INTERNATIONAL JOURNAL ON ODeL

Vol. 7, No. 1

University of the Philippines Open University
Los Baños, Laguna, Philippines

ISSN 2467-7469
(January - June 2021)

www.ijodel.com

IN THIS ISSUE:

Vision and Mission of the IJODeL

Vision

To be a leading international academic journal that publishes and disseminates new knowledge and information, and innovative best practices in open and distance e-learning.

Mission

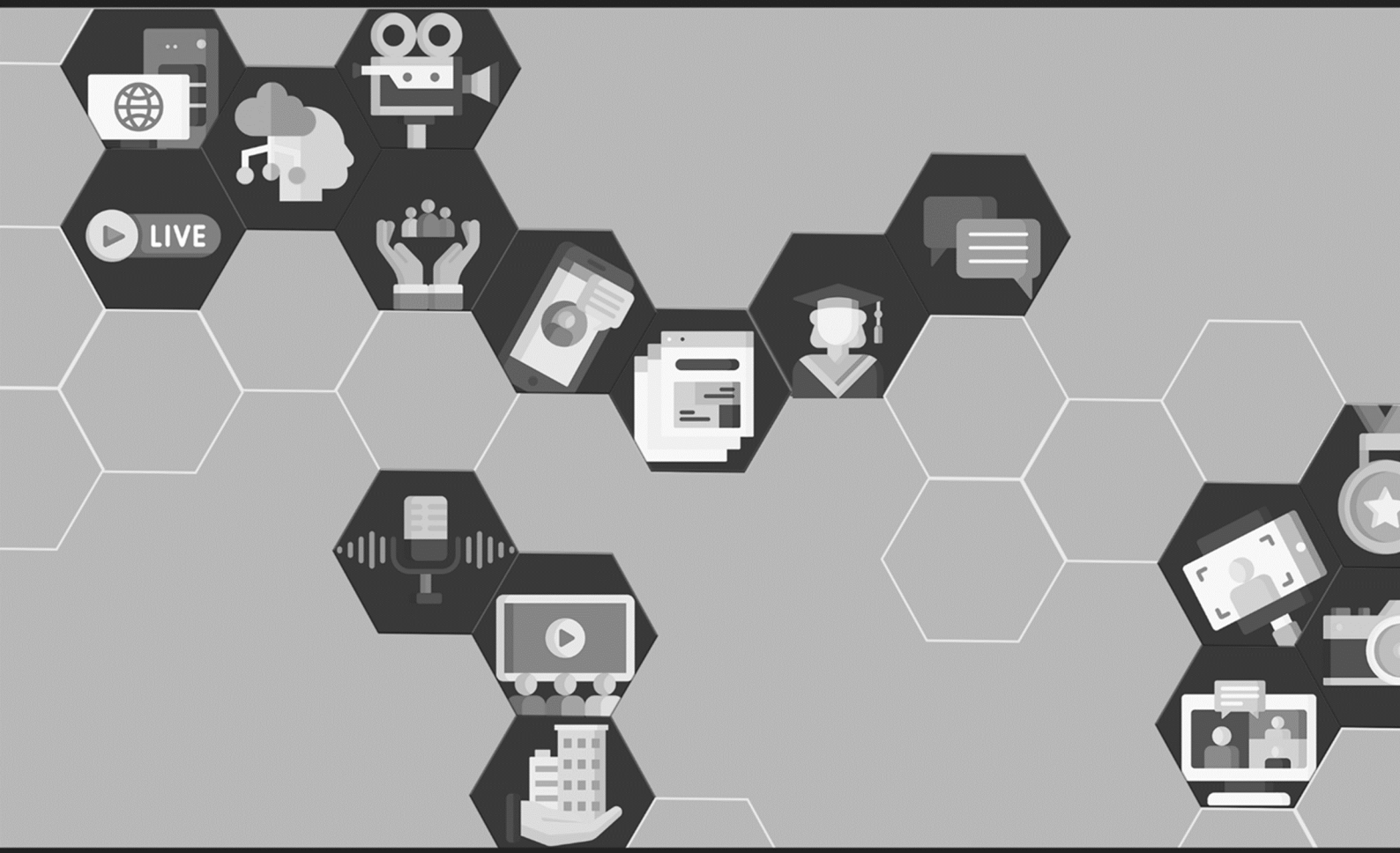
The IJODeL shall publish and disseminate new knowledge and information based on original research, book reviews, critical analyses of ODeL projects and undertakings from various researchers and experts in the Philippines, the ASEAN Region, and the world, and concept articles with the intention of presenting new ideas and innovative approaches to interpreting and implementing best practices in open and distance e-learning as alternative delivery mechanisms for quality education.

International Journal on ODeL

Vol. 7, No. 1

University of the Philippines Open University
Los Baños, Laguna, Philippines

ISSN 2467-7469
(January - June 2021)



www.ijodel.com

International Journal on Open and Distance eLearning

Published in the Philippines by the University of the Philippines Open University

UPOU Headquarters
Los Baños, Laguna 4031. Philippines
Tel/Fax: (6349) 536 6014
Email: ijodel@upou.edu.ph

ISSN: 2467-7469

The icons used in the cover of this material are licensed under "free for commercial use with attribution" from Freepik on http://www.flaticon.com.

Board of Directors and Editorial Team

Table of Contents

Articles

Instructors' Perceptions of Using Videos in Flipped Learning: A Reflective Study on Online Discussion Classes

Posheng Vincent Chien[1], Inna Dzabelova[2], Charu Gupta[3], and Zi Ning Wee[4]

[1]Lecturer in English Education, Rikkyo University, Japan, vincent.chien@rikkyo.ac.jp
[2]Lecturer in English Education, Rikkyo University, Japan, inna.dzabelova@rikkyo.ac.jp
[3]Lecturer in English Education, Rikkyo University, Japan, charug@rikkyo.ac.jp
[4]Lecturer in English Education, Rikkyo University, Japan, wee.zining@rikkyo.ac.jp

Abstract

Since most of the university courses in Tokyo shifted to online mode, instructors were forced to adapt to different teaching approaches and maintain quality education. This reflective paper investigates perceptions of instructors in using videos in flipped learning in online discussion classes. To maximize student speaking time and practice opportunities, they decided to implement flipped learning by creating videos explaining the target discussion skills for each lesson and posting them in an online learning management system (LMS). The students were required to complete their pre-learning in preparation for classroom activities with their instructors or their peers. Pre-learning involved having the students watch the video at any time in the week before the lesson and completing a connected task. When the students come to class, they could start to apply, analyze, evaluate, and produce meaningful, interactive, and rich discussions. After implementing flipped learning and pre-lesson tasks for one semester, the instructors reflect on and discuss their experiences and observations. This study analyzed and discussed the advantages and disadvantages of flipped learning. On one hand, it helped save time spent on online instruction, offered learners a chance to control their learnings, and helped students at different levels. On the other hand, learners and instructors also faced some challenges, such as time consumption and low motivation. The paper concluded with the study limitations and suggestions for future implementation in online, face-to-face, and hybrid settings.

Keywords: flipped learning, online teaching, reflection, university education

Introduction

English Discussion Class (EDC) is a mandatory class for all first-year students at Rikkyo University in Japan. The students in EDC classes are sorted into four levels based on their Test of English for International Communication (TOEIC) scores as shown in Table 1, with Level I students having the highest proficiency level in English, and Level IV having the lowest proficiency.

Table 1

TOEIC Scores and CEFR for all Four Levels

Level	TOEIC Scores	CEFR
I	680 and above	B1 – C2
II	480 - 679	B1
III	280 - 479	A2 – B1
IV	below 279	A1 – A2

Typically, an EDC lesson is structured in such a way that functional language, or a discussion skill (such as giving opinions or joining a discussion), is first introduced to the students. Instructors

are able to present these discussion skills in a method that they so choose, with most instructors utilizing less teacher-fronted methods such as the Deep-End method (Johnson, 1982), which encourages students to use the target language without prior instruction, thus allowing the instructor to use the students' successes and errors as examples while presenting the skill, to encourage more peer-learning. This presentation stage is then followed by practice, then two discussions. The expectation is that by the second discussion, students would be able to fluently engage in a discussion on the given topic in English only, using the functional language taught to them. To facilitate this, at each stage of the lesson, instructors also give feedback to students to encourage them to analyze their own output so that they can have more fluent discussions (Hurling, 2012).

To accommodate the sudden shift to online learning in April 2020 due to the COVID-19 pandemic, four instructors, the authors of this paper, decided to incorporate flipped learning into their classes. Drawing on their experience in flipped learning, both as learners and instructors in a physical classroom context, they adapted the EDC curriculum to fit an online learning context, particularly for the presentation stage of the lesson. This was to accommodate the loss of time and face-to-face interaction due to the online medium.

Additionally, most instructors split their classes into two sessions, with shorter in-class time, in order to help the students adjust better to the online learning environment. Assignments had to be given in place of the remaining time which was originally allocated to them. Flipped learning in the form of assignments was how EDC instructors accounted for this additional time.

This paper discusses and analyzes the methods of implementation, benefits, and challenges instructors faced in applying flipped learning in the context of EDC classes in an online setting, as well as proposed changes and improvements for future lessons.

Objectives of the Study

The purpose of the reflective study is to provide a better understanding of instructors' perceptions of implementing flipped learning in online discussion classes in Tokyo, Japan, based on the researchers' actual experience. The paper also aims to explore the benefits and drawbacks of this teaching approach from the perspective of instructors. In addition, it also offers suggestions for the instructors who wish to experiment with this approach in the future.

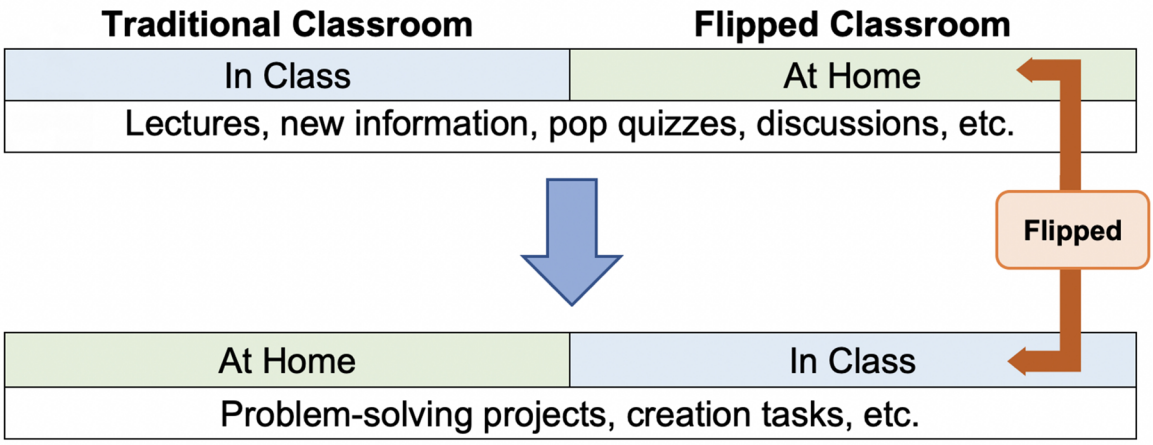
Literature Review

Flipped learning

Flipped learning (FL), which is also known as the flipped classroom, has been a research phenomenon in the past decade. FL is a methodology that revolutionizes the roles of class assignments and activities (Chen Hsieh et al., 2016). It flips the traditional way of teaching, in which students learn new information from lectures in class, to problem-solving and doing creation tasks at home, as shown in Figure 1 (Bates et al., 2017). It moves the teacher-fronted instructions from classroom settings to individual learning space and utilizes the class time for student-centered and interactive learning activities (Abeysekera & Dawson, 2014; Flipped Learning Network [FLN], 2014). This pedagogical approach has been experimented with and developed in different studies and the outcome and perceptions of the approach have been reported in a positive light (e.g. Blair et al., 2015; Lee & Wallace, 2017).

Figure 1

Comparison of Learning Tasks in Traditional versus Flipped Classrooms



The simplest and most common way to implement FL is to have learners watch videos as pre-lesson tasks to acquire new information and then conduct interactive learning activities in the class, where instructors can observe and provide feedback (Bergmann & Sams, 2012; Chen Hsieh et al., 2016). Anderson et. al (2001) cited the revised Bloom's Taxonomy which illustrates six major categories of the learning process as shown in Figure 2. The pre-lesson tasks can include videos, worksheets, pop quizzes, or online discussions (González-Gómez et al., 2016) and aim to achieve the base dimensions such as remembering, understanding, and applying prior to the class time (Chen Hsieh et al., 2016; Lee & Wallace, 2017). The class time in FL is completely restructured compared with the traditional teacher-fronted classrooms as shown in Table 2 below (Bergmann & Sams, 2012). FL allows maximized class time for student-centered activities and for achieving high-order skills such as analyzing, evaluating, and creating (Clark & Besterfield-Sacre, 2017; Davis, 2016).

Figure 2

Anderson et. al's (2001) Revision of Bloom's Taxonomy (Armstrong, 2010)

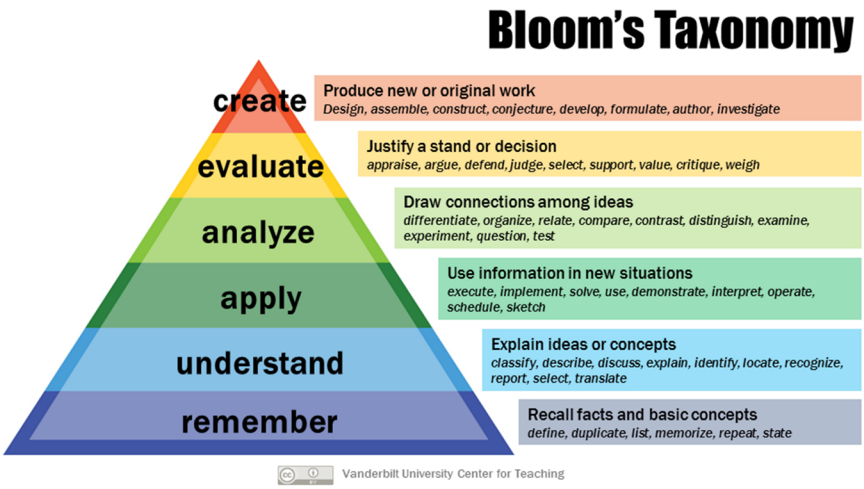


Table 2

Comparison of Class Time in Traditional versus Flipped Classrooms (Bergmann & Sams, 2012, p.15)

Traditional Classroom		Flipped Classroom	
Activity	Time	Activity	Time
Warm-up activity	5 min	Warm-up activity	5 min
Go over previous lesson's homework	20 min	Q&A time on video	10 min
Lecture new content	30-45 min	Guided and independent practice	75 min
Guided and independent practice	20-35 min		

Previous studies have suggested several advantages of FL. First, FL offers learners more exposure to the target language inside and outside the classroom and more opportunities to use the target language (Bergmann & Sams, 2012; Lee & Wallace, 2017). Bergmann & Sams (2012) reported cases in which videos saved the instructors a lot of time and allowed instructors to have more conversations and activities with the students in the target language. Second, it was shown that learners could control their own learning. For example, they could replay, fast-forward, or playback the videos at different speeds according to their own pace and abilities (Bergmann & Sams, 2012; Chen Hsieh et al., 2016). Third, in 2014, Abeysekera & Dawson (year) proposed that FL could increase the learners' motivation, and studies have validated the theory, revealing that FL does indeed help improve learners' confidence and motivation (Chen Hsieh et al., 2016; Wright et al., 2017). Another advantage is that FL offers more student-instructor interaction and instructors could understand their students better (Bergmann & Sams, 2012). Overall, FL definitely provides benefits to both students and instructors.

However, the shift from conventional teaching style to FL also creates some doubts as to its benefits. First, FL could be stressful. Reidsema et al. (2017) reported that this sudden transition could add more pressure on students as FL contradicts the traditional conceptions of teacher-centered lectures. Second, although studies showed that students' engagement increased, FL could be too demanding. For instance, in Chen Hsieh et al. 's (2016) study, participants complained that they had to devote more time to the course, and it took away their private time. Additionally, the content of FL also affects the outcome. Making videos can be extremely time-consuming for instructors (Bergmann & Sams, 2012), but this time could potentially be wasted if the videos and content are too monotonous, as such content could result in learners losing motivation (Reddan et al., 2016). Overcoming these difficulties and finding a balance between the pros and cons will be the biggest challenge.

Instructors' Perceptions of Flipped Learning

FL offers instructors a new way to conduct a lesson, and one of the biggest differences is the role of the instructors (Bergmann & Sams, 2012). In the traditional classroom setting, teachers are the authority and the person who conveys new knowledge. However, in FL, instructors' roles have been shifted. One of the new roles is that of a professional educator and a learning facilitator because FL instructors need to observe learners, give feedback, and perform formative assessments (FLN, 2014). They also provide different tasks to meet students' needs, according to students' prior knowledge (van Leeuwen, 2018). The role requires more professional knowledge and effort from the instructors. Another new role is as learning coach who is always ready to

support and encourage learners and provide short lectures on misconceptions they may have (Bergmann & Sams, 2012). These roles also strengthen the relationships between learners and instructors.

The general response to FL from instructors has been positive. Concerns and benefits have both been reported in many studies. Some of the benefits were mentioned in previous paragraphs, such as instructors having more opportunities and time to work with learners (Blair et al., 2015) and students being able to control their learning (Bergmann & Sams, 2012). However, one factor that might push instructors away from FL is that it demands a great amount of effort and time (Wanner & Palmer, 2015). Also, in Lee & Martin's (2020) report, the participants were concerned about a) the amount of work, b) ambiguous learning responsibilities, and c) lack of professionalism. Learners are the center of FL and although they are responsible for their own learning, it is also the instructors' responsibility to make sure students follow the necessary steps. If students do not watch the videos before joining classes, they will not be able to participate in the in-class activities. Moreover, FL increases the pressure on teachers to offer immediate feedback during class.

With both pros and cons in mind, what influences instructors' decision to implement FL? Long et al. (2018) suggested that the two key factors would be "performance expectancy" and "technology self-efficacy." In other words, if FL can help learners, and if instructors can implement FL with different types of technology in blended learning or distance learning, instructors are more likely to join FL.

Methodology

Participants

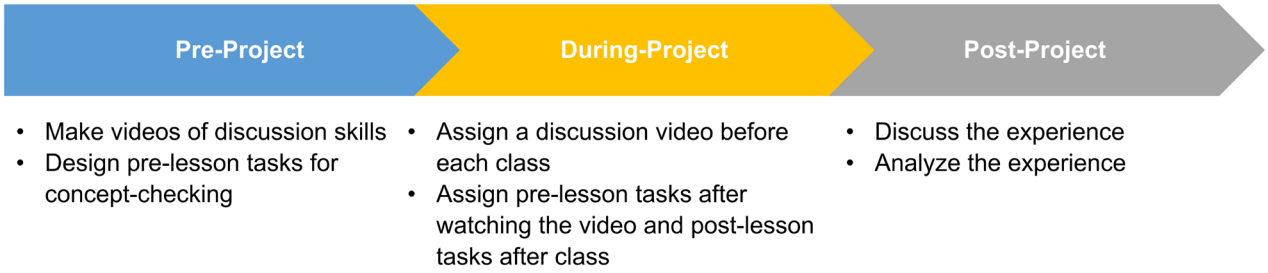
The participants (n=4) in this reflective study are instructors in English education at a private university in Tokyo, Japan, and the researchers of the paper. All the participants have a master's degree in English Language Teaching or a certificate in teaching English to speakers of other languages (CELTA) and 7-13 years of teaching experience combined. All instructors have heard of FL, three of them have experienced FL as students, and only one has implemented FL in the classroom.

Research Design

This study was conducted over one semester in three stages as presented in Figure 3. The pre-project stage was the preparation phase. The researchers made videos for each discussion skill. Bergmann & Sams (2012) suggested that a) the videos should be short and on topic, b) instructors should work together, and c) callouts should be added to attract attention or to offer more explanation. In the current study, researcher A created the pilot video and the templates, and the other researchers made videos for all the discussion skills. Each video was about five minutes long. Then researcher A completed the post-production edits. All of the researchers also created pre-lesson tasks such as concept-checking pop quizzes and topics for online forum discussions for each video.

Figure 3

Research Design



In the second stage of the research process, the students were required to watch a video and complete pre-lesson tasks each week before joining the online lessons. During the lessons, the researchers conducted student-centered discussions and activities and maximized the student practice time. The students were encouraged to revisit the videos when needed or before midterm and final exams.

During the post-project stage, to explore instructors' perceptions of using videos in FL, the researchers generated the discussion topics (Appendix A) for this FL implementation experience a week prior to the discussion. The researchers were encouraged to reflect on their journey and experience and express their thoughts organically during the meeting. The meeting was recorded for the analysis. After the meeting recording was shared, the researchers first listened to the recording individually and took notes. Then the researchers shared and coded the notes and searched for the themes that stood out. The themes were developed and interpreted later in this reflective paper.

Ethical Considerations

The research project has been approved by the research committee at the target university. All of the participants, who are also the authors of the paper, were above 18 years old and agreed to take part in the experiment. The communication between the participants before, during, and after the experiment has been transparent. All of the collected research data has been securely stored, and only the authors of this paper have access to it.

Discussions

Themes

Table 3 below shows the five themes that were most mentioned in the post-project discussion based on this FL experience. The themes can be categorized into benefits and challenges which will be discussed in the following sections.

Table 3

Five Most Mentioned Themes from the Recording

Benefits	Challenges
Saving time for more practice	Maintaining students' motivation
Allowing student-centered learning	Learners' having little experience with active learning

Benefits	Challenges
Adjusting to students' learning pace	Time-consuming preparation
Knowing learners' weak points	Adding extra workload to learners
Familiarizing with the content	Appropriate timing to release learning videos

Benefits of implementing FL

As with previous studies on FL, instructors also found a number of benefits to FL in our context. Namely, time saved, student autonomy, the flexibility of implementation, and greater specificity in giving feedback and teaching.

At the beginning of the semester, instructors faced many technical challenges as students were new to using Zoom, an online video conferencing software for classes, and needed time over the semester to adjust. At the same time, with students situated in different cities, even countries, connections were not always stable. That, together with the time needed to organize students for practice and discussions online, meant that much time was lost on organization and logistical matters. As such, having the students watch videos and familiarize themselves with the target language before class was a good way to cut down on time used on the presentation stage of the lesson, which was mostly teacher oriented. The in-class time could then be maximized for parts of the lesson which needed student-student interaction, such as practice and discussion.

At the same time, FL allows for student-centered learning (Davis, 2016). This is especially important because such a method of learning is a key aspect of EDC classes. Students were expected to watch the lesson video and complete an assignment, which they had to do in their own time. They thus had the freedom to watch the videos and check their assignment answers as many times as they needed to familiarize themselves with the target language. Also, some instructors gave assignments that had an element of peer learning. For example, in one assignment students had to ask for different points of view on their class's online discussion board. In asking and responding to the questions, students had time to test their understanding of the target language, even before class.

Indeed, the instructors felt that they had a good amount of freedom to incorporate flipped learning which best met the needs of our students. The lesson video was particularly useful for students with lower proficiency in English, as they had the freedom to replay the video or slow it down if they needed to. This is in line with the benefits of flipped learning espoused in previous studies (e.g. Bergmann & Sams, 2012; Chen Hsieh et al., 2016). Simpler assignments, such as gap-fills, also helped to solidify their understanding in a way that would not be too much of a burden on them. The production of language could then take place more smoothly during class time. As for the students with higher proficiency levels, assignments that required them to use the language, such as responses to each other on the discussion board, ensured that they had some amount of challenge. This is especially true since some of them were already familiar with the target language and did not feel the need to watch the lesson video. As stated by Bergmann & Sams (2015), "flipped learning is key to differentiation" wherein students get "what they need, when they need it, and at an appropriate depth" (p.45-46). Instructors found this to be particularly true in the online EDC context, especially with regards to depth of learning.

Such a pairing of a lesson video with an assignment was also useful from an instructors' perspective. Again, instructors could tell from the assignments whether the students had difficulties with

particular phrases or concepts. Targeted feedback could thus be given, and lessons prepared more effectively. For example, in one assignment, students were confused about the phrases used for turn-taking, often using the phrase "Can I start?" in the middle of a discussion rather than "Can I say something?" Knowing that, instructors could target this issue and help to explain it during class time. More time could also be allocated to the presentation or practice stages of the lesson if students needed it.

In this, the instructors found that while flipped learning needed some amount of preparation, it led to efficient use of in-class time, without sacrificing the quality of the lessons, as well as the amount of independent learning that could take place.

Challenges faced in implementing FL

FL, while an excellent resource in the communicative and student-centered classroom, is not without its challenges. The instructors who participated in this study benefited from implementing the flipped classroom, particularly in an online setting where teaching time was extremely limited. However, they were faced with several hurdles along the way and found that sometimes using the flipped approach was not as beneficial as they had hoped.

The very first challenge was motivating students to watch the videos before they came to class. In the first few weeks, many students were still waiting for their textbooks to arrive and the videos were a great resource for them to be prepared for the class without having to read an online document written almost entirely in English. However, as the semester progressed, some students stopped watching the videos and did not complete the related assignments. Additionally, since the videos were released a week in advance, there were many students who watched them right after class and completed the assignments. That usually resulted in them forgetting the content of the video before they came to the lesson the following week.

However, different approaches could have been taken to prevent the problems mentioned above. First, the videos should have been released only up to three days before the lesson so that the content would still be fresh in their minds. Second, the video and assignments could have been put together in a Google Form so that students only had to open one assignment where they watched the video and completed the assignment below. Another solution would have been to include some questions in the assignment that could only be answered from the video and not just the textbook. Additionally, emphasizing that watching the video was just as important as completing the assignments would have been helpful. The lessons could have been structured so that students would have to complete an assignment at the beginning of each class pertaining to the video, thus encouraging them to watch the video in order to complete a graded test.

A related problem was that of additional workload (Lee & Martin, 2020; Warner & Palmer, 2015). Once all the classes moved online, students found themselves dealing with far more assignments and reading requirements than they would have on-campus. Instructors were required to assign extra work equivalent to the time that they were not teaching in class. Since most instructors had split their classes in half to provide more attention and speaking opportunities to students, they were asked to give students enough work to compensate for the remaining half of the lesson. Most other classes students were taking also had a high workload since instructors were not able to evaluate the students' performance in class or in some cases, group assignments were made into individual assignments to prevent students from meeting with each other. It is possible that this pressure of having to complete multiple assignments every day further demotivated students

and made them choose between the assignments they thought were absolutely necessary and the ones they could skip without failing or struggling too much in their lessons.

Another issue was that students were not familiar with or were not open to the idea of active learning (Brown & Muller, 2014). Most students came from teacher-centered high school classrooms where the focus was on preparing students for entrance exams to join a good university. It was thus understandable that entering a new environment, being asked to speak in English, and having to do their classes entirely online for the first time in their lives were all added pressures to the students (Reidsema et al., 2017). Furthermore, the students were expected to watch videos in English, understand a discussion skill, and be prepared to use it with other students with whom they had never actually met face-to-face. Thus, given their prior experience with mostly passive learning, most students expected that aside from the videos, the skills would be taught again in class. This meant that even if students watched the video, it was difficult for them to dive straight into the practice where they had to use the target language before the teacher review it in class. All of the instructors found themselves repeating most of what was covered in the video before conducting practices in class. Perhaps, setting some expectations beforehand and modelling what was expected from the students after viewing the videos, would have facilitated a much smoother experience. Additionally, the instructors were also teaching online for the first time, thus feeling the added pressure of providing extra scaffolding and support to the students so that they wouldn't feel overwhelmed or completely lost, which resulted in the loss of time that could have been spent on them speaking to each other using the target language.

Since the students were used to teacher-centered classrooms, we found it difficult to receive input from them on what they liked or disliked about the videos as well as what they were hoping to get out of the flipped learning approach. There was a definite language barrier, as well as the difficulty of negotiating a clear conversation online, and finally, the idea that the "teacher knows best" and a student just follows the instructions. If we could have gotten some student feedback and expectations, we might have been able to provide them with the videos and assignments which would have actually made our flipped classroom significantly more successful than it had been.

Nonetheless, as mentioned above, students did face challenges, but the instructors also found that creating materials for a flipped classroom could also be extremely time-consuming (Wanner & Palmer, 2015). Making videos for target skills nearly every week, creating assignments for each of the videos, and making sure all the content was clear, concise, easy to understand, and accessible to all was a challenge. As a group of four, it was much easier to divide the work among, but if done all alone, it would have taken far too much time and effort in exchange for very little return.

Conclusion

Summary

Overall, by reflecting on the entire research process at the end of the semester, the instructors found multiple benefits to implementing FL in the classroom. It allowed them to use the time that would have been spent on teaching the skills, to give students more speaking and practice opportunities. FL also helped increase student autonomy in the classroom by making them responsible for their learning and by letting them choose how they would implement the skills in class. Additionally, the instructors found that they had more flexibility in planning their lessons and choosing when FL would be most effective. Another notable benefit was the greater specificity in

teaching the target language and providing relevant feedback.
Nonetheless, the flipped classroom was not without its challenges. One significant issue was the added workload for instructors and students alike. On the instructor's end, there was a lot of preparation involved in setting up the flipped classroom and grading the related assignments throughout the semester. Of course, if shared with other instructors and reused in the following academic years, the initial work would be a very useful investment indeed. On the student's side, however, they will continue to have extra work to complete before they come to class, which can often lead to low motivation and lack of participation. In the context discussed in this paper, another challenge was helping the students adapt to the flipped classroom which required active learning, unlike their teacher-centered classrooms in high school. This became particularly difficult in the online classroom which was new to both the students and instructors.

In the end, as long as the preparation to set up the FL lessons is not too overwhelming, the flipped classroom could be largely beneficial from the instructor's point of view, especially in the online context where time is at a premium and students need multiple opportunities to view and review the content.

Limitation

There are some limitations to this study which should be considered. The limitations of this study are four-fold. Firstly, this research was conducted in a limited context at one university, with only four instructors teaching one type of course (English Discussion). To ascertain the applicability of this method in wider contexts, more research will have to be done in a wider range of courses and with larger sample sizes.

As this is a reflective paper, it is primarily based on the instructors' in-class observations. Further quantifying methods of determining the benefits or challenges of the FL method and materials used can be taken. This would be including, but not limited to, student surveys.

Next, not only was this the first time the instructors were teaching this course online, but this was also the first attempt at using FL in the classroom with videos created exclusively with the online context in mind. As such, some challenges observed may be due more to the shift to teaching online, rather than using FL online. A follow-up study with the same instructors, using the same method and materials will give a clearer picture of what challenges are exclusive to using FL.

On a related note, this was also the first time the students in the university were taking online courses and they were overwhelmed by this sudden change and added workload from all their university courses. Some of these limitations have created more challenges in the implementation of FL, which could potentially be avoided in the future.

Future Implications

This study on FL has shown that there are various opportunities and possibilities to create a flipped classroom. To begin, there are multiple variations of FL that can be implemented. While this study focuses on using videos, reading materials, and discussion boards could be just as effective. Additionally, flipped content could also be reviewed in class by the instructors, or in an effort to increase student engagement, they could attempt to teach the target language or skills in the classroom. The use of FL in the online classroom is likely to increase given that it allows students to move at their own pace and allows for more discursive live lessons. Finally, this could

be extremely beneficial in face-to-face classes as well, particularly in mixed-ability classrooms or when presenting more advanced or difficult material. FL is a significant step forward in making the classroom more student-centered and creating more independent learners.

References

Abeysekera, L., & Dawson, P. (2014). Motivation and cognitive load in the flipped classroom: definition, rationale and a call for research. *Higher Education Research & Development, 34*(1), 1–14. https://doi.org/10.1080/07294360.2014.934336

Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J., & Wittrock, M. C. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.* Longman.

Armstrong, P. (2010, June 10). *Bloom's Taxonomy*. Vanderbilt University. https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/

Bates, J. E., Almekdash, H., & Gilchrest-Dunnam, M. J. (2017). The flipped classroom: A brief, brief history. In J. R. Banas & R. A. Perkins (Eds.), *The Flipped College Classroom: Conceptualized and Re-conceptualized*. Springer International Publishing.

Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day.* International Society For Technology In Education.

Bergmann, J., & Sams, A. (2015). *Flipped Learning for Elementary Instruction.* International Society For Technology In Education.

Brown, P. S., & Muller, T. (2014). Introduction. In T. Muller, J. Adamson, P. S. Brown, & S. Herder (Eds.), *Exploring EFL Fluency in Asia*. Palgrave Macmillan.

Blair, E., Maharaj, C., & Primus, S. (2015). Performance and perception in the flipped classroom. *Education and Information Technologies, 21*(6), 1465–1482. https://doi.org/10.1007/s10639-015-9393-5

Chen Hsieh, J. S., Wu, W.-C. V., & Marek, M. W. (2016). Using the flipped classroom to enhance EFL learning. *Computer Assisted Language Learning, 30*(1–2), 1–21. https://doi.org/10.1080/09588221.2015.1111910

Clark, R. M., & Besterfield-Sacre, M. (2017). Assessing flipped classrooms. In C. Reidsema, L. Kavanagh, R. Hadgraft, & N. Smith (Eds.), T*he Flipped Classroom: Practice and Practices in Higher Education*. Springer.

Davis, N. L. (2016). Anatomy of a flipped classroom. *Journal of Teaching in Travel & Tourism, 16*(3), 228–232. https://doi.org/10.1080/15313220.2015.1136802

Flipped Learning Network (FLN). (2014). *The Four Pillars of F-L-I-PTM*. https://flippedlearning.org/definition-of-flipped-learning/

González-Gómez, D., Jeong, J. S., Airado Rodríguez, D., & Cañada-Cañada, F. (2016). Performance and Perception in the Flipped Learning Model: An Initial Approach to Evaluate the

Effectiveness of a New Teaching Methodology in a General Science Classroom. *Journal of Science Education and Technology, 25*(3), 450–459. https://doi.org/10.1007/s10956-016-9605-9

Johnson, K. (1982). *The Deep End Strategy in Communicative Language Teaching*. Communicative syllabus design and methodology. Pergamon Press.

Lee, G., & Wallace, A. (2017). Flipped Learning in the English as a Foreign Language Classroom: Outcomes and Perceptions. *TESOL Quarterly, 52*(1), 62–84. https://doi.org/10.1002/tesq.372

Lee, Y., & Martin, K. I. (2020). The flipped classroom in ESL teacher education: An example from CALL. *Education and Information Technologies, 25*(4), 2605–2633. https://doi.org/10.1007/s10639-019-10082-6

Long, T., Cummins, J., & Waugh, M. (2018). Investigating the factors that influence higher education instructors' decisions to adopt a flipped classroom instructional model. *British Journal of Educational Technology, 50*(4), 2028–2039. https://doi.org/10.1111/bjet.12703

Reddan, G., McNally, B., & Chipperfield, J. (2016). Flipping the classroom in an undergraduate sports coaching course. I*nternational Journal of Sports Science & Coaching, 11*(2), 270–278. https://doi.org/10.1177/1747954116637497

Reidsema, C., Hadgraft, R., & Kavanagh, L. (2017). Introduction to the flipped classroom. In C. Reidsema, L. Kavanagh, R. Hadgraft, & N. Smith (Eds.), *The Flipped Classroom: Practice and Practices in Higher Education*. Springer.

van Leeuwen, A. (2018). Teachers' perceptions of the usability of learning analytics reports in a flipped university course: when and how does information become actionable knowledge? *Educational Technology Research and Development, 67*(5), 1043–1064. https://doi.org/10.1007/s11423-018-09639-y

Wanner, T., & Palmer, E. (2015). Personalising learning: Exploring student and teacher perceptions about flexible learning and assessment in a flipped university course. *Computers & Education*, 88, 354–369. https://doi.org/10.1016/j.compedu.2015.07.008

Wright, A., Greenfield, G., & Hibbert, P. (2017). Flipped tutorials in business courses. In C. Reidsema, L. Kavanagh, R. Hadgraft, & N. Smith (Eds.), *The Flipped Classroom: Practice and Practices in Higher Education*. Springer.

Online Student Engagement and Sense of Community in a Philippine Online University

Al Francis Librero

Assistant Professor, University of the Philippines Open University, Philippines, adlibrero@up.edu.ph

Abstract

This study aimed to consider the correlation between student engagement and sense of community through the partial application of the online student engagement scale (OSE) and classroom community scale (CCS) as designed by Dixson (2015) and Rovai (2002), respectively. A total of 67 students from two classes in the Bachelor of Arts in Multimedia Studies (BAMS) program at the University of the Philippines Open University (UPOU) participated in the study, whose input revealed a correlation coefficient of 0.442. This means that there is a moderate correlation between the two attributes. The study also revealed that, based on the two classes attended by different sets of students that as far as the participants are concerned, the level of engagement and sense of community stays the same over time. It is, however, important to note that there are underlying factors affecting respondents' perceptions due to the COVID-19 pandemic as well as a series of natural calamities, which occurred during the academic year in which this study was conducted. The relatively low turnout of responses in the survey may also have affected the findings and subsequent analysis. Regardless of the underlying factors, certain areas can be improved in order to foster engagement, mainly through encouraging interaction through various communication and social media platforms. Data also suggests that official support from the university would also be of benefit. It is recommended that future studies build on the findings of this paper for a wider and deeper understanding of the issues that were discussed.

Introduction

Understanding student engagement and learning how to enhance is key to building a greater sense of community. In the time of the pandemic, such sense of community becomes even more important for students both academically and socially.

The so-called new normal (Research Institute for Tropical Medicine, 2020) brought about by the COVID-19 pandemic had heavily disrupted the education sector across the globe. The Philippines resorted to an abrupt shift to online and blended learning (Custodio, 2020) raising levels of anxiety among many students and teachers, not just in the Philippines, but for much of the world. And it is believed that this is where a sense of community may be important. Local and global events may have exacerbated feelings of isolation and the mental health issues that stem from it. It is therefore important to gauge the situation through first-hand accounts in order to manage the issue more effectively.

Fostering learning communities or communities of practice within the bounds of an online university in the Philippines has been challenging. Librero (2019) has directly faced some of these challenges during his attempts to build and facilitate community-driven projects. A higher level of engagement among students may be key to greater success in building and facilitating

community-driven projects. However, gauging online student engagement at the University of the Philippines Open University (UPOU), particularly in the Bachelor of Arts in Multimedia Studies (BAMS) program, has been largely anecdotal. Whatever adjustments made by teachers may be driven by intuition and personal experience, as opposed to a comprehensive analysis at the university or at the program levels.

Objectives

This study intended to gain first-hand information and insight from students in order to achieve the following objectives:

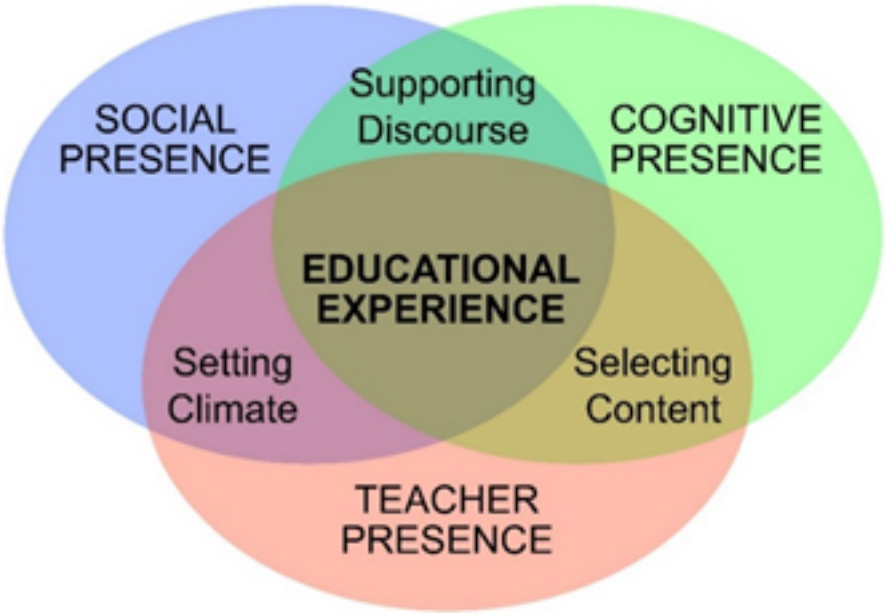
- Determine whether or not there is a correlation between how engaged students are with their sense of community;
- Determine if the length of residency has any effect on engagement and community; and,
- Propose solutions and strategies on how student engagement can be improved given available tools.

Review of Related Literature

Young and Bruce (2011) defined student engagement as the interest and motivation students have in their own learning of course content. While seemingly straightforward, there is much to deconstruct in order to better understand how student engagement works. The concept of student engagement is largely influenced by social constructivism, which essentially states that learning is facilitated through interaction and collaboration. This can perhaps start to explain the assertion that a sense of community has a significant impact on engagement. This also establishes a connection between student engagement and the Community of Inquiry (CoI) model (Garrison, Anderson, & Archer, 2000) which posits that a learning medium is composed of three components (social, cognitive, and teacher presence) which, when working together, results into an educational experience (Figure 1).

Figure 1

Community of Inquiry (COI) framework (Garrison, Anderson, & Archer, 2000)



This model has been expanded upon by other authors. Meyer's version (2014) suggests that the educational experience explicitly translates into a student's learning experience. However, the process does not end there. Instead, there must be retention of what was learned, which itself is subject to several factors. This model, however, is vague with regards to what these factors are, exactly. Shea et al. (2012) devised their own revision to the CoI Model by inserting learning presence as a new component. "Learning presence" in the model indicates the *exercise of agency and control rather than compliance and passivity and more fully articulates popular beliefs about the importance of self-direction in online environments.*

Measuring Student Engagement

There are a number of known ways to gauge student engagement. As shown in Figure 2, student engagement in traditional classrooms involve affective and behavioral components: skills, emotion, participation, and performance. But while online classrooms differ in the method of delivery, they can essentially have the same components of engagement (Dixson, 2015). Each component is manifested by certain behaviors of students. The National Survey of Student Engagement (NSSE, 2013) offers a similar framework which includes four themes —academic challenge, learning with peers, experiences with faculty, and campus environment, each with multiple indicators used for measuring the level of engagement.

Figure 2

Affective and behavioral components of engagement. (Dixson, 2015)

Fredricks and McColskey (2012) compiled a comprehensive list of methods for gathering data, which were classified as follows:

- Student self-report – students are provided with items reflecting various aspects of engagement and select the response that best describes them.
- Experience sampling – a method that constricts self-reporting to specific times, thereby allowing for the data collected to be from that very moment rather than a retrospection which most self-reporting methods tend to be.
- Teacher ratings of students – making use of checklists from a teacher perspective.
- Interviews – directly meeting with individuals for asking pre-designated questions, which allows for a more open-ended discussion.
- Observations – scrutinizing student behavior within specified time frames.

Fredricks and McColskey (2012) asserted that student self-reporting is the most common method used when measuring student engagement, and it typically covers three aspects— behavioral, emotional, and cognitive engagement. While not immediately apparent, this fits with Dixson's (2017) framework, as behavioral engagement covers participation, while cognitive engagement is concerned with how motivated a student is with regards to improving academic performance. While it can be argued that most established methods can also be applied in an online setting, methods designed specifically for it are relatively more difficult to come by.

The social media platform Facebook has also been used as the basis to measure student engagement. Magno (2016) related engagement in Facebook posts. In the context of a discussion within a learning management system, it was asserted that engagement could be expressed as:

$$MPER = \frac{(CL + C + L)}{R}$$

Where:

MPER = Moodle post engagement rate
CL = Clicks
R = Reach (number of people who saw the post)
C = Comments
L = Likes

Given pre-defined weights for clicks, comments, and likes, it would be possible to derive an aggregate of engagement. However, the problem with this equation is that it cannot account for the outcomes behind the clicks and likes. It also cannot directly account for the quality of the comments, which by themselves could also be a measure of engagement. Without additional conditions, there is literally no distinction between a single word post, and an exposition on the topic discussed. Halpin, von Davier, Hao, and Liu (2017), applied what is called the Hawkes process. In a nutshell, a Hawkes process is a mathematical model where the occurrence of an event increases the probability of another event (Obral, 2016). The feasibility of adoption within the context of measuring student engagement was established. However, the problem of accounting for the content of messages was also noted, thus exhibiting the same weakness as with the Facebook model.

Dixson (2015) made use of what is called the online student engagement (OSE) scale, which takes cues from existing measurement methods to develop a method that accounts for all aspects of the model shown in Figure 2. The OSE is a self-reporting method, which separates it from Magno's (2016) and Halpin et al.'s (2017) methods. While it does have potential bias issues and may have trouble accounting for contextual factors, the OSE does not explicitly factor in learning artifacts such as posts and comments and thereby does not carry the weakness of not accounting for their quality in the model it follows.

Measuring Sense of Community

Sense of community has been broadly defined as an acknowledged interdependence with others. McMillan and Chavis (1986) added precision and detail to the concept, proposing that sense of community has four elements: 1) membership – feeling of belonging, 2) influence, the belief of being able to make a difference, 3) reinforcement – integration and fulfillment of needs, and 4) shared emotional connection. There are a handful of ways to measure a sense of community. The Sense of Community Index (SCI) was founded on these four elements and has been applied to

several types of communities. Chipuer and Pretty (1999) acknowledged the SCI's usefulness and theoretical grounding but raises the possible need for considering the physical environment as a factor. However, Rovai (2002) developed a means of measurement tailored for academic settings called the Classroom Community Scale (CCS). The CCS is seen as a viable instrument for gauging connectedness and learning for a wide range of populations, including that of residential-type institutions.

Theoretical Framework

This study draws from the COI Framework (Garrison, Anderson, & Archer, 2000) and Dixson's (2015) framework of student engagement and how it is governed by affective and behavioral components (Figure 2). The frameworks are expanded upon through the idea that student engagement is the related sense of community. Furthermore, it is also hypothesized that both engagement and sense of community are influenced by the environment in which students and teachers reside. Chipuer and Pretty (1999) argued as much, albeit with physical settings in mind. The OSE and CCS scales themselves were designed with online environments in mind. This study, however, explores the possibility that online learners are subject to both the online and physical environments, especially in extraordinary times such as a global pandemic.

Methodology

Setting and Participants

The study involved two classes within the Bachelor of Arts in Multimedia Studies (BAMS) program at UPOU. BAMS is a fully online undergraduate degree program populated by students with diverse age groups and backgrounds who live inside and outside the country. Two classes were chosen to be part of the study— MMS 100 (Introduction to Multimedia), and MMS 175 (Videography in Multimedia). The former is a course typically taken during a student's first year of residency. The latter, on the other hand, is typically taken on a student's third year at the earliest, depending on his or her pace. A BAMS class typically follows a 10- to 12-week schedule. Students participated in the study by the end of the second month of their classes.

UPOU's learning management system is an amalgam of different platforms. At the core is a Moodle-based course management system and an instance of Google's G Suite for Education. Zoom has also been officially adopted as the university's video conferencing platform. While experimentation with other platforms has been tolerated and in some cases even encouraged, there were no other third-party applications officially sanctioned by the university for use as learning tools and platforms at the time of the study.

Data Gathering

This study adopted elements of the Online Student Engagement (OSE) scale and Classroom Community Scale (CCS), namely their 18- and 20-item Likert scales as employed by Dixson (2015) and Rovai (2002), respectively. Both scales ask respondents various questions regarding perceptions about themselves, their peers, teachers, and the environment they reside in. The two scales were deployed as an online questionnaire using Google Forms under the G Suite for Education instance managed by the University of the Philippines System.

Students were also asked to answer additional items regarding external factors that may have affected their engagement in class. The ongoing academic year as of this writing has been significantly affected by the COVID-19 pandemic, as well as a series of natural calamities. Asking students whether or not these may have had an effect on them further contextualized their responses to the items in the Likert scales. An open-ended question as to whether or not they wanted to add anything they felt were relevant was also asked to catch anything that the survey could have missed.

Responses are labeled according to class (they are either from MMS 100 or MMS 175). However, they remain anonymous with no sensitive information required. Furthermore, answering the questionnaire was voluntary. Appendix 1 shows the contents of the Google Forms questionnaire.

Analysis

In order to address the first objective, through the OSE and CCS scales, this study attempted to look for any correlation between a student's engagement and a perceived sense of community. For the OSE, each item was assigned a value according to the respondents' answers, scaled between zero (not at all characteristic of me) and four (very characteristic of me) in order to be commensurate to the level of engagement claimed. Half of the twenty items in the CCS were treated the same way, with zero representing strong disagreement up to four, representing strong agreement. The other ten items, having negative statements, had values reversed, with a strong agreement and strong disagreement being equivalent to zero and four, respectively.

For the second objective, a one-way analysis of variance (ANOVA) was conducted for the results of each scale. This was meant to determine whether or not there are significant differences between the results from the two different classes representing different lengths of residency in the BAMS program. The third objective was addressed through the analysis of descriptive statistics derived from the answers to the items in the OSE and CCS scales, as well as additional comments possibly shared by respondents. These were conducted with respect to the methods prescribed by Creswell and Guetterman (2019) regarding the collection, analysis, and interpretation of qualitative data.

Limitations of the Study

Due to constraints in the level of access and time, this study was only able to abide by two of the three-phase survey administration procedure as prescribed by Cresswell and Guetterman (2019, p. 400). After an initial invitation to answer the survey, there was only time for one follow-up within four weeks instead of two follow-ups within a six-week time frame. Furthermore, while this study adopted both the OSE and the CCS scales, it did conduct other measurements of engagement and community in parallel to check for their accuracy. Therefore, it was assumed that the assertion that the accuracy of the two scales is adequate. With regards to correlation, while analysis can establish its existence between the OSE and CCS scales, they cannot provide information on the nature of the relationship between engagement and community. There is not enough to determine whether engagement is dependent on the community, or if it's the other way around, or if there is a synergy between them.

Ethical Considerations

This study complies with the ethical standards set by the University of the Philippines Open University. As partial fulfillment to the E-Research and Technology Enhanced Learning Program

where the author was enrolled in at the time of writing, the study was also granted the ethical approval of Lancaster University. The study was conducted with the informed consent of all study participants. No sensitive information was drawn from the participants.

Results and Discussion

Descriptive Statistics

A total of sixty-seven students responded to the survey, sixty of which are from MMS 100 and seven from MMS 175. Table 1 shows the descriptive statistics for OSE and CCS by class and total participants.

Table 1

Descriptive statistics by class and total participants

	OSE			CCS		
	MMS 100	**MMS 175**	**Total**	**MMS 100**	**MMS 175**	**Total**
Responses (n)	60	7	67	60	7	67
Mean	2.608	2.651	2.613	2.297	2.429	2.311
Std. Error	0.071	1.104	0.064	0.065	0.176	0.061
Std. Dev.	0.550	0.275	0.527	0.504	0.466	0.498
Minimum	1.611	2.222	1.611	1.100	1.800	1.100
Maximum	3.889	3.111	3.889	3.600	2.950	3.600

Respondents gave an average answer of 2.613 for each item on the OSE scale. This implies that students in both classes exhibited fair to moderate levels of engagement. On the other hand, as far as the sense of community is concerned, with a mean score of 2.311 for items in the CCS, students are apparently more or less neutral. This can imply that while it is not discounted that there is some level of connectedness or sense of belonging among students and teachers, students might not definitively feel there is a community at large. A closer inspection of the responses to the individual items provides a more complete picture. Looking at the average scores of each item reveals other interesting details. With the OSE, items referring to self-motivation tend to get higher scores, such as *putting forth effort* (3.030), *really desiring to learn the material* (2.970), or *finding ways to make the course interesting to me* (2.940). However, students tended to give themselves lower scores on matters relating to interacting with others, like *having fun in online chats, discussions, or via email with the instructor or other students* (1.910) or *getting to know other students in the class* (1.851). The results from the CCS seem to relate to this observation. While students typically believed that the course they were enrolled in does *promote a desire to learn* (3.217), hardly anyone believes that t*heir courses are like a family* (1.801). There is almost definitely *no sense of interdependence* (0.746). While the respondents generally agree that they are *encouraged to ask questions* (2.597) and that it's not *hard to get help when they have questions* (2.298), they express reluctance to do so, *feeling uneasy exposing gaps in their understanding* (1.805).

Correlation between Student Engagement and Sense of Community

Results of the correlation analysis between the OSE and CCS are shown in Table 2 and Figure 3. At 0.422 with statistical significance at α=.001, the correlation coefficient indicates that there is a moderate positive relationship between students' level of engagement and sense of community in classes. This corroborates the assertion that student engagement and a sense of community

are related to each other. However, the analysis cannot determine causality. The data on hand cannot indicate which depends on the other or if there is a synergy between the two.

Table 2

Correlation between OSE and CCS results

			n	Pearson's r	p
OSE	-	CCS	67	0.422***	< .001

* p < .05, ** p < .01, *** p < .001

Effect of Residency Length

Results for the analysis of variance (ANOVA) test for both OSE and CCS are shown in Tables 3 and 4, respectively. With an F = 0.040 and P-value = 0.842, it can be definitively said that in the case of this study, no statistical significance was found in the difference between the OSE scores of the two classes. It means that among the respondents, there is no apparent increase or decrease in engagement the longer students stay in the BAMS program. While there is a nominal difference between mean scores of MMS 100 and MMS 175 students in the CCS with the latter being higher, analysis shows no statistical significance.

Figure 3

Scatter plot for correlation between OSE and CCS results

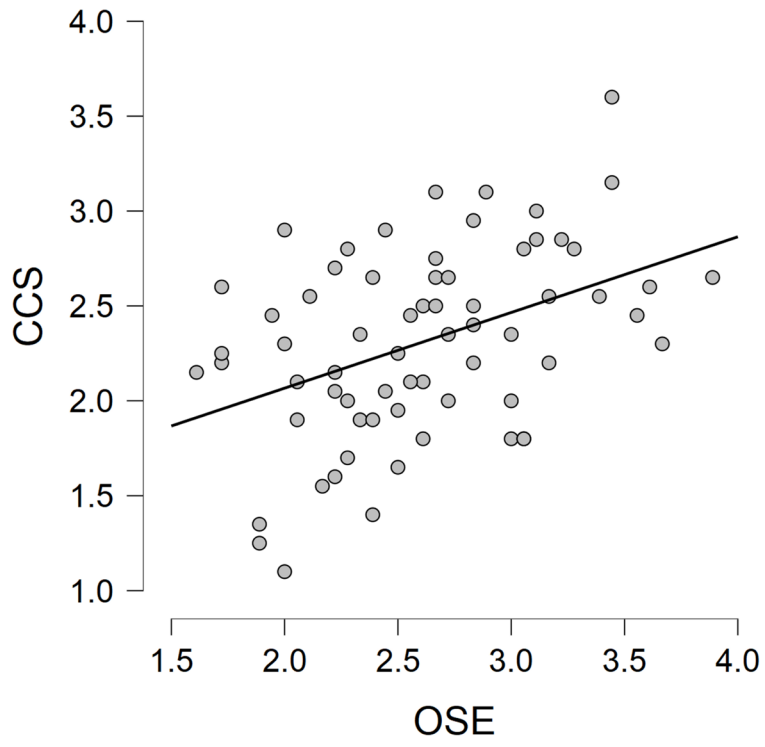


Table 3

Analysis of variance (ANOVA) test for the OSE scale

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.011	1	0.011	0.040	0.842	3.989
Within Groups	18.310	65	0.282			
Total	18.321	66				

Table 4

Analysis of variance (ANOVA) test for the CCS

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.108	1	0.108	0.430	0.514	3.989
Within Groups	16.276	65	0.250			
Total	16.384	66				

Other Factors Affecting Results

The MMS 100 and MMS 175 classes covered by the study are populated by 169 and 75 students, respectively. This leads to the fact that the online survey yielded a response rate of 35.50% in MMS 100 and 9.33% in MMS 175. According to Creswell and Guetterman (2019), survey studies in educational journals typically yield a response rate of 50% or better. Nulty (2008) echoes a similar finding, at least for paper-based surveys (56%), but also found a substantial difference when it comes to online response rates, which was 33%. With respect to this study, it can therefore be argued that while the response rate in MMS 100 can be deemed acceptable, the same is not necessarily true for MMS 175. This raises the concern of the possibility of response bias (Creswell and Guetterman, 2019, p. 400). Without further study, whether this leads to the findings being more positive or negative than what it may be in reality can only be speculated upon. Still, it is believed that it would be reasonable to surmise that since participation in the survey can be viewed as a means of engagement itself. Therefore, more likely than not, a low response rate could mean that the level of student engagement in MMS 175 is lower than what the survey results might suggest.

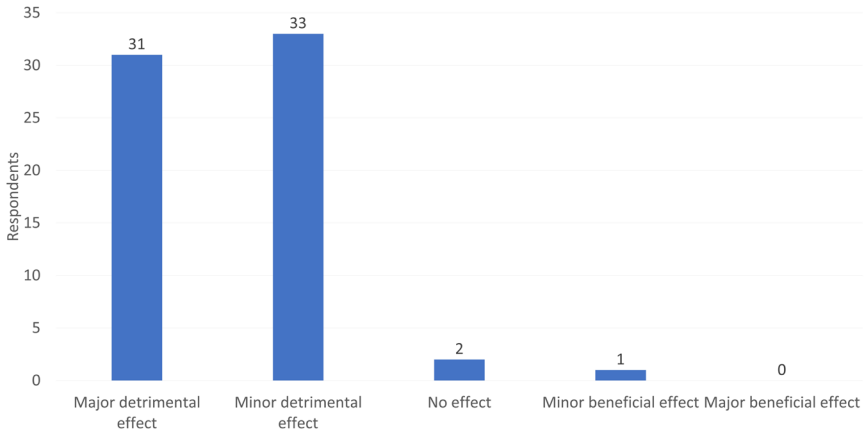
While not explicitly declared by literature on hand, it can be argued that both the OSE and CCS implicitly assume that participants are responding under circumstances deemed normal. They do not account for extraordinary factors. As this study was conducted in an academic year that has endured the COVID-19 pandemic, as well as a series of natural calamities, it was deemed necessary to find out from respondents whether or not these events have had any effect on their sentiments regarding engagement and community.

Figure 4 shows that out of the 67 respondents, all but three felt there was a detrimental effect with regards to their engagement in class. Thirty-one of them opined that there was a major detrimental effect. While not all respondents elaborated on their opinions, those who did indicate two general types of issues. The first type is technical-related, such as poor Internet connectivity, which became more pronounced in certain areas due to the surge in nation-wide use as people were confined to their own homes, as well as power failures, mainly caused by the series of

storms and typhoons that beset the Philippines in the latter half of 2020. The other type is related to mental and emotional well-being, as the pandemic brought about drastic and jarring changes in lifestyle which students found stressful. The single respondent who claimed a beneficial effect to engagement did not elaborate his or her position.

Figure 4

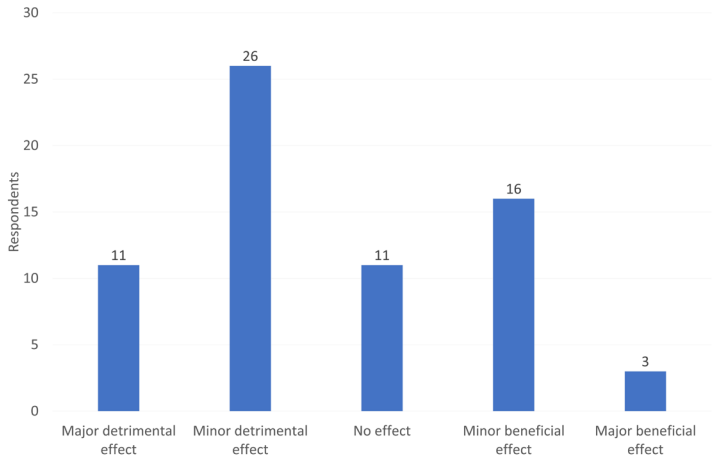
Respondents' perceived effect of external factors such as the COVID-19 pandemic and natural calamities on their engagement



Respondents are, however, more divided with regards to their sense of community, as Figure 5 would suggest. While 37 felt that it also degraded in the face of immediate realities, 11 believed there was no effect, with another 19 who believed that there was a beneficial effect. One of these more optimistic respondents remarked that, "having to adjust to a new learning method is difficult enough as it is. However, my perception of my peers and my professors (at least, for a few) has upped beneficially. Their willingness and effort to learn and teach amid this crisis motivate me to work even harder." Another respondent cited that "I have a class where I meet up with my teammates once to twice a week via Zoom/Discord. And that has provided some stability and support." These are indications of active adjustments made by students and teachers that have started to pay off. While students do continue to struggle in the face of the current adversities, some have made strides through establishing stronger connections amongst each other, leading to an improved sense of community. That being said, another respondent who did say there has been a detrimental effect to the community stated that while there were such movements among students, "it was quite disheartening to find out that the university did not have any official organizations like other UP constituents especially as this is my first time in a college environment. I believe this contributes a lot to a sense of community as I used to join multiple clubs and organizations in my previous schools and have found myself getting to know more people this way." While students and teachers taking initiative to connect are noteworthy, others may still be looking for university-sanctioned support.

Figure 5

Respondents' perceived effect of external factors such as the COVID-19 pandemic and natural calamities on the community



Possible Means of Improving Engagement

Unfortunately, some issues cannot be directly solved within an online classroom, such as natural calamities, and the pandemic. Disconnection from the Internet will also disrupt any sort of effort done remotely. That being said, other areas can be improved upon through interventions.

While it would be difficult to assess what goes on in other classes without conducting the same survey on them, the data collected from the two classes have been revealing their dynamics. It can be argued that the final item in the CCS scale (I feel that this course does not promote a desire to learn) may as well allude to one of the foundations for a learning experience. There is a relatively strong disagreement (3.269) with the statement among respondents. This can mean that there is strong motivation towards learning. The first item in the OSE scale (putting forth effort) also yielded a high score (3.030), making it consistent with the CCS item score that was just cited. This can mean that the issue is not necessarily building motivation. This may be about harnessing what motivation is already inherent to the students.

Survey items with the lowest mean scores involved interpersonal interaction and communication. In the OSE, "having fun in online chats, discussions, or via email with the instructor or other students" and "getting to know other students in the class" got mean scores of 1.910 and 1.851, respectively.

These were consistent with the lowest among items in the CCS. "I feel that this course is like a family " and "I feel uneasy exposing gaps in my understanding;" both had scores of 1.806. All of these allude to a general hesitation towards being more open on a personal level with peers and teachers. Replies to the open-ended questions in the survey provided clues for addressing this issue. As previously cited, one respondent explicitly identified the extra-curricular use of communication platforms such as Zoom and Discord. Facebook was also being used in a similar manner, which is documented in previous studies as cited in Librero (2019). Furthermore, responses also suggest that a more formal organization among students would help foster a sense of community. As of this writing, UPOU has not officially recognized the existence of any student academic organization.

Clearly, peer interaction should be encouraged. The question is where should boundaries be set, if at all? How can the university decide which platforms or technologies to sanction and how should they be employed? How involved should teachers be? According to Dave (2019), effective faculty participation is a key driving factor towards the success of technology-mediated distance education. However, it is unclear if that extends to activities outside the bounds of official platforms. As evidenced by respondents' feedback, teachers in the two classes are generally well-regarded in terms of being a source of encouragement. However, teacher presence does have an impact on how students behave even outside the online classroom (Librero, 2019). Therefore, it can be argued that while teachers could still have some involvement in fostering community outside the online classroom, spearheading the activity may only lead to the same dynamics as in the classroom. Thus, community building may require significant proactive involvement among students.

The study aimed to provide insights into the reasons behind the apparent habits of students in online classrooms. This study may also shed light on how Asians, particularly Filipinos, navigate through the realities of online learning.

Conclusion and Recommendations

The findings allow this study to conclude that there is indeed a relationship between student engagement and community. The combined results of the OSE and CCS provided a picture of an educational experience as expressed in the Community of Inquiry model. The study also supports the argument that conditions in the physical environment can also have an impact in an online classroom but it cannot be accurately determined to what degree. It may therefore be prudent to study this further should a theoretical framework reflecting this observation continue to be forwarded.

From a practical perspective, this study came to a variety of conclusions stemming from information that may prove valuable moving forward in the handling of classes in the BAMS program. The establishment of a correlation between student engagement and a sense of community can certainly give a more established purpose to community-building efforts in higher education institutions such as UPOU. However, the results of the Likert scales may require additional vetting for future studies. Both OSE and CCS are self-reporting methods that pose certain issues affecting accuracy. As a means of vetting, Dixson (2015), conducted other methods, namely teacher ratings and observations in parallel with the OSE. Rovai (2002), conducted a rigorous series of statistical tests to determine the reliability of the CCS. While there are no definitive reasons to doubt the reliability of the OSE and CCS as applied in this study, the realities influencing this study may warrant an investigation as to whether or not these two scales are reliable as applied.

There are also a number of issues that further work would do well to address. For starters, the low and unbalanced turnout led to a small sample size which could have compromised the accuracy of statistical analysis. Furthermore, the problem of a voluntary and anonymous survey resulting in low turnout might make the study more prone to non-response bias whose implications are potentially critical to a topic such as engagement and sense of community. For example, can it be argued that a non-response means detachment or indifference? And if so, wouldn't it subsequently mean that since only seven people from MMS 175 answered the survey – much fewer than those from MMS 100, it would be reasonable to surmise that sense of community tends to diminish over time and that the respondents are more like outliers who do not represent the majority? In order to address this issue, a more inclusive survey, or employment of additional methods of data collection and analysis may be in order.

While a selection was noted, the items in the OSE and CCS Likert scales may not have been given an in-depth analysis. Beyond its being a data-gathering tool for quantitative analysis, the items from the two scales have the potential to provide a lot of insight with regards to how students behave. Responses to the scales can be a strong basis for formulating approaches and strategies in learning design and teaching online classes at UPOU and other similar institutions.

Ethical Considerations

This study complies with the ethical standards set by the University of the Philippines Open University. As partial fulfillment to the E-Research and Technology Enhanced Learning Program where the author was enrolled in at the time of writing, the study was also granted the ethical approval of Lancaster University. The study was conducted with the informed consent of all study participants. No sensitive information was drawn from the participants.

References

Anderson, E. (2017). *Measurement of online student engagement: utilization of continuous online student behaviors as items in a partial credit Rasch model.* Electronic Theses and dissertations. https://digitalcommons.du.edu/etd/1248.

Asih, I.W. (2017). Social presence among distance learners: portrait of online communication at Universitas Terbuka. T*he International Journal on Open and Distance e-Learning (IJODeL), 3*(1), 33–47.

Baizas, G. (2020, April 15). Netizens debate mass promotion of students amid coronavirus pandemic. *Rappler.* https://www.rappler.com/nation/netizens-reaction-mass-promotion-students-coronavirus-pandemic.

Berry, S. (2019). Teaching to connect: community-building strategies for the virtual classroom. *Online Learning Journal, 23*(1), 164–183.

Chen, P., Lambert, A., & Guidry, K. (2010). Engaging online learners: The impact of Web-based learning technology on college student engagement. *Computers & Education, 54*(4), 1222–1232.

Chipuer, H.M., & Pretty, G.M.H. (1999). A review of the sense of community index: current uses, factor structure, reliability and further development. *Journal of Community Psychology, 27*(6), 643–658.

Creswell, J. W., & Guetterman, T.C. (2019). *Educational research: planning, conducting, and evaluating quantitative and qualitative research.* Pearson Education, Inc.

Custodio, A. (2020, July 24). Blended learning is the new normal in Philippine education. *The Manila Times.* https://www.manilatimes.net/2020/07/24/supplements/blended-learning-is-the-new-normal-in-philippine-education/744913.

Dave, D. (2017). Role of teachers in technology-mediated distance education: a preliminary synthesis. T*he International Journal on Open and Distance e-Learning (IJODeL), 3*(2), 39–51.

De Guzman, S.S. (2020, May 4). Mass promotion — an act of compassion? The Philippine Star. https://www.philstar.com/opinion/2020/05/04/2011597/mass-promotion-act-compassion.

Dixson, M.D. (2015). Measuring student engagement in the online course: the online student engagement scale (OSE). Online Learning Journal, 19(4). https://files.eric.ed.gov/fulltext/EJ1079585.pdf.

Farrell, O., & Brunton, J. (2020). A balancing act: a window into online student engagement experiences. *International Journal of Educational Technology in Higher Education*. https://doi.org/10.1186/s41239-020-00199-x

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education model. *The Internet and Higher Education,* 2(23), 87–105.

Gutierrez, J. (2020, November 18). 'Within seconds everything was gone': devastating floods submerge the Philippines. *The New York Times*. https://www.nytimes.com/2020/11/18/world/asia/philippines-floods-photos.html.

Halpin, P.F, Hao, J. & Liu, L. (2017). Measuring student engagement during collaboration. *Journal of Educational Measurement, 54*(1), 70–84.

Jason, L.A., Stevens, E., & Ram, D. (2015). Development of a three-factor psychological sense of community scale. *Journal of Community Psychology, 43*(8), 973–985.

Ki, C.N.O. (4 September 2020). Students say they have a hard time with online classes. *Manila Bulletin.* https://mb.com.ph/2020/09/04/students-say-they-have-a-hard-time-with-online-classes/

Librero, A.F.D. (2019). Student co-creation in an online university: successes, failures and how to move forward. *The International Journal on Open and Distance e-Learning (IJODeL), 5*(2), 13–26.

Magno, L. (2016). Using Facebook metrics to measure student engagement in Moodle. T*he International Journal on Open and Distance e-Learning (IJODeL),* 2(2), 39–48.

Meyer, K.A. (2014). *Student engagement online: what works and why.* Jon Wiley & Sons, Inc. Hoboken, NJ.

Nistor, N., Daxecker, I., Stanciu, D., & Diekamp, O. (2015). Sense of community in academic communities of practice: predictors and effects. *Higher Education,* 69(2), 257–273.

Nulty, D.D. (2008). The adequacy of response rates to online and paper surveys: what can be done? *Assessment & Evaluation in Higher Education, 33*(3), 301–314.

Pickford, R. (2016). Student engagement: body, mind and heart – a proposal for an embedded multi-dimensional student engagement framework. *Journal of Perspectives in Applied Academic Practice, 4*(2), pp. 25–32.

Research Institute for Tropical Medicine. (6 May 2020). *What is the new normal? New normal in our homes, in the workplace, and in schools.* http://ritm.gov.ph/new-normal-in-our-homes-in-the-workplace-and-in-schools/

Rovai, A.P. (2002). Development of an instrument to measure classroom community. *Internet and Higher Education, 5*(2002), 197–211

Speedtest. (September 2020). *Speedtest global index.* https://www.speedtest.net/global-index.

Vera, P.A.E. (2016). New media usage and its perceived effects on classroom communication and learning behavior. *The International Journal on Open and Distance e-Learning (IJODeL),* 2(2), 1–17.

Young, S., & Bruce, M.A. (2011). Classroom community and student engagement in online courses. *MERLOT Journal of Online Learning and Teaching, 7*(2), 219–230.

Appendix

Study Questionnaire

Part 1: Online Student Engagement*

Read each item carefully and choose the option that most closely indicates how you feel about the course or program. There are no correct or incorrect responses. There is no need to spend too much time on each item, but please respond to all of them.
1 = not at all characteristic of me
2 = not really characteristic of me
3 = moderately characteristic of me
4 = characteristic of me
5 = very characteristic of me

	1	2	3	4	5
1. Putting forth effort					
2. Staying up on the readings					
3. Looking over class notes between getting online to make sure I understand the material					
4. Being organized					
5. Taking good notes over readings, PowerPoints, or video lectures					
6. Listening/reading carefully					
7. Finding ways to make the course material relevant to my life					
8. Applying course material to my life					
9. Finding ways to make the course interesting to me					
10. Really desiring to learn the material					
11. Having fun in online chats, discussions, or via email with the instructor or other students					
12. Participating actively in small-group discussion forums					
13. Helping fellow students					
14. Getting a good grade					
15. Doing well on the tests/quizzes					
16. Engaging in conversations online (chat, discussions, email)					
17. Posting in the discussion forum regularly					
18. Getting to know other students in the class					

*** Note:** *Part 1 adapted from*— Dixson, M.D. (2015). Measuring student engagement in the online course: the online student engagement scale (OSE). *Online Learning Journal, 19* (4). https://files.eric.ed.gov/fulltext/EJ1079585.pdf

Part 2: Sense of Community**

Read each item carefully and choose the option that most closely indicates how you feel about the course or program. There are no correct or incorrect responses. There is no need to spend too much time on each item, but please respond to all of them.

SA = Strongly agree; A = Agree; N = Neutral; D = Disagree; SD = Strongly disagree

	SA	A	N	D	SD
1. I feel that students in this course care about each other					
2. I feel that I am encouraged to ask questions					
3. I feel connected to others in this course					
4. I feel that it is hard to get help when I have a question					
5. I do not feel a spirit of community					
6. I feel that I receive timely feedback					
7. I feel that this course is like a family					
8. I feel uneasy exposing gaps in my understanding					
9. I feel isolated in this course					
10. I feel reluctant to speak openly					
11. I trust others in this course					
12. I feel that this course results in only modest learning					
13. I feel that I can rely on others in this course					
14. I feel that other students do not help me learn					
15. I feel that members of this course depend on me					
16. I feel that I am given ample opportunities to learn					
17. I feel uncertain about others in this course					
18. I feel that my educational needs are not being met					
19. I feel confident that others will support me					
20. I feel that this course does not promote a desire to learn					

**** Note:** *Adapted from*— Rovai, A.P. (2002). Development of an instrument to measure classroom community. *Internet and Higher Education,* 5(2002), 197–211.

Part 3: Additional Leveling

It is definitely a difficult time for everyone. And I would like to acknowledge your willingness to participate here again. But I have a feeling that your answers may have been influenced by external factors. I would like to account for that here.

1 = major detrimental effect
2 = minor detrimental effect
3 = no effect
4 = minor beneficial effect
5 = major beneficial effect

	1	2	3	4	5
Do you feel that recent happenings, particularly the COVID-19 pandemic and natural calamities, have affected your engagement with your courses?					
How about your perception of community with your fellow students and your teachers?					

If you're willing to elaborate on your answers to the two previous questions, I'd be happy to read about it. Please feel free to do so here.

_____

Is there anything else you feel is relevant which I may have missed?

_____

Teaching Presence in K-12 Blended Learning Classes under the Alternative Delivery Mode

Juliet Aleta R. Villanueva

Assistant Professor, University of the Philippines Open University, Philippines, j.aleta.villanueva@upou.edu.ph

Abstract

Flexible learning options and blended learning programs continue to serve marginalized student populations under the Alternative Delivery Mode of the Philippine K-12 system. However, blended learning interactions in these programs remain hidden. This exploratory case study sought to capture the interactions and experiences in three blended learning classes through the elements of the Community of Inquiry (CoI) framework espoused by Garrison, Anderson, and Archer (2000). Qualitative data were gathered through interviews, focus group discussions, class observations, stored data, and field notes to investigate teacher and student blended learning interactions. An adapted version of the survey instrument based on the framework was also utilized to validate qualitative findings. Using content analysis and descriptive statistics, the study indicated strong teaching presence demonstrated through the roles and actions of K-12 teachers and students which lead to learning community building. Students manifested teaching presence through directing and regulating their learning. Areas for improvement which relate to teaching presence were also revealed, particularly in the communication and the timeliness of feedback, and online facilitation of discourse. This study justifies the CoI as a practical framework to understand and guide teaching and learning in K-12 blended learning programs. To highlight the role of teachers in learning community building, a CoI framework for the K-12 and a self-reflection tool for teachers are being proposed. Changes to the categories and indicators of the presences are recommended to further affirm the framework's applicability in the K-12 setting.

Keywords: *teaching presence, Community of Inquiry framework, K-12 blended learning, alternative delivery mode, e-learning Philippines*

Introduction

Within the K-12 education system of the Philippines, programs under the Alternative Delivery Mode (ADM) have been implemented to: (1) target potential school leavers; (2) minimize youth dropouts; and, (3) provide access to other students in unusual circumstances (DepEd Order No. 54 s.12, Phils). Case studies on ADM revealed that a limited number of schools become involved in genuine blended learning (BL) (Seameo-Innotech, 2015) where there has been a recent call for improvement of teacher's skills and pedagogies for self-directed learning (Seameo-Innotech, 2019) and BL engagement and assessment (Flor & Flor, 2017), and through the professional development of teachers on BL (Archambualt & Dalal, 2020; Hathaway & Mehdi, 2020; Tovine et al., 2019). The importance of instructor role and expertise, teacher presence, and teacher-learner interactions in BL have been highlighted in research (Ma et al., 2015; Hathaway & Mehdi, 2020; Richardson et al., 2015). These studies, however, were mostly done in higher education contexts abroad where BL has gained acceptability (Bonk & Graham, 2012). If K-12 BL programs are to thrive in contexts such as the Philippines where barriers and challenges to ICT integration exist (Aguinaldo, 2013; Kubota et al., 2018), these must draw from research-based practices and frameworks to ensure

sound pedagogies beyond the acquisition of ICT skills (Arinto, 2016). As such, this study examined BL interactions through the Community of Inquiry (CoI), a longstanding framework validated in higher education to examine educational experiences in computer-mediated instruction and online learning environments. Through an exploratory case study, this research applied the elements of the CoI, one of which is teaching presence. Investigated experiences, and outcomes of BL classes situated within programs under the ADM.

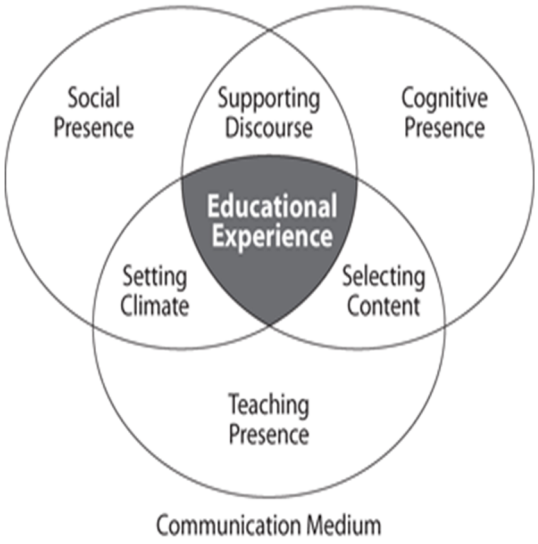
This article discusses findings and results in relation to the study's research sub-questions: "How is teaching presence manifested in the K-12 BL classes? In what ways do these interactions reveal learning communities as outcomes of BL?". It describes the manifestations of teaching presence and analyzes ways these indicate learning communities as outcomes of BL. Recommendations on future practice and research on K-12 BL grounded on the CoI are proposed given that in the Philippines, schools have shifted to remote learning and fully online learning during the pandemic. The next section discusses the literature on teaching presence.

Teaching Presence of the CoI framework

This study posits that K-12 BL experiences may be further understood through the CoI framework by Garrison et al. (2000). Social interactions and critical discourse are made possible within the CoI through the interplay of the three elements or presences deemed necessary for a fruitful online community of learning to take place (Arbaugh et al., 2010). These elements are teaching presence (TP), cognitive presence (CP), and social presence (SP) as seen in Figure 1. Within constructivist learning communities in higher education, varied instructor roles are fulfilled, and these are characterized and examined through the element of TP. TP is believed to play a vital role in maintaining the balance and function of the other elements of the framework in achieving desired learning outcomes (Garrison & Anderson, 2003; Garrison & Cleveland-Innes, 2005).

Figure 1

The Community of Inquiry framework



Note. From the "CoI Framework" by D. R. Garrison, T. Anderson, and W. Archer, 2000, (https://coi.athabascau.ca/coi-model/). In the public domain.

Under TP are categories and indicators validated in empirical studies that measure the quality of educational experiences and collaboration. These are seen in Table 1 below:

Table 1

Community of Inquiry: Categories and Indicators

Elements	Categories	Indicators
Teaching Presence	Design & Organization Facilitating Discourse Direct Instruction	• Setting Curriculum & Methods • Shaping Constructive Exchange • Focusing and Resolving Issues
Social Presence	Open Communication Group Cohesion Personal/Affective Expression	• Learning Climate/Risk-Free Expression • Group Identity/ Collaboration • Self-Projection/ Expressing Emotions
Cognitive Presence	Triggering Event Exploration Integration Resolution	• Sense of Puzzlement • Information Exchange • Connecting Ideas • Applying New Ideas

Note. Adapted from "Researching the community of inquiry framework: Review, issues, and future direction" by D.R. Garrison and J.B. Arbaugh, 2007, *Internet and Higher Education, 10*(3), p.159. (https://doi.org/10.1016/j.iheduc.2007.04.001). Copyright 2007. Adapted with permission from Elsevier.

TP is described as an amalgam of instructor roles in learning communities that must be fulfilled to ensure effective and successful learning. The increasing role of TP in the direction of cognitive and social processes within BL communities in higher education has been emphasized (Vaughan et al., 2013). Studies have shown TP as definitely having a positive influence on both these two presences, (Garrison et al., 2010; Szeto, 2015; Feng et al., 2017) to include student's sense of classroom community (Shea et al., 2006).

However, studies have questioned whether TP, with its categories and indicators and corresponding CoI survey items, sufficiently account for the distribution of teaching roles and actions which members of the learning community take on (Dempsey & Zhang, 2019; Shea et al., 2014). In particular, learning presence was proposed as an additional element (Shea et al., 2012) inclusive of student roles set apart from the teacher (Blaine, 2019) with behaviors considered as co-regulation and shared regulation (Hayes et al., 2015). Co-regulation is a supportive behavior from a skilled or capable member toward fellow learners in need, usually demonstrated through social interactions amidst working on tasks (Hadwin et al., 2011). However, Garrison (2017) asserted that within the CoI framework, the construct of TP was applicable to both teachers and students, especially within a constructivist learning community. What these studies in higher education emphasize is that the pedagogies coupled with the tools for learning determine to some extent the kind of TP manifested in these learning environments. This study intends to investigate manifestations of TP, including its interaction with the other presences within emerging BL programs to ascertain the framework's applicability at the K-12. The results will potentially inform the professional development of teachers who are currently experiencing the new normal of online and distance e-learning during this pandemic.

Methodology

A research methodology was undertaken which allowed for varied data collection from three BL classes, situated in three urban public schools with programs under the ADM and supervised by the City Schools Division Office of the Department of Education. These schools either offer an e-Learning Program or an Open High School program (OHSP). These BL classes were treated as one single case in an exploratory case study design. The findings uncovered facets of the BL programs based on data gathered from a sample size ranging from 24 to 40 students and five teachers as indicated in Table 2, from which descriptive statistics and content analysis were generated.

Table 2

Summary of Case Profile: BL Classes

BL Class Population	DepEd Program	Number of Student Participants Total N ≤ 40	Number of Teacher Participants Total N=5
One Grade 10 Class from School A (36 students)	OHSP in a public high school	N ≤ 7	1
One Grade 7 Class from School B (36 students)	e-Learning Program in a public high school	N ≤ 18	2
One Grade 10 Class from School C (29 students)	eLearning Program in a public science high school	N ≤ 15	2

Note. Data compiled by the researcher

Student focus group discussions (FGD) (N=8 groups, 29 students) and teacher interviews (N=5 teachers) were undertaken. Participants were asked open-ended questions to describe their interactions and experiences within their BL classes. To gain a general view of the presences as well as detailed descriptions, students were asked to complete the CoI Survey Part 1 (Likert type scale, N=40 students) adapted from the CoI Survey by Arbaugh et al. (2008) and the CoI Survey Part 2 (open-ended questions, N=24 students). A bilingual version of the survey was developed by the researcher for use among students who use Filipino or Tagalog and English languages in school to communicate and learn. Teacher interview questions were also aligned with the open-ended questions for students. In addition, three face-to-face classroom observations were completed to validate further the participant responses. The interpretation of stored data from virtual class interactions was also included, drawn from the school-administered Learning Management System and teacher or student-managed group chats over at FB Messenger.

The study involved a close examination of participant experiences through the coding protocols based on the categories and indicators of the CoI by Anderson et al. (2001) in prior research. These also guided the collection, analysis, and interpretation of varied data. Through constant comparison analysis, the study undertook a systematic process of coding to examine layers of meanings in the textual data and narratives (Leech & Onwuegbuzie, 2008) nested in the BL class interactions and which relate to the research questions.

Ethical Considerations

This article is based on the author's dissertation undertaken in accordance with the ethical standards and guidelines of the USQ Human Research Ethics Committee, with approval ID H18REA165. Permission to undertake the study was sought from the respective school district local government office and the school principals. Informed consent from all participants in the study was obtained.

Findings on Teaching Presence

Students across class groups have generally positive responses about the TP in their BL classes. This may be largely attributed to students experiencing their teachers as instructors responsible for subject content and learning activities. Students felt that the teacher participants in the study demonstrated teaching skill and support through the detailed learning activities. The online posting of complete lessons with the deadlines provided structure and focus to their work, as one Grade 7 student indicated "we learn to make sure that all lessons asked of us get done, either individually or in groups." Students mentioned that they can approach their teachers anytime for questions or clarifications, even to help resolve issues, as a Grade 10 student stated that "we have an open forum during homeroom period time if there are conflicts which need to be fixed immediately."

TP was also interpreted by students through the teacher's use of technology in relation to their subject-related concerns on communication and time management. For example, a few Grade 7 students from School B remarked that at times they felt confused "when there will be classes in school or not," despite announcements being posted on the school's website. Some students in School C also noticed that "there can be miscommunications with teachers because sometimes, we have a hard time accessing the platform due to bugs and updates". These Grade 10 students sensed that not all teachers seem to be proficient with technology and thus were perceived as less present when online. A few students noted that some teachers did not seem to be trained in the use of the LMS or know how to use other applications for educational purposes, comparing them to the active teachers who were participants in the study.

Results of the CoI Survey Part 1 (N=40 students), further lend support to the above manifestations of TP given the significantly high scores across the TP items. Mean ratings were generated through SPSS to determine whether the survey results supported the findings gathered through student responses to the FGD. Table 3 presents mean ratings across all items of TP. All items received a maximum rating of 5 with varied minimum ratings ranging from 1 to 3 (strongly disagree to neutral or no opinion). The results indicated most ratings as skewed left, represented by the standard deviation.

Table 3

Descriptive Statistics of TP Items from the CoI Survey Part 1

TP Category	TP Survey Item	Mean	Std. Deviation
Design and Organization	TP1 clearly communicated important subject topics	4.18	0.931
	TP2 clearly communicated important subject goals	4.18	0.874
	TP3 provided clear instructions	4.15	0.700
	TP4 clearly communicated important due dates	4.25	0.899
Facilitating Discourse	TP5 helpful in identifying areas of disagreement	3.95	0.815
	TP6 guiding the class towards understanding topics	4.30	0.823
	TP7 helped keep the class engaged	4.03	0.800
	TP8 helped keep the class on task	4.10	0.744
	TP9 encouraged the class to explore new ideas	3.85	0.864
	TP10 reinforced the development of a sense of community	4.02	1.025
Direct Instruction	TP11 helped to focus the discussion	4.10	0.672
	TP12 provided feedback that helped understand strengths	3.90	0.955
	TP13 provided feedback in a timely fashion	3.57	0.958

Note. SPSS Data Analysis collated by the researcher

Items TP1-TP4 under the Design and Organization category received relatively even scores. Items pertaining to Facilitating Discourse in the CoI Survey Part 1 likewise showed positive results, having a mean average of 4.04 and with TP6 garnering the highest mean rating of 4.30 among all TP items. This item particularly describes ways teachers manifest facilitation as indicated by the survey. Item TP10, 'Teacher actions reinforced the development of a sense of community among students in class' received positive ratings for 30 out of 40 responses (combined agree and strongly disagree) but with eight responses indicated as neutral or no opinion. The neutral/ no opinion ratings possibly meant students either did not understand the item, had no basis to decide or may be too polite to give a negative rating. Also, the term "sense of community" could have been difficult to concretize. For the category of Direct Instruction, the students offered positive ratings to the quality of feedback as seen in Item TP12. Whereas Item TP13 pertaining to the timely feedback received the lowest mean rating at 3.57 among all the survey items. Hence, the timeliness of feedback may be an area of concern for some students.

The researcher noticed that TP which arose from roles or actions coming from students were rarely reflected through the TP items of the CoI survey. Most items under TP were framed from the point of view of the student rating the presence of their teachers and not necessarily themselves as facilitators or as peer-teachers. It was observed that in the CoI Survey, 12 out of 13 items started as "The teacher", which was listed as the most frequent word used in the instrument. These show TP as roles actively taken by the teacher which are to be rated by students. As such, the study found it valuable to examine further manifestations of TP through class observations and virtual stored data made available, as described in the next paragraphs.

Data was gathered through face-to-face class observations with three subject teachers, one in each school, through an observation template developed by the researcher. Along with the field

notes and virtual classroom stored data, these served to triangulate with responses collected through the instruments identified. The TP manifested by teachers was evident in face-to-face class observations as indicated in Table 4, which reinforces the findings from the descriptive statistics presented early in this section. More so, support for student TP emerged as unique findings in this study undertaken among K-12 students.

Table 4

Coding Summary for Face-to-Face Class Observations and Virtual Classroom Stored Data

Teaching Presence Categories	Coding Frequency from Face-to-Face Classes	Coding Frequency from Stored Data	Coding Frequency of Student TP
Design and Organization	17	14	4
Direct Instruction	18	10	2
Facilitating Discourse	35	2	5

Note. Analysis from NVivo files collated by the researcher

As seen in Table 4 above, Facilitating Discourse is most frequently demonstrated by teachers during face-to-face sessions. The coding count for facilitating discourse is 35 for face-to-face sessions while that of online classes is two. The coding frequency revealed indicators of facilitation through which students perceive TP and these are: setting the climate for learning, drawing participants and prompting discussion, acknowledging, encouragingsg, reinforcing student contributions, and seeking to reach consensus and understanding.

The other categories of TP received less than half the number of frequencies but were spread evenly across direct instruction and design and organization. All indicators of TP across the two categories were found to be present, with all categories indicating TP as demonstrated by students. These are: utilizing media effectively (Design and Organization), confirming understanding through assessment and explanatory feedback (Direct Instruction).

Within the category of Design and Organization and Facilitating Discourse are specific indicators of setting curriculum, methods, and shaping constructive exchange. Data from both teachers and students described how this transpired in their interactions. The ways students searched and selected additional information to help themselves learn have also been described. Moreover, students and teachers mentioned terms such as group work, group chats, "groupings" or "working in their squads" while describing cooperative learning where ongoing discussions happened. These were either planned by teachers when meeting face-to-face or naturally executed by students when online. Thus, these allude to the interaction of TP with SP and CP.

Thus far, the findings presented in this section showed evidence of TP manifested as roles and behaviors primarily carried out by the teachers. Overall, these support teacher participant descriptions of their actions to engage learning and participation within their BL classes. Interestingly, findings also surfaced TP as driven by students. This was reported to take place during online group work and collaborative learning. A Grade 10 student revealed, "when one sees a classmate not being able to understand, another classmate will teach." Findings thus far point to a possible interaction of TP with the other elements of the CoI at the K-12 setting. The next section elaborates on the analysis of these findings.

The Manifestations of Teaching Presence in K-12 BL Classes

This study argued that the manifestations of TP highlight the important roles of both teachers and students in their BL experiences. Overall, findings on manifestations of TP among K-12 teachers and students aligned with research on TP in higher education. Studies have looked deeply into instructor roles within higher education blended and online learning communities (Sheridan & Kelly, 2010). The caring and support received by students in this study affirmed the student support processes that are provided by tutors in higher education (Feng et al., 2017). This is also consistent with the indicators of rapport in which distance education teachers find valuable to implement while working with high school students (Murphy & Rodríguez-Manzanares, 2012). In this K-12 study, the fulfillment of these roles has been manifested across the TP categories and through its interaction with SP and CP as discussed in the next sections.

Design and Organization

Within the K-12 setting, the responsibility for the design and organization of blended learning is the remit of the teachers. Teachers in the study clearly see this as their role, which students also expect of them. Design of instruction was observed to be of value among higher education students, mainly because it contributed to student satisfaction in blended and online learning environments (Shea et al., 2003; Wise et al., 2004). Setting curriculum, methods, and parameters as indicators of Design and Organization, were observed consistently in online and face-to-face sessions. This was mostly manifested by teachers with consistent results across all schools. For students, TP meant that they were able to rely on their teachers to provide structure to their daily lessons, tasks, and targets.

Facilitating Discourse

TP through facilitating discourse is meant to engage interaction, dialogue, and thinking among community members in higher education research. These are grounded on values of respect, trust, and equality (Liu et al., 2007; Vesely et al., 2007; Zhao et al.,2012). This category was manifested quite consistently whether online or face-to-face in this study, hence was found to be a strength of the teacher participants, most of whom were language teachers with additional responsibilities as homeroom advisers.

Findings showed how the teachers of School A and School C maximized the FB Messenger for language learning. To guide student discussion when online, the English teacher posted polls and questions on controversial issues or current events. A group of Grade 10 students appreciated being given the time to compose their thoughts before sharing or taking note of others' posts before responding, stating that "we also learn how to write, learn to speak in English even if our grammar is incorrect; we learn from the corrections and we learn it for our own sake, even if it's hard." Thus, students sensed they acquired and developed English language skills through the teacher's shaping of constructive exchange in their BL classes.

Hence, facilitating discourse as manifested at the K-12 level means that teachers explicitly communicate ways to make students comfortable with self-expression. These, in turn, foster interaction which demonstrates that their ideas and responses are welcomed by both peers and teachers (Lewis & Abdul-Hamid, 2006; Villanueva, 2013). Teachers and students alike have been found to facilitate discourse by prompting student contributions.

Direct Instruction

Focusing and resolving issues as an indicator of direct instruction was evident but mostly during face-to-face class sessions. Resolving issues related to conflict and student behavior remain to be delegated to the teacher as relayed by both students and teachers of Schools A and B. Through homeroom teaching responsibilities, teachers asserted their presence to both parents and students. Teachers attested to contacting parents of selected students for specific academic and student life concerns; also taking time to provide feedback during parent-teacher conferences. Students viewed these as part of the guidance they receive from their teachers. A possible explanation for this is the established role of supervising adults in the K-12 system, more so, in the Philippine public-school setting because Filipino students are expected to respect their elders. Accepting the authority of the teacher and supervising adults to resolve such matters is deemed to be a sign of respect, reciprocity, or compliance to rules. These qualities characterize learning communities in higher education research (Brown, 2001; Reilly, 2014; Vesely et al., 2007) where members demonstrate trust and mutual respect as important ingredients in community development and maintenance (Peck, 2010).

Interactions of TP with SP and CP

The study highlighted the teaching behaviors of online instructors when it comes to supporting adolescent learners, some of whom have learning difficulties that contribute positively to the learning environment by being caring and receptive as discussed by Ma et al. (2015). In this study, teachers of the OHSP provide support and guidance which was likewise observed by Velasquez et al. (2013). The homeroom teachers in this study were found to manifest TP through immediacy behaviors, especially with the choice of using FB Messenger. However, immediacy behaviors were observed as forms of SP in higher education settings which are aimed at closing the transactional distance among instructors and their students (Arbaugh, 2001; Garrison et al., 1999). In this study, immediacy behaviors took the form of private messages as evidence of teachers intentionally getting connected with students in need of support, to offer remedial sessions or extended deadlines to those students who need it due to learning difficulties. These are indicative of the interaction of TP and SP, an area this study was able to reveal in the context of K-12 teachers and students.

Co-regulation is an area of contention in CoI research (Garrison, 2017; Garrison & Akyol, 2013), defined by Hadwin et al. (2011) as "consisting of emergent interactions which temporarily mediate regulatory work (strategies, evaluating, goal setting, evaluation, and motivation)" (p.68–69). This study affirmed that co-regulation, as a manifestation of TP, is meant to direct members of the learning community towards attaining learning goals. In the case of School B, class observations revealed how selected students manifested resolving work or task-related issues while engaged in cooperative learning or group work. The same was indicated by School C students who often engaged in small-group collaborative work. Without having the need for the teacher to facilitate nor moderate online communications by FB Messenger, the Grade 10 students managed to settle their differences, concerns, and other issues in order to get needed work accomplished. These online collaborations help themselves and their peers as a way to attain shared goals of learning, leading to a sense of community felt with each other (Rovai & Jordan, 2004) indicative of learning communities. This affirms the correlation of collaborative learning and a sense of community at the K-12 which have been established in recent higher education research by Chatterjee and Correia (2020).

Within a community of inquiry, TP was revealed through the distribution of teaching responsibilities among learning community members, and thus not solely with the instructor (Garrison, 2017). When learning with peers, the TP was demonstrated as peer-facilitation of cognitive presence which according to Chen et al. (2019) includes providing information, asking factual and explanatory questions, giving clarifications, and using social cues. In this study, TP was fulfilled by students and this meant working independently while interacting with content when online. When placed in a position to navigate their learning, self-directed students take responsibility for the monitoring and management of learning tasks and processes (Garrison, 1997; Pilling-Cormick & Garrison, 2007). In this study, students managed their tasks and facilitated their learning in the process of understanding content delivered online. These concrete actions likewise indicated a form of self-direction. Through self-direction, learners demonstrate psychological control of their learning as they exercise their free will to learn (Jézégou, 2012).

Learning Community Building through Teaching Presence

Specific manifestations of TP by K-12 teachers and learners in this study indicated processes of learning community building found in higher education research. These processes pertain to the establishment of boundaries, rules and guiding principles (Palloff & Pratt, 2005; Vesely et al., 2007) grounded on good communication (Peck, 2010) and equality (Manalili, 2013). However, among K-12 learners, actions are observed to be more implicit, meaning these are closely tied with a shared goal of having a group output while keeping harmonious ties and communication with peers. The timely communications are welcomed by students with shared values for accountability, time management, responsibility, and skills improvement through outputs and timelines.

This study indicated the importance of scaffolds such as timeliness of feedback and other communications with K-12 students who need clarity and consistency to carry out expected work. Students felt that this was part of creating the structure that they needed to help themselves manage their time or regulate their learning as members of blended and online learning communities (Hayes et al., 2015). Dialogue and communication are also of the utmost importance among learning community members (Reilly, 2014) manifested through the communication of direct feedback and assessment and are likened to instructor immediacy behaviors which higher education students find important (Sheridan & Kelly, 2010).

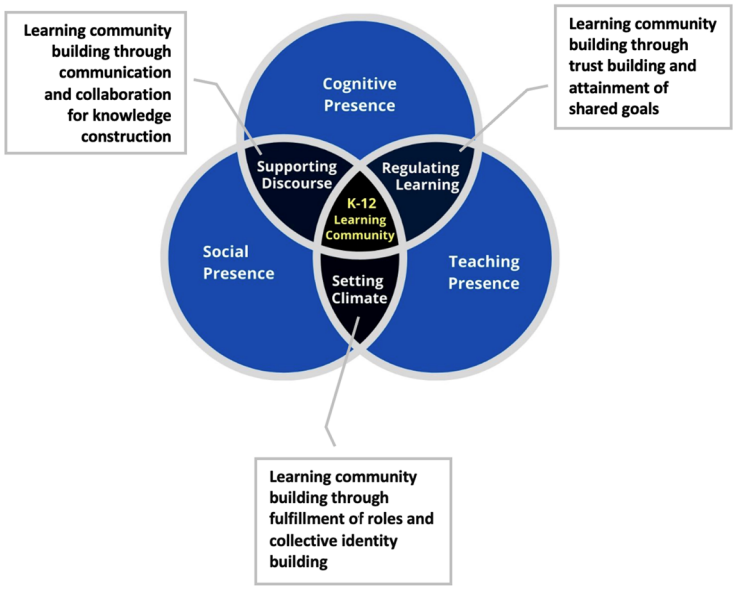
In higher education research into TP, Shea (2006) found that instructors were directly responsible for building a sense of community through indicators of facilitation and direct instruction. Teachers in this study however expressed that the cooperative and collaborative learning strategies were designed to parallel their face-to-face class interactions. Whether these were intended to explicitly build a learning community was not verbalized. In this sense, teachers may still be unaware of their potential role in learning community building through the manifestations of TP in different ways. Hence, the importance of immediacy behaviors, clear communications, student support, learning community building, and other manifestations of TP that students find important serve as inputs for the professional development of teachers towards the creation of quality TP and learning community building.

Thus far, this article affirmed prior recommendations in research for the professional development of teachers on BL course design, pedagogies, and use of technology (Deutsch, 2010; Jokinen & Mikkonen, 2013). More important is the application of the CoI at the K-12 to frame blended learning community building, teaching practices, and professional development. To further guide the development of K-12 blended learning communities, this study proposes this framework in

Figure 2. Specific to contexts where BL and other flexible learning options are emerging in settings where constructivist teaching has not been quite explicit, or where traditional teaching remains as a dominant practice, this study suggests the CoI framework of the K-12 Learning Community. The said framework is foreseen to guide BL delivery and instruction, not only in terms of academic learning targets but also to highlight BL as an experience of learning community building among K-12 teachers and students.

Figure 2

The CoI Framework for K-12 Learning Community Building by Villanueva (2020)



Note. Adapted from the "CoI Framework" by D. R. Garrison, T. Anderson, and W. Archer, 2000, (https://coi.athabascau.ca/coi-model/). In the public domain.

With the above, changes to the categories and indicators of the CoI (see Appendix A) are also suggested. For the element of TP, this study proposes an additional category referred to as Self-direction and with the corresponding indicators, monitoring/knowledge of cognition, and strategy use. With this proposed modification, suggested items for inclusion in the CoI survey are presented. This study suggests that items from the Shared Metacognition Questionnaire of Garrison and Akyol (2015) be accommodated within the CoI survey instrument for use among K-12 students, examples of which are displayed in Table 5:

Table 5

Additional CoI Survey Items under the Proposed TP category: Self-direction

Items added to the K-12 CoI Survey from the Shared Metacognition Questionnaire by Garrison and Akyol (2015)	**Suggested Indicators** Shea et al. (2012) and Nota et al. (2004)
I am aware of my existing knowledge.	Knowledge of cognition
I assess my understanding.	Monitoring of cognition
I make judgments of the difficulty of the problem.	Strategy use
I change my strategy when I need to.	Strategy use

Note. Adapted from "Investigating Experiences and Outcomes of K-12 Blended Learning Classes through the Community of Inquiry Framework" (p.268), by J.A.R. Villanueva, 2020 (https://eprints.usq.edu.au/40350/).

These proposed modifications of the TP items are based on findings that correspond to the Shared Metacognition construct discussed by Garrison and Akyol (2015) and prior research on self-direction by Garrison (1997). The corresponding indicators for TP in Table 5 are from the learning presence construct proposed by Shea et al. (2012) and the components of self-regulation as reported by Nota et al. (2004). Along with these are modifications to the other CoI categories, indicators, and survey items based on the studies by Redmond (2014) on reflection and by Lowenthal and Dunlap (2014) on the social presence (see Appendix A and B). Hence, these suggestions are still consistent with the framework's three presences validated in higher education research which this study has found to be applicable at the K-12 setting.

Moreover, this study seeks to contribute another practical application of the CoI framework through a proposed CoI Self Reflection Tool for K-12 Teachers. The next section justifies this further.

A Proposed CoI Self-reflection Tool for Teachers

This study found that learning communities were outcomes of the BL interactions. However, whether teachers see themselves and their experiences as indicative of them being part of the learning community was not explicitly revealed. The research only applied the CoI survey instrument to the students as an added measure to support the findings. The survey was not designed for teachers to use as a mirror for their contribution to the learning community-building process. Though the dynamics of teacher-student relationships have a bearing on this, this study finds sense in proposing the CoI survey instrument as a basis for a K-12 CoI Self-Reflection Tool for teachers (see Appendix B). The proposed tool also includes a section of open-ended questions, emphasizing the role of the teachers as partakers of the learning community and active members of the teaching team. In-service teacher training activities can potentially accommodate the use of this tool for self and collaborative reflection on their remote, blended, or fully online class teaching experiences during this pandemic to engage action planning for the development of teaching presence and learning community building. This is justified capitalizing on this study's practical contribution through a recommended CoI framework for K-12 learning community building depicted in Figure 2, applicable in contexts where BL and other flexible learning options are emerging as viable solutions and with conditions supportive of these.

Conclusion

This article sought to discuss findings on the ways teachers and students manifested TP in their BL classes. The discussion brought to light distinct manifestations of TP in the categories of design and organization and for facilitating discourse. It provided evidence of the roles and actions K-12 teachers and students perform, manifested as TP which lead to learning community building through their BL interactions. Specifically, these are through establishing guidelines or ground rules, boundaries, and shared values which are indicative of learning communities in higher education online learning (Brown, 2001; Shea, 2006; Vesely et al., 2007). Additionally, this article revealed manifestations of TP by students in the K-12 setting within indicators of facilitating discourse and direct instruction. These indicated a shift in the roles for managing and regulating learning as performed by students when online. This was evident because students were given more control of their own learning and in supporting others.

Areas for improvement related to TP were also discussed, particularly in the communication and the timeliness of feedback, and online facilitation of discourse afforded by the choice of media

and use of technology. The study affirmed the role of TP in learning community building reported in higher education research, which is also found to be valid among K-12 teachers and students. Likewise, it revealed that through the CoI framework, TP may be further understood in the context of K-12 learning, namely strategies for building trust, mutual respect, and self-regulation, aspects crucial to adolescent learners.

Recommendations

This research applied the CoI, a Western-based framework, but with a bilingual survey instrument, an initial step for future studies to ascertain the wider application of the CoI in the Philippine K-12 system and its suitability in Southeast Asian culture and context. More importantly, the study provided evidence of the role of TP within the CoI framework and also in relation to the other presences leading to learning community building as outcomes of K-12 BL.

While the study found the TP categories and indicators as valid in the context of the K-12, it also revealed limitations in the CoI Survey instrument as a measure of TP. Suggested modifications to the TP categories and indicators with corresponding survey items for the K-12 have been proposed and further research must be undertaken in order to reflect TP as both fulfilled by teachers and students. With these modifications is a call to reconsider changes in the categories and indicators of TP and that of SP and CP which this study also included. These changes will allow for the CoI Framework for K-12 Learning Community Building suggested in this study to be utilized in contexts where BL program models are still emerging and where learning community building may be introduced as an essential part of BL pedagogy and practice.

The CoI framework as a focal point to guide teacher training on course design, pedagogy, and learning community building has been highlighted as a concrete contribution of this study. The CoI Self Reflection Tool for Teachers has been proposed for inclusion in teacher preparation endeavors for BL in schools. Possibilities for the use of this CoI tool are being proposed for use in the school-based professional development of teachers, whether in BL environments or technology-enabled classrooms, and likewise in preparation for a school-wide BL implementation.

Acknowledgements

This article is based on the author's dissertation made possible through the research supervision of Dr. Petrea Redmond and Dr. Linda Galligan of the University of Southern Queensland (USQ), the support of the USQ Research and Writing League, and a doctoral study grant under the Faculty, REPS, and Administrative Staff Development Program of the Office of the Vice President for Academic Affairs, University of the Philippines-System, in cooperation with the University of the Philippines Open University Office of the Vice-Chancellor for Academic Affairs.

References

Aguinaldo, B. E. (2013). Implementing blended learning in an impoverished academic institution using a bricolage approach model. *International Journal of In-formation and Education Technology, 3*(2), 211–216. https://doi.org/10.7763/IJIET.2013.V3.266

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks, 5*(2), 1–17. https://doi.org/10.24059/olj.v5i2.1875

Arbaugh, J. B., Bangert, A., & Cleveland-Innes, M. (2010). Subject matter effects and the community of inquiry (COI) framework: An exploratory study. *The Internet and Higher Education, 13*(1), 37–44. https://doi.org/10.1016/j.iheduc.2009.10.006

Arbaugh, J.B., Cleveland-Innes, M., Diaz, S.R., Garrison, D.R., Ice, P., Richardson, & Swan, K.P. (2008). Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample. *The Internet and Higher Education, 11*(3–4), 133–136. https://doi.org/10.1016/j.iheduc.2008.06.003

Archambault, L., & Dalal, M. (2020). *Exploring blended learning perceptions among international secondary educators.* Proceedings of Society for Information Technology & Teacher Education International Conference, 664–669. https://www.learntechlib.org/primary/p/215809/

Arinto, P. B. (2016). Issues and challenges in open and distance e-learning: Perspectives from the Philippines. *The International Review of Research in Open and Distributed Learning, 17*(2), 162–180. https://doi.org/10.19173/irrodl.v17i2.1913

Blaine, A. (2019). Interaction and presence in the virtual classroom: An analysis of the perceptions of students and teachers in online and blended advanced placement courses. *Computers & Education*,132, 31–43. https://doi.org/10.1016/j.compedu.2019.01.004

Bonk, C. J., & Graham, C. R. (2012). *The handbook of blended learning: Global perspectives, local designs.* San Francisco, CA: John Wiley & Sons.

Brown, R. E. (2001). The process of community-building in distance learning classes. *Journal of Asynchronous Learning Networks, 5*(2), 18-35. https://doi.org/10.24059/olj.v5i2.1876

Chatterjee, R., & Correia, A. P. (2020). Online students' attitudes toward collaborative learning and sense of community. *American Journal of Distance Education, 34*(1), 53–68. https://doi.org/10.1080/08923647.2020.1703479

Chen, Y., Lei, J., & Cheng, J. (2019). What if online students take on the responsibility: students' cognitive presence and peer facilitation techniques. *Online Learning, 23*(1), 37-61. https://doi.org/10.24059/olj.v23i1.1348

Choi, B. (2019, March 18). *Student-generated discussion activity: A lever for building a community of learners in an asynchronous online learning.* [Paper presentation]. Society of Information Technology and Teacher Education International Conference, Las Vegas, NV. https://www.learntechlib.org/primary/p/207672/

Dempsey, P. R., & Zhang, J. (2019). Re-examining the construct validity and causal relationships of teaching, cognitive, and social presence in community of inquiry framework. *Online Learning, 23*(1), 62–79. https://doi.org/10.24059/olj.v23i1.1419

Deutsch, N. (2010). *Instructor experiences with implementing technology in blended learning courses (34291550).* [Doctoral dissertation, University of Phoenix]. ProQuest UMI Dissertations Publishing.

Feng, X., Xie, J., & Liu, Y. (2017). Using the community of inquiry framework to scaffold online tutoring. *The International Review of Research in Open and Distributed Learning, 18*(2), 162-188. https://doi.org/10.19173/irrodl.v18i2.2362

Flor, B. G., & Flor, L. C. G. (2017). Authentic assessment construction in online education: The case of the open high school program of the Philippines. In N. Ostashewski, J. Howell, & M. Cleveland-Innes (Eds.), *Optimizing K-12 education through online and blended learning* (pp. 225–239). IGI Global https://doi.org/10.4018/978-1-5225-0507-5.ch012

Garrison, D. R. (1997). Self-directed learning: Toward a comprehensive model. *Adult Education Quarterly, 48*(1), 18–33. https://doi.org/10.1177/074171369704800103

Garrison, D. R. (2017). *E-learning in the twenty-first century: A community of inquiry framework for research and practice*. Routledge.

Garrison, D. R., & Akyol, Z. (2013). The community of inquiry theoretical framework. In *Handbook of distance education* (pp. 122–138). London: Routledge.

Garrison, D.R., & Akyol, Z. (2015a). Toward the development of a metacognition construct for communities of inquiry. (Developing a shared metacognition construct and instrument: Conceptualizing and assessing metacognition in a community of inquiry). *The Internet and Higher Education,* 24, 66–71. https://doi.org/10.1016/j.iheduc.2014.10.001

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education, 15*(1), 7–23. https://doi.org/10.1080/08923640109527071

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2/3), 87–105. http://cde.athabascau.ca/coi_site/documents/Garrison_Anderson_Archer_Critical_Inquiry_model.pdf

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6

Garrison, D.R., Anderston, T., & Archer, W. (2000). *CoI Framework.* https://coi. athabascau.ca/coi-model/

Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education, 10*(3), 157–172. https://doi.org/10.1016/j.iheduc.2007.04.001

Garrison, D. R., & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: Interaction is not enough. *The American Journal of Distance Education, 19*(3), 133–148. https://doi.org/10.1207/s15389286ajde1903_2

Hadwin, A., Järvelä, S., & Miller, M. (2011). Self-regulated, co-regulated, and socially shared regulation of learning. In D. H. Schunk & B. Zimmerman (Eds.), *Handbook of self-regulation of learning and performance* (pp. 65–84). New York, NY: Routledge.

Hathaway, D., & Mehdi, T. (2020, April). Exploring teachers' perceptions of quality K-12 blended and online learning. In D. Schmidt-Crawford (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 677–684). https://www.learntechlib.org/primary/p/215812/

Hayes, S., Uzuner-Smith, S., & Shea, P. (2015). Expanding learning presence to account for the direction of regulative intent: Self-, co-and shared regulation in online learning. *Online Learning, 19*(3), 1–19. https://doi.org/10.24059/olj.v19i3.530

Jézégou, A. (2012). Towards a distance learning environment that supports learner's self-direction. The model of presence. *International Journal of Self-directed Learning, 9*(1), 11–23. https://edutice.archives-ouvertes.fr/edutice-01819742

Jokinen, P., & Mikkonen, I. (2013). Teachers' experiences of teaching in a blended learning environment. *Nurse Education in Practice, 13*(6), 524–528. https://doi.org/10.1016/j.nepr.2013.03.014

Kubota, K., Yamamoto, R., & Morioka, H. (2018). *Promoting ICT education in developing countries: Case study in the Philippines.* Paper presented at the International Conference for Media in Education, Busan, Republic of Korea. https://www.researchgate.net/publication/228655099_Promoting_ICT_education_in_developing_countries_Case_Study_in_the_Philippine

Leech, N. L., & Onwuegbuzie, A. J. (2008). Qualitative data analysis: A compendium of techniques and a framework for selection for school psychology research and beyond. *School Psychology Quarterly, 23*(4), 587–604. https://doi.org/10.1037/1045-3830.23.4.587

Lewis, C. C., & Abdul-Hamid, H. (2006). Implementing effective online teaching practices: Voices of exemplary faculty. *Innovative Higher Education, 31*(2), 83–98. https://doi.org/10.1007/s10755-006-9010-z

Liu, S., Gomez, J., Khan, B., & Yen, C.-J. (2007). Toward a learner-oriented community college online course dropout framework. *International Journal on E-Learning, 6*(4), 519–542. https://www.learntechlib.org/primary/p/21789/

Lowenthal, P. R., & Dunlap, J. C. (2014). Problems measuring social presence in a community of inquiry. *E-Learning and Digital Media, 11*(1), 19–30. https://doi.org/10.2304/elea.2014.11.1.19

Ma, J., Han, X., Yang, J., & Cheng, J. (2015). Examining the necessary condition for engagement in an online learning environment based on learning analytics approach: The role of the instructor. *The Internet and Higher Education,* 24, 26–34. https://doi.org/10.1016/j.iheduc.2014.09.005

Manalili, A. G. (2013). Ang proseso ng pag-oorganisa ng pamayanan na mula sa tao para sa tao. *Daluyan: Journal ng Wikang Filipino, 19*(1), 64–97. https://journals.upd.edu.ph/index.php/djwf/article/view/3675/3383

Murphy, E., & Rodríguez-Manzanares, M. A. (2012). Rapport in distance education. *The International Review of Research in Open and Distributed Learning, 13*(1), 167–190. https://doi.org/10.19173/irrodl.v13i1.1057

Nota, L., Soresi, S., & Zimmerman, B. J. (2004). Self-regulation and academic achievement and resilience: A longitudinal study. *International Journal of Educational Research, 41*(3), 198–215. https://doi.org/10.1016/j.ijer.2005.07.001

Palloff, R., & Pratt, K. (2005, April). *Online learning communities revisited.* [Paper presentation] The 21st Annual Conference on Distance Teaching and Learning, Madison, WI. http://www.uwex.edu/disted/conference/Resource_library/proceedings/05_1801.pdf

Peck, M. S. (2010). *The different drum: Community making and peace*. Simon and Schuster.

Pilling-Cormick, J., & Garrison, D. R. (2007). Self-directed and self-regulated learning: Conceptual links. *Canadian Journal of University Continuing Education, 33*(2), 13–33. https://doi.org/10.21225/D5S01M

Redmond, P. (2014). Reflection as an indicator of cognitive presence. *E-Learning and Digital Media, 11*(1), 46–58. https://doi.org/10.2304/elea.2014.11.1.46

Reilly, C. (2014, October 27). *Online teaching as the art of hosting: Designing social interactions to promote engagement*. [Paper presentation]. E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education, New Orleans, LA. https://www.learntechlib.org/p/148876/

Richardson, J., Koehler, A. A., Besser, E. D., Caskurlu, S., Lim, J., & Mueller, C. M. (2015). Conceptualizing and investigating instructor presence in online learning environments. *The International Review of Research in Open and Distributed Learning, 16*(3), 256–297. https://doi.org/10.19173/irrodl.v16i3.2123

Rovai, A. P., & Jordan, H. (2004). Blended learning and sense of community: A comparative analysis with traditional and fully online graduate courses. *The International Review of Research in Open and Distributed Learning, 5*(2), 1–13. https://doi.org/10.19173/irrodl.v5i2.192

Southeast Asian Ministers of Education Organization and the Regional Center for Educational Innovation and Technology (SEAMEO-INNOTECH) (2015). *Evaluation of the open high school program in the Philippines*. Diliman, Quezon City. http://www.seameo-innotech.org/wp-content/uploads/2016/01/OHSP-Final-2015-December-21.pdf

Southeast Asian Ministers of Education Organization and the Regional Center for Educational Innovation and Technology (SEAMEO-INNOTECH) (2019). *Re-examining the responsiveness of secondary level alternative delivery modes: Case studies of selected open high school program (OHSP) schools in the Philippines serving marginalized learners.* https://www.seameo-innotech.org/portfolio_page/re-examining-the-responsiveness-of-secondary-level-alternative-delivery-modes/

Shea, P. (2006). A study of students' sense of learning community in online environments. *Journal of Asynchronous Learning Networks, 10*(1), 35–44. https://doi.org/10.24059/olj.v10i1.1774

Shea, P., Pickett, A. M., & Pelz, W. E. (2003). A follow-up investigation of "teaching presence" in the SUNY learning network. *Journal of Asynchronous Learning Networks, 7*(2), 61–80. https://doi.org/10.24059/olj.v7i2.1856

Shea, P., Hayes, S., Smith, S. U., Vickers, J., Bidjerano, T., Pickett, A., Gozza-Cohen, M., Wilde, J., and Jian, S. (2012). Learning presence: Additional research on a new conceptual element within the community of inquiry (COI) framework. *The Internet and Higher Education, 15*(2), 89–95. https://doi.org/10.1016/j.iheduc.2011.08.002

Shea, P., Hayes, S., Uzuner-Smith, S., Gozza-Cohen, M., Vickers, J., & Bidjerano, T. (2014). Reconceptualizing the community of inquiry framework: An exploratory analysis. *The Internet and Higher Education*, 23, 9–17. https://doi.org/10.1016/j.iheduc.2014.05.002

Stenbom, S. (2018). A systematic review of the community of inquiry survey. *The Internet and Higher Education*, 39, 22–32. https://doi.org/10.1016/j.iheduc.2018.06.001

Szeto, E. (2015). Community of inquiry as an instructional approach: What effects of teaching, social and cognitive presences are there in blended synchronous learning and teaching? *Computers & Education*, 81, 191–201. https://doi.org/10.1016/j.compedu.2014.10.015

The CoI Survey (2008). *The Community of Inquiry.* https://coi.athabascau.ca/coi-model/coi-survey/

Tovine, G., Fleetwood, A., Shepherd, A., Tapoler, C. J., Hartshorne, R., & Pesce, R. (2019). Investigating student perceptions and the effectiveness of K-12 blend-ed learning communities. In T. L. Heafner, R. Hartshorne, & R. Thripp (Eds.), *Handbook of research on emerging practices and methods for K-12 online and blended learning* (500–522). Hershey, PA: IGI Global.

Vaughan, N. D., Cleveland-Innes, M., & Garrison, D. R. (2013). *Teaching in blended learning environments: Creating and sustaining communities of inquiry*. Athabasca University Press.

Velasquez, A., Graham, C. R., & West, R. E. (2013). An investigation of practices and tools that enabled technology-mediated caring in an online high school. *The International Review of Research in Open and Distributed Learning, 14*(5), 277–299. https://doi.org/10.19173/irrodl.v14i5.1465

Vesely, P., Bloom, L., & Sherlock, J. (2007). Key elements of building online community: Comparing faculty and student perceptions. *Journal of Online Learning and Teaching, 3*(3), 234–246. https://jolt.merlot.org/vol3no3/vesely.pdf

Villanueva, J.A.R. (2013). Teaching presence of selected exemplary ESL teachers at WizIQ: A preliminary study. In N. Deutsch (Ed.), *Connecting Online for Instruction and Learning: International Perspectives* (213–238). Lexington, KY: CreateSpace Independent Publishing Platform.

Villanueva, J.A.R. (2020). *Investigating experiences and outcomes of K-12 blended learning classes through the Community of Inquiry framework* [Doctoral dissertation, University of Southern Queensland]. USQ ePrints. https://eprints.usq.edu.au/40350/

Wise, A., Chang, J., Duffy, T., & Del Valle, R. (2004). The effects of teacher social presence on student satisfaction, engagement, and learning. *Journal of Educational Computing Research, 31*(3), 247–271. https://doi.org/10.2190/V0LB-1M37-RNR8-Y2U1

Zhao, L., Lu, Y., Wang, B., Chau, P. Y., & Zhang, L. (2012). Cultivating the sense of belonging and motivating user participation in virtual communities: A social capital perspective. *International Journal of Information Management,* 32(6), 574–588. https://doi.org/10.1016/j.ijinfomgt.2012.02.006

Appendix A

Proposed Changes by Villanueva (2020) to the Community of Inquiry Categories and Indicators

CoI Element	Categories	Indicators
Teaching Presence	» Design and Organization » Facilitating Discourse » Direct Instruction » **Self-direction**	• Setting curriculum & methods • Shaping constructive exchange • Focusing and resolving issues • **Monitoring/Knowledge of cognition** • **Strategy use**
Social Presence	» Affective Expression » Interactive Communication » Group Cohesion » **Shared Regulation**	• Self-projection/ • Expressing emotions • Learning climate/ • Risk-free expression • Group identity • **Cooperation and collaboration**
Cognitive Presence*	» **Self- and Co-regulation** » **Reflection** » **Critical Thinking and Dialogue**	• **Monitoring/ Managing cognition** • **Reflecting on content/learning process** • *Sense of puzzlement* • *Information exchange* • *Connecting ideas* • *Applying new ideas*

Note. Adapted from "Researching the community of inquiry framework: Review, issues, and future direction" by D.R. Garrison and J.B. Arbaugh, 2007, *Internet and Higher Education, 10*(3), 159 (https://doi.org/10.1016/j.iheduc.2007.04.001). Copyright 2007. Adapted with permission from Elsevier.

**Categories of CP, namely Triggering event, Exploration, Integration and Resolution were removed but its indicators, in italics, have been maintained.*

Appendix B

K-12 CoI Self-Reflection Tool for Teachers by Villanueva (2020)

I. Kindly rate your actions/ behavior as a teacher of a blended learning class.
Refer to the scale below. Mark the space which corresponds to your self-rating.

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

Teaching Presence	1	2	3	4	5
Design and organization					
1. I clearly communicate important subject goals or content/topics to my students.					
2. I provide clear instructions on how to participate in learning activities.					
3. I clearly communicate important due dates/time frames for learning activities.					

Teaching Presence	1	2	3	4	5
Facilitation					
4. I am helpful in identifying areas of agreement and disagreement on content/ topics that help my students learn.					
5. I guide the class towards understanding topics in a way that helps them clarify their thinking.					
6. I keep the class engaged and on task in a way that helps us learn.					
7. I make an effort to develop a sense of community among students in the class.					
Direct instruction					
8. I help to focus the discussion on relevant issues in a way that helps my students learn.					
9. I provide feedback that helps my students understand their strengths and weaknesses in relation to the subject's goals and objectives.					
10. I provide feedback to my students in a timely fashion.					
Self-direction +					
11. I help my students to be aware of their existing knowledge					
12. I provide opportunities for students to assess their understanding					
13. I encourage my students to make judgments on the difficulty of the problem they encounter.					
14. I encourage my students to change their strategy when they need to.					

Reminder:
1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

Social Presence	1	2	3	4	5
Affective expression					
15. I can form distinct impressions of some of my students.					
16. I am comfortable expressing my emotions with my students through online or web-based communication.					
17. I can trust my students' expressions and other communications while interacting online.					
Interactive communication					
18. I feel comfortable conversing with my students through online platforms such as FB/ LMS/ chat groups.					
19. I feel comfortable engaging in the online discussions as a way to build rapport or provide support to my students.					
20. I see our disagreements as part of communicating or interacting while teaching and learning with my students.					
Group cohesion					
21. Getting to know other students through this class gives me a sense of belonging.					
22. I feel comfortable with my students disagreeing while still maintaining a sense of trust in their process.					
23. I feel a sense of connectedness with my class/ students.					
Shared regulation +					
24. I encourage my students to listen to each other's ideas or points of view.					

Social Presence	1	2	3	4	5
Shared regulation +					
25. I encourage my students to consider each other's feedback and contributions.					
26. I find ways for students to help each other learn.					
27. I allow students to monitor each other's behavior while learning.					

Reminder:
1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

Cognitive Presence	1	2	3	4	5
Self- and Co-regulation +					
28. My students are encouraged to be aware of their effort and motivation.					
29. Opportunities are provided to my students to assess how they approach the problem.					
30. My students are allowed to look for confirmation of their understanding from others.					
31. My students are encouraged to challenge the perspectives of others, including mine.					
Reflection +					
32. I encourage my students to reflect upon the comments of others.					
33. I encourage my students to reflect on the content and discussion to help them understand concepts in the subject.					
Critical thinking and dialogue					
34. My students' curiosities are engaged with online learning activities.					
35. Opportunities are provided for brainstorming and finding relevant information which helps my students resolve content related questions.					
36. New concepts are sufficiently explored by my students in this subject.					
37. Group interactions and discussions in class are valuable in helping my students to appreciate different perspectives.					
38. My students are allowed to combine new information to help them answer questions raised in the class activities.					
39. The learning activities in class help my students construct explanations or solutions.					
40. My students will be able to apply the knowledge created in this subject to their other subjects/ classes or other related activities in school.					

II. Kindly reflect and respond to the questions as best as you can.

1) What do I like best about my teaching experiences in my blended learning classes?

2) Which areas do I need to work on to improve teaching and learning in my blended learning classes?

3) In what ways do I feel/sense that my students and I are part of a learning com-munity? What else can I do to build our learning community?

4) Which teacher training topics/content will I be interested in learning about to help improve my blended learning experiences?

5) Which teacher training topics/content will I be interested in sharing about to help improve a fellow teacher's blended learning experiences?

6) Describe ways the school leadership team can help develop or enrich our blended learning experiences.

Note. Adapted from "*The CoI Survey*" by B. Arbaugh. M. Cleveland, S.R. Diaz, D.R. Garrison, P. Ice, J. Richardson, P. Shea and K.P. Swan, 2008. (https://coi.athabascau.ca/coi-model/coi-survey/).CC-BY-SA.

+Items under these categories adapted from "Toward the development of a metacognition construct for communities of inquiry" by D.R, Garrison and Z., Akyol, 2015, *The Internet and Higher Education*, 24, p.69. (https://doi.org/10.1016/j.iheduc.2014.10.001). Copyright 2015. Adapted with permission from Elsevier.

Student support in an open and distance electronic learning (ODeL) context: The experiences of students with disabilities in KwaZulu-Natal

Zwelakhe Erick Cebisa

Regional Academic Coordinator, University of South Africa, South Africa, cebisze@unisa.ac.za

Abstract

The institutions of higher learning in South Africa and around the globe are under a lot of pressure to provide equal access to all students with diverse learning needs. It is important to realize that students come from diverse backgrounds, which leads to them experiencing the academic support services offered by open and distance e-learning (ODeL) institutions differently. The experiences of students with disabilities (SWDs) were studied through the adoption of the qualitative and interpretivism paradigm to produce data that is rich in insights. The exploratory research design was followed to achieve a better understanding of in-depth information. The research data was collected using the MS Teams platform, which was necessitated by adhering to the strict protocols demanded by the Covid-19 regulations. A small number of study participants were identified and recruited to provide the required in-depth information about the issues explored in the study. Using a purposive and snowball sampling method, 10 ODeL students were drawn as participants. The results revealed that the common denominator and the most important aspect of an ODeL institution is effective student support. The qualitative findings revealed that institutions of higher learning must understand the needs and requirements of SWDs. This study contributes to the literature by providing a better understanding of SWDs' needs and the proposed reviewed allocation of resources by the university to cater to the SWDs' needs. The study recommended the development of disability-friendly technology and infrastructure and the strengthening of the safety program for students with albinism.

Keywords: institutions of higher learning, ODeL, students with disabilities, Covid-19, learning needs

Introduction

The inclusion of students with disabilities (SWDs) in higher learning institutions is in line with the UN's Sustainable Development Goals, which emphasize the reduction of inequality by 2030 (Del Hoyo et al., 2021). The mission of reducing inequality can also be achieved through transforming institutions of higher learning, including ODeL institutions, by making them more conducive for SWDs' access to all facilities, study materials, and technology needed to study or submit material. Thus, transforming institutions of higher learning will require technologies that are disability-friendly; for instance, the emergence of the internet and related networks such as the World Wide Web has had and will increasingly have a radical impact on the transformation of education and training in all sectors. The impact of technology is already significant in developed countries, and the great majority of developing countries are seeking to become a meaningful part of the emerging global educational community, despite the various challenges they still face (Möwes, 2005). Beyond these challenges, it is imperative to look closer at how students with disabilities experience studying at an ODeL institution and what shortcomings still form barriers to their optimal performance.

Objectives of the study

The main objective of the study was to explore the support students are offered in the ODeL context as experienced by students with disabilities.

Specifically, it aimed to:

- Identify the different disabilities among students studying at an ODeL institution;
- Establish how their disability affects the student's life while studying at an ODeL institution;
- Identify the factors that inform the students' decision to study at an ODeL institution; and
- Explore the experiences of SWD students studying at an ODeL institution.

Review of Related Studies

Students with disabilities are also referred to as students with special needs, in the sense that these needs must be addressed, and according to the mission of offering equal opportunities to all students, it becomes the responsibility of the institution to accommodate the students with special needs. "Students with disabilities are defined as students with some physical or mental impairment that substantially limits one or more major life activities" (Gilson et al., 2020, pp. 65–81). Slater et al. (2015) state that the disability might also include a disorder, illness, or disease that affects a person's growth through the processes, their perception of reality, emotions, or judgment, which results in disturbing behavior. Disability has also been defined as a "physical condition that affects the ability of an individual to learn and adjust to social settings for instance, the loss of sight" (Majoni & Mashatise, 2017, p. 38). This disability can be described as a restriction or an impairment that results in the person not being able to do certain things at home and during other environmental activities.

Numerous studies have been conducted on disability issues; however, limited research has been conducted to analyze the experience of the student support services in the ODeL institution setting from the perspective of students with disabilities. Mutanga (2017) presents a review of his published studies, describing the experiences of students with disabilities in South African higher education institutions for the period 1994 to 2017. The author concentrates on three aspects, which include the conceptualization of disability; access to the higher education institution; inclusion and participation in higher education institutions; and supporting mechanisms for students with disabilities by the institutions. Mays' (2000) study touched on students' experiences, which had a South African program perspective, in which she stipulated that in theory, student support is now an integral component of the Department of Education's provision and should be included in all planning and budgeting. Majoni and Mashatise (2017) sought to establish the problems faced by blind students studying through an ODeL institution. Also, from an African perspective, Möwes (2005) conducted an evaluation of the effectiveness of the student support system in an ODeL institution at the Centre for External Studies of the University of Namibia. All research studies conducted on open distance learning or on student support at institutions of higher education confirmed that there is insufficient data available on student support in ODeL institutions, or the impact the support or lack thereof have on SWDs as seen from their own perspective. This leads one to conclude that understanding the students' perspective will help to close the gap in knowledge regarding the support SWDs need. It also proposes that a review of the university's policies and procedures should be undertaken to thereby promote the academic success of SWDs and enable more or better-aligned support to be offered to these students.

Student-centeredness that has an impact on SWDs

The ODeL institution's module puts students at the center, meaning that whatever activities are supposed to be performed or executed, the student is a priority. In line with the ODeL strategy, the University has created an enabling teaching and learning environment that leads to the full participation and equalization of opportunities for students with disabilities (Ngubane-Mokiwa, 2017). The institution has a "framework of personalized, anytime, anywhere, mastery-based support, and student-centredness," where "it capitalizes on an increasingly sophisticated understanding of learning and a whole-student theory, as well as the development of new technologies to answer students' needs" (Parci & Wolfe, 2018, para. 1). This framework is aligned with the demands made regarding universities in the 21st century having to stay focused on ensuring that students are developed to become knowledgeable, have the necessary skills, and are positioned for success, to ensure that they will have the capacity to make informed decisions and will become valuable participants in society. This framework might not guarantee success for all students, especially those with more challenging levels of abilities. However, it helps to create or open up learning opportunities that emphasize the social interaction of all students, including those with learning disabilities, who have been denied access to some courses, and some with certain physical disabilities, who were discouraged from taking up certain opportunities because of their disabilities. It remains an unfortunate fact that the students who stand to benefit most from being included in this student-centredness of the institution are the very same students who are often denied the opportunity to participate. This leads to the related concepts of self-advocacy skills and self-determination, which are some of the most well-researched and effective principles of successful special education practices. Wehmeyer and Schwartz (1997) stated that self-advocacy skills are defined as skills that enable students to fully understand their own needs and rights, and this develops their capacity to communicate their needs. While self-determination is a capacity to act toward the achievement of freely chosen goals, this ability is critical in helping students with disabilities to succeed in higher education. It is also essential for students' long-term success in the working environment and their life in general (Wehmeyer, & Schwartz, 1997). Without these skills and capacities, students struggle when they have to ask the university for support regarding their needs, for example, textbooks and papers in braille for blind students. It also applies when they have to plan their own budgets or need to advocate for their needs in other life situations or for job applications. Having lost the protection that they were used to in their childhood and school years prior to entering university, and the pervasive support of parents and dedicated university staff while on campus, can be a huge culture shock for these students once they graduate, so the institution will have to prepare them for this.

The experiences of SWDs regarding academic support

International law, for example, the Individuals with Disabilities Education Improvement Act of 2004 (IDEA), provides SWDs with better and more opportunities to pursue higher education, even though "they still face significant barriers in achieving academic success and are less likely to graduate when compared to students without disabilities" (Abreu et al., 2017, p. 323). In the USA, there are policies that require higher education institutions to provide allowances for university SWDs in an effort to support their academic needs. Depending on their level and type of disability, and their specific eligibility, these allowances or dispensations might include extended time for exams, having a note-taker available during class, or taking an exam verbally as opposed to in a written format (Abreu et al. 2017, p. 323, cited in Egan, & Giuliano, 2009). While efforts to embrace diversity should be applauded, there is less consideration given to the representation of individuals with a disability. Representation among faculty or staff is very low, and visibility of

disability-related issues, policies, and events are minimal in most academic institutions. Abreu et al. (2017) state that as the population of students with a disability continues to increase, hopefully, also recognition and awareness of these issues will increase. Improving the university's culture surrounding disability would likely enhance the overall academic experiences for SWDs, and that in turn, might help increase their graduation rates (Abreu et al., 2017).

The argument presented by scholars revealed that ODeL institutions recognize the importance of inclusivity in terms of accommodating SWDs. However, not much has so far been established pertaining to how SWDs experience studying at an ODeL institution.

Methodology

The study adopted a qualitative approach and interpretivism paradigm, with the intention of producing data that is rich in insights, understanding, explanations, and in-depth information. The study sought to explore the experiences of SWDs studying at an ODeL institution, and employed an exploratory design, as no previous information was available on the specific angle of the study. The originally intended data collection method had to change because of the outbreak of the Covid-19 pandemic. This implied that the study had to adhere to the strict Covid-19 protocol, and the data could no longer be collected using the face-to-face interviews method. Instead, the MS Teams meeting approach replaced the face-to-face method. The most frequently chosen method for data collection in qualitative research is interviewing for collecting information from study participants. "Interviews provide the researcher with the freedom to decide how questions are asked and in which order to ask the questions" (Creswell & Clark, 2011, p. 173). This method also allows the researcher to collect information from participants who are characterized as information-rich participants. Creswell and Clark (2011) and Gray et al. (2017) confirm that in qualitative research, a small number of study participants can be identified and recruited to provide in-depth information about the issues explored in the study. Primary data was used to conduct this research. Insight was drawn from a purposive or snowball sample. The sample comprised 10 students with disabilities registered at ODeL institution in the Durban hub in KwaZulu-Natal, which consists of five offices (Smiso Nkwanyana campus; Wild Coast; Pietermaritzburg; Richards Bay; and New Castle). Due to the sensitivity of the research topic, SWDs were furnished with all the information regarding the project and the purpose of the project. All data were collected from participants after an ethical clearance certificate had been obtained from the University of South Africa (Unisa). All participants had the opportunity to consider the informed consent form prior to being interviewed as the study and its ethics were cleared. Interviews were recorded in a journal and/or via tape recorder, for which the participants had granted the researcher their prior permission. The data were analyzed using thematic analysis. Thematic analysis is the most common type of analysis used in qualitative research. It emphasizes pinpointing, examining, and recording patterns (themes) within the data.

Ethical Considerations

The conduct of the study was approved and had research ethical clearance from the UNISA Professional Research Committee – Research Ethics Workgroup (PRC-REW). The researcher complied with provisions provided on the UNISA Policy on Research Ethics and the UNISA Standard Operating Procedure on Research Ethics Risk Assessment, whereby research reference number *2020_PRC_REW_006* was indicated on all forms of communication with the intended research participants, including the Committee.

Results and Discussion

ODeL institutions are by their very nature student-centric; hence, it is imperative for ODeL to cater to students' needs. The study explored the academic support provided in the ODeL context through SWDs' lived experiences. The study was conducted with 10 research participants. The sample comprised seven female and three male SWDs, of whom two were classified to have albinism, five have a physical disability, and three are visually impaired/challenged. It should be noted that these are not the only forms of disabilities that should be catered to in an ODeL institution. However, the above-mentioned forms of disability are found to be common in an ODeL institution.

The common denominator for all SWDs is that they all have different experiences of studying at an ODeL institution. However, when they study from home, the flexibility of being able to study through ODeL appears to be one of the main reasons for choosing an ODeL institution.

Students' responses on the effect of disability on their life as students

It can be assumed that any form of disability affects a student's academic life in one form or another. Therefore, the institution should provide the resources that cater to the needs of SWDs. A resource-based view emphasizes the importance of resources being made available for any institution to realize its objectives (Furr, & Eisenhardt, 2021). While students with disabilities are affected in many ways, out of the total sample of SWDs interviewed in this study, four students with different disabilities emphasize their experiences related to their independence, discrimination, and resources. Participants sum this up as follows:

> "Even though … I am independent in many things, I can manage to move around, since the kind of disability is called physical; therefore, sometimes I need assistance of mobility … instructor to move me from point A to B, and to meet other students" (R1).

> "Whatever happens to me is going to have an effect on my academic performance. For instance, the society still discriminates against disability; in turn, this affects my student life. Furthermore, the institution directly or indirectly reinforces exclusion of SWDs. For instance, my left side body is not moving, but it does not mean I cannot participate in any sporting activities. There are other sports … such as table tennis" (R2).

> "Library, tutorials, extra classes and even study … that is conducive to study quietly are the main concern. As a student, I felt discriminated [against] by the institution as the height and level of desks are not made to accommodate my wheelchair" (R3).

> "There is a lack of resources designed for SWDs, such as assistive devices. Covid-19 also worsened the situation, such that SWD students were given email addresses that are not working at all" (R4).

These results reveal that regardless of their level of independence, the SWDs studying at an ODeL institution should be consulted and better supported, as their individual needs cannot be assumed. Hence, ODeL institutions should become more realistic in their assessments and in terms of catering to the SWDs' needs. Discriminatory practices seem to be another issue of concern. Educating communities about the different forms of disabilities and the SWDs' other abilities seem to be idealistic, but prejudices and discrimination cannot be curbed if the consequences are not emphasized or at least addressed.

Students' responses regarding the factors that inform their decision to study at an ODeL institution

The decision to study at an ODeL institution is influenced and informed by many factors. The iron triangle model, which consists of three components (access, quality, and costs) can influence the students' decision to study at an ODeL institution (Daniel et al., 2009). According to this theory, easy access, good quality education, and reasonable costs can be achieved simultaneously at an ODeL institution, according to all study participants stating that: "Unisa is accessible because you can study while you are at home".

One student further elaborates on the other factors that inform the decision to study online. The nature of disability compels the student to choose to study at an ODeL institution:

> "Due to the nature of my disability, I prefer to study on my own, as I was ashamed to express my feelings. The ODeL institution was chosen, because I have a poor vision; secondly, there was no time limit when it came to the exams and library material" (R1).

The reliance on the ODeL institution for the delivery of what the SWDs need means that the institution also has the responsibility of making these services fully accessible, as students decide to study there based on the accessibility of all facilities and study options.

Study participants' responses on their experiences at the ODeL institution

Studying at or through an ODeL institution seems to have or creates a range of specific challenges. Most participants attest to the fact that studying through ODeL can be a very lonely and frustrating journey. Participants state that:

> Although we have a challenge with being neglected in other services, such as academic support, late delivery of study material, staff members who did not receive any training on disability issues, but the ODeL institution still gives us a positive experience, … allowing for structures such as disability forums to represent SWDs in various structures of the institution. The SWDs do not have to join a long queue, assistive devices were provided. SWDs are also funded by the ODeL (all).

One student with disability further elaborates on the topic by including the issue of safety when on campus or leaving for public transport. The student comments that:

> "As a student with albinism, no place is safe for us. People with albinism are more targeted than students with other forms of disability. The university personnel, if possible … we need to be escorted to the public transport or they should communicate with the transport providers to ensure the safety of people with albinism."

SWDs acknowledge the challenges, and their positive and negative experiences of studying at or through an ODeL institution.

Emerging Themes

The qualitative analysis explored issues or challenges that need addressing regarding the SWDs' lived experiences. The emerging themes from the study could be grouped or categorized into the

following three major themes: discrimination of students in the ODeL institution; accessibility; and safety of SWDs in the ODeL institution.

Discrimination of students with disabilities in the ODeL institution

People with disabilities have been the victims of discrimination across the ages. Hamilton et al. (2021) state that some students feel undervalued compared to their peers because their university did not prioritize or even address their disability-related needs. Participants explain that their universities fail to prioritize accessibility and that some disabilities are not optimally addressed, supported, or sometimes even taken cognizance of. The perception that their disability is not prioritized nor addressed by their institution feeds into the SWDs' feelings of inequality and being less worthy than other students. Failure to treat all students equally and with dignity can also be regarded as another form of discrimination. Kaushansky (2017) attests that disabled individuals can also be represented as objects of 'pity'. All these views perpetuate discrimination.

Accessibility

Resource constraints compound the problem of access for SWDs. This is obvious when seen from the statement made by study participants that ODeL institutions do not have sufficient resources designed to meet the needs of SWDs. As stated, the findings by Daniel et al. (2009) highlighted the three important constructs that comprise the iron triangle model, namely, access, cost, and quality. The model highlights the ODeL's level of success as being fully dependent on these three constructs. Thus, it is important to note that accessibility issues should be coupled with usability or user-friendliness and ease of use, as otherwise, students have access to an institution that cannot benefit them fully. ODeL institutions have computer laboratories, but access to them is a major challenge for SWDs if these facilities are not disability friendly. Meleo-Erwin et al. (2021) confirm that students with disabilities face a wide range of physical barriers in their respective higher education institutions. Therefore, the ODeL institutions need to identify all potential barriers to access and thereafter, set about removing them.

Safety of SWDs in an ODeL institution

Safety is a concern for everybody in South Africa. However, the feeling of being unsafe is extremely high among students with albinism. Albinism represents a group of inherited abnormalities of melanin synthesis in the skin, hair follicles, and parts of the eye responsible for vision (Hammond, 2020). More melanin, resulting in darker skin color, protects individuals from the harmful effects of ultraviolet (UV) light. People with albinism have a reduced amount of melanin or no melanin at all. During the interviews, SWDs state that people with albinism seem to be safer in other countries than in South Africa. Students with disabilities are being targeted by others, not only by criminals, and are being killed because of the illogical and ill-founded myths surrounding albinism. The myths include killing for 'muthi', based on the mistaken belief that killing such people can make someone rich. The country has witnessed an increase in the number of people with albinism being killed, which poses a serious threat for people with this condition.

Findings of the study

The study found that consultation plays a key role in ODeL institutions. Considering the UN's 2030 Sustainable Development Goals and the drive toward establishing equal opportunities for all, SWDs are important stakeholders in the institutions of higher learning. However, the ODeL institution is

still lagging in its purpose of effectively addressing the needs of students with various disabilities. For example, SWDs and their specific challenges and needs were never considered at the time the policies were designed, and therefore, none of the physical facilities that were designed by ODeL institutions are disability friendly. The buildings were not designed with SWDs in mind. As ODeL institutions are supposed to be student-centric, this should also imply that all decisions regarding ease of access and user-friendliness should revolve around the students' needs. This includes, for example, better access for students in wheelchairs, blind students, students using crutches, or other physical challenges.

The Covid-19 pandemic raised another challenge, or even a range of challenges that completely changed the entire education system, and as such was an unforeseen risk, needing change management. SWDs' needs caused by their disabilities were left in limbo. SWDs were so severely affected that the ODeL institution resorted to online examinations, without considering students with special needs and their access to suitable technology at home. When SWDs are writing exams in a physical venue, extra time is granted to them. However, with online exams, no extra time was given.

Institutions of higher learning strive to provide all students with a very positive experience. However, there are cases where students only experience discrimination, prejudice, and barriers to participation. The findings from the qualitative study analysis indicated that SWDs have been neglected in quite a number of the services offered by the ODeL institution. For instance, it took time for the ODeL institution to send the correct study materials to the students with poor vision. However, SWDs indicate that they still have a positive experience because the ODeL institution allowed them to be members of the Students with Disability Forum (DWDF) and provided them with approachable staff members, especially during the registration period. Arrangements were also made to ensure that SWDs did not have to join a long queue for services. The ODeL institution has also provided some students with information on how to apply for assistive devices.

However, the ODeL institution should put better safety mechanisms in place, particularly concerning the fact that students with the albinism condition view safety as the most important aspect that needs attention. It is common knowledge that students with the albinism condition cannot walk freely in public, as they are living in fear for their lives. However, the perception exists that the university is not concerned about how they get to campus and on what mode of transport, and nobody is available to escort them to or from public transport. In the ODeL structures, the issues of safety have not been fully addressed. An absence of mobility instructors compounds the problems experienced by SWDs. The mobility instructor is someone who is trained to assist SWDs when they are on campus. The presence of a mobility instructor can make SWDs feel less dependent on other students and ensures that the challenge of how to access various facilities on campus is removed from the shoulders of the SWDs.

Conclusion

SWDs reported their experiences regarding the functioning and responsibilities of the ODeL institution, as most of them highlighted that studying while already working influenced their choice of studying at or through the ODeL. Despite many positive experiences, the ODeL institution's shortcomings were also identified. The visually impaired students had negative experiences when the ODeL could not provide them with the necessary study material suitable for students with special needs. The institution and the students were faced with an additional range of challenges because of the Covid-19 pandemic lockdown regulations, which compelled the ODeL to move all

study functions and access them completely online. In turn, this affected the SWDs, who needed access to disability-friendly technologies. As the ODeL was unable to accommodate the SWDs technologically, this held the SWDs back academically.

Recommendations and implications for future research

The concerns raised regarding the availability of study material, including late delivery of study material for SWDs, should be addressed and a system should be put in place that ensures timely delivery, particularly during lockdown regulations. There also still seems to be a lack of inclusivity felt by the SWDs. Hence, the study recommends that the ODeL institution should consider the needs of the diverse students studying at the ODeL institution, and plan to strengthen the support programme in terms of fast-tracking solutions to the various raised challenges. The outbreak of Covid-19 compounded the problems when the institution was compelled to move from a physical to an online examination without considering the need by SWDs to have extra time granted. The SWDs' challenges were ignored or not taken cognisance of, since the technology to write online examinations was not disability-friendly. The SWDs should be consulted regarding any possible additional challenges when new lockdowns or other risks emerge, which could affect them and have serious repercussions on their ability to study and pass their examinations.

The safety of SWDs is also a concern, which should compel the ODeL institution to re-examine the issue of safety for all and the involvement of a mobility instructor. The safety of SWDs should not be compromised when they are on campus or seeking public transport. Hence, the study recommends the strengthening of safety measures by the ODeL institution.

References

Abreu, M., Hillier, A., Frye, A., & Goldstein, J.E. (2017). *Student experiences utilizing disability support services in a university setting.* University of Massachusetts Lowell.

Creswell, J.W., & Clark, V.L.P. (2011). Designing and conducting mixed method research. 2nd ed. London: Sage Publishing Ltd.

Daniel, J., Kanwar, A., & Uvalic'-Trumbic', S. (2009). Breaking higher education's iron triangle: Access, cost, and quality. *Change: The Magazine of Higher Learning, 41*(2), 30–35. https://doi.org/10.3200/CHNG.41.2.30-35

Del Hoyo, R.P., Visvizi, A., & Mora, H. (2021). Inclusiveness, safety, resilience, and sustainability in the smart city context. *Smart Cities and the UN SDGs.* https://doi.org/10.1016/B978-0-323-85151-0.00002-6

Furr, N.R., & Eisenhardt, K.M. (2021). Strategy and uncertainty: Resource-based view, strategy-creation view, and the hybrid between them. *Journal of Management.* https://doi.org/10.1177/01492063211011760

Gilson, C.B., Gushanas, C.M., Li, Y.F., & Foster, K. (2020). Defining inclusion: Faculty and student attitudes regarding postsecondary education for students with intellectual and developmental disabilities. *Journal of Intellectual and Developmental Disabilities, 58*(1), 65–81. https://doi.org/10.1352/1934-9556-58.1.65

Gray, J.R., Grove, S.K. & Sutherland, S. (2017). *Burns and Grove's practice of nursing research: Appraisal, synthesis, and generation of evidence*. 8th ed. China: Elsevier, Inc.

Hamilton, P.R., Hulme, J.A., & Harrison, E.D. (2021). Experiences of higher education for students with chronic illnesses. *Disability and Society*. https://doi.org/10.1080/09687599.2021.1907549.

Hammond, E.N.A. (2020). *Oppression due to difference: The case of people living with albinism in Africa* [Unpublished Masters, International Relations Modern Social Theory]. Universität Bremen.

Kaushansky, D., Cox, J., & Dodson, C. (2017). Living a secret: Disclosure among adolescents and young adults with chronic illnesses. *Chronic Illness*. https://doi.org/10.1177/1742395316655855

Majoni C., & Mashatise J. (2017) *Challenges faced by students with blindness studying through open distance learning*. Zimbabwe Open University Mashonaland Central Regional Campus.

Mays, T. (2000). Student support: A South African programme perspective in SAIDE. *Open learning through distance education, 6*(2). SAIDE: sub-Saharan Africa.

Meleo-Erwin, Z., Kollia, B., Fera, J., Jahren, A., & Basch, C. (2021). Online support information for students with disabilities in colleges and universities during the Covid-19 pandemic. *Disability and Health Journal, 14* (1). https://doi.org/10.1016/j.dhjo.2020.101013.

Möwes, D.L. (2005). *An evaluation of the effectiveness of the student support system in open and distance learning at the Centre for External Studies of the University of Namibia.* University of Stellenbosch. South Africa.

Mutango, O. (2017). *Students with disabilities' experience in South African higher education - a synthesis of literature.* Institute of Health and Society. Faculty of Medicine, University of Oslo. Norway.

Ngubane-Mokiwa, S.A. (2017). Implications of the University of South Africa's (UNISA) shift to Open Distance e-Learning on Teacher Education. *Australian Journal of Teacher Education, 42*(9). http://dx.doi.org/10.14221/ajte.2017v42n9.7.

Parci, A. & Wolfe, R.E. (2018). *Student-Centered Learning and Inclusion: Getting the Details Right.* Education Week. https://www.edweek.org/technology/opinion-student-centered-learning-and-inclusion-getting-the-details-right/2018/03

Slater, R., Pearson, V.K., Warren, J.P., & Forbes, T. (2015). Forbes Institutional change for improving accessibility in the design and delivery of distance learning – the role of faculty accessibility specialists at The Open University. *Open Learning: The Journal of Open, Distance and e-Learning, 30* (2015). https://doi.org/10.1080/02680513.2015.1013528

Wehmeyer, M., & Schwartz, M.A. (1997). Self-determination and positive adult outcomes: A follow-up study of youth with mental retardation and learning disabilities. *Exceptional Children*, 63, 245–255.

Ask Iska and IskOU: Analysis of UPOU's Chatbot for Information Support Services

Joane V. Serrano, Ph.D.[1], Janele Ann C. Belegal[2], Anna Ma. Elizabeth F. Cañas-Llamas[3], Lovelyn P. Petrasanta[4], and Myra C. Almodiel[5]

[1]Associate Professor, University of the Philippines Open University, Philippines, jserrano@upou.edu.ph
[2]Project Research Assistant, University of the Philippines Open University, Philippines, janele.belegal@upou.edu.ph
[3]Administrative Officer IV, University of the Philippines Open University, Philippines, anna.canas@upou.edu.ph
[4]Research Assistant, University of the Philippines Open University, Philippines, lovelyn.petrasanta@upou.edu.ph
[5]Assistant Professor, University of the Philippines Open University, Philippines, myra.almodiel@upou.edu.ph

Abstract

In the educational domain, artificial intelligence (AI) is one of the information and communication technologies gaining popularity for its advantages in teaching and learning, especially in information support services. The University of the Philippines Open University (UPOU), as a leader of open and distance e-learning in the country, explored this technology and came up with its own tool to streamline its information support services. The UPOU chatbot, personified as Iska and IskOU, provides immediate and appropriate human-like conversations when prompted by users. The tool is able to deliver these conservations through its intelligence database or knowledge base, which is a result of a university-wide effort to collate relevant information. This chatbot intelligence influences user satisfaction as it is the basis of the tool's performance. Therefore, the study aimed to evaluate the UPOU chatbot's performance as an information support tool by determining the level of satisfaction of UPOU chatbot users. Data was collected through a post-interaction survey with the users and was analyzed using descriptive statistics and thematic analysis. Results showed mixed experiences among UPOU chatbot users. It was mainly reported that the tool has issues in interpretations and addressing complex, multiple, and specific/unique queries. Nonetheless, users evaluated the UPOU chatbot as a satisfying and helpful tool. A number of areas and topics for future investigations were also listed.

Keywords: *artificial intelligence, chatbot, information support, support services*

Introduction

Chatbots

In recent years, artificial intelligence (AI) has been widely recognized and adopted in educational settings. It has transformed the way universities and academic institutions interact with their students, especially in providing information support services. AI has taken on various definitions due to its application in a number of domains. In education, Luckin et al. (2016, p. 14) define AI "as computer systems that have been designed to interact with the world through capabilities... and intelligent behaviors...that we would think of as essentially human." AI in education has been found to be used for data mining, learner support, online tutoring, instructional tools and platforms, and education administration, (Luckin et al. 2016; Holmes et al. 2019; Chen et al. 2020; Roll & Wylie, 2016). With these uses of AI in education, the University of the Philippines Open University (UPOU), as the leader in open and distance e-learning in the country, continues to

innovate upon these tools to streamline its operations and services on teaching and learning among others. As an academic institution, UPOU puts considerable emphasis on providing proper and adequate support to its constituents (students [existing and prospective], alumni, faculty, staff, and community). One of UPOU's streamlined services through AI is its information support services. In UPOU, this service is characterized as providing appropriate and timely university-related information to its constituents. This service is mainly provided by support staff, information resources (e.g. websites, dissemination materials), and tools. Specifically, this study will focus on the provision of information support via an AI tool, the chatbot.

Chatbots are also known as conversational agents. Some of the renowned chatbots are ELIZA, PARRY, Jabberwacky, Dr. Sbaitso, ALICE, SmarterChild, Siri, IBM Watson, Google Now, Amazon Alexa, Google Allo, Tay, and Xiaoice (Wei, Yu, & Fong, 2018; Cahn, 2017). These tools are "computer programs which attempt to simulate conversations of human beings via text or voice interactions" (Rouse, 2017, as cited in Winkler, & Söllner, 2018, p. 5). Chatbots function due to their developer-designed systems, and their intelligence database or knowledge base (KB). The KB acts like the chatbot's brain where it generates its responses to user inputs from stored information. Mostly, chatbots "are utilized and deployed...for the purpose of seeking information, site guidance, and answering frequently asked questions" (Huang et al. 2007, p. 423, as cited in Serrano et al. 2020, p. 161). With these in mind, UPOU developed its own chatbot to streamline its information support services.

The UPOU Chatbot

Launched in February 2019, the UPOU chatbot was developed by the following UPOU Offices: Office of Public Affairs (OPA), Multimedia Center (MC), and Information and Communication Technology Office (ICTDO). The tool was developed in response to the need to streamline the university's virtual information support services provided to its constituents. UPOU constituents can access and use the chatbot via the official UPOU Facebook page chat (https://www.facebook.com/UPOpenUniversity), and through its website (https://askou.upou.edu.ph). The UPOU chatbot is personified as Iska and IskOU for gender representation (Serrano et al. 2020, see Figure 1).

Figure 1

UPOU chatbot Iska (left) and IskOU (right)

Note. These icons are produced by the UPOU Office of Public Affairs in 2019 (as reproduced in Serrano et al. 2020). From "UPOU chatbot: Toward quality information services," by J. Serrano et al. 2020, *Quality Initiatives in an Open and Distance eLearning Institution: Towards Excellence and Equity* (In M.F. Lumanta, & P.G. Garcia [Eds.]), pp. 162.

In Serrano et al (2020) the UPOU chatbot's design was described as follows:

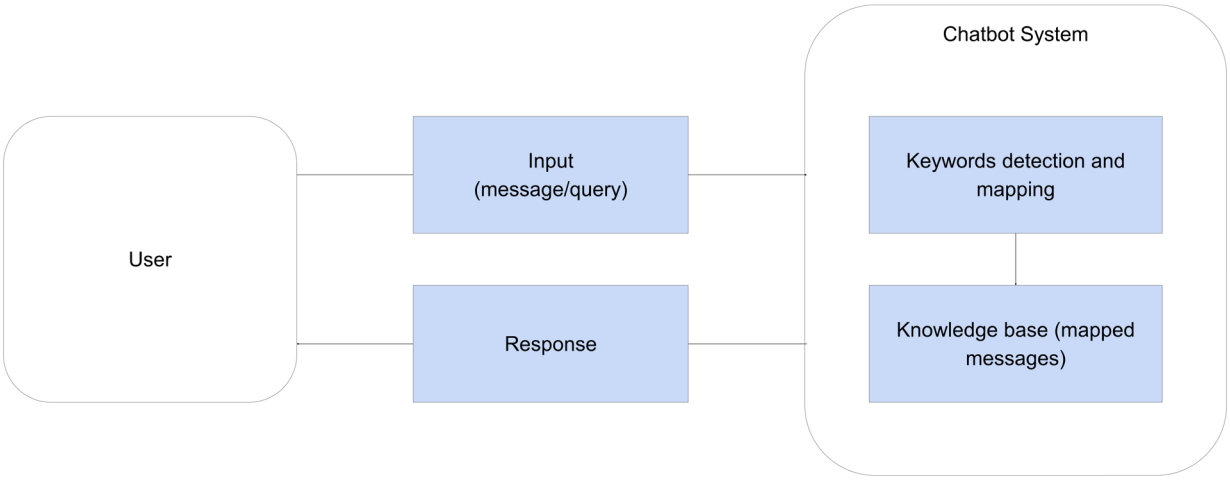
> The UPOU chatbot was designed to provide immediate, intelligent, [timely], and appropriate human-like interactions and conversations related to UPOU matters when prompted [by users]. It works by detecting and mapping keywords in user inputs (message/query) with the chatbot's KB to generate appropriate responses. (p. 161)

> [It] offers natural language processing wherein users may ask questions, in both English or Filipino, in a conversational manner. As a bot, it operates through a pre-configured keyword matching system by which it attempts to detect the intent of the user and respond accordingly from a list of mapped messages. Its responses follow a template organized and listed by the chatbot [developers]. (p. 162)

Contents of the UPOU chatbot's response templates mainly consist of links to UPOU's online resources and websites. The tool's keyword detection and mapping also work best on brief messages. Figure 2 illustrates the UPOU chatbot's response generation design.

Figure 2

UPOU chatbot response generation design



The UPOU chatbot was mainly deployed to provide constituents with a convenient and efficient online platform for UPOU-related inquiries (Serrano et al. , 2020). However, users can experience two different styles of support from this tool. First, the UPOU chatbot on Facebook looks and acts similar to a chat box, where users leave a message and the chatbot responds accordingly (as shown in Figure 3). On the other hand, the UPOU chatbot on the website acts similar to both a chat box and a search tool. On the chatbot website, information is displayed according to what's found on UPOU's 1) websites; 2) frequently asked questions; 3) announcements, news, and features; and, 4) educational resources. When a user converses with the chatbot on the website, the chatbot responds and displays other relevant information to the user input (as shown in Figure 4). In the event that the tool is unable to detect the user's intent, "an automated response [is] sent prescribing the user to rephrase their questions [for the system to] map [keywords] effectively to its preset templates and answers" (Serrano et al. 2020, p. 163).

Figure 3

UPOU chatbot via Facebook

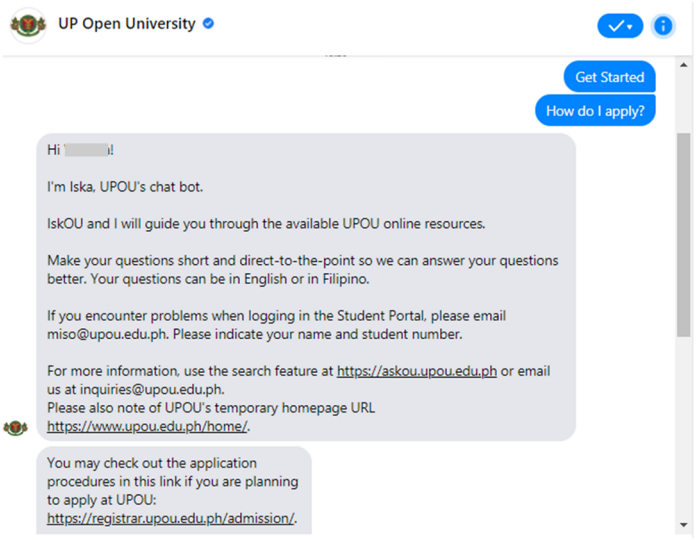
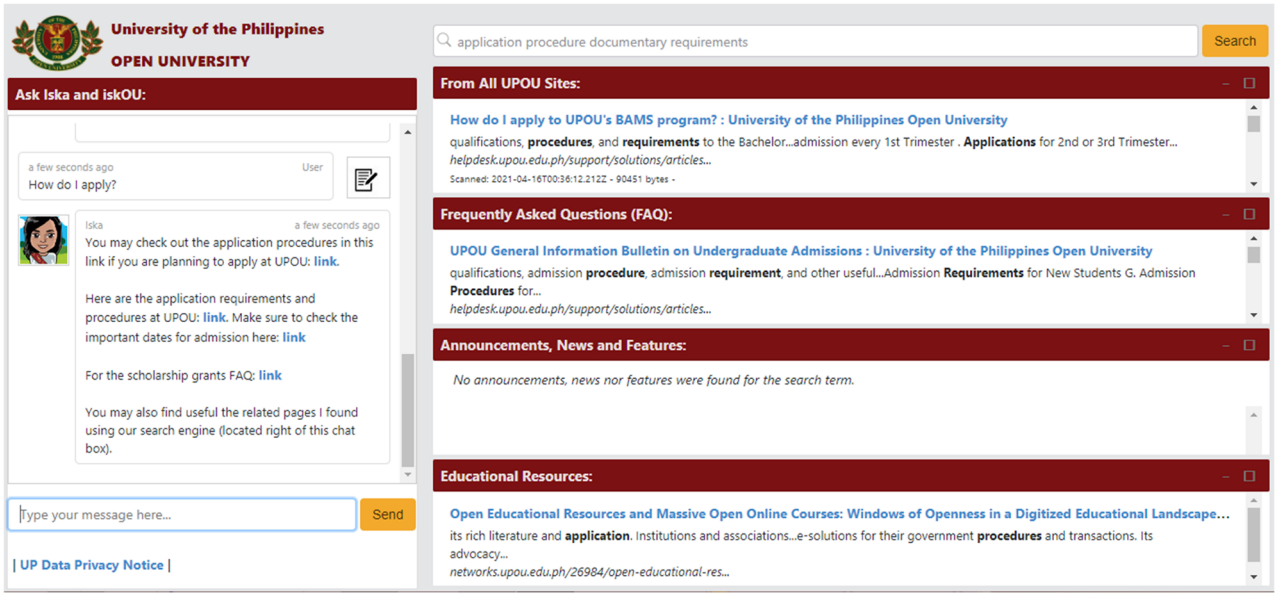


Figure 4

UPOU chatbot via website



The UPOU chatbot completely embodies the previously mentioned chatbot purposes by Huang and colleagues (Huang et al. 2007). It is able to deliver its purpose through its comprehensive KB which is the result of a university-wide effort to collate information about UPOU. In turn, the UPOU chatbot benefits both the information support staff and the constituents—through the streamlined process of giving and receiving UPOU-related information via the tool's platforms. Nonetheless, it is imperative to periodically evaluate the UPOU chatbot's performance to sustain the validity and timeliness of its intelligence, as it influences how it responds to its users and eventually results in how it satisfies its users.

Objective

This study aimed to evaluate the UPOU chatbot's performance as an information support tool by determining the level of satisfaction of UPOU chatbot users.

Conceptual/Theoretical Framework

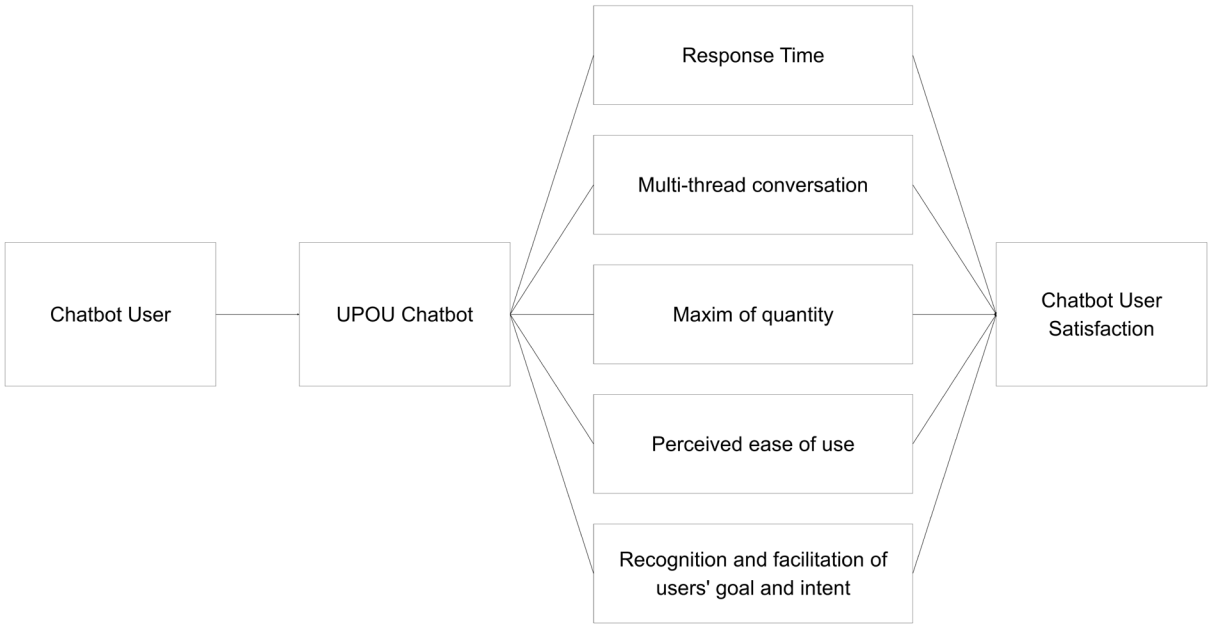
The study draws upon features that could influence users' perceived usability of chatbots as cited by Tariverdiyeva (2019). The 2019 investigation listed 27 chatbot features. This study, however, focused only on 5 relevant features to the UPOU chatbot: response time, multi- thread conversation, maxim of quantity, perceived ease of use, and recognition and facilitation of users' goal and intent. Tariverdiyeva (2019) defined these features as follows:

> Response time - Ability of the chatbot to respond timely to users' requests (Amazon, n.d.-b)
>
> Multi-thread conversation - Ability of the chatbot to recognise and process multiple parallel topics simultaneously (Staven, 2017)
>
> Maxim of quantity - Ability of the chatbot to respond in an informative way without adding too much information (Gnewuch et al., 2018; Google, 2017)
>
> Perceived ease of use - The degree to which a person believes that to interact with a chatbot would be free of effort (Van Eeuwen, 2017)
>
> Recognition and facilitation of users' goal and intent - Ability of the chatbot to recognize user's intent and guide the user to its goal (Coniam, 2014; Ramos, 2017; Van Eeuwen, 2017a; Wilson et al., 2017) (pp. 10-11)

As shown in Figure 5, the selected features make up the conceptual framework of this study on the satisfaction of UPOU chatbot users.

Figure 5

Conceptual framework of the study



Review of Related Studies

AI is a widely studied topic and has shown established evidence of its advantages in education (Chen et al. 2020; Roll & Wylie, 2016). The same goes for chatbots. A review of literature also suggests that there is a breadth of studies on chatbots as information support tools (Ranoliya et al. 2017; Tariverdiyeva, 2019; Balaji, 2019; Feine et al. 2019; Følstad & Brandtzaeg, 2020). Among other factors and features, these studies almost highlight the importance of a chatbot KB to properly accommodate users. With KBs acting as the brain of a chatbot system, it is, therefore, necessary for these to be updated, especially when chatbots acquire new and unique queries from users. Cahn (2017) states that chatbots "are only intelligent to the information they have access to," thus further implicating the significance of chatbot KBs. A previous study on the UPOU chatbot showed from analyzed developer narratives that the tool's KB needs upgrading or updating (Serrano et al. 2020). However, the UPOU chatbot's KB is manually updated by developers. Updating the KB is highly dependent on human resources and time. Although, there have been studies on automatic KB updates by utilizing online discussion forums (Huang et al. 2007; Wu et al. 2008) and Wikipedia (Hussain & Ginige, 2018). The studies of Huang et al. (2007) and Wu et al. (2008) concluded with good results for automatic KB updates. Hussain and Ginige's study also resulted in a good evaluation of the automatic update for a secondary KB (Wikipedia). The developers of the UPOU chatbot can draw upon these studies to streamline KB updates. Nonetheless, when KBs lack timely, varied, and complete information, then chatbots cannot adequately converse with users; thus, affecting user satisfaction (Hussain & Ginige, 2018).

Chatbot user satisfaction is mainly influenced by a number of factors, as listed in Tariverdiyeva's 2019 chatbot literature review. Some studies on chatbot user satisfaction measured it through post-interaction surveys and interviews (Jain et al. 2018; Følstad et al. 2018; Hien et al. 2018; Crutzen et al. 2011; Følstad & Brandtzaeg, 2020). In Jain et al. (2018), eight chatbots in the Facebook Messenger platform were evaluated. Results of the study show the participants' disappointment and frustration with the chatbots due to their inability to comprehend user intent and answer efficiently. Følstad et al. (2018) studied customer service chatbots and found that users find the following chatbot factors beneficial: productivity, immediate support, accessibility, and relaxed nature. The study also highlighted a chatbot's inability to comprehend intent and to address complex requests as "a major limitation" (Følstad et al. 2018, p. 204). A study on FIT-EBot, a chatbot for service inquiries of a faculty of study in a university, resulted in a satisfactory evaluation from users (Hien et al. 2018). Crutzen et al. (2011) studied Bzz, a chatbot for health promotion, which was "evaluated positively for its conciseness, response speed, privacy, and quality of information" (Crutzen et al. 2011, as cited in Serrano et al. 2020, p. 165). In Følstad and Brandtzaeg (2020), they have investigated the hedonic and pragmatic attributes of chatbots and reported that users place importance on perceived chatbot usefulness for positive experiences. However, interpretation issues and low effectiveness (inability to help) were also reported for negative experiences (Følstad & Brandtzaeg, 2020). Another study on chatbot user satisfaction suggested that productivity (effectiveness and efficiency of chatbots in information retrieval) was the "primary motivation" for users to interact with chatbots (Balaji, 2019, p. 70). However, Balaji (2019) suggested that "factors relevant to determining user satisfaction may critically depend on the specific type of chatbot" (p. 71). Generally, chatbots are challenged with linguistic and interpretational factors; although these could also be considered for their improvement.

Methodology

The study was conducted in late 2019. Data were collected from an online post-interaction survey administered via Google Forms, and disseminated via the UPOU Facebook pages. The survey was shared on this social media platform to reach the users who have interacted with the UPOU chatbot. Anyone who has access to the survey link and who has experience in using the chatbot was considered study respondents. A combination of short questions and 5-point Likert scale questions were used in the survey. Survey questions centered on the aforementioned chatbot features: response time, multi-thread conversation, maxim of quantity, perceived ease of use, and recognition and facilitation of users' goal and intent. The study questionnaire also included questions on overall user satisfaction, problems encountered, and suggestions for the UPOU chatbot. Survey responses were analyzed using descriptive statistics and thematic analysis. The survey questionnaire used for the study is presented in Appendix 1.

Ethical Considerations

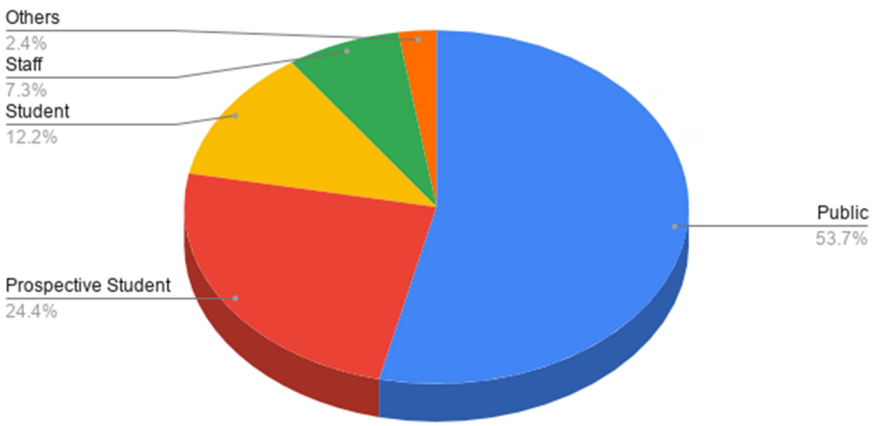
The study questionnaire was integrated with an informed consent. Participation was voluntary, and participants were free to withdraw from the study. Participant names and other personal information were also withheld from the discussion and presentation of results.

Results and Discussions

In this section, we discuss the experiences and satisfaction shared by the users with the UPOU chatbot as documented from the post-interaction survey. A total of forty-one (41) users responded. Figure 6 presents the characteristics of these respondents.

Figure 6

Pie graph of study respondents



Based on the survey results, UPOU chatbot users inquire about: application procedures and requirements to UPOU programs, UPOU programs (undergraduate and graduate), tuition fees, contact numbers, academic calendar, distance education, UPOU events, and eligibility to be a UPOU student. It is noteworthy that most respondents of the survey were non-UPOU students (inquiring public, n=22, 53.7%). Other respondents were 10 (24.4%) prospective students, 5 (12.2%) UPOU students, 3 (7.3%) UPOU staff, and 1 (2.4%) UP student. This respondent distribution could be attributed to the practice of information support in the university. UPOU students almost always direct their inquiries and concerns to official UPOU emails. On the other hand, inquiring

public, who are yet to familiarize themselves with the university, proceed to the official Facebook page to inquire, as it is most convenient and accessible to them. Moreover, based on monitoring the conversations of the UPOU chatbot, UPOU students will only message the chatbot about their concerns when the support staff behind the official UPOU emails cannot respond to them within a few (usually 1-3) working days.

This remark is verified by an actual response in the study survey:

> "Sometimes mailers take too long to respond to emails. That is why I message your Facebook page to get an answer from you since no one is responding in your mailers."

UPOU Chatbot Performance

Response Time

For response time, results show that the UPOU chatbot can 'always' (n=41, 100%) answer user queries promptly. Checking UPOU chatbot logs in the Facebook for Developers page revealed that on average the tool responds within 900 milliseconds upon prompts. These prove to show that the tool performs accordingly to its design of providing immediate responses to users. However, this study could be replicated into exploring the possibility of "dynamic" UPOU chatbot responses to investigate whether user satisfaction could be influenced, and possibly affected as demonstrated in Gnewuch et al. 2018.

Multi-thread Conversation and Maxim of Quantity

The study tackled these 2 factors in one survey question, and that was on the ability of the tool to answer completely. Results showed (n=21, 51.2%) that the UPOU chatbot can 'always' answer user queries completely. However, upon identifying which questions (see Table 1) were "always" answered completely by the chatbot, it revealed that the UPOU chatbot gives an appropriate response to queries related to application procedures, requirements, deadlines, and UPOU programs. These queries are the frequently asked questions and are included in the prompting message of the UPOU chatbot, hence the chatbot can readily and appropriately respond to these types of questions. On the other hand, when the chatbot can only 'sometimes' (n=10, 24.4%) answer, and 'never' (n=9, 22%) answer queries, it also revealed that users who have multiple, complex, or specific/unique queries gave such responses. Example of these queries, as mentioned in the study survey, are:

> "One time I messaged the UPOU page about the requirements to be a UPOU student. The chatbot did answer me for the first [few] questions, but I noticed that when my questions became more specific about my situation, it cannot answer me anymore."

> "The chatbot cannot answer questions about the steps in the online application system [of UPOU]. It can direct you to the OAS link, yes, but specific OAS questions cannot be answered."

> "Sometimes the chatbot cannot answer specific questions. If I ask about the contact number/s of specific UPOU offices, it just gives me an answer for its location map."

These results suggest that the UPOU chatbot does not perform well on all questions or interactions. This performance could be attributed to a possible lack of varied and complete information on the UPOU chatbot KB. Survey results can be used to identify the weak points of the UPOU chatbot and to improve its KB, and its response mapping and generation for future (specific/unique) queries.

Table 1

User queries 'always' answered by the UPOU chatbot

Question	# of 'always' response
Application procedures	7
Program list	6
Requirements	5
What is distance education	1
Tuition fees	1
Important dates/events	1

Perceived Ease of Use

A little more than half of the study respondents (n=21, 51.2%) strongly agree that the UPOU chatbot was intuitive and easy to use, followed by 9 (22%) who agree, 8 (19.5%) are neutral, 1 (2.4%) who disagree, and then 2 (4.9%) who strongly disagree. The intuitiveness of the UPOU Chabot (Facebook chat box) may be attributed to the availability of 'buttons' and links in the chat box, which direct users to the information they need. On the other hand, for the AskOU-site-chatbot, the availability of sections for "FAQs," "news and announcements," etc. also make the chatbot intuitive and easy to use. Moreover, 23 respondents (56.1%) deemed the UPOU chatbot very useful. Followed by 6 (14.6%) who responded with "useful," 5 (12.2%) who responded "neutral," 4 (9.8%) who responded with "not useful," and 3 (7.3%) who responded with "not very useful." These results indicate that the majority of the users found the UPOU chatbot useful in terms of its ability to give them the information or response they need. These participants also view the usefulness of the chatbot as an innovative tool in relaying immediate information about UPOU.

Recognition and Facilitation of Users' Goal and Intent

In terms of the UPOU chatbot's ability to comprehend user queries and usefulness, 18 (43.9%) responded that the chatbot can understand their queries very well, followed by 9 (22%) who said that it did not really understand their queries, then 7 (17.1%) who were neutral.

Overall User Satisfaction

Overall, the majority of the participants were 'very satisfied' with the UPOU chatbot (n=17, 41.5%), followed by 9 (22%) neutral, 6 (14.6%) satisfied, 6 (14.6%) not satisfied, and 3 (7.3%) not very satisfied.

User Evaluation and Suggestions

Users shared the difficulties and issues they encountered with the UPOU chatbot. The most prevalent difficulties or issues were the following: inability to respond to specific/unique queries, inability to comprehend intent, and the 'lacking' knowledge of the UPOU chatbot (about office

hours, application documents, certain steps in University processes, etc.). Here are some user responses:

> "One time when I asked about the availability of Sablay in UPOU, since I was graduating, it gave me a link on how to shift the Sablay. I did not need that information since I was inquiring if I can get a Sablay from UPOU."

> "The chatbot can answer questions as long as you are direct to the point. But if you ask about something that it has no knowledge about, it gets annoying that it will just reply to you with "Please try rephrasing..." every time. Even if you try rephrasing your keywords for the chatbot to answer you, if it does not know the answer, it will just keep on telling you to rephrase your message."

> "I have specific questions when I messaged the Facebook page, but it seems that it cannot understand the question."

> "When my questions are very specific, the chatbot can't answer my question. And sometimes if I ask too many in a single message, it just catches some keywords and is not able to answer all of my questions."

> "Sometimes, the keywords the chatbot recognizes are not related to the 'content' of my query."

These responses reflect user frustration with the UPOU chatbot being unable to understand their input text or intention very well, resulting in incomplete and incorrect chatbot responses. Seemingly, the UPOU chatbot cannot map the appropriate keyword/s in situational/unique queries, thus cannot generate a satisfactory response. Similar to Følstad et al. (2018), it seems the UPOU chatbot also has interpretational problems. Jain et al. (2018) suggest that chatbots need to address these issues and improve "to engage and retain users effectively" (p. 903). Aside from retaining users, retaining and enticing more individuals in pursuing UPOU education should be highlighted in improving the UPOU chatbot.

Additionally, there are survey responses wherein users stated their preference of human agents since the UPOU chatbot cannot satisfactorily give them a response. Jain et al. (2018) suggest that users prefer human agents over chatbots due to conversation efficiency issues. On the other hand, findings of Følstad et al. (2018) state that users find chatbots better in terms of asking questions without feeling judged and pressured, unlike with human agents. With these user feedbacks on the UPOU chatbot, there is a need to sustainably measure the queries satisfactorily completed by the UPOU chatbot against the queries that need human agents. Nonetheless, once a more varied and complete UPOU chatbot KB is available, perhaps users will no longer seek human assistance as the Chatbot has already assisted them satisfactorily.

Aside from human agents, some users also prefer that they be answered directly by the UPOU chatbot instead of the links:

> "The chatbot could give direct answers to questions instead of just giving links."

This concern is even expounded by one response from the users:

> "I think the chatbot has to give me a direct answer sometimes. Because there might be occasions wherein a user contacted the UPOU main Facebook page through the service of Free Facebook. And if the chatbot redirects you to another link, you won't be able to visit the link because you have no mobile data or wifi connection at the moment."

The above statement can be a considerable improvement to the UPOU chatbot since free Facebook users were overlooked during the deployment of the UPOU chatbot. In the Philippines, some cellular service providers enable their users to access Facebook for free. However, if links cannot be totally removed from the chatbot responses, perhaps these could be made shorter "just so the message looks less bulky." The preference of UPOU chatbot users for shorter links in the chatbot responses should be considered since users will be retained if external links are minimized (Jain et al. 2018).

Despite these issues with the UPOU chatbot, some users still commend the chatbot and have expressed their appreciation of the chatbot as an innovative tool in addressing public queries. Some positive feedbacks are:

> "It makes communication with UPOU faster and better. The chatbot gives me immediate answers."

> "The chatbot feels personal when you talk to it. It responds to you with a "Hi!", it mentions your name, it says thank you/good morning/good afternoon/good evening/ you're welcome. It also introduces itself every time you start a conversation."

These positive feedback are as significant as the negative ones. The presence of positive feedback may reflect improved information support services. Jain et al. (2018) emphasized that "chatbots should have an apparent personality suiting its domain...engage users in small talk and provide a personal touch…" (p. 901). However, the UPOU chatbot lacks concluding statements after the user's conversation. As discussed in the studies of Jain et al. (2018) and Robinson et al. (2010), introductory and concluding phrases are expected of chatbots.

The users have also shared their suggestions on further improving the UPOU chatbot:

> "If [the chatbot] can be improved like a messaging pop-up [or sidebar] in the UPOU website that does not close, it will add efficiency."

> "The chatbot needs to be integrated with very specific keywords for different concerns. Example, if I am to ask about which UPOU office sells the Sablay, the chatbot should not only answer me about how to shift the Sablay. It has to give me the name of the office, the office hours, and the amount to be paid."

> "Monitor the chatbot [conversations]. An actual human or employee who oversees the chatbot and how it responds to messages."

In response to the third suggestion, one approach is already in place in the university wherein there is an assigned staff to monitor the UPOU chatbot on Facebook. This assigned staff documents all the conversations of the UPOU chatbot on Facebook, including the queries satisfactorily (complete and correct) answered, and the queries not answered by the UPOU chatbot. However, a monitoring scheme for the conversations on the UPOU chatbot via website is yet to be established. Monitoring results can be used to further enhance and expound the UPOU chatbot KB. This information then needs to be inputted and mapped with appropriate keywords into the UPOU chatbot KB to enhance its intelligence. The process needs to be done as long as there are user queries unresolved by the UPOU chatbot. As previously mentioned, UPOU chatbot developers could also explore automated KB updates. Improvements on the UPOU chatbot's

ability to comprehend user intent and conversation context are also needed. Since developments and improvements on the UPOU chatbot are at present manually done and requiring human resources and time, updates on this tool may not be immediate. Although not immediate, UPOU chatbot improvements are still necessary and should be maintained.

Conclusions and Recommendations

The UPOU chatbot was a tool developed and launched by the university to streamline its information support services to constituents. This study on the satisfaction of UPOU chatbot users resulted in mixed experiences. Results showed that the UPOU chatbot can always answer user queries, but it holds true to queries related to FAQs. The tool has issues in addressing complex, multiple, and specific/unique queries. Interpretational issues were also evident. Overall, the UPOU chatbot needs improvement as an information support tool. Improvements could focus on the lack of varied and complete information on its KB. However, the majority of its users still found this tool useful, intuitive, easy to use, and overall providing a satisfying experience. This study could be further expanded to explore the following: 1) user behavior and gender differences; 2) chatbot gender; 3) evaluation of chatbot responses per interaction; 4) the number of interactions/conversations per user; 5) user adaptation; and, 6) user retention. Future studies on the UPOU chatbot could also recruit a bigger and more diverse sample size of UPOU chatbot users with different experiences (e.g. first-time users, long-time users, one-time users, etc.). A more comprehensive study on chatbot key performance indicators influencing user satisfaction, analyzed using a usability scale, is also suggested. While the current study may be limited to only a few user satisfaction measures, this research could serve as a basis for succeeding chatbot investigations, especially for the UPOU chatbot.

References

Balaji, D. (2019). *Assessing user satisfaction with information chatbots: A preliminary investigation* [Master thesis, University of Twente]. http://essay.utwente.nl/79785/

Brandtzaeg, P.B., & Følstad, A. (2017). Why people use chatbots. In I. Kompatsiaris et al. (Eds.), *Internet science: Lecture notes in computer science*, *10673,* 377–392. https://doi.org/10.1007/978-3-319-70284-1_30

Brandtzaeg, P.B., & Følstad, A. (2018, August). Chatbots: Changing user needs and motivations. *Interactions, 25*(5). https://dl.acm.org/doi/10.1145/3236669

Cahn, J. (2017). *Chatbot: Architecture, design, & development* [Senior thesis, University of Pennsylvania]. https://www.academia.edu/37082899/CHATBOT_Architecture_Design_and_Development

Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access, 8,* 75264–75278. https://doi.org/10.1109/ACCESS.2020.2988510

Crutzen, R., Peters, G.J.Y., Portugal, S.D., Fisser, E.M., & Grolleman, J.J. (2011). An artificially intelligent chat agent that answers adolescents' questions related to sex, drugs, and alcohol: An exploratory study. *Journal of Adolescent Health, 48*(5), 514–519. https://dx.doi.org/10.1016/j.jadohealth.2010.09.002

Feine, J., Morana, S. & Gnewuch, U. (2019, 24–27 February). *Measuring service encounter satisfaction with customer service chatbots using sentiment analysis* [Conference session]. 14th International Conference on Wirtschaftsinformatik, Siegen, Germany.

Følstad, A., Nordheim, C., & Bjorkli, C. (2018, 24–26 October). *What makes users trust a chatbot for customer service? An exploratory interview study* [Conference session]. International Conference on Internet Science, St. Petersburg, Russia.

Følstad, A., & Brandtzaeg, P.B. (2020). Users' experiences with chatbots: Findings from a questionnaire study. *Quality and User Experience,* 5(3). https://doi.org/10.1007/s41233-020-00033-2

Gnewuch, U., Morana, S., Adam, M., & Maedche, A. (2018). Faster is not always better: Understanding the effect of dynamic response delays in human-chatbot interaction. *Research Papers, 113.* https://aisel.aisnet.org/ecis2018_rp/113/

Hien, H.T., Cuong, P.N., Nam, L.N.H., Nhung, H.L.T.K. & Thand, L.D. (2018). Intelligent assistants in higher-education environments: The FITEBot, a chatbot for administrative and learning support. In *SoICT' 18: Ninth International Symposium on Information and Communication Technology*, 69–76. ACM. https://doi.org/10.1145/3287921.3287937

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning.* Center for Curriculum Redesign. https://curriculumredesign.org/our-work/artificial-intelligence-in-education/

Huang, J., Zhou, M. & Yang, D. (2007). *Extracting chatbot knowledge from online discussion forums* [Conference session]. 20th International Joint Conference on Artificial Intelligence.

Hussain, S., & Ginige, A. (2018). *Extending a conventional chatbot knowledge base to external knowledge source and introducing user based sessions for diabetes education* [Conference session]. 32nd International Conference on Advanced Information Networking and Applications Workshops.

Jain, M., Kumar, P., Kota, R., & Patel, S.N. (2018). *Evaluating and informing the design of chatbots* [Conference session]. Designing Interactive Systems Conference 2018, 9–13 June 2018, Hong Kong.

Liao, Q.V., Hussain, M.M., Chandar, P., Davis, M., Khazaen, Y., Crasso, M.P., Wang, D., Muller, M., Shami, N.S., & Geyer, W. (2018, 21-26 April). *All work and no play? Conversations with a question-and-answer chatbot in the wild* [Conference session]. CHI 2018, Montreal, Canada. https://doi.org/10.1145/3173574.3173577

Luckin, R., Holmes, W., Griffiths, M., & Forcier, L.B. (2016). *Intelligence unleashed: An argument for AI in education.* Pearson Education. http://oro.open.ac.uk/50104/

Ranoliya, B.R., Raghuwanshi, N., & Singh, S. (2017). Chatbot for university related FAQs. In *2017 International Conference on Advances in* Computing, *Communications and Informatics*, 1525–1530. IEEE. https://doi.org/10.1109/ICACCI.2017.8126057

Robinson, S., Traum, D.R., Ittycheriah, M. & Henderer, J. (2010, 17–23 May). *What would you ask a conversational agent? Observations of human-agent dialogues in a museum setting* [Conference session]. 7th International Conference on Language Resources and Evaluation, Valletta, Malta.

Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. *International Journal of Artificial Intelligence in Education, 26,* 582–599. https://doi.org/10.1007/s40593-016-0110-3

Serrano, J.V., Belegal, J.A.C., Cañas-Llamas, A.M.E.F., Petrasanta, L.P., & Almodiel, M.C. (2020). UPOU's chatbot: Toward quality information services. In M.F. Lumanta, & P.G. Garcia (Eds.), *Quality Initiatives in an open and distance elearning institution: Towards excellence and equity*, 173–186. University of the Philippines Open University. https://networks.upou.

edu.ph/32136/quality-initiatives-in-an-open-and-distance-e-learning-institution-towards-excellence-and-equity/

Smutny, P., & Schreiberova, P. (2020). Chatbots for learning: A review of educational chatbots for the Facebook Messenger. *Computers & Education, 151*. https://doi.org/10.1016/j.compedu.2020.103862

Tariverdiyeva, G. (2019). *Chatbots' perceived usability in information retrieval tasks: An exploratory analysis* [Master thesis, University of Twente]. http://essay.utwente.nl/77182/

Van den Broeck, E., Zarouali, B., & Poels, K. (2019). Chatbot advertising effectiveness: When does the message get through? *Computers in Human Behavior, 98*, 150–157. https://doi.org/10.1016/j.chb.2019.04.009

von Wolff, R.M., Nortemann, J., Hobert, S., & Schumann, M. (20). Chatbots for the information acquisition at universities - A student's view on the application area. In A. Følstad et al. (Eds.), *Chatbot research and design*, 231–244. Springer. https://doi.org/10.1007/978-3-030-39540-7_16

Wei, C., Yu, Z. & Fong, S. (2018, 26-28 February). *How to build a chatbot: Chatbot framework and its capabilities* [Conference session]. 10th International conference on machine learning and computing, Macau, China.

Winkler, R., & Söllner, M. (2018). *Unleashing the potential of chatbots in education: A state-of-the-art analysis*. Academy of Management Annual Meeting. https://www.alexandria.unisg.ch/254848/1/JML_699.pdf

Wu, Y., Wang, G., Li, W., & Li, Z. (2008). *Automatic chatbot knowledge acquisition from online forum via rough set and ensemble learning* [Conference session]. International Conference on Network and Parallel Computing.

Zarouali, B., Van den Broeck, E., Walrave, M., & Poels, K. (2018). Predicting consumer responses to a chatbot on Facebook. *Cyberpsychology, Behavior, and Social Networking, 21*(8), 491–497. https://doi.org/10.1089/cyber.2017.0518

Appendix 1

Post-interaction survey used for the study

Iska and IskOU: The UPOU Chatbot for Information Support Services

Good day! We, from the University of the Philippines Open University (UPOU), are conducting a study on the UPOU chatbot—Iska/IskOU. With this, we kindly ask you to accomplish this online questionnaire for our study. This study focuses on documenting and sharing UPOU's experience after its operationalization of the Iska and IskOU Chatbots to provide information to its students and to the public. The results of this study will be used both for research purposes and for the improvement of the UPOU chatbot.

All information disclosed in this survey will be used for research purposes only. We also assure the anonymity of your identities when we present the results of the study. If you have any questions, please feel free to reach us at janele.belegal@upou.edu.ph**.**

Thank you and have a nice day!

1. Are you a UPOU Student?
   - o Yes
   - o No (Prospective student)
   - o No (Just inquiring)
   - o Other: _____

2. What questions do you usually ask the UPOU chatbot?

_____

3. Was the UPOU chatbot able to answer your questions promptly?
   - o Always
   - o Sometimes
   - o Never
   - o Other: _____

4. Was the UPOU chatbot able to answer your questions satisfactorily?
   - o Always
   - o Sometimes
   - o Never
   - o Other: _____

5. How well did the UPOU chatbot understand your question?

Very Well	Well	Neutral	Did Not Understand	Really Did Not Understand

6. Is the UPOU chatbot useful?

Very Useful	Useful	Neutral	Not Useful	Very Not Useful

7. Is the interface of the UPOU chatbot intuitive and easy to use?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

8. Did you face any technical difficulty in using the UPOU chatbot? Please specify.

_____

9. Do you have any other suggestions to improve the UPOU chatbot? Please specify.

_____

10. Please suggest other ways of using the UPOU chatbot for learning purposes.

_____

11. Please rate your overall experience/satisfaction with the UPOU chatbot.

Very Satisfied	Satisfied	Neutral	Not Satisfied	Very Not Satisfied

Call for Articles

We call on colleagues, such as academics, researchers, technology developers, and open distance e-learning experts to submit their articles for publication in the International Journal on Open and Distance e-Learning. The IJODeL is a bi-annual journal, hence it comes out every June and December of the year.

The preferred articles are those reporting original research, articles based on critical analyses of e-learning undertakings, book reviews, evaluation studies, and original think pieces such as concept papers.

Please visit the IJODeL website and familiarize yourselves with the process of submitting your articles online.

Template for Quantitatively-Oriented Articles

Title of Article

Author 1[1]and Author 2[2]

[1]Position, Institutional Affiliation, Country, Email address

Abstract

Abstract in 150-250 words.

Keywords: No more than five (5) keywords.

Introduction (Center Heading 1)

This section contains a clear historical background of the study, showing why the research had to be undertaken. In this section, the author(s) shall have the opportunity to expound on what the research says about the research problem, and show clear support for the need to undertake the research, through appropriate research gap analysis.

Objectives (Center Heading 2)

This section provides a clear statement of the goals and objectives of the research.

Conceptual/Theoretical Framework (Center Heading 3)

The conceptual or theoretical framework would be expected for research studies that dealt with empirical procedures and methodologies. A framework of this nature would provide for clear interrelationships and direction of interactions of variables which the researcher expects to show by his/her data and data interpretations. It should be noted that variable interactions may be easier to understand if they were to be presented in illustrated model formats.

Methodology (Center Heading 4)

This section includes brief discussions of data collection procedures and analyses. Data must be presented in appropriate tables.

Results and Discussions (Center Heading 5)

Analytical discussions must present possible relationships of the results of the study and the findings from other studies specifically reviewed for this purpose. Post analysis data may be presented in both statistical tables and appropriate models and figures.

Include subheadings as are necessary.

Conclusions and Recommendations (Center Heading 6)

Conclusions must be according to the objectives of the study.

Recommendations must reflect the objectives and conclusions of the study.

References

General format must follow the suggestions for authors, but generally must follow the APA Style for publications.

Template for Qualitatively-Oriented Articles

Title of Article

Author 1[1] and Author 2[2]

[1]Position, Institutional Affiliation, Country, Email address

Abstract

Abstract in 150-250 words.

Keywords: no more than five (5) keywords

Introduction (Center Heading 1)

This section contains the historical background of the study, including specific reports and studies that provided direct support to the research problem. Some relevant part of the literature shall be included in the discussion of the research problem to establish more strongly the need to undertake the study.

Objectives of the Study (Center Heading 2)

This section contains both the research over-all goal and the specific objectives to be attained.

Relevant Studies or Review of Related Studies (Center Heading 3)

Review of studies that are highly related to the current study. After the relevant studies have been presented, a synthesis of these may be presented and the relationship of such synthesis must be related to the study under consideration.

Subheading may be determined as necessary. In these subheadings, specific observations may be noted and statistical tables presented as well as figures and models.

Discussions (Center Heading 4)

In this section shall be inserted full discussion of results and finding, discussed more deeply in relation to the related studies already reviewed. Subheads may be determined and included in the discussions.

Conclusions (Center Heading 5)

The conclusions of the study must reflect the objectives of the research.

Recommendations (Center Heading 6)

All recommendations must appropriately correspond to the conclusions, and therefore the objectives of the study.

References (Center Heading 7)

Follow the APA Style Guide.

Style Guide for Full Paper Submission

The paper should be 15-25 pages long (including tables, figures, and references) and prepared preferably in Microsoft Word format. The author(s) should provide a title, the name(s) of the author(s), position(s), institutional affiliation(s), institutional address(es), email address(es) and key words (no more than five). You may make use of the template for preparing your paper: Journal Article Template (Qualitatively-Oriented); Journal Article Template (Quantitatively-Oriented). Detailed guidelines are as follows:

1. **Font type**
   The whole text should be in Arial.

2. **Margins**
   The paper should be A4 size (21 x 29.7 cm). All margins (top, bottom, left, and right) should be 1 inch.

3. **Line Spacing**
   The whole text should be single-spaced.

4. **Title**
   The title of the paper should be 14-point, bold, in capital and lower case letters, and centered.

5. **Author Information**
   Use 12-point and centered for the author name(s). The Western naming convention, with given names preceding surnames, should be used.

   The author name(s) should appear below the title, with one blank line after the title.

   Use 10-point for author(s)' position(s), institutional affiliation(s), country, and email address(es).

   The author(s)' position(s), institutional affiliation(s), institutional address(es), and email address(es) should appear below the author name(s), with one blank line after the name(s).

6. **Headings**
   - Heading font (with the exception of the paper title and the abstract) should be 14-point Arial and in bold.
   - Headings should be centered and in capital and lower case letters [i.e. nouns, verbs, and all other words (except articles, prepositions, and conjunctions) should be set with an initial capital].
   - There should be two blank lines before each heading and one blank line after it.

7. **Subthemes**
   - Subtheme(s) should be 14-point Arial, in bold capital and lower case letters, and flushed left.

- There should be one blank line before and after each subtheme.

8. **Abstract**
   - The abstract heading should be 14-point Arial, bold, centered.
   - The abstract should be in 150-250 words.
   - The main text of the abstract should be 12-point Arial, italicized.
   - Alignment of the main text of the abstract should be justified, no indent.

9. **Key Words**
   - Include at most five keywords.
   - Use 12-point Arial. The keywords should appear below the abstract, with one blank line after the abstract.

10. **Main Text**
   - In general, paragraphs should be separated by a single space.
   - All paragraphs must be in block format.
   - Text font should be 14-point Arial, single-spacing. Italic type may be used to emphasize words in running text. Bold type and underlining should be avoided.
   - The first line of each paragraph should not be indented.

11. **Tables and Figures**
   - Tables and figures should be numbered and have captions which appear above them.
   - Graphics and pictures should not exceed the given page margins.
   - Captions should be 14-point centered.
   - The tables and figures of the paper should follow the APA citation style.
   - There should be no space between the caption and the table/figure.

12. **Footnotes**
   - Footnotes may be used only sparingly. A superscript numeral to refer to a footnote should be used in the text either directly after the word to be discussed or – in relation to a phrase or a sentence – following the punctuation mark (comma, semicolon, or period)
   - Footnotes should appear at the bottom of the page within the normal text area, with a line about 5 cm long immediately above them.
   - Footnotes should be 10-point and aligned left.

13. **References**
   - The author-date method in-text citation should be used. Following the APA format, the author's last name and the year of publication for the source should appear in the text.

   - All references that are cited in the text must be given in the reference list. The references must be in APA format and arranged alphabetically at the end of the paper.

Sample:

Surname, A. A. (year). Article title. *Title of Journal, volume number*(issue number), inclusive page numbers.

Surname, A. A. (year). *Title of book.* Publisher location: Publisher Name.

Surname, A. A., Surname, B. B., & Surname, C. C. (2000). Title of article. *Title of periodical, volume number*(issue number). Retrieved from URL/web address.

Surname, A.A. (Year, Month). *Title of paper.* Paper presented at name of conference, city, country.

1. **Length**
   The paper should be 3,000-7,000 words including tables, figures, and references.

Author's Guide

The International Journal on Open and Distance e-Learning (IJODeL) welcomes original research articles, book reviews, theories, and best practices pertaining to ODeL worldwide. Articles should be 3,000-7,000 words including tables, figures, and references.

1. A publishable quantitatively-oriented paper should contain the following:
2. Abstract
3. Introduction
4. Objectives
5. Conceptual/Theoretical Framework
6. Methodology
7. Results and Discussions
8. Conclusions and Recommendations
9. References

Go to: Quantitatively-Oriented Journal Article Template

A publishable qualitatively-oriented paper should contain the following:
1. Abstract
2. Introduction
3. Objectives of the Study
4. Relevant Studies or Review of Related Studies
5. Discussions
6. Conclusions
7. Recommendations
8. References

Go to: Qualitatively-Oriented Journal Article Template

To submit an article, visit www.ijodel.com and follow the steps in the online submission system.