types of food cutouts, scrap paper and pencils. (<b>*Each team will have the same word problem on their worksheet</b>)</p> <p>- The teacher will then explain to the students that as teams they will be given 10 minutes to choose the food items they want to compare and do the proper calculations based on what has been asked on their worksheet. Also, that whichever team has the most change left over after doing the proper calculations will be the winners.. All work must be shown...</p> <p>- When the 10 minutes are over the teams will then share out their answers and how much they have left</p>	<p>- Handouts should already be placed on students desks with all materials</p>
	<p><b>Closing/Assessment:</b></p> <p>- The teacher will give the students an exit ticket that has the question on it, “ In 1 paragraph, explain how this activity applies to real life circumstances?”</p> <p>- Teacher will express that it must be turned into the teachers inbox before the end of the school day.</p> <p>- They will also receive a worksheet with multiple word problems that involve subtracting decimals.</p> <p>Resources/Materials: (20) Food, fruit and vegetable cutouts per table with prices written on each of them, worksheets, pencils, exit ticket, timer background music, scrap paper</p>	

## Appendix C: Sample ELA Lesson Plan

Example ELA Curriculum

### Sample Activity Worksheet

Grade Level:

Standards:

Directions: Read the following unfinished paragraph and circle all of its errors. When you have found all of the errors rewrite the paragraph with the proper corrections. Lastly, please include your own conclusion to this unfinished paragraph.

One day on a sunny saturday Afternoon Sally decided to help her Father plant tomatoes in the community garden located a few miles away from her home. as she was Assisting him, she noticed a puppy run into the Garden. She was so distracted by this, and she didn't notice that she was planting apple seeds instead of tomatoe seeds. As the puupy continue to run through the Garden Sally.....

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Your Conclusion: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Think About it:** Have you ever planted a fruit and/or vegetable? If yes, what did you plant? If not what would you like to plant?

**Do:** With a parent/guardian, visit your nearest community garden and try to identify a fruit and/or vegetable that you have never seen or eaten before. When you have identified the food with your parent/guardian ask the community garden staff to provide research material on that particular fruit and/or vegetable.

**Acknowledgements:**

We would like to acknowledge the editorial contributions of Dr. Deborah Reid Bryant the retired Assistant Dean for Undergraduate Studies and Director for Letters and Sciences at University of Maryland College Park. We will also like to acknowledge the editorial and policy recommendations of Thomas Keane-Dawes, J.D. His background in compliance and regulatory work in both the corporate and public sectors were greatly appreciated. Mr. Keane-Dawes is currently the Senior Mediator at the District of Columbia Housing Authority. His legal background from working with the Legal Regulatory team for Comcast/NBCUniversal, and with the Environmental Protection Agency, offered us a broader scope of the issues and an insight into the policy decisions necessary to eradicate food deserts.

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***Study Abroad Program:  
Case Study for Career Program***

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The IAFOR International Conference on Education 2019  
Official Conference Proceedings

**Abstract**

In this paper, I introduce Study Abroad Program as tacit knowledge. In Japan, classes are often offered in the didactic lecture style where many students are enrolled, and they began to promote a more “Active Learning” style in classes only recently. It is imperative to motivate students and maximize their willingness to work and study. Listening to professionals and experts firsthand accounts of their purpose of career at their working place is a precious lesson for students.

Keywords: Study Abroad Program, Tacit Knowledge, Active Learning

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## **Introduction**

At universities in Japan, classes are often offered in the didactic lecture style where many students are enrolled, and it is only recently that they began to promote a more “Active Learning” style in classes. Examples of an active learning style include students preparing and giving presentations, then taking part in discussions and debates, or colleges offering experience-based classes such as domestic and overseas fieldwork and volunteering. More universities have started offering internship programs where students visit companies, collect information, conduct research, and find agendas on their own, then seek clues to address these problems through hands-on experience.

Professional skills development in Japan has excessively relied on corporate education and training. In Japan, students study general academic subjects at universities that are less relevant to work, and they receive professional training at companies with their on-the-job training programs. Listening to professionals and experts firsthand accounts of their purpose of career at their working place is a precious lesson for students. Moreover, it is universities’ mission to provide students with professional skills training coupled with career development opportunities, and that effort requires an interdisciplinary approach beyond departmental boundaries. Many Japanese youth quit their job without building a career. If this condition continues, Japan will fall into a critical situation where companies are unable to find competent professionals who serve as central roles in organizations.

## **Chapter 1 Introduction of Study Abroad Program**

### Chapter 1.1 Outline of the program

The program which the author serve as a coordinator for the program, aims to cultivate general capabilities (cognitive, theoretical, social, and cultural skills as well as broad knowledge and experience) through students’ own proactive quest with active learning. The program entails discovery learning, problem-solving learning, experience learning, and explorative learning. It offers two credits and entails completing pre- and post-training guidance in Japan, overseas training at local companies, and compiling a final report. The program started in 2008, and so far has conducted overseas training sessions in California, US (2008, 2009), Paris, France (2010), San Francisco/ Silicon Valley, California, US (2011), and New York City, US (2012 – 2016), with a total of 69 participating students.

Students who enrolled in the Business Communications II (credit course) can participate in this program. The Business Communications II aims to teach business communication skills that are the foundation and basic requirements for global business people, and are imperative for smooth interaction and transaction with colleagues and clients from a variety of backgrounds. Furthermore, it aims to teach cross-cultural communication skills and presentation skills that are essential for global business persons to exercise leadership, especially when major Japanese companies such as Toyota and Nissan rely on more than 70% of their sales from countries outside of Japan in a progressively globalized world economy. The program invites instructors with experience in international businesses to teach with a hands-on learning approach, as well as industry experts operating globally as guest speakers to

give lectures. Moreover, in response to a pre-training guidance request from students, the program invites a master of international protocols to teach table manners and etiquette at a French restaurant with a full-course dinner.

#### Chapter 1.2 Case Study: New York in 2016

The training took place in early February for 8 nights and 10 days. The purpose of the program was to visit and talk with employees at local companies and a law office in New York City, a creative city in an advanced media nation. The participating students were encouraged to learn about current businesses conditions and the purpose of working overseas, and to utilize the findings for their own career planning by understanding the importance and value of having expertise in a region as diverse as New York City. Below is the summary of the program in New York.

##### Day 1

All day: Visit commercial facilities in New York City: The Museum of Modern Art (MoMA), The New York Public Library, Broadway musical theatres, luxury brand stores, etc.

##### Day 2

Morning: Orientation at Global Labo

Afternoon: The United Nations (UN) tour

Evening: The Ride NYC bus tour

##### Day 3

Morning: Visit and lecture at Moses & Singer LLP, a New York City law firm

Afternoon: Visit Columbia University and campus tour

##### Day 4

Morning: Courtesy visit to Consulate General of Japan in New York

Afternoon: Lecture at JETRO (Japan External Trade Organization) New York office

Evening: Lectures from Japanese guest speakers working in New York at Global Labo

##### Day 5

Morning: Visit and lecture at Bloomberg

Afternoon 1: Lecture at the Permanent Mission of Japan to the UN

Afternoon 2: Debate at PricewaterhouseCoopers LLC. (PwC)

##### Day 6

Morning: Alexander Technique lesson and lecture at Global Labo

Afternoon: Lecture at Kodansha USA Inc.

Evening: Cross industry networking at Global Labo

##### Day 7

All day: Visit of cultural facilities in New York

##### Day 8:

Departure to Japan

## Chapter 2 Discussion

According to the knowledge management theory advocated by Dr. Ikujiro Nonaka “There are two types of knowledge: tacit and explicit.”<sup>i</sup> In this theory, the knowledge conversion model, SECI in which tacit knowledge is shared through collaboration with others (Socialization) and converted into a shareable form of explicit knowledge (Externalization), then explicit knowledge is combined with other explicit knowledge (Combination) to create new knowledge. As the new knowledge is acquired and mastered through experience and practice, it becomes one’s tacit knowledge (Internalization)<sup>ii</sup>, assumes new knowledge is created through interaction between tacit knowledge and explicit knowledge, and is converted from individual knowledge into shared organizational knowledge. This interaction between tacit knowledge and explicit knowledge is essential for knowledge creation within organizations, and organizational knowledge creation is therefore a spiraling interactive process between these two types of knowledge. It is important for individual’s knowledge to interact with the organization at large since it provides the opportunity to nurture innovation and to create competitive advantages. Dr. Nonaka states that this is a key factor contributing to Japanese companies that succeeded in the global society in such a short period.

Tacit knowledge is the knowledge that individuals implicitly possess yet are unable or find difficult to externalize by writing or verbalizing. The concept of tacit knowledge was originally developed and introduced by a Hungarian physical chemist and philosopher, Michael Polanyi (1891-1976) in *Personal Knowledge* (1958) and *The Tacit dimension* (1966) which he described “we can know more than we can tell.”

For example, when scientists, artists, or athletes exhibit exceptional breakthroughs or performance, it is difficult for them to explain how they “knew” what it required them to do in order to make the achievement. Likewise, just because one can recognize someone’s face, it doesn’t mean that it is easy to explain how he or she recognizes the face and describe the details of the face to someone else. It is also difficult to explain how one can ride a bicycle, even if one can ride it with ease. These skills related to recognition, physical accomplishment, and unique talents are composed of small specific elements such as the way you put your feet on the pedals of a bicycle, the way you shift your body weight, etc. But, laying out all these specific small details does not mean he or she explained how to ride a bicycle. Those mastered the skill of riding a bicycle “know” how to ride a bicycle which is not just composed of small details, and that knowledge which is “unable to externalize by writing or verbalizing” is tacit knowledge. On the other hand, objective and rational knowledge that can be verbalized and/or externalized into things like mathematical formulas, graphic charts, and manuals, etc., and is conveyable and sharable is called explicit knowledge.

Education in Japanese universities typically offer classes to disseminate explicit knowledge. However, they do not offer experience-based classes to nurture tacit knowledge, making it difficult for students to connect what they learned in the class into more subjective and personalized knowledge. Students build foundations by taking classes and achieving explicit knowledge, and then convert the explicit knowledge into tacit knowledge through hands-on experience like this overseas career



## [The Activities of the Overseas Career Training]

- 1 The Museum, Public Library, Broadway musical theatres
- 2 The United Nations (UN) tour
- 3 The Ride NYC bus tour
- 4 Moses & Singer LLP
- 5 Columbia University campus tour
- 6 Courtesy visit to Consulate General of Japan
- 7 JETRO (Japan External Trade Organization) New York office
- 8 Japanese guest speakers working in New York
- 9 Bloomberg
- 10 The Permanent Mission of Japan to the UN
- 11 PricewaterhouseCoopers LLC. (PwC)
- 12 Alexander Technique lesson
- 13 Kodansha USA Inc.
- 14 Cross industry networking (guest speaker: Mr. Yoroku Adachi, CEO of Canon USA)
- 15 V Indoor complexes such as Chelsea Market, Macy's.
- 16 Business communication class and pre- and post-training guidance

## [Global Human Resources Requirements]

- A. Linguistic skills
- B. Communication skills
- C. International protocol
- D. Self-direction
- E. Positivity
- F. Spirit for challenge
- G. Cooperativeness
- H. Flexibility
- I. Understanding of other cultures
- J. Japanese identity
- K. Broad and well cultivated mind and profound expertise
- L. Willingness to find and solve problems
- M. Team-work
- N. Leadership skills
- O. Public-mindedness and moral sensibilities
- P. Media-literacy
- Q. Presentation skills
- R. Creativity and originality

In this program, it is also essential to foster human resources that one can trust and rely on. For that goal, students must be able to think critically without prejudice, and assert their opinions clearly. In order to articulate one's opinion on a timely manner and persuade others, logical thinking and debate skills, as well as English fluency to communicate ideas are all crucial, hence these skills must be trained in early years. Japanese students often tend not to speak up even when they have their own opinions due to their shyness and fear of making mistakes, or fear of standing out in public. Likewise, teaching them explicitly at home and school the importance of actively speaking up is a good thing to do.

Structured and integrated explicit knowledge that academic courses at universities provide is objective and rational knowledge. In order for students to acquire this, our overseas career training is highly effective as it entails an active learning method through hands-on experience and practice which efficiently converts explicit knowledge into tacit knowledge.

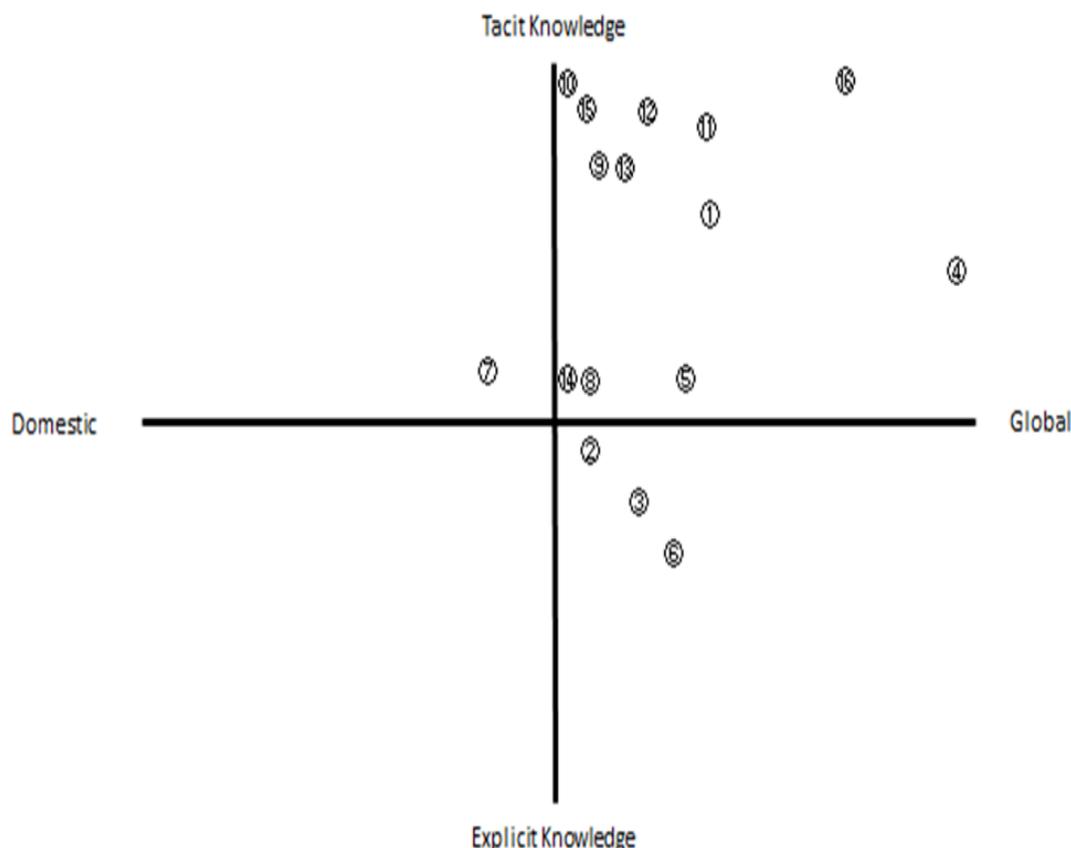


Table 2: Categorization of the Activities of the study abroad program

**Conclusion**

Many students reported that they would like to brush up on their English skills and become fluent communicators overseas, suggesting that they are no longer hesitant about utilizing English and have become more confident. Furthermore, upon their return from the overseas career training, they enrolled not only in English classes, but also international-relations classes, deepening their ability to understand more specific and concrete global agendas. They became more open to overseas travel, and many students started traveling alone by themselves. They now actively select and find employment at companies operating worldwide. Along with the changes in environment surrounding companies and youth, teaching students not only basic academic skills and specialized knowledge but also communication skills to collaborate with others has become increasingly more important than ever.

The reports submitted by students who participated in the New York illustrate how much they were inspired and learned, even more so than we the professors had expected. These students will start participating in recruiting activities later this year.

It was a great opportunity and the right timing for the students to consider their future. It would be meaningful to conduct a survey after their graduation, and find out which aspects of the training were beneficial and influential to their later career, and then reflect the findings onto the planning of future trainings.

The fact that roughly 80% of freshmen and sophomores in Japan have never considered their career choice<sup>iv</sup> suggests the important role career education and placement support can play in colleges. Career education and placement support should be offered from the freshmen year instead of the junior and senior years. Many colleges in Japan still don't recognize career education courses and placement support guidance for credits. As a result, it is only when students enter the junior and senior year that they become serious about the job search; however, colleges should offer career education classes as basic requisites with credits as soon as students enter the college, and offer detailed instructions and off-campus career related opportunities such as internship programs with active learning approaches during their freshmen and sophomore years.

In recent years, more colleges have started to engage in career education efforts. Nonetheless, students' utilization and participation in career education activities is limited, and it is not well integrated into a whole college education from entry to graduation in a four-year program. The study abroad program with the active learning approach is highly valuable and influential for students not only as career education activities, but also for their lives at large. The program offers students the opportunity to engage in conversations with professionals and experts, to actually visit their offices, and to learn in a group work setting overseas. The active learning approach enables students to engage in independent and proactive learning, and to cultivate general capabilities (cognitive, theoretical, social, cultural skills) as well as broad knowledge and experiences. It entails discovery, problem-solving, experiential, and explorative learning, all which make the whole learning experience more satisfying. It is highly recommended to incorporate an overseas internship program with the active learning approach into the curriculum, especially during early college years. It would motivate students to envision their career goals and plans earlier, and serve as the catalyst for building a stronger foundation for becoming more proactive and independent individuals who can thrive in the recruitment activities following their junior year.

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## Endnotes

<sup>i</sup> Ikujiro Nonaka and Hirotaka Takeuchi. (1996) *Chisiki Souzou Kigyou (The Knowledge-Creating Company., Katsuhiko Umemoto trans.)*. Tokyo, Japan. Toyo Keizai Inc.

<sup>ii</sup> Socialization is the process of acquiring and communicating tacit knowledge through collaboration. Externalization is the process of converting tacit knowledge into a shareable form of explicit knowledge. Combination is the process of combining explicit knowledge with other explicit knowledge to create new knowledge. Internalization is the process of acquiring and mastering newly created explicit knowledge through experience and practice.

<sup>iii</sup> The Council on Promotion of Human Resource for Globalization Development (June 22nd 2011) *An Interim Report of The Council on Promotion of Human Resource for Globalization Development*. Retrieved from

[http://www.kantei.go.jp/jp/singi/global/1206011interim\\_report.pdf](http://www.kantei.go.jp/jp/singi/global/1206011interim_report.pdf)

<sup>iv</sup> Yuki Mochizuki (2012) *Dai Nikai Daigakusei no Gakushu/ Seikatsu Jittai Chousa Houkokusho. Daigaku ni okeru Keito-teki na Career Kyoiku/Shien no Hitsuyosei*, Tokyo, Japan: Benesse Educational Research & Development Institute.



*Urban and Rural Secondary School Parents' Sense of Community in Alberta,  
Canada*

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The IAFOR International Conference on Education—Hawaii 2019  
Official Conference Proceedings

**Abstract**

For decades educational researchers have been pursuing the question, how do you increase parent involvement in schools? With this question, educators and policymakers are curators of parent involvement, resulting in practices that tend to be school centric. Adages such as "it takes a whole village to raise a child" are invoked, but whether and/or how parents feel part of a school community is rarely interrogated. This research redirected the study of parents in schools from the typical question of "involvement" by asking, what makes parents feel in community in their children's schools? We focused on secondary school parents since research shows parents' involvement declines at this level, and they feel displaced on the school landscape. Based on semi-structured interviews with 18 parents of rural secondary schools and 13 parents of urban secondary schools in Alberta, Canada, we describe parents' sense of community in terms of McMillan and Chavis' theory, including the categories of membership, influence, integration and fulfillment of needs, and shared emotional connection. In rural contexts boundaries between school and the external community are porous, which can enhance parents' sense of community because they have multiple opportunities to engage. Urban parents feel anonymous to teachers and staff, and security measures literally lock them out of the school. Both groups experience gatekeeping by other parents, which suggests that the school-home dynamic is influenced by parent-parent dynamics, and not simply how parents and teachers relate to each other.

Keywords: parent participation, school community, secondary school

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## Introduction

Secondary school educators think parents have “disappeared” because they do not see them at the school like they did in younger years. But secondary school parents report feeling displaced in the schools and not needed by teachers, so they move behind the scenes to support their children (Stelmach, 2013). Robinson and Harris (2014) demonstrated statistically that traditional parent involvement strategies, such as helping with homework and volunteering in school, have negligible and even negative impacts upon secondary students’ learning (Robinson & Harris, 2014). These suggest that involvement may not be the best construct to imagine school-home relations at this level. Our study offers a new angle by asking instead, what makes secondary school parents *in community* in their children’s school?

## Situating the Question

Discourses of involvement and partnership have dominated since the 1990s (Christenson & Reschly, 2010; Lareau & Shumar, 1996). The focus of parent involvement has been on schoolcentric (Lawson, 2013) practices that have become institutionalized; parents are expected to value a form of supporting their children’s learning that is teacher-directed and teacher-valued. This ultimately positions parents to be judged by educators and by other parents who align with this paradigm. Despite leading scholar Joyce Epstein’s (2019) suggestion that the home, school and community work together in a bi- and tri-directional manner, parent involvement tends to be narrowly defined in ways such as helping with homework, volunteering at the school or for school-sponsored events, attending parent-teacher conferences, or performing other home-based activities that correspond to school expectations.

Kim and Sheridan (2014) differentiate between structural and relational approaches to family-school partnerships. A structural approach captures traditional parent involvement activities, those they define as “scripted objectives rather than interpersonal processes” (p. 4). They critique structural approaches because they are punctuated activities that may have immediate, but not generalizable, impact, particularly when considering children’s learning needs as they age. By contrast, relational approaches emphasize how families and educators “cooperate, coordinate, and collaborate to enhance opportunities and success for children and adolescents across social emotional, behavioural, and academic domains” (p. 5). They promote “an integration of structural and relational elements, enveloped within a partnership orientation” (p. 7). Along this vein, Harris and Robinson (2016) also argue for reframing traditional concepts of parent involvement through the metaphor “stage-setting” (p. 188). Stage-setting occurs through parents conveying the importance of education and by creating a life space for children that is conducive to learning. What makes Harris and Robinson’s framework distinct from traditional parent involvement activities is that “stage-setting aims can also be achieved without employing any traditional parental forms of involvement” (p. 192). While these researchers have opened the door to interrogate how the field has been conceptually monopolized by terms such as involvement and partnership, their focus is epistemological and ultimately remains focused on what parents do and how this impacts upon students’ academic outcomes. A focus on community is a shift toward the ontological for it seeks to understand parents’ *being* rather than doing, which seems to us to be a primordial condition for involvement and partnership to occur.

Sergiovanni (1994) wrote, “community building must become the heart of any school improvement effort” (p. xi). In educational research community has been invoked as a truism, particularly when it comes to parents. Our review of the literature turned up one phenomenological study in 1997 that examined rural parents’ school experiences (McLelland), but community theory itself seems to have been given little attention in educational research. One exception was a recent study by Angelle (2017) who employed McMillan and Chavis’ (1986) sense of community theory to investigate how high school principals create a sense of community for students. Our study assumed community itself was not static or universal, and that it was not merely something to be shaped by teachers or principals, but conceptualized through the experience of parents.

### **Data Collection**

Our study sought insight into both rural and urban parents’ sense of community. Rural is an important inclusion in empirical research about parents considering in the lone published literature review we found about parents (Semke & Sheridan, 2012), only one was identified.

Assuming that feeling in community is a socially constructed experience ‘we gathered data using semi-structured interviews (Fontana & Frey, 2005) with 21 rural and 13 urban parents of secondary schools. Our study was situated in Alberta, Canada where we both work and study. Canada, too, is a relatively uncharted territory in rural educational research about parents in particular; Semke and Sheridan’s (2012) literature review included one Canadian study conducted in a remote First Nations community.

Our definition of rural corresponds to that provided by du Plessis, Beshiri, Bollman, & Clemenson (2001). They define rural regions as those outside of commuting zones of urban centres that have 10,000 or more inhabitants. A “0” in Canadian postal codes also denotes rural, and the sites in our study met that criterion.

Rural data collection occurred on site through multiple visits to three publicly funded secondary schools located in two rural towns with populations under 3000 inhabitants. We refer to these as School 1, School 2, and School 3. School 1 was a non-denominational junior/senior high school with grades 7-12. In that same town, School 2 was a Catholic K-12 school. Their student populations were fewer than 300 students. Though in the same town, they were from different school divisions.

School 3 was located in a town more than three hours away. School 3 was a Catholic K-12 school with a student population of less than 600. School 3 reported a First Nations student population of more than 60% but Schools 1 and 2 were relatively composed of White students. Families of Asian and First Nations descent were among the minority in all these schools. None of these parents volunteered to take part in the study.

Through multiple site visits, we contextualized the data through school observations at school council meetings and other events, and by exploring the towns. School newsletters and automated phone call outs were used to recruit parents to participate. Among the 21 rural parents interviewed, 16 were mothers. Two fathers

were interviewed individually, and the three other fathers participated in interviews with their wives. All interviews were conducted in person. Three parents from School 3 were First Nations, but our sample was not ethnically representative.

Data collection with urban parents took place after all rural parents were interviewed. Given the geographical distance of cities in Alberta, we solicited the support of Alberta's provincial parent organization, Alberta School Councils Association (ASCA), to recruit urban parents through their newsletter, and interviewed some parents by phone. Parents volunteered from cities that ranged in size from about 100,000 to 1,000,000, and were located in central and southern Alberta. Among these, one parent recently immigrated to Canada to pursue doctoral studies, and another had been in Canada for over 10 years. Data collection for this study began in 2014 and was completed in 2018.

### **Theoretical Framework**

McMillan and Chavis' (1986) sense of community theory heeds both relational and territorial considerations, and thus was appropriate for our purpose. Since schools are grounded in concrete space, it makes sense that the nature of the space in which schools reside might impact upon whether and/or how parents feel in community with schools. McMillan and Chavis propose four elements in their sense of community theory. The first element, membership, is defined as "the feeling of belonging or of sharing a sense of personal relatedness" (p. 9). Membership is further characterized as giving members a sense of security and emotional safety, identifying with others through relations, and feeling valued because of one's contributions and investments to the group. The second element is influence, which they define as a feeling among members that they matter to the group, and that the group matters to them. To feel a sense of community, one must not only feel like they have influence over the group, but that the group can have influence over individuals. This results in cohesion. The third element in McMillan and Chavis' sense of community theory is what they call integration and fulfillment of needs. The term "reinforcement" is central to this element; to feel in community members must experience reward. In other words, when people feel their needs and sense of purpose are met within a community, their commitment to it is reinforced. Finally, and perhaps most importantly, a shared emotional connection is critical to the strength of a community. Through frequent, quality interactions, and a shared understanding of experiences – including those not personally lived—forge emotional connections.

Our initial analysis of the transcripts followed what Saldana (2013) calls structural or holistic coding. Using this approach we took a "grand tour" (p. 64) of the data, attending to the conceptual elements of McMillan and Chavis' theory and identifying phrases that aligned with the framework and responded to our research questions. In a second cycle, Marcela reduced the codes into "big ideas", creating a multi-page document that provided a skeleton of potential themes to answer our research question. To interpret the big ideas into themes, we followed Freeman's (2017) notion of categorical thinking. Categorical thinking allowed us to account for the variety of descriptions that parents used when talking about community. These descriptions were categorized into the four elements, which were akin to a classification system that Freeman discusses in categorical thinking. This research

advances the conversation about parents by injecting a conceptual focus on community, a term with current and universal appeal.

### **Interpretations and Discussion**

These data point to differences in whether and/or how urban and rural parents experienced community through or with their schools. One parent who lived rurally but had a child in a nearby city school captured a clear difference:

At [name of school] it's rural—very much a sense of community....I find that parents are much more friendly, and, you know, easier to talk to...In the city at [name of school]—very different sense of community. It's more superficial....More pleasantries, like they smile and nod. They will say hello, but that's as far as it goes.

In the following parents are given pseudonyms. As we did not visit urban schools, and parents participated from various parts of Alberta, we used the generic term “urban parent” instead of referencing a school.

### **Membership**

McMillan and Chavis (1986) characterize membership as “a feeling of belonging” (p. 9). There was clearly a difference between urban and rural parents in this regard. While rural parents used terms like “family” to describe their children’s schools, urban parents used words like “anonymous”, “rejected”, “impersonal” and “distant” to describe their experiences. Community for urban parents was about their and their children’s one-on-one interactions with teachers and staff. By contrast, rural parents included their experiences in the external community when talking about school. There was no clear boundary when it came to school community and external community.

When asked if she felt she belonged, one urban parent replied, “No, I don’t actually, to be honest.” Most urban parents echoed this sentiment. We were surprised to learn that front office staff played a central role for these urban parents’ sense of community considering that researchers emphasize educators in this regard (Lin, Isernhagen, Scherz, & Denner, 2014; Ruitenberg & Pushor, 2005). Most, however, described felt like they were introducing on office staff:

When I walk into the high school and the office staff are not helpful and kind of curt with you, that doesn’t make you feel in community at all, you know what I mean? (Tammy, Urban Parent)

Urban parents were shocked how unfriendly secondary schools were. In elementary, teachers and principals knew them by name and who were their children, they knew other parents, and they felt “it was personal” (Urban Parent). Events such as parent orientations provided limited opportunities for building connections, and these even these failed to feel connective. Jenn described Meet the Teacher night: “we just sat in the classrooms and listened to them (teachers)...We tried to introduce ourselves, but by grade 9 we didn’t even go.” One parent reported “I haven’t been able to really meet any of [child’s] teachers” (Tammy, Urban Parent). Parents ‘knew’ their children’s teachers by “[catching] a glimpse” (Petra) on the first day, or seeing their

picture on the website. Such descriptions depict the parent-teacher relationship as that of strangers.

Community was seamless in the rural contexts; what was experienced in the external community translated into feelings about the school and vice versa. Like urban parents, these rural parents had less contact with the secondary school compared to their children's elementary schools unless their children were involved in extracurricular activities. But unlike urban parents, rural parents achieved membership through other activities that involved youth, or contributed to community in a larger sense. Through these activities, parents got to know youth and other parents, and felt they belonged because they contributed to children's welfare.

The metaphor of family was commonly invoked when rural parents talked about their school. "They know who I am. They know who my kids are" (Kari, School 1). Whereas urban parents had limited opportunities to engage with teachers and other parents, it was hard to avoid interactions in a small town, and these rural parents felt this reinforced connections:

It actually has helped my daughter within the school, too, because even though it is just running into somebody at IGA, it is still a personal contact and you get to know each other a little bit better even just from that. It breaks down a couple more barriers. (Nelly, School 3)

It is not just that when rural parents go to the school that they are known, but that the school was an open space in which they felt at home. They did not have to get buzzed in and report to the office as some urban parents explained. "No one directs you to the office anymore....it's not uncommon to walk through the hallways" (Harold, School 3).

Familiarity to and with others led to trust and a sense of security, an important element of belonging (McMillan & Chavis, 1986). "You are not anonymous like you are in the city" (Heidi, School 2). Knowing people established trust and a sense of safety: "Oh, hey, I know you, and I've seen you do this, so you're okay" (Dianne, School 3). Sandy (School 3) explained this is why the school felt like family: "They're an extended part of my family for that simple reason -I'm entrusting them with my children. And their safety is a big deal." This sentiment extended into the town; people watched over and helped each other's children. Rural people "stepped up" to sickness, death, house fires, breakdowns during harvest.

What seemed to be different for urban and rural parents was that urban parents relied on teachers and school staff to create a sense of belonging. If they encountered cold and impersonal office staff, or if they saw the principal standing at the door and greeting people in the mornings, this made a difference to how they felt. Membership for urban parents was contained within the school and created by teachers and school staff, but for rural parents membership in the external community translated to membership in the school.

Weaved throughout the description of these rural communities as friendly, however, were admissions of cliques and elitism. Long-term residents, referred to as "legacy parents" or "generational" families, belonged because of history. Newcomers,

including those who had lived in the town over a decade were mindful of the importance of navigating this fact:

Once you get into the school there is a sense of community, but it's hard to break that barrier....You gotta almost connect with a family that's a legacy family. (Lila, School 3).

Parents native to these places were equally conscious of their advantage:

I think generational families are the ones that have the real sense that—well, I still feel like [this school] is *my* school, you know what I mean? Whereas when you're coming into a place, it's not—you don't have the tie to it like the rest of us do, you know? (Tina, School 1)

It was easy to identify the legacy and generational families walking through these schools; one could trace the names on current trophies or honor rolls to the graduation composites of decades past. These symbolized who truly belonged.

### **Influence**

Both urban and rural parents acknowledged that “when kids come to the high school you see a little bit more of the hands-off with parents” (Tina, School 1). They still needed, however, to feel like they were “an important part of the education process” (Uma, Urban Parent). The basic tenet of influence in the sense of community theory (McMillan & Chavis, 1986) is that “members are attracted to a community in which they feel that they are influential” (p. 12). In our study, urban parents were primarily individually oriented toward their children such that the extent to which they felt they were influential depended on whether and or how the school responded to their advocacy. Rural parents tended to be other-oriented; the welfare of children beside their own was within the scope of their intentions and impact.

Petra, an urban parent who had recently immigrated to Canada had mixed experiences when working with her children's school: “I feel like I can go in and ask questions....and somebody will answer me. Even if it doesn't work the way I wanted to, I feel like I was heard, you know? They listen.” Knowing “[their opinions are valued and heard” (Emma, Urban Parent) made parents feel part of the school. But by far the most common narrative we heard from urban parents was frustration over their inability to advocate for their children when they were struggling in school, or the feeling that parents were not wanted at the secondary level. Not being able to get their “foot in the door” was a metaphor commonly invoked.

Urban parents felt that they had to “work harder” (Delia, Urban Parent) to develop a relationship with teachers. Some parents felt that the school intentionally “put a brake on”(Uma, Urban Parent) or gave the message, “I'm the educator and you're not (Nathan, Urban Parent). Others were chastised for “hovering” (Deena, Urban Parent). Indeed, Emma described such an experience: “The message I get is, “Oh my God, you're driving us crazy. Stop phoning, stop emailing, stop asking for stuff. It's not reasonable” (Emma, Urban Parent). At the highest level of powerlessness parents removed their children from the school.

By contrast, rural parents felt they influenced youth in a positive way. Yolanda (School 1) had initiated a youth group in the town, saying, “I can always see those kids that are lonely or just need someone to encourage them. So that’s the kind of thing that I focus on mostly, and that’s the youth center.” As a baseball coach in town Gerry (School 3) said, “That makes me feel special because I’m connecting with kids. I try to build friendships with kids so that they can trust me.” They had in-school influence as well, such as organizing book fair, milk program, yearbook, and drama programs.

There was, however, the perception that some parents had more influence than others. Sports parents ruled in these rural towns, for example. Deena was well aware of how sports was privileged:

My kid’s not good at sports and why should they be forced to do track and field? But they still do it. So why can’t it be the same thing for this academic kind of thing?

Influence was also related to history. The legacy parents referred to in the previous section were perceived by newcomers as being the “default” for the school when they were seeking contribution or looking for parent leadership. These parents further enhanced their influence because in the spirit of continuing certain legacies they created booster clubs who raised funds for the school.

### **Integration and Fulfilment of Needs**

McMillan and Chavis (1986) claimed that “a strong community is able to fit people together so that people meet others’ needs while they meet their own” (p. 13). What motivated these urban and rural parents’ behaviour, and what were their reinforcements? Urban parents expressed a need for communication, and intimate knowledge about their children’s school experiences. Rural parents tended to focus on helping others, and making things happen to maintain or improve the community. Information made urban parents feel in community; contribution made rural parents feel in community.

Urban parents lamented losing touch with their children’s daily school activities. Tina (Urban Parent) said, “I know that they’ve gotten away from sending out paper copies of anything, but I would just love to get an email from them just to say, ‘hey, this is our monthly update’ or whatever.” Digital portals provided parents access to their children’s progress on a daily basis if they chose, but the “cookie cutter comments on report cards” (Leanne, Urban Parent) generated from such programs felt distant. They preferred “old-fashioned way” face-to-face communication. Jenn (Urban Parent) kept a handwritten letter from a grade 7 teacher saying, “it made us feel connected.” This poignantly demonstrates the impact of the personal touch.

Connections were improved if parents knew the teacher “looked at [their children] individually.” But significant frustration was expressed by more than one parent who tried to advocate for their children. Some, like Leanne (Urban Parent), reported feeling shut out: “I was completely out of the loop of what was happening....I tried for months, I tried to get information from them and they just wouldn’t, they would not give it....I think they found that I was irrelevant in the process....there wasn’t any feeling in community.”

Some parents sought out school councils as a way “to kind of know what is going on behind the scenes” (Tammy, Urban Parent), but most accounts of school council were less than complimentary. It was either “formal and very directed by the principal” (Nelly, Urban Parent), or they perceived the principal as treating it like “it’s a bit of an obligation” (Kara, Urban Parent) rather than a genuine venue for engaging parents. Dalia (Urban Parent), who was extensively involved with school councils throughout her children’s schooling said, “It’s not the involvement or the parental input that there is in elementary.” Another reason school council did not strengthen a sense of community was that it was perceived to be a “closed group” (Nathan) with “their own agenda” (Kelly). Dalia (Urban Parent) said introductions were not made at meetings, “so it’s awful because you don’t know who you’re sitting with even” (Dalia). Thus, these urban parents did not feel meaningful connection to teachers or other parents.

Rural parents, on the other hand, were driven by a need to be, and to be known as, active contributors who were connected to others doing the same. Whereas information reinforced sense of community for urban parents, action reinforced rural parents’. Community itself is a rural person’s purpose (Wuthnow, 2013), and this propelled parents into action not only for the preservation of community, but as a condition for being a parent and community member. “If you want the community to give to you, you have to give to the community” (Sandra, School 2) captures the idea that community is action oriented, not something to be received. One developed a sense of community by “stepping up” and “mak[ing] your environment your home” (Tara, School 1). Even small gestures affirmed people’s sense of belonging, as Heidi (School 2) indicated: “I know they could do it without me, but it makes me feel good knowing that they want me to help.”

Because community was valued in and of itself, this created expectations, and ultimately people were judged according to whether they measured up to these expectations. Being busy was not accepted as a reason to not get involved because “spending an hour here, spending an hour there makes a big difference in [students’] lives” (Sandy, School 3). Action differentiated the insiders from the outsiders, as Mandy (School 2) indicated: “If you’re not out there, you aren’t part of it.” Newcomers were especially vulnerable in this regard. Ultimately, they expected newcomers to take the initiative, as Wendy (School 2) said, “Don’t wait for the invitation to volunteer at the school. You just need to be there. Go. Show up....That’s how you get kind of brought in quicker I think.” But it was not that simple. Like the urban parents in our study, some of these rural parents joined the school council as a way to stay connected to the school, only to encounter gatekeepers who thwarted others’ efforts to contribute their ideas.

### **Shared Emotional Connection**

The “definitive element for true community” (McMillan & Chavis, 1986, p. 14) is shared emotional connection. On this element there was clearly a difference in what parents’ experienced. Context had much to do with this.

While some of these urban parents had positive experiences with the school by making connections with individual teachers or the principal, overall they did not experience the “community of spirit” (p. 14). The fundamental element that was

missing was interaction. Urban parents did not necessarily live in the neighbourhood of their children's school; consequently, interactions were limited. Some parents made connections with other parents through their children's performance-oriented activities, but at other school-sponsored events, such as open house or orientation parents reported being "just kind of anonymous faces in the gym" (Jenn).

A number of factors impeded urban parents' emotional connection. First, having no interactions with school staff themselves, parents were apt to judge the sense of community according to their children's experiences. When children described school staff as "cold" or "mean" parents believed that was how it was. But also, in their own limited interactions, parents did not feel like they were genuinely invited to participate: "It feels like the reaching out to parents or the involvement of parents is just a box that needs to get checked on their end, you know" (Nelly). Third, there were structural impediments. Pick up zones, where parents naturally socialized in elementary, did not exist because parents waited in cars instead of standing at the entrance—sometimes at the request of their teenagers. Having to get buzzed in and report to the front office—safety measures in many schools—was "off-putting" (Nathan). And technology, though convenient for getting information about their children's progress, was impersonal. Petra's comment captures a core issue: "For me community is something like you can meet, where you can share, that you can interact with people...So at this school, I don't think there is sense of community." These urban parents were isolated both from the school and other parents.

Rural parents talked about "loving" their schools and towns. They described the schools as having an open door policy where parents were free to pop into the school to visit a teacher or principal, and formalities such as signing in were waived.

Because it was typical for parents to bump into other parents and teachers outside of the school, these casual meetings were reinforced familiarity, and strengthened emotional bonds. As Lena (School 3) explained, "It's good to see that, going through a grocery store and then meeting a teacher, and them saying how impressed they are with your children." Parents commonly joked about how long it takes to buy groceries or pick up the mail because they always ran into someone and ended up in lengthy conversations. The familiarity that was established through these interactions also created the impression of sameness. This was binding, but also polarizing. Not being seen out and about in the community was as powerful as being seen. Absence was interpreted as rejecting the community or having disdain for it, and this led to defensive posturing, as in Dianne's (School 3) comment:

It's the ones that come in that are missing their Starbucks and can't wait to get out of town for the weekend. I find that those ones I'm not too sure how to make them part of the community.

One had to be seen supporting local businesses, join in on activities like curling, and accept invitations to things that might not have been that interesting, all for the sake of showing acceptance of what already existed. Those who claimed there was "nothing to do" had a "snotty" attitude, and were subject to disdain for rejecting the place.

Students were a key source of emotional connection for parents, and everyone in fact. Students were celebrated in the local newspaper, and even community members who did not have school-aged children attended events where students were involved. Graduation, for example, was iconic, as Tara (School 1) explained: “People from the community love to support the grads here. And they will come out. Businesses will be closed for the afternoon of grad so that people can be accommodated. It’s a big deal.”

These rural parents had the advantage of a small-scale locale, and we believe this contributed to their emotional connection. Given the size, interactions happened naturally and were not restricted to the school; therefore, these rural parents had opportunities to enhance connections in ways that the urban parents did not.

### **Conclusions: Entryways and Boundaries**

We conclude with three central observations:

1. When thinking about community, the reference point is crucial (Jason, Stevens, & Ram, 2015). Secondary parent involvement cannot simply be recast from an elementary school mould. Urban and rural parents differed in agency with respect to negotiating community within these new conditions. Because community resided within the school and its context, it is perhaps not surprising that urban parents attributed their lack of community to what school staff did or did not do for them. Boundaries are porous between school and town in rural contexts, giving rural points multiple orientations to each other (McClelland, 1997).
2. Teachers are encouraged to be border crossers (Sanders, 2009) and to make schools more familycentric (Pushor, 2017). This discounts the role that parents play in each other’s sense of community, in both friendly and gatekeeping ways.
3. A finding unique to rural communities is the role “legacy” parents play in boundary setting. Legacy parents have deep roots in the school and community, which means they already think it is *their* school. Their emotional connection creates a weave so tight that others may have a difficult or impossible time passing through.

### **Acknowledgements**

This research was funded by the Social Sciences and Humanities Research Council of Canada (SSHRC).

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## *New Literacy Memberships: Implications for 21st Century Literate Identities*

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The IAFOR International Conference in Education - Hawaii 2019  
Official Conference Proceedings

### **Abstract**

The purpose of this qualitative research study was to explore the impact of memberships held within new literacy practices on young adolescents' literate identities. The experiences of young adolescents were examined to better understand how these experiences and their perceptions impact the development of their literate identities in multiple contexts. As such, this study sought to explore the following research question: How were the literate identities of sixth-grade adolescents shaped by the memberships they held within new literacy practices? This paper was part of a larger body of work that explored adolescent participation in new literacy practices and the impact on their literate identities. This study illustrated that the sociocultural underpinnings of New Literacies were directly tied to the meanings that young adolescents developed from the various practices in which they interacted. Exploring the connections between the various digital communities of practices in which young adolescents traversed offered great insights about possible implications that these communities may have had upon their literate identity formation. Understanding adolescents' literate identities and the communities of practice in which they navigate is a crucial element in helping them build a repertoire of skills and attitudes necessary for positive engagement within our increasingly global societies. As educators, we can use this knowledge to better understand our students, specifically how the literacy practices in which they participate directly impact their overall identity perception. These understandings should guide our future teaching practices.

Keywords: literate identities; new literacy practices; adolescent literacy; new literacies

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## Introduction

Our understandings of what it means to be a literate individual have advanced much since the turn of the 21<sup>st</sup> century. Lankshear and Knobel (2013) point out that at the end of the twentieth century *new literacies* was a term used to describe primarily reading and writing texts, which were mediated by the use of digital technologies. However, it appears that although the ways in which literacies are used have changed, it is not so much that there are new types of literacy practices, but rather it seems that this time period has served as a hallmark for the evolution of literacy practices. New literacies today encompass understandings that are more complex, focusing on ways in which meaning-making practices have evolved based on diverse technological platforms (Knobel & Lankshear, 2014).

The ways in which people use literacy today have transformed based on the practice(s) they are utilizing, for example, when “chatting” with a friend on a social media platform such as Instagram discussions can take place across different spaces and times with different levels of “friends” participating. Literacy, as a construct, has shifted towards a more socio-cultural notion of literacy where various literacy networks “dynamically interact” with each other in daily practice (Gee, 2000). However, networks can be a disputed term, as understandings can vary. Gee (2004) holds that “networks harness the power of unfamiliarity”, which during time periods of rapid growth and development is not only important and useful, but rather crucial to linking and connecting people and organizations (p. 99). Conversely, Wenger (1998) is opposed to the idea of networks, because merely participating in an event would not constitute membership and membership is critical to the idea of the community of practice. What remains undisputed is the idea that literacy has definitive social elements. Viewing literacy as a social practice has become a central tenet in evolving visions of literacy (Barton, 2007; Jewitt & Kress 2003; Kress, 2003; Mills, 2010; Street, 2005a). Literacy can no longer be thought of simply in terms of the “skills” one possesses, but rather as context-specific social practices that fluctuate in different environments (Street, 2009). Barton (2007) offers that understanding the means in which literacy is situated in the social contexts of reading and writing is vital to understanding new insights regarding literacy. Kucer (2005) states that “the desire of the language user to explore, discover, construct, and share meaning” has become paramount to the act of literacy (p.5). In this way, literacy facilitates meaning making.

According to results from the 2017 National Assessment of Educational Progress (NAEP), 37% of fourth grade students and 36% of 8<sup>th</sup> grade students scored in the *at or above proficient* reading category. Scores do represent only a slight improvement since 1992, the earliest reported test date: 2017 saw scores 5 points higher amongst 4<sup>th</sup> graders and 7 points higher amongst 8<sup>th</sup> graders; however, there was only a modest 1-point improvement amongst 8<sup>th</sup> grade scores in 2017 from 2015, and no significant improvement during that same period amongst 4<sup>th</sup> grade scores. The educational community is well aware that young children who have limited early literacy skills represent a great challenge today (Snow, Burns & Griffin, 1998). In fact, countless reading initiatives, programs, and legislation (i.e.: early intervention programs such as Head Start, programs such as Reading First, and legislative acts such as No Child Left Behind and the Common Core State Standards) have been created in order to facilitate and measure the effectiveness of teaching reading. Likewise, there has been an

increased focus on adolescent literacy development, yet, studies into engagement and motivation have nonetheless failed to yield a concrete answer that can serve to bridge the gap between where our students are functioning and where we would like them to be.

Even with the great emphasis placed upon improving and remediating literacy skills in recent years, it seems that scores are not improving as much as we would expect. This fact indicates there may be a discrepancy between the types of literacy practices emphasized in our school practices and those which serve to increase students' ability to read and write well in the 21<sup>st</sup> century. It becomes necessary to examine student literacy practices so teachers can become aware of the different types of literacy practices in which students are participating (Jewett, 2011). Torgenson et al. (2007) defined the period of adolescent literacy development as beginning as early as 4<sup>th</sup> grade and extending through 12<sup>th</sup> grade. Thus, investigation into the new literacy practices of young adolescents in digital contexts may serve to highlight areas that could be of benefit to both younger elementary students and older adolescents. Further, this information will help uncover how the literate identities of sixth-grade adolescents may be shaped by the memberships they hold in the various new literacy practices in which they participate. Understanding adolescents' literate identities and the communities of practice in which they navigate is an essential component in aiding them to construct a repertoire of skills and attitudes necessary for positive engagement within our increasingly global societies.

## **Methodology**

Previous research demonstrated that students display multiple literate identities as they participate in different literacy practices (Beach & Ward, 2013a), although the effect of the participation in various new literacies practices on their multiple identities has not been previously explored. A phenomenological approach was used in this study as it aided in highlighting the participants' unique and subjective experiences (Bogdan & Bilken, 2003). One of the purposes of the current study was to explore the ways these young adolescent participants' literate identities were shaped by the memberships they held within the new literacy practices in which they participated. All descriptions and terminology used came directly from participants.

## **Participants and Setting.**

The participants in this qualitative study were sixth grade students from the three participating elementary schools. Sixth graders were targeted in this study because previous studies have demonstrated that young adolescents in middle school often begin to experience decreases in motivation in regards to their literacy learning (Ryan & Patrick, 2001; Wigfield, Eccles, & Rodriguez, 1998). All of the participants in the study were students who reported an interest in technology in some regard. While interest in technology was not a requirement of the study, it turned out those participants that volunteered naturally tended to be interested in participating due to this type of interest.

This study took place at three different parochial schools in the southwest region of the United States. All of the schools were co-ed and served students from pre-kindergarten through eighth grade. In all of the schools, the sixth grade was

considered to be part of the middle school, but was not located at a different campus. In the state where the research took place there was a wide variance as to whether the sixth grade fell in a middle school/junior high environment or still within the confines of the elementary school. Parochial schools were selected so that the sixth grade could be investigated without being directly tied to either an elementary or middle/junior high school setting, allowing for a more holistic view of this age group to emerge.

### **Data Sources.**

The data sources that were used in this study were designed to provide more information about participating students, in general and also in regards to the types of technological tools they utilized. There were three main sources of information used in this study. The Student Demographic Information form supplied basic background information on each participant and the Student Technology Survey provided an outlook into the new literacy practices that students participated in. These two forms were given to the students simultaneously. Finally, the Student Activity and Demonstration asked students to discuss and demonstrate the new literacy practices they used in order to elicit in-depth information on the new literacy practices they employed (such as online and offline computer practices), both in terms of the adeptness at which they participated in those practices and in terms of how they viewed themselves as literate individuals when they participated in said practices.

Participants also listed which specific programs or applications they used and identified the two digital practices at which they felt they were most competent and the digital practice in which they did not feel as confident. High competence digital practices included gaming, exploring websites, word processing, YouTube, Instagram, blogging, and Skype as well as texting on a phone. Low competence practices included working with graphics, Excel, blogging, emailing and instant messaging, gaming, and typing and word processing.

In the individual interview and activity session, the students discussed and demonstrated their highlighted practices, enacting their literate identities in the different digital contexts and practices. During the demonstrations, they were encouraged to describe in detail each portion of their activity demonstration. Using this narration allowed a fuller exploration of the lived experience of these young adolescents as they relayed not only what they were doing but also their personal perceptions of their digital literacy practices. The students were encouraged to demonstrate any of the practices they listed on the survey that stood out to them or that they wanted to demonstrate. Sessions lasted about 60 minutes and were recorded using iShowU Pro®, yielding real-time screen capture as well as video and audio recordings, both of which were analyzed. The researcher did the interviews and kept field notes to document any other cues that might not have been captured by the program, such as facial gestures or body language.

**Analysis.** An inductive analysis approach was used in order to search for patterns or themes in the data collected (e.g.: field notes and transcriptions). First, significant statements were selected from small groups of transcriptions in order to horizontalize the data. As patterns began to emerge, a codebook was generated which became the core of my analysis and helped elucidate relationships and linkages amongst the data.

This process continued with small groups of transcriptions from various schools until all transcriptions were coded and then repeated the process again. This process aided the researcher in making sure that all possible codes were explored and were clearly described. Any new codes that emerged were added to the codebook, which ensuring that the codebook was representative of all emerging themes and non-repetitive. Summary charts were created for each participant and organized by corresponding school in order to pare down the information and better horizontalize the data. Once the summaries were finished, resulting patterns were identified in order to address the overarching research questions.

## **Findings**

A key finding from this research on literate identities was that adolescent competence perceptions and membership perceptions have a direct impact upon their literate identities within the various new literacy practices in which they engage. Other key findings about new literacies that emerged were that new literacy practices are interconnected and that adolescents traverse within both affinity spaces and communities of practice.

**Literate Identities.** This study sought to explore the ways in which adolescents' literate identities were shaped by the new literacy practices and new literacy skills that they participated in and demonstrated. Student discussion and demonstrations revealed these adolescents exhibited both intrinsic and extrinsic competence which occurred on a continuum, varying roles of membership within the practices in which they engaged, and that literate identities are multiple and vary between contexts.

**Competence connections.** Some important findings regarding competence emerged as a result of this research. The ways in which adolescents discussed and described how they perceived their ability to do something well or efficiently, and further exhibited positive self-perceptions regarding their proficiency indicated they had two types of competence perceptions: intrinsic competence and extrinsic competence. This extended previous research which alluded to the fact that competence was not a singular construct, but likely had elements of both intrinsic and extrinsic dimensions (Beach & Ward, 2013; see also Young & Beach, 1997; Collins & Beach, 2012). Specifically, the way that Beach and Ward (2013) operationalized literate identity put direct emphasis on both internal perceptions (as reflected through the young adolescents' feelings regarding their 'literate attributes') and their external perception (as reflected in the adolescents' perception regarding their competency in a given context). In the present study, specific evidence was found to support these previous assertions. Further, in the present study, the adolescents' perceptions regarding both their intrinsic and extrinsic competence were especially pronounced. One major difference with the design of the present study in regard to previous studies (Beach & Ward, 2013; Collins & Beach, 2012; Young & Beach, 1997) was that in this study, adolescent digital literacy activities were both discussed and demonstrated, which yielded a rich description of the types of digital literacy practices in which adolescents engaged. Additionally, the adolescents had the ability to demonstrate a variety of digital literacy practices, most of which were not classroom based. These findings have extended the knowledge regarding competence in non-classroom based literacy events. The addition of the demonstrations allowed the adolescents to replicate literate activities which made the conversation more layered and likely increased the

depth of student answers and offered a deeper understanding regarding adolescent competence within the contexts they were demonstrating.

Also, the present study occurred in a one-on-one setting in contrast to some of the other studies (Beach & Ward, 2013; Collins & Beach, 2012). Thus, students may have been more inclined to freely explore their individual competence perceptions with the researcher. These augmented understandings regarding the impact of both intrinsic and extrinsic perceptions in relation to the literate identities of the adolescents in this study help us have a more multifaceted understanding regarding competence, especially within digital environments. It is clearly evident that we must support and examine both how adolescents perceive their competence in regards to extrinsic performance measures and how that perception was internalized, resulting in intrinsic estimations, because the relationships are what defines their literate identities. Encouraging student reflection and encouraging them to think metacognitively about their feelings regarding their perceived competence may be a key in this regard. This connection between literate identity and metacognition has not been researched previously, but it may be connected to the positive impact the teacher/student relationship has upon increasing students' literate identities that both Akey (2007) and Skerett (2012) discussed in their studies.

The present findings support previous assertions (Beach et al., 2013; Collins & Beach, 2012) that competence varies within different contexts and seemingly occurs on a continuum. In this study, the adolescents indicated their perceptions fluctuated from high to low, or somewhere in between, indicating that competence did indeed occur on a continuum. Further, in this study, several student responses indicated they had continued goals for improvement in regards to their proficiency within the new literacy practices in which they engaged. The presence of these continual goals indicated that for these adolescents, improvement was an active and ongoing process. Collins and Beach (2012) found the variations in adolescent competence levels evidenced in their study reinforced their belief that literate identities transform as students progressed through school. These findings indicated their understandings of the transitional nature of competence. This study bolsters the idea of a competence continuum which is often in a state of active development. The fact that the competence perceptions of the adolescents in my study fluctuated on a continuum also implied that the literate identities of the adolescents were not only fluid, but malleable as well, because at its core, literate identity is about perceived competence. If an adolescent perceived his or her competence was low in a particular practice, the literate identity within that context was negative. However, many of the adolescents actively sought to improve or change, often offering specific skills that they wanted to improve. They also often said they were "still learning" about a new practice and they desired more exposure and subsequently more time to practice and hone their skills. These types of statements demonstrate not only the active nature of their literate identities in relation to their perceived competence, but also indicate they were aware of these perceptions and actively trying to improve their skills. This finding also supports previous assertions that adolescent perceptions about their competence within a given community of practice or affinity space can change (Akey, 2007; Beach & Ward, 2013).

***Membership implications.*** The relationship between literate identity and feelings of membership, or belongingness were themselves manifested in the discussions the

researcher had with adolescents in this study. Part of a literate identity, being either positive or negative or somewhere on the continuum, is dependent upon the feelings of membership adolescents had within the affinity space or community of practice in which they participated. This notion of membership, in connection to the belongingness that one has within a particular community of practice, was discussed by Beach and Ward (2013). In that study, membership emerged as a significant construct related to how adolescents viewed themselves as literate individuals (Beach & Ward, 2013). Membership was also highly valued in the present study, and it emerged that there were different membership roles the adolescents held within the practices in which they participated. The present study found evidence of membership within digital contexts had five roles: novice, intermediate, insider, outsider, and peripheral. These roles were directly tied to their overall perceptions regarding the practice in which they were participating. The varying degrees of membership within the contexts of the communities of practice in which they participated became important to their personal perceptions of membership, because they were viewed as defining features of their literate identities. It was these memberships that became integral to the development and evolution of the adolescents' literate identities as new literacy platforms and new literacy practices manifested, often necessitating the need for new membership within a new community of practice. Further, membership was discussed in terms of having a fluid range, which was active and changed depending on how their roles changed. Thus, the practice and consequently, the membership roles these adolescents had were likely always in a state of change. Previous research (Beach & Ward, 2013) demonstrated how young adolescents' understandings about their membership within a class or school setting can impact their literate identities, yet we have not clearly understood this connection as it occurred in digital contexts.

Beach and Ward (2013) held that literate identities of the young adolescents in their study were impacted by the "willingness, ability, and choice to participate in the literacy community of practice at school" (p. 250). The roles the adolescents in the present study held also directly influenced their willingness to participate in digital communities of practice, and thus had direct implications on their membership perceptions within digital contexts. Conversely, some adolescents specifically chose to not participate and act as a peripheral member, lurking on the edges of the practice. Choosing not to participate was often tied to value perceptions they made related to the given community of practice. Similar to the Beach and Ward (2013) findings within school-based communities of practice, adolescents in the present study exhibited similar dispositions in regards to participation within digital contexts. This finding is significant because it bolstered the theory that membership was important and directly related to the literate identities that adolescents hold within a variety of literacy contexts.

***Multiplicity and contextual nature.*** The current study found evidence to support the previous assertions that literate identities are multiple and vary between contexts (Beach & Ward, 2013; Collins & Beach, 2012). However, this study focused upon practices that occur outside the context of school, thus extending our understanding of literate identities in multiple contexts. Many studies have examined the ways in which children and adolescents' literate identities were manifested within school contexts (Beach et al., 2013; Beach & Ward, 2013; Collins & Beach, 2012; Young, 1996; Young & Beach, 1997), yet no studies examined the ways in which literate

identities, as defined by Beach and Ward (2013), may vary within other contexts. The present study gave adolescents the ability to discuss a wide variety of practices within multiple settings, which emerged to be dependent not only upon the context and community of practice, but also related to the affinity spaces they traversed within digital contexts. The findings in this research serve to further increase our understandings of how context impacts literate identities in digital contexts. Understanding how adolescents perceive their literate identities in digital contexts is necessary to obtaining a more multidimensional understanding regarding their literate identities. Beach and Ward (2013) theorize that “Children’s flexibility in understanding the different communities and being able to be boundary crossers (Wenger, 1998), activating the literate identity that fits in the particular context, is key to their engaged participation in those different literacy communities of practice” (p. 251).

By understanding the multi-dimensional nature of adolescents’ literate identities, and further, the relationship that exists between the multiple contexts in which they traverse and the impact that said contexts have upon their literate identities, we serve to help increase their ‘engaged participation’ in different digital communities of practice and digital affinity spaces in which they participate. We know that adolescents possess multiple literate identities in multiple contexts, so the key to understanding their literate identities may likely be connected to the ways in which they cross boundaries between one practice and another. Wenger (1998) holds that boundaries can be crossed “when participants are able to recognize an experience of meaning in each other and to develop enough of a shared sense of competence to do some mutual learning” (p. 140). This shared sense of competence exemplifies the social nature of literacy and the way in which meaning making is ever present in the literacy contexts in which we traverse. As adolescents communicated and collaborated in digital contexts, their competence perceptions impacted not only their overall feelings of competence, but further, served to impact the other members in their communities of practice with whom they interacted.

## **Conclusions**

The purpose of this study was to examine how the literate identity formation of sixth grade adolescents were shaped by the memberships they held within various new literacy practices. New literacy practices were shown to be interconnected, likely due to the fact that the adolescents manipulated the practices in order to better facilitate asynchronous and synchronous communication. Further, adolescents revealed they navigated both in affinity spaces and within communities of practice, which seemed to be linked to perceptions regarding the given new literacy practice.

Literate identities were found to be impacted by both competence perceptions and membership perceptions within digital contexts. The importance of both intrinsic competence perceptions and extrinsic competence perceptions within digital contexts was found to be significant amongst the adolescents that participated in the study. Further, competence was demonstrated to not only vary, but seemingly occurred on a continuum which was often in an active state of development. Membership was also found to be active and five different roles of membership emerged from the adolescent demonstration and discussions. The present study bolstered previous

findings that literate identities are multiple and vary between contexts (Beach & Ward, 2013; Collins & Beach, 2012).

This study found that the new literacy skills and new literacy practices of adolescents were not only interconnected, but also impacted the literate identities of the adolescent participants. Continual discussion of adolescents' new literacy practices and skills is imperative in order to stay connected to the types of new literacy practices in which they engage. The study was not without limitations, chief among them was the accessibility of the technological tools and platforms. Further exploration into the digital new literacy practices of adolescents is necessary in order to continue to develop a clear understanding of the new literacy skills and new literacy practices they have. These understandings are necessary to examine how literate identities form within digital contexts.

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*The Effect of Gamification Elements on Engagement and Achievement in Calculus 1 and 2*

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

Gamification is increasingly being used in educational contexts to attempt to increase student engagement and achievement. In this study, gamification elements were added to pilot course offerings of post-secondary Calculus 1 and Calculus 2. The content of these online courses was structured around a narrative of a pirate quest to retrieve sunken treasure. Gamification elements included badges, points, progression/scaffolding/levels, unlockable content, progress bars, immediate feedback, and replay/do-over options. Students responded positively to the gamification elements, particularly the ability to re-do assignments until a mastery level was achieved. Engagement was positively affected. The sample sizes were too small to show statistically significant improvements in achievement. This paper reviews the literature surrounding the use of gamification elements, analyzes the results of these pilot course offerings, and provides suggestions for next steps.

Keywords: Gamification, engagement, calculus

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## **Introduction**

Throughout North America, the dropout/failure rate for first-year post-secondary level calculus is too high, despite the fact many of the enrolled students have excellent grades from their secondary studies and most have already passed a high school level calculus course. The Mathematics Association of America reports the national average of unsuccessful Calculus 1 students to be 25% (Bressoud, Mesa, 2015). It is not reasonable to conclude all these students are underprepared, although unpreparedness may be a factor for some. A more probable cause is the prevalence of the outdated lecture-based mode of instruction, where students have little chance to be active participants in learning the material. In addition, a large amount of content is presented at a fast pace, with few chances for students to check their understanding. No wonder there are many calls to teach this material a different way.

Gamification is an educational trend which is being used to attempt to increase student engagement. By carefully planning and adding elements of game strategy, students may stay interested in the material longer and become active rather than passive learners.

In this study, Calculus 1 and Calculus 2 were offered in an online, self-paced, gamified format. The course material was presented in the over-arching narrative form of two rival pirate groups on a quest to recover sunken emeralds. Students progressed through the material at their own pace with the exception of two set dates: the midterm and the final exams. A mastery level of eighty percent had to be achieved on all tasks in each topic before the student could 'level up' to the next topic. Gamification elements such as badges, completion marks, and progress bars were incorporated to help the students track their progress. As each topic was introduced, the story progressed and puzzles and questions related to the quest had to be solved by the students in order to move on.

This paper examines how students engaged with the material, how they reacted to and engaged with the gamification elements, and compares their grades with other offerings of these same courses in a non-gamified format. In addition, the design principles behind this offering are discussed, as well as recommendations for improvements.

## **Research Question**

Can the incorporation of gamification elements in Calculus 1 and Calculus 2 improve student engagement and, subsequently, improve both student retention or student achievement in first-year calculus?

## **Review of the Literature**

Gamification has been given a working definition of 'the use of game design elements in non-game contexts' (Deterding, et al, 2011) and has increasingly been used in education in the last decade. Children grow up having a positive relationship with games, more specifically with elements of competition, cooperation, and the belief that, with practice, one can get better at playing the game and proceed towards mastery. Video games are explicitly designed for entertainment rather than for utility.

These types of games demonstrably motivate users to remain actively engaged in an activity for long periods of time. Thus, it make sense to use game design elements on non-game activities to attempt to make those activities more engaging and motivating. (Deterding, et al, 2011).

Many children do not have a positive relationship with mathematics, especially in North America. Children are afraid of math, afraid of trying problems, and believe ‘math brain’ is innate, rather than learned (Baker, 2018). Even high school students who previously enjoyed and were good at math experience a statistically significant drop in confidence, enjoyment, and the desire to continue after experiencing first year calculus in North America (Bressoud, et al, 2015).

Enter the idea of gamification. Game design elements can make non-games more enjoyable, motivating and/or engaging students to pursue rewards, and encouraging students to spend more time doing a specific activity or performing that activity better (Goehle and Wagaman, 2016). While developing an actual computer-based game for learning math would be prohibitive in terms of both money and time, introducing game design elements into a calculus course can easily be done in most learning management systems. That being said, it is important to note simply randomly putting in gamification elements is not an effective plan.

The literature (Stott,A., & Neustaedter, C., 2013) shows the following concepts are consistently more successful than others in learning contexts:

- Freedom to Fail
- Rapid Feedback
- Progression
- Storytelling

If students are encouraged to take risks, to experiment and to repeat tasks until they are better at doing them, the focus is taken away from the final result and instead centered on the process of learning (Stott, A., & Neustaedter, C., 2013). Rapid feedback encourages students, gives them an instant ‘reward,’ and reduces the chance they will learn something incorrectly. “Feedback is a critical element in learning. The more frequent and targeted the feedback, the more effective the learning.” (Kapp, 2012). The idea of progression is not a new pedagogical concept; it is also known as ‘scaffolding’ and has been in wide use since the 1990’s. In a gamified context, it helps the student to restart if she gets stumped on a problem. Storytelling can give a seemingly unrelated set of facts context and can help students see the larger picture. Avatars can give some anonymity in an online setting. This is helpful for those students who lag behind but also for those students who previously did not want to identify themselves as academic leaders (Lee, J & Hammer, J.,2011).

It is important to distinguish between design elements and design principles. Design principles (Dicheva, et al, 2014) include goal setting, customizing the learning environment to allow personalized experience and adaptive difficulty, short feedback cycles, accrual grading, freedom of choice, and multiple routes to success. The ‘elements’ are simply things you can add to your course. Nah et al (2014) compiled a useful review of the literature on gamification and listed the most common elements. These include points, levels, challenges, badges, leaderboards, peer interaction,

replays, unlockable content, storytelling, and student customization. Many of these elements are standard in current Learning Management Systems, although some are available only as add-ons.

Much of the literature emphasized the principle of ‘freedom to fail’. Games involve repeated experimentation so they involve repeated failure (Lee and Hammer, 2011). For many games, the only way to learn is to fail repeatedly, learning something each time (Gee, 2008). From their game playing experiences, students are used to ‘failing’ as a path to getting better. Student can markedly benefit from multiple attempts at an assignment, whether it is rewriting a paper or redoing a quiz. In principle, the ‘reward’ for success should be the opportunity to try something harder (Koster, 2004).

## **Method**

In this study, I incorporated a variety of gamification design principles and design elements to see if more students would persevere in their study of calculus, rather than dropping out or simply giving up on the course. I was also interested to see if student attitudes or achievement would be affected.

During the fall of 2016, I prepared for a gamified offering of Calculus 1 to begin in January, 2017. The first step was to present the course in an online format so students could progress through the fourteen general topics of the course as they mastered each level. There were only two set dates in the course: a midterm exam after Topic 7, given at the halfway point in the semester; and a final exam, given during the regular final examination period in April.

The design principles I incorporated were freedom to fail, rapid feedback, mastery learning for progression, and storytelling. An additional significant goal was to make the course fun. After all, enjoyment is a fundamental principle of playing a game.

I was systematic in my design of the course material and the progression. I separated course materials into ‘skills’ (algebraic skills, knowledge of trig and other functions, knowledge of geometry, etc.) and ‘topics’ (limits, derivatives, applications of derivatives, anti-derivatives, theorems, etc.). The skills became ‘powers’ in the story (for example, algebra knowledge was the ability to swim, geometry and graphing knowledge was the ability not to be sea sick), and the content became weapons, potions, and key pieces of knowledge needed to progress in the story. Badges were awarded for abilities and knowledge. I laid out the content along with the skills. I decided what was necessary for the next level. That helped me design the “restrictions” and the levels. Students were blocked from accessing certain activities or content modules until they had mastered particular skills or gained particular knowledge. For example, a student might have to have the badge for a certain potion to go to the next step. I mapped out the entire course, and made sure I was clear which skills and abilities should link to specific content blocks of the course. I ensured the content covered was the same as the content in a traditional face-to-face course, making sure successful students were prepared to progress to Calculus 2.

The quest story was written by a colleague and was designed to tie everything together. The story was about a ship carrying a chest of precious emeralds, which sunk on a reef. The location of the wreck is not exactly known. There are two

competing bands of pirates trying to find the jewels. The student has been recruited by one of these crews because of his or her problem solving ability. A map was central to the quest. Certain adventures took place at sea, some were on islands. Solving problems would tell the students where they were or, for example, would enable the student to find the jewels they needed to open a temple door. There were monsters, a wizard, as well as the other band of pirates to deal with. Questions had to be correctly solved for the student to know where they were on the map.

There were no fancy special effects and only very limited graphics (the map, badges, and the odd picture of a monster). Students needed to use their imaginations, similar to what players did in early role playing games such as Dungeons and Dragons. Each topic of the course within the learning management system had the same general format, starting with an audio file of me reading a chapter from the quest story. The story stopped at a point where there was a tricky situation where the student (as the hero) had to solve a problem. Next, there were links to content about the calculus material. These were video files of actual math lectures and pdf files of notes on the material.

Last in each topic section were the tasks. All topics contained a lab activity using a computer algebra system (mathematical software otherwise known as a CAS) called Maple, as learning to use a CAS is a learning outcome in the traditional course. I also utilized an educational software company called Lyryx, which pairs open educational resources with online homework assignments. Lyryx has the ability to generate the same type of problem, with different numbers, over and over again. It also gives the student immediate feedback on how the question should have been done. Each topic contained one of these online assignments. Lyryx assignments were gamified in that students could attempt these questions as often as they needed, to reach mastery (80%). Everything else was blocked until they achieved this goal.

Once students achieved 80%, they got a checkmark by that activity (which they loved), perhaps a badge or some points, and then they moved on to the Transition Quiz. The questions in the Transition quizzes were ones I wrote, and I like to think these questions were more difficult and comprehensive than the Lyryx ones. However, these questions were the same each time the student attempted the quiz. The last question of each Transition Quiz related the math topic and the quest story. Once mastery was achieved on that quiz, the level would be 'complete' (more checkmarks) and the next topic would unlock.

Students often would advance at the 80% level, but later go back and redo any incorrect questions, in order to raise their grades on these activities to 100%.

Data was collected in three ways. First, there was a questionnaire for the students to fill out to qualitatively measure their attitude towards math and how they approached difficult math problems. Next, there was the learning management system activity reports to quantitatively see how often students were interacting with the course materials. Lastly, there was the collection of the students' final grades in the course.

## Results

The two courses in the study (Calculus 1 in Winter, 2017, and Calculus 2 in Fall 2017) were pilot offerings and the class sizes ( $n_1 = 14$  and  $n_2 = 5$ ) were too small to be statistically significant. In addition, the people who do the support work for the learning management system at our College accidentally erased all the user data for the Calculus 1 pilot course before I had a chance to download all of it, so the data I had to analyze for Calculus 1 was limited.

Based on their responses to the questionnaire, the students in the 2017 courses came in with a positive attitude towards mathematics and had a fair amount of confidence in their skills and abilities to handle the course material. This agrees with the Mathematical Association of America (MAA) study (Bressoud, Mesa, 2015). We can't attribute the high dropout/failure rate in calculus to inadequate preparation at the high school level. The results of the math experiences questionnaire are summarized in the table below:

Question	Agree or Strongly Agree
Math problems can be fun or enjoyable	100%
I clearly see a use for the math I have already learned	82%
I prefer work that is challenging so I can learn new things	100%
Ideas from previous math classes are interesting to me	82%
If I do poorly on an assignment or test, I try to learn from my mistakes	100%
When math problems get difficult, I give up or only study the easy parts	9%
I feel it is important to do at least a little bit of math each day	91%
In the past, when I have enjoyed math, it is because of the instructor	90%
In the past, when I have enjoyed math, it is because of the content	73%
In the past, when I have enjoyed math, it is because of the learning environment	91%
I feel what is being taught in this math course is important	100%
I think I will be able to use what I learn in this course in other parts of my education	100%
I feel prepared to take on new math problems	100%
Compared with other math students, I think I am a good student	82%
I have an uneasy, upset feeling when I take a math test	45%
Compared to other math students, my study skills are excellent	55%
In my past math classes, I often did not understand what was being taught	18%
I try to connect the things I am learning to what I already know	91%
When I study, I put the important ideas in my own words	73%

Engagement with the course was dramatic. Students were accessing the course materials multiple times. The actual content for these courses was presented in two ways: a video of the material (each of these was at least an hour long), which simulated the experience a student would get sitting in a traditional lecture; and pdf files of the notes which would result from each lecture. The table below shows you how often students were accessing these resources:

Interaction with Learning Materials				
	Average Views per Student of Lecture Videos	Average Views per Student of Lecture Notes	Average Times per Student Transition Quiz was Accessed	Average Times per Student Transition Quiz was Submitted for Grading
Calculus 1	1.8	2.9	41.8	Not available
Calculus 2	2.4	1.8	55.7	9.8

In the Calculus 2 course, where I had access to all of the user data, every student watched every video at least once. The maximum any one video was viewed was 9 times. Contrary to what happened in Calculus 1, the notes were not looked at nearly as often. One student never looked at any them.

To me, the most dramatic data was how often students chose to access the Transition quizzes. On average, each and every student accessed those quizzes an average of 41.8 times in Calculus 1 and 55.7 times in Calculus 2. In Calculus 2, each quiz was submitted for grading an average of 9.8 times. No data was available on how often students tried the Lyryx assignments but students reported to me they were accessing those assignments in a similar manner.

The ‘mastery learning’ requirement appeared to work well. Students were able to move along at their own pace and not feel left behind. Although the course was designed to average completion of one topic per week, most students would complete several topics at a time, then pause, then complete another topic or two. One student (who ultimately was successful) did all 7 topics in the first half of the course in the week immediately before the midterm. Students appeared to appreciate having the flexibility to put calculus aside when other course or life demands were high and then catch up when they were able. This is important, as students who get behind in a traditional calculus course often just drop out.

Completion Rates for Assigned Work in Gamified Calculus Courses			
	Lyryx Assignments	Transition Quizzes	Maple Labs
Calculus 1	93%	88%	80%
Calculus 2	100%	100%	100%

It was disappointing to find the quest story did not seem to be important to the students. Despite the fact there were specific badges and questions relating to the story, only 5 of the 14 students in the first group created avatars, and only 11 of those students listened to most of the story. Strangely, only 6 listened to the final chapter to see what happened. This trend continued with the students in Calculus 2. Two

students listened to each chapter while the other 3 listened occasionally, and one student gave up completely after the midterm exam.

Quest Story Completion Rates															
	Ava tar	Ch p 1	Ch p 2	Ch p 3	Ch p 4	C hp 5	C hp 6	C hp 7	C hp 8	C hp 9	C hp 10	C hp 11	C hp 12	C hp 13	Ch ap 14
Calc ulus 1	36 %	21 %	93 %	86 %	86 %	79 %	86 %	71 %	86 %	86 %	79 %	79 %	79 %	64 %	43 %
Calc ulus 2	NA	10 0%	10 0%	10 0%	10 0%	80 %	80 %	80 %	56 %	60 %	80 %	20 %	60 %	N A	N A

Regarding achievement, as the charts below show, the overall results were not much different than with the traditional calculus course with one possible exception – it may have ‘moved the bottom up’. The percentage of failures, withdrawals, and audits is lower in the gamified courses, and the percentage of C- s is higher. In Calculus 2, the lowest grade in the gamified course was a C. This fits with other research findings of gamification possibly being of more benefit to ‘at risk’ learners.

Grades in Calculus 1													
	A+	A	A-	B+	B	B-	C+	C	C-	D	F	AUD	W
Gamified	7%	7%	7%	20%	0%	7%	0%	0%	20%	13%	13%	0%	7%
Cumulative 2012 - 2017	7%	5%	12%	4%	6%	8%	5%	6%	6%	7%	18%	5%	14%
Grades in Calculus 2													
	A+	A	A-	B+	B	B-	C+	C	C-	D	F	AUD	W
Gamified	0%	0%	40%	20%	20%	0%	0%	20%	0%	0%	0%	0%	0%
Cumulative 2013-2018	3%	7%	6%	3%	6%	6%	5%	5%	3%	2%	8%	6%	6%

## Discussion

Although this study did not yield statistically significant results, the data collected does agree with the findings of other studies – the addition of certain game elements can lead to increased engagement and may positively affect at-risk learners’ achievement. Students took full advantage of the freedom to fail and the immediate feedback aspects as shown by the hundreds of times they accessed the assignments. As a teacher, I appreciated the progression aspect as I felt students had a deeper understanding of a topic’s material before they moved to the next topic.

The storytelling did not work as I hoped but, upon reflection, it should have been structured better. The connection of the story and the course material was too superficial. In future offerings, I will create real choices for the students which will actually affect the outcome of the story.

I was surprised by how much students enjoyed the completion boxes and progress bars. These seemed to be more motivating for students than the quest story, a fact I will take advantage of in future course offerings.

### **Limitations**

The sample sizes of the classes studied were small. These sections of Calculus 1 and Calculus 2 were offered in the 'off' semesters (Calculus 1 is usually offered in the fall, followed by Calculus 2 in the winter but, in this case, Calculus 1 was offered in the winter followed by Calculus 2 the following fall), so many of the students had already failed Calculus 1 previously. Additionally, calculus courses at our College have always been offered in a face-to-face format prior to this, so delivery in an online format may have had an effect on students' learning. The most unfortunate limitation was the accidental erasure by the IT Department of the actual usage data for the Calculus 1 course, leaving me with only the completion data, survey results, grades, and data I had recorded outside of the learning management system for that iteration.

### **Conclusion**

Gamification is a useful tool for educators, one that is increasingly easy to incorporate. Learning management systems have created gamification plugins and blocks, so if you use a learning management system, the technical challenges have already been addressed. That being said, to be effective, educators need to carefully plan which gamification elements to add.

Gamification has the potential to add real flexibility and choice for learners. The desire to achieve check marks, badges, points, and unlock activities can help motivate students to complete more assignments and learning activities.

In British Columbia, Canada, the K to 12 Curriculum has recently been modernized with the goal of providing students with a rigorous education that is also flexible and innovative. We will see the first graduates of this new approach in the fall of 2020 and those students will be used to having choice in what they learn and how they demonstrate their learning. Gamification tools can help us bridge the gap between traditional teaching methods at post-secondary and the modern learning expectations the contemporary students have. As an added bonus, it might even be fun.

### **Acknowledgements**

I am grateful for the receipt of a 2018 BCCampus Scholarly Teaching Fellowship Award, which made this research possible.

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***Community, Peace and Sustainability: Leveraging Institutional Positionality to Affect Local and System Change***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

In October 2018, the IPCC published a predictable, but no less grim, report on where 'we' are situated vis a vis climate change and what is yet to unfold. Despite over a hundred years of scientific concern from scientists on the human effects of industrialization and globalization, we now face out of control wildfires, drought, desertification, intensity and frequency of hurricanes and catastrophic flooding. The report clearly outlines what experts have emphasized for years; there is no singular strategy that will stave off the impending planet-wide economic, social and environmental disaster resulting from climate change and environmental degradation. We need strategies that work with the institutionalized systems currently in place and organizations operating at the community level. International, national, or regional policy is not sufficient without community level buy in. Community level organizing is rarely sufficient to cement system-wide change. The bridge between institutional systems and community is education. Changing our educational institutions should be one of the primary strategies to tackle climate change. Post-secondary educational institutions are currently one of the best-placed bridges between governments and communities because they wield power with and within community and government systems while simultaneously balancing the tension between these two groups. Educational institutions are both firmly within and of the system and yet are firmly embedded in and creators of community. This presentation will introduce the work done in this vein at Dawson College and their network of institutional and community partners that aim to connect and model solutions based on interconnecting community, institutions and sustainability.

Keywords: Sustainability, Community, Education

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## Introduction

Growing across the world are Living Schools. A Living School “embraces well-being - individually and collectively, for all people and the “other than human” life on our planet. It is an inclusive vision that recognizes that our well-being is important both now, and in the future and that our well-being is intertwined with the lives of other people and the natural environment” (O’Brien, 2016, p.9). At Dawson College our Living School or as we have named it the Living Campus initiative focuses on re-connecting people, community and Nature. It is about defining sustainability as intimately connected to the health and welfare of people and Natural world. In North America we have embraced individualism and a growth-at-all-costs neoliberal capitalist extraction-based consumption model that has contributed to the dislocation from our human connection with the land and each other as well a profound world-wide environmental degradation and climate change (Elliot 2016; Jorgenson 2003; Menzies & Butler 2006; Shiva 2015; Simpson 2017). The Living Schools movement, manifested in a variety of forms all over the world, holds in common this idea of reconnecting our communities and ourselves with Nature as being fundamental to effecting environmental change. Connection to Nature in this context frames our collective and individual relationship with the land. Our species is dependent on healthy soil, water and air in order to thrive and yet in the global north we have designed and maintained systems, political, economic and social, which disrupt our relationship with the natural world (Elliot 2016; Homer-Dixon 1999; Klein 2014; Simpson 2017). The consequences of forgetting this relationship or perhaps more aptly sacrificing this relationship, means we are neglecting our responsibilities. There is no reciprocity in our relationship with the land currently because we have forgotten that we are interdependent. In addition, we have outsourced environmental degradation, pollution and the worst effects of climate change to the most vulnerable populations at home and abroad such that the minority can benefit from the luxuries of 21<sup>st</sup> century privileged living (Jorgenson 2006; Newell 2005; Shiva 2015; Waldron 2018). In order to mitigate the worst effects of climate change and environmental degradation we need to develop strategies that centre upon building equitable relationships and institutions our communities, from the local to the global, in conjunction with our reciprocal relationship with the natural environment and our responsibilities to it (IPCC 2018; Fourth National Climate Assessment 2018; O’Brien 2016; Shiva 2015).

Reconnection with the land and one another through the Living School Movement is an effective strategy for system change and in theory; it should be an easy ‘win’. We have the body of knowledge on how to do this as there are practical models available both in North America and around the world where educators frame their pedagogy through the lens of sustainability (O’Brien 2015; Frias & Hurtado 2014, 2019; Simpson 2017;). More specifically sustainability as an equitable ethical process that centres the well-being of people on par with the needs of the Natural world (O’Brien 2015; Simpson 2017;). With respect to climate change, environmental degradation, increasing political insecurity and the havoc wrought by neoliberal capitalist economics the Living School movement signifies one of a multiplicity of strategies that both grass roots level organizations and institutions within larger systems can deploy, in partnership and unilaterally, in order to make effective local and system change. Schools do not simply train our future CEOs, Prime Minister’s or Presidents, lawyers, doctors and plumbers. They are also reflections of socio-economic and

political priorities of our governments and the people who elect the government. Most importantly and often undervalued, the educational system is a bridge between those who work on the local level in communities and government institutions. In addition, schools are a community unto themselves; they also reside within a specific geographic community and are makers of community. In circumstances where the state has direct influence over the content, curriculum and governance of education (most notably in the primary and secondary levels in North America and Western Europe) there is even more opportunity to leverage local level work in sustainability into the institutionalized system. Without a fundamental change in our relationship with the land in everything we do, from our local to global policies, procedures, regulations, institutions and trade agreements the only future we will face will be even more dangerous and inequitable. The Living School model's focus on bringing Nature into the classroom while also moving students out of the classroom to work on environmental justice projects to meet community needs is a reasonable, relevant and achievable strategy that can be adapted, transferred and scaled up within educational systems.

I believe that educational institutions are places where community level action can be leveraged, scaled up and transformed into institutional and system change. I will explore this idea through presenting the case of my own institution, Dawson College. We are beginning to institutionalize peacebuilding and sustainability from the building envelope, into the classroom curriculum and extra-curricular projects. Furthermore, we are in the process of expanding our current Living Campuses network based on reciprocal relationships founded upon the principles of reconnecting people, Nature, research and community.

### **The CEGEP system & Dawson College**

Dawson College is a degree granting post-secondary institution in Montréal, Québec, Canada. It is home to approximately 10,000 students, full time and continuing education. Dawson is the largest English language College in Québec with a student population that is reflective of the diversity of the city of Montreal. In 2018 Dawson's admissions reports indicated that 51% (4,338 students) of students spoke English as their first language, 21% (1,630 students) first language French and 28% (2,311 students) of admitted students identified their mother tongue as neither French nor English (2018-2019 Dawson College Admissions Report). Dawson College is part of the College d'enseignement général et professionnel (CEGEP) network which represents 48 post secondary education institutions (2018 Fédération des cégeps). CEGEPs came into being in 1969 in the province of Quebec (this particular institution is not found elsewhere in Canada) designed to facilitate the transition from highschool to university studies (2018 Fédération des cégeps). Students aspiring to attend university, who were educated in Quebec, must attend CEGEP and earn their Diplôme d'études collégial (D.E.C) to be eligible to apply into a university program. The Federation des CEGEPs is the body, which represents all 48 post-secondary institutions in the network (2018 Fédération des cégeps). It is the umbrella organization, which represents the 26,000 employees in all collective bargaining negotiations with the government and will use its advantage to push issues at the government level (2018 Fédération des cégeps). There are currently 175 000 students enrolled in day programs and another 51,000 adult students enrolled in continuing education or professional development programming offered at CEGEPs across the

province of Quebec (2018 Fédération des cégeps). In 2014 the auditing firm KPMG determined that the CEGEP system is responsible for contributing 9.8 billion dollars to the Québec economy, therefore there is little doubt of the financial, social and political importance of this system in Quebec (2014 KPMG).

While there are many unique features of the CEGEP system amongst the most important is that it is completely publicly funded. Students who are residents in the province of Québec do not pay tuition to attend the public French and English language CEGEPs (2018 Ministère de l'éducation et enseignement supérieur). The CEGEP system is currently one of the more equitable government institutions in terms of access to post-secondary education for the general population. Thus, the degree granting program's curriculum to College policies and finances are largely either determined by the government or subject to review and approval prior to enactment (2018 Ministère de l'éducation et enseignement supérieur). The Ministry of Education determines what programs will be on offer, program competencies and will undertake evaluation and revision of the programs based on marketplace and University needs (2018 Ministère de l'éducation et enseignement supérieur). CEGEP budgets are subject to the priorities of the government Québec and have in the past seen budgets slashed during times of government austerity measures. While the government determines program composition, faculty have a lot of freedom within the context of the classroom itself. That is to say, while all students enrolled in Social Sciences are required to take the History of West Civilization, the faculty have complete liberty on assigned readings and assessments insofar as they ensure their selections will facilitate the attainment of the program and course competencies (2015 – 2020 Dawson College Teachers Union Collective Agreement). This freedom is crucial because it allows for space for innovation in learning particularly for faculty who are engaged in experiential learning pedagogy as well as service learning projects in the context of the college community and the community beyond the campus. Critically, faculty freedom in the classroom is protected through their unions in their collective agreements (2015 – 2020 Dawson College Teachers Union Collective Agreement). The Living Campus initiative capitalizes on this freedom by working with, and support through grants and partnerships, faculty to bring in sustainability education into courses in and out of the science programs. In fact, this freedom on the part of faculty and the support of sustainability and peacebuilding champions at the college are in large part the reason why Dawson is now firmly engaged in the process of institutionalizing sustainability. Effectively, the CEGEP system combines the freedom of University professors concerning the content in the classroom with the government oversight and standardization typically seen in the primary and secondary levels of education.

Senior administrators also have a certain level of freedom when it comes to institutional priorities. Each CEGEP uses its budget to invest in the projects and initiatives seen as being in the best interests of its students and employees. This is not to say that the government would not intervene should a College be perceived as wasting taxpayer's dollars or pursuing investment in projects that are counter to its own agenda. The structure of the CEGEP system is extremely important because this creates opportunity for system change in a way that is absent in other systems. Firstly, the senior administration is in a position to negotiate with the government based on the needs the College community. Initiatives that derive from a singular CEGEP can be adapted to other College's within the network. Secondly, if a senior administrator

can demonstrate the effectiveness of a particular strategy or initiative, they are in a better place to negotiate broader institutional change by virtue of the fact that they are in regular and constant contact with the Ministère de education et enseignement supérieur (MEES). Thirdly, senior administration officials of each CEGEP have direct access to the minister and deputy minister of MEES throughout the course of the academic year. Lastly, the leveraging power of the Federation des CEGEPs representing all 48 cegeps cannot be underestimated should its representatives elect to push for a specific network-wide change. Senior administration at a CEGEP benefit from the power of the local interests of the College community as well as being able to sit in the same room on a regular basis as the people who make the final decisions on CEGEP policy for the network. In addition, this is nothing to say of the collective power of over 200,000 thousand of students who recent and past history forced policy or legislative reversal through very public boycotts, protests and demonstrations.

### **Origins of a Movement: Dawson College & the Living Campus Initiative**

Sustainability, social justice, community building and peacebuilding hold a very special place at Dawson College. In 2006 an armed young man entered the College and proceeded to kill one young woman and injury dozens more. The aftermath of this tragedy was surprisingly overwhelmingly positive. The senior management of the College in conjunction with the union representatives and student union executive immediately declared that they would take back the school and refuse any and all overtures to militarize the College. We added no additional security nor metal detectors nor armed security; this was not going to be *our* answer. The administration and student union worked together to ensure there was counselling and outreach efforts to all members of the community who were affected by that day. Before the language of safe spaces and well-being for all made it into common vernacular, our College was doing the work to ensure that every survivor could return to school and work knowing that we would keep them safe and supported. The major outcomes of this day that impacted our work and view of peace and sustainability were:

1) The creation of the 22 000 square foot Peace Garden, planted by students and employees. The soil used for the planting came from composting of the thousands of flowers left at the school entrance to the College in the aftermath of the shooting. It is from this incident that the evolution of the Living Campus movement was birthed. The garden still stands today, and is maintained by student volunteers;

2) The launch in 2014 of the Peace Centre and the Peace Studies Certificate. Foundational to Dawson College's current peace and sustainability initiatives was this first response of our administration who facilitated community building through Nature in the planting of the Peace Garden. This strategy of connecting the land or Nature with community building, peace-making and wellbeing eventually became the heart of much of the work done at the Dawson College.

Over the year's employees (faculty and administration alike) championing the need for an institutionalized Peace & Sustainability action plan worked to cultivate social capital to yield community collaboration on what we firmly believe are two interrelated and interdependent issues, peace & sustainability. In 2016 we finally saw the very beginning of this hard work manifest itself in the current Strategic Plan. The

Strategic Plan 2016-2021 (SP) redefined our Mission, Vision and values as well as identifies nine goals. The SP not only reflects the more than 10 years of hard work by faculty and staff to push the sustainability dossier as a priority, but also institutionalizes this priority by its inclusion in the Strategic Plan. Effectively, the inclusion of peace and sustainability explicitly in the Strategic Plan means that for at least five years it will have dedicated resources, funding and the institutional support.

### **Dawson College & the Sustainable Campuses Network**

While the catalyst for the peace building and sustainability initiatives on campus were sparked by the 2006 shooting, it was the Sustainable Campuses Initiative (which later became a crucial piece of the Living Campus initiative), that built the partnerships and continued to motivate stakeholders overtime to get Dawson College to where we are now. This network is crucial to being able to demonstrate the effectiveness of broader change beyond our own community. Additionally, this initiative brought student research into the classroom both at Dawson College and at our partner institutions, which directly affected on-campus sustainability initiatives. The Sustainable Campuses initiative originates from research pursued by Dr. Gisela Frias, department of Geography at Dawson. She was initially awarded funding by the Canadian International Research Development Centre (IRDC) and then later by the Social Sciences and Humanities Research Council (SSHRC) to continue this project.

The Sustainable Campuses research project utilized a community based participatory action research methodology. The research project aimed to:

- 1) create a network of post secondary education institutions and community organizations in Mexico, including Universidad Pedagogica Nacional at Cuernavaca, Aylaya and Galiena Campuses, Univerisdad Autonoma del Estado Mexico, Universidad Politecnica del Estado de Morelos and Ciudades Verdes with Dawson College, to research the environmental and peace building sustainability work being done on each respective campus;
- 2) create the conditions for the sharing of best practices;
- 3) training of students through internships that facilitated service learning and the professional development of employees; and
- 4) contribute to the growing body of research that incorporates Traditional Ecological Knowledge and Indigenous Knowledge systems as a part of sustainability research.

This project essentially created a network of living schools whose aim was to reconnect its students, community and Nature in an educational milieu while doing crucial research. Fundamental to this research project, as it relates to the work in which we are engaged as an institution, was firstly defining sustainability as a whole – not as environmental best practices that were dislocated from Traditional Ecological Knowledge, environmental justice, economics and politics. Secondly, Dr. Frias's intentional decentring of academic knowledge production as being the primary source of expertise was the other crucial bit that eventually framed our peace & sustainability work at the College. This carved out a space for students to become experts in their own right through their own sustainability projects and internship exchanges with our Mexican partners. This working definition of sustainability and engagement with other-than ivory tower knowledge holders and producers is central to our Living Campus work at Dawson.

## Sustainability at Dawson College

What makes our path towards sustainability particularly exciting is that it is not confined to waste management or emissions reduction. We have purposefully centered our work on the twin principles of peace and sustainability to effect an institutional culture of wellbeing for our entire community. We ground sustainability through: 1) building relationships between employees and students; 2) students, employees and Nature; 3) projects, initiatives and activities in and out of the classroom; 4) as well as with the community beyond our doorstep.

(2018 -2019 mid-term Sustainability Report)

Sector	Metrics & Status
Academics	<p>43% of all departments at the college offer at least one sustainability focused course</p> <p>16% of all courses at Dawson are sustainability focused</p> <p>33% of College research is sustainability related (as defined by AASHE)</p> <p>84% increase in faculty using Dawson Campus for teaching and learning from 2016-2017 to 2017-2018 academic year</p> <p>20% of Sustainability Office budget used for sustainability focused course development</p>
Engagement	<p>Student orientation and new staff include sustainability components</p> <p>Monarch Butterfly Breeding and Tagging Program (staff &amp; student developed and maintained)</p> <p>Projects for Peace: Urban Restoration Rooftop Microhabitat Biodiversity Zone (student &amp; staff developed and maintained)</p> <p>Ahsen Nikontate'kén:'a Kaiénthon (Three Sisters Rooftop Garden) &amp; Medicinal Plant Garden (staff &amp; student service learning project)</p> <p>40,000 Honey Bees located on fourth floor green rooftop</p>

	<p>80 % increase in student participation in SustainabiliTEAM (2016-2018) – student volunteer program responsible for all rooftop garden maintenance &amp; Peace Garden.</p> <p>Outreach development to local organizations to jump-start a Living Campus model into their organization</p>
<p>Operations</p>	<p>100% Carbon Neutral (starting 2017-18 academic year)</p> <p>70% reduction in Natural Gas (NG)&amp; Refrigerants (R) since 1990</p> <p>51 % reduction in NG, R and Electricity (E) since 2010</p> <p>36% reduction in NG, R, E, Waste and Travel since 2010</p> <p>Decreased water consumption per user and/ per square meter</p> <p>85% of paper at College is recycled</p> <p>50% of all electronics purchases are energy efficient and end of life management (EPEAT) certified</p> <p>70% of non-hazardous construction and demolition waste is diverted from landfills</p> <p>71% of new waste sorting stations installed around campus (compost, recycling and landfill destined waste)</p> <p>Registrar’s office reduced paper use by 3.4 million sheets</p> <p>7,500 light fixtures replaced with LED</p> <p>College-wide composting</p>
<p>Planning &amp; Administration</p>	<p>6000 students participated in sustainability projects &amp; initiatives in 2017-2018 academic year</p> <p>In progress, 60% of all Dawson</p>

	<p>Foundation funds are placed in sustainable investments</p> <p>Student &amp; Staff wellness free initiatives (Yoga, daily meditation, reducing stress &amp; anxiety workshops, Sustainable Happiness Certificate, reduced rates for staff taking fitness classes, free tuition for staff taking courses at the Dawson College Centre for Training and Development)</p> <p>All external contractors hired by the College pay a living wage to their employees</p>
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## Conclusion

While the institutionalization process has only begun in the past two years at Dawson College since the approval of the 2016-2021 Strategic Plan we have been able to achieve an increase:

- 1) In employee and student engagement in extracurricular sustainability activities and projects;
- 2) Student volunteerism in sustainability initiatives around the College;
- 3) The number of courses and curricula with a sustainability focus or modules (in and outside of the science programs);
- 4) Community awareness that sustainability is not solely defined by the environmental sciences but includes social equity, economics and politics in order to frame useful strategies to mitigate the worst affects of climate change.

In my mind, the objectives of the Peace Centre and the Office of Sustainability over the next few years should be:

- 1) Document
  - a. All processes on how to turn a school into a living school.
- 2) Data Collection & Analysis,
  - a. Work with Quality Assurance and Planning Office to collect qualitative data, and HR to check for tracking on effects of Living School on employees, with admissions etc.
- 3) Work with current CEGEP partners to pilot at other colleges and track data.
- 4) Expand the Living Campus network
  - a. Start piloting projects at those schools/organizations, collect data, share best practices and work to make local, regional changes.
- 5) Develop a plan and proposal for adaptation within the CEGEP network

The outcome we desire, namely shifting the cegep network into a network of Living Campuses, is by no means guaranteed, there are many challenges to achieving this goal. However, it is a strategy that has great potential not only to shift the entire educational system but every other government run institution. Schools are the

foundation of our modern democratic systems, By leveraging the positionality of educational institutions to build bridges between communities and government systems this could be one of many different effective strategies to mitigate climate change and environmental degradation.

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***Does English Work as the Universal Language?  
- Judging from the Current Trend of World Englishes -***

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The IAFOR International Conference on Education – Hawaii 2019  
Official Conference Proceedings

**Abstract**

Japan has faced numbers of foreign national suspects, defendants and/or witnesses (criminals and civil cases) along with the globalization. Not only major-spoken language speakers such as English or Spanish but also minor-spoken language speaking suspects/defendants have increased in Japan. When the suspects, defendants and/or witnesses are those language speakers, it is quite difficult or impossible to find legal interpreters in Japan. On those cases, it often happens that the legal institutes allocate English speaking interpreters for them, since their second or third languages may be English. It is a tendency that they may think English is “just” English at legal institutions and don’t pay any attention to the variation or difference of discourses or utterance, even though speakers (suspects, defendants and/or witnesses) come from many different countries. English, however, is not the same in the world, and they don’t understand that there are “World Englishes” and they are different respectively. English speaking interpreters in any legal situations try to convey and translate message from the original “English”, but the utterance or discourse are different depending on speakers or their native countries and/or educational background. Even though those circumstances, no attention or little attention has been paid to languages or interpreters from legal participants, i.e. judges, prosecutors or attorneys, as they think English is “just” English and don’t think there are differences. This paper explains the current situation in Japan, in particular, conditions at legal institutions, and focuses on challenging issues that legal interpreters have to face as well as possible solutions.

Keywords: Court Interpreting, Language Equivalency, World Englishes, Minor-spoken Language Speakers

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## **Introduction**

For decades, Japan has encountered various types of crimes by foreign nationals, in addition to globalization and economic development. It is, however, difficult to find interpreters who speak the native languages of the suspects/defendants because the number of represented countries and nationalities has increased. Several of the suspects and defendants can have interpreters who speak their native tongues, whereas others are unable to locate such interpreters. Most of defendants who are with English Interpreters in Japan at courtroom are non-native speakers, whose situation is quite different from other languages. They, for example, cannot find interpreters who speak their native languages. In the case of those who cannot find interpreters who speak the proper (native) languages, they must have interpreters who speak their second or third language, such as English, which is more frequently spoken in Japan than their mother languages.

Communicating in English with the suspects/defendants is possible using simple or easy conversation, although it is difficult or nearly impossible in legal settings because they do not understand the legal terms in English or do not have the same concept in their language. The legal interpreters attempt to make them understand or explain using simple or plain English, although it is difficult because the interpreters are expected to communicate both with the suspects/defendants, even in the second or third language, and with other legal participants, such as police officers, prosecutors, legal counsellors and judges or lay judges. Legal interpreters for individuals who speak languages that are less frequently used are not as numerous in Japan; therefore, they often use English as the second or third language to communicate.

### **1. Current Statistics of Court Interpreters in Japan**

For the year 2017 in total, there were 2,996 foreign national defendants with interpreters in court, representing 75 nationalities and 35 languages (there was an increase in the number of speakers of languages less often used). The most often used language was Chinese (30.3%), followed by Vietnamese (23.6%), Pilipino/Tagalog, Portuguese, English, Thai, Spanish and Korean. As of April 2018, 3,788 were registered as court interpreters who spoke 62 languages throughout Japan, according to statistics of Ministry of Justice of Japan (2018). If the courts cannot find a proper interpreter, they contact embassies, universities or international exchange organizations for those languages. Anyone who would like to be an interpreter or candidate, however, can register because there is no official examination and certification system. Additionally, other legal interpreters, such as those who work with the police, prosecutors' offices, immigrations and customs, are recruited by each regional office, and they have not disclosed detailed information concerning recruitment or examination.

#### **1.1 Legal System Changes in Japan**

Since lay judge system was introduced in 2009 in Japan, the task of court interpreters has increased drastically. Before 2009, there was no lay judge system in Japan, and the examination for all cases/incidents were based on documents submitted to the court. This means that court interpreters didn't need to translate all documents and were required to translate/interpret the discourses and utterance in the court.

Lay judge system, however, requested all court interpreters to translate all documents including investigative reports at prosecutors' office or police stations with little information or short notice just before the court proceedings.

## **1.2 Court Interpreters for Foreign Nationals**

Court interpreters are assigned by each court (Ministry of Justice) based on request by defendants/suspects/witness for their best language to speak. However, the most possible closest language or their second or third language interpreters are assigned, when their native languages interpreters or requested language interpreters are not found. This happens sometimes, when they are minor-spoken languages speakers in Japan. This, however, does not check language equivalency or justice between those languages; i.e.

- Afghanistan (Pashto, Farsi)
- Uganda (Luganda)
- Ghana (Twi, Mfantse, Dagbani)
- Netherlands (Dutch)
- Albania (Albanina)

## **2. Challenging Issues in Japan**

Regardless of English education, cultural or educational background, legal systems or legal term understanding, the second or third language interpreters are assigned when native language interpreters for defendants/suspects/witness are not found. It is, however, unidentified or unknown whether they actually understand English or English translation through interpreters and there is no check interpreter at the court.

## **3. Problems Faced by Interpreters**

Legal participants at the court, such as judges, prosecutors, or legal counsellors, tend to think that interpreters are just "word-changing machines", and don't pay attention to language equivalency, meaning of messages, cultural difference caused by language, correctness of interpretation. Some researchers, such as Gonzáles, Vásquez and Mikkelson (2012) discuss the interpretation with cultural differences as follows:

The potential for misunderstanding is exacerbated when communication takes place between people from cultures that have different customs and worldview. (707)

Gile (1995: 24), in addition, noted that in interpreting, unlike translating, all of the parties concerned are aware of the communication situation, including the likely difficulties associated with the interlingual and sometimes intercultural transfer. Pöhhacker (2004: 53) also reported that the overall idea of the interpreter's communicative activity found its most poignant expression in the meme of making sense, which conceptualizes the interpreter's task as grasping the intended meaning ('sense') of an original speaker and expressing it in another language for listeners. Hatim and Mason (1990) explained the process as follows:

The translator has not only a bilingual ability but also a bicultural vision. Translators mediate between cultures (including ideologies, moral systems and socio-political structures), seeking to overcome those incompatibilities which stand in the way of

transfer of meaning. What has value as a sign in one culture community may be devoid of significance in another and it is the translator who is uniquely placed to identify the disparity and seek to resolve it (223-24).

At present, scholars consider legal interpreters not to be simply conduits or word-changing machines, but instead consider the interpreters' role to involve intercultural communication or brokerage to convey cultural messages and meaning as well as to avoid any cultural barrier or misunderstanding. Mikkelson (2000: 2), however, reported the following:

Even in countries where public proceedings are the norm, laypersons who observe or participate in court cases are frequently confused and mystified by the language and behavior of legal professions. In many societies, lawyers are reviled for their tendency to obfuscate and manipulate by using arcane language. It is often noted that the court interpreter's role is to level the playing field by overcoming the language barrier, not to put the interpreter at an advantage over other litigants.

### **3.1 Requirements for Legal Interpreters**

Legal interpreters, including court interpreters, are required to translate/interpret with no addition, omission or editing, even though the speakers, i.e. defendants/suspects/witness come from different countries or cultures. It means their utterance with the same words or phrases should be translated in the same Japanese, but this is not always correct. This is because their language or word usage may be different from their background and sometimes grammar may be different. Interpreters, however, are not allowed to add comments or edit the meaning. Therefore, there may be misunderstanding, which may lead to miscommunication or lack of justice or fairness.

### **Conclusion**

English is a language that people understand, but there are "Englishes" all over the world. Now it is necessary in Japan to set up official exam/certificate/training system not only for court interpreters but also for legal participants including judges, prosecutors and legal counsellors so that they should understand the importance of language and "Englishes".

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