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Gerry Mae Torres Silvero
Cavite State University - Tanza Campus, Philippines

Mildred Arellano Sebastian
Cavite State University - Tanza Campus, Philippines

Mary Joy Angelique Romero Mojica
Cavite State University - Tanza Campus, Philippines

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Transition towards Alternative Learning Activities: The Case of Tertiary Education Students

Gerry Mae Torres Silvero, Mildred Arellano Sebastian, Mary Joy Angelique Romero Mojica

Abstract

The COVID-19 outbreak greatly affected the education sector. Various alternative learning activities were considered by the tertiary education including the synchronous and asynchronous mode of online learning. The result of this study determined the perception of learners about alternative learning activities used in the virtual learning environment. Moreover, the performance of students in face to face and asynchronous learning activities were compared and tested for significant difference. It was found out that students who were taught with face to face learning modality has significantly higher academic performance than those students who were taught with alternative learning modality but alternative learning mode could still be used to further the learning during this time of pandemic.

Keywords: Alternative learning, Blended learning, e-learning, Flexible learning, Pedagogy

Introduction

The coronavirus COVID-19 outbreak disrupted life around the globe in 2020 and has profound effects and impacts on almost all sectors in the human race (Gonzalez et al., 2020). These have resulted in widespread disruption including closure of schools (Viner et al., 2020). As the world transitions to a new normal, there have been calls for substantial improvements in processes to facilitate safe, effective and ethical care in the post-COVID era (Mitchell & Nou, 2020). Enhanced community quarantine has been enforced in the Philippines in response to the growing spread of the novel coronavirus outbreak (Ravelo, 2020). Responses like community lockdown and community quarantine of several countries have led students and teachers to study and work from home which led to the delivery of online learning platforms (Angelova, 2020 ; Crawford et al., 2020; Ghazi-Saidi et al., 2020; Hebebci, Bertiz, & Alan, 2020; Niemi, & Kousa, 2020; Sahin & Shelley, 2020). Commission on Higher Education (CHED) Chairman Prospero de Vera III said that flexible learning shall be implemented this year. He added that universities and colleges have the freedom to choose what mode would be effective for them (Magsambol, 2020). The mode of learning can be synchronous, asynchronous, or both.

Several studies have been conducted to determine the difference in the use of face to face learning and distance/online learning. Bali and Liu (2018) found that face-to-face learning perception was higher than online

learning in terms of social presence, social interaction, and satisfaction. However, there is no statistically significant difference in learning preference found among level of student. The study also showed that some students were very comfortable in online learning since it led them to the chance of being innovative by using computer technology. In another study by Arias, Swinton, & Anderson (2018), students in the face to face section have statistically significant higher exam scores and statistically significantly greater improvement on the post-test instructor questions. There is no statistical difference in the improvement on the post-test overall nor in the improvement in the post-test standardized questions.

These mixed results suggest that both course objectives and mechanisms used to assess the relative effectiveness of the two modes of education may play an important part in determining the relative effectiveness of alternative delivery methods. Hence, this study determined the perception of learners about alternative learning activities used in virtual learning environment as well as if it facilitate or hinder the learning process. The result of the study provided a glimpse of perspective if alternative learning activities can be used as a paradigm shift in teaching and learning process in the new normal.

Moreover, the students' academic performance during face to face and asynchronous learning activities was also compared to support the affectivity of the learning experiences. Furthermore, this study can help educational leaders and curriculum managers decide in considering which learning modality better facilitate learning in the new normal. On the other hand, students may also gain broader understanding of alternative learning activities as a paradigm shift in the teaching and learning process. Likewise, future researchers may gain benefit in this study. The results of the study suggest new information which is useful as a basis for future studies.

Literature Review

The works of the professional researchers helped the present researchers gain idea regarding the students' perception in online and face to face learning activities. It also helped determine the difference between the academic performances of students in face to face learning activities from asynchronous learning activities. In addition, the previous studies provided information regarding the pandemic and its effect in the education sector including information about synchronous and asynchronous learning arrangement.

Rise of COVID-19

The World Health Organization (WHO) declared COVID-19 a pandemic as the confirmed cases rise around the world (Ducharme, 2020). This started in China and is caused by a novel coronavirus (SARS-CoV-2, previously known as 2019-nCoV) and has received global attention from growing infections and on how to eradicate the disease and flatten the curve of infections (Guo et al., 2020). Symptoms include fever, fatigue, cough, lack of appetite, body aches, shortness of breath, and phlegm which can be transferred when the infected person coughs or sneezes. They can spray droplets as far as 6 feet away. If you breathe them in or swallow them, the virus can get into your body (Pathak, 2020). Though it affects people of all ages, it is most vulnerable to adults, children and people with underlying medical conditions (WHO, 2020).

The coronavirus COVID-19 outbreak disrupted life around the globe in 2020 and has profound effects and impacts on almost all sectors in the human race (Gonzalez et al., 2020). These have resulted in widespread disruption such as travel restrictions (Chinazzi et al., 2020), closure of schools (Viner et al., 2020), global economic recession (Fernandes, 2020), political conflicts (Barrios & Hochberg, 2020), racism (Habibi et al., 2020), and misinformation and controversies (Enitan et al., 2020), to name a few.

As the world transitions to a new normal, there have been calls for substantial improvements in processes to facilitate safe, effective and ethical care in the post-COVID era (Mitchell & Nou, 2020). Enhanced community quarantine has been enforced in the Philippines in response to the growing spread of the novel coronavirus outbreak (Ravelo, 2020). The education sector is highly affected (Tria, 2020). Most countries around the world have temporarily closed educational institutions to contain the spread of the COVID-19 pandemic and reduce infections. This closure has affected more than 1.2 billion learners worldwide with more than 28 million learners in the Philippines (UNESCO, 2020). Responses like community lockdown and community quarantine of several countries have led students and teachers to study and work from home which led to the delivery of online learning platforms (Crawford et al., 2020).

Education in the New Normal

To respond to the needs of learners, especially of the 3.5 million tertiary-level students enrolled in approximately 2,400 Higher Education Institutions (HEIs), certain HEIs in the country have implemented proactive policies for the continuance of education despite the closure. These policies include modified forms of online learning that aim to facilitate student learning activities (Joaquin et al., 2020). Online learning might be in terms of synchronous, real-time lectures and time-based outcomes assessments, or asynchronous, delayed-time activities, like pre-recorded video lectures and time-independent assessments (Oztok et al., 2013).

Commission on Higher Education (CHED) Chairman Prospero de Vera III said that flexible learning will be implemented this year. He added that universities and colleges have the freedom to choose what mode would be effective for them. Some of them would be using pure online, pure modular, while others are combination of the two (Magsambol, 2020).

In flexible learning, students gain access and flexibility with regard to at least one of the following dimensions: time, place, pace, learning style, content assessment or learning path (Muller et al., 2019). It focuses on the design and delivery of programs, courses, and learning interventions that address learners' unique needs in terms of the given dimensions. It does not necessarily require connectivity (Cervantes, 2020). Further, it aims to decongest the classroom to reduce the number of students who go there at one time so that distancing and the health of the students can be protected (San Juan, 2020).

Asynchronous and Synchronous Learning

Asynchronous learning means that there is no set time for the learning to be occurring. Learners can learn

anywhere and can consume their time to gain knowledge of what they want to know and when they need to know. On the other hand, synchronous learning is related to structure and time-bounded activities, which are offered through web conferencing and chatting options (Malik et al., 2017). Further, asynchronous learning makes it possible for learners to log on to an e-learning environment at any time and download documents or send messages to teachers or peers. Students may spend more time refining their contributions, which are generally considered more thoughtful compared to synchronous communication (Hrastinski, 2008).

Asynchronous Learning and Face to Face Learning

The biggest opportunity that face to face learning presents is the ability to discuss, collaborate, practice, and role play, all live and with guidance from a facilitator on hand. Being part of a group and being held accountable are powerful learning tools. Meanwhile, asynchronous learning is self-paced, accommodates a busy schedule, allows people to learn at their own pace, provides consistent instruction to very large audience groups and is available for review (Malamed, 2011). Furthermore, the biggest differences between online and face to face learning have always been in the realm of fostering connection and collaboration between learners. The importance of face to face interaction in education is vital. Social interaction has a richness that might feel hard to replicate in the digital world. However, it is not impossible in the corporate world (Cooke, 2020).

Students' Performance in Face to Face Learning and Online Learning

According to a study by Bali and Liu (2018), face to face learning perception was higher than online learning in terms of social presence, social interaction, and satisfaction. However, there is no statistically significant difference in learning preference found among level of student. The study also showed that some students were very comfortable in online learning since it led them to the chance of being innovative by using computer technology.

With regards to students' performance, students in online courses do as well in objective measure of performance, but not better than students in face to face courses. According to Allen and Seaman (2006), students need more discipline to succeed in online courses. Lack of self-discipline would have a more severe impact on student performance in, especially asynchronous, online courses where students are often attracted by appeal of anytime, anywhere structure of the course which is somewhat inconsistent with the previous finding that online students and traditional students performed equally well (Daymont & Blau, 2008).

In another study by Arias, Swinton, & Anderson (2018), students in the face to face section have statistically significant higher exam scores and statistically significantly greater improvement on the post-test instructor questions. There is no statistical difference in the improvement on the post-test overall nor in the improvement in the post-test standardized questions. These mixed results suggest that both course objectives and mechanisms used to assess the relative effectiveness of the two modes of education may play an important part in determining the relative effectiveness of alternative delivery methods.

Blended Learning

According to Alammary, Sheard, and Carbone (2014), the term blended learning has no single agreed upon definition. Although this might appear to be an academic point, the consequence is that it allows teachers and course designers to develop their own understandings of the term within the context of their courses or institutions, and then use that as a basis to design their blended courses. In 2002, Driscoll identified four different concepts denoted by blended learning: (1) To combine or mix modes of web-based technology (e.g., live virtual classroom, self-paced instruction, collaborative learning, streaming video, audio, and text) to accomplish an educational goal; (2) To combine various pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology. (3) To combine any form of instructional technology (e.g., videotape, CD-ROM, web-based training, film) with face to face instructor-led learning.

Drawing on the Driscoll (2002) work, Oliver and Trigwell (2005) proposed three different definitions of blended learning: (1) The combination of media and tools employed in an e-learning environment; (2) The combination of a number of pedagogic approaches, irrespective of the learning technology used; and (3) The integrated combination of traditional learning with web-based online approaches.

Theoretical Framework

As seen in Figure 1, the model shows which pedagogical objectives and activities drive the approaches, including the online technology that faculty members use in instruction. The model also suggests that blending the objectives, activities, and approaches within multiple modalities might be most effective for, and appeal to, a wide range of students. The most important feature of this model is that pedagogy drives the approaches that will work best to support student learning.

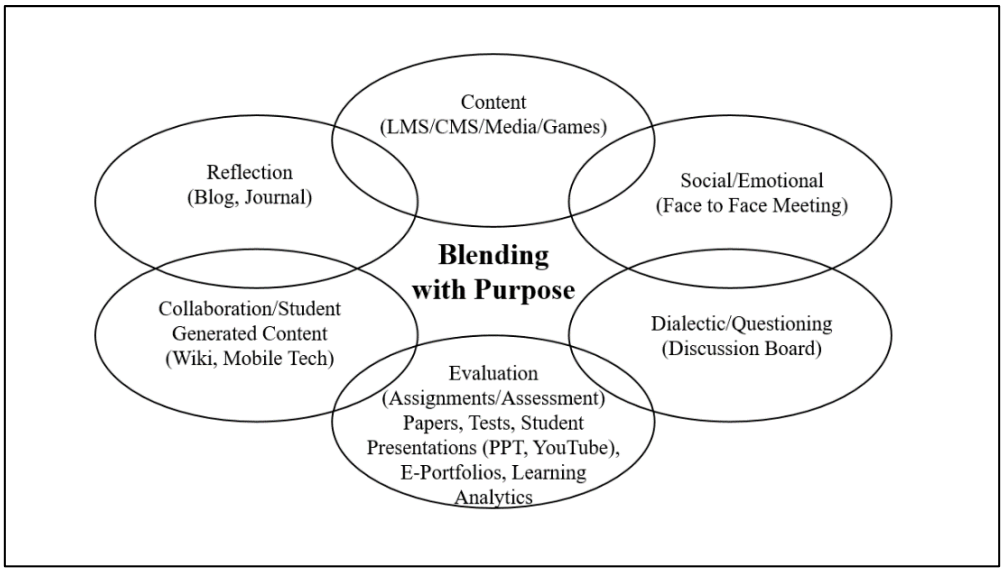

Figure 1. Blending with Pedagogical Purpose Model (Picciano, 2017)

In the rise of the pandemic, alternative learning systems have been necessary. This included the utilization of the online learning system which can be conducted synchronously or asynchronously. On the other hand, blended learning as defined by Oliver and Trigwell (2005) is the combination of a number of pedagogic approaches, irrespective of the learning technology used. Moreover, blended learning can be utilized in the said alternative learning system as long as it combines various pedagogical approaches to produce an optimal learning outcome with or without instructional technology.

Research Questions

Generally, this study aimed to determine if alternative learning activities can be used as a paradigm shift in the teaching and learning process in the new normal. Specifically, it sought to answer the following:

1. What perceptions do learners have about alternative learning activities used in virtual learning environment?
2. Do alternative learning activities facilitate learning or hinder the process?
3. Can alternative learning activities be used as a paradigm shift in the teaching and learning process in the new normal?

Method

Research Design

This study is a descriptive-correlation research investigating alternative learning activities – synchronous and asynchronous mode of learning as a paradigm shift in the teaching and learning process in the new normal. The significant difference in the students' academic performance during face to face and asynchronous learning activities was also determined.

Sampling and Participants

The participants of the study were teacher education students in a state university who took Child and Adolescent Learners and Learning Principles course under the same instructor. The first group of students took the course under the online modality which utilizes the asynchronous learning mode during the conduct of the study; while the second group took the course under the face to face learning modality. Students were selected purposively.

Instruments

The instruments used by the researcher are the data gathered from the students' Senior High School Form 138 from the university registrar, the students' final grade in the course, Child and Adolescent Learners and Learning Principles from their instructor, and the responses of the teacher education students in the survey questionnaire which determined their perception towards the use alternative learning activities in virtual learning environment.

Data Gathering and Procedure

Students' grades during their Senior High School were obtained from their Form 138 submitted to the Office of the University Registrar. Permission was sought first prior to actual data gathering. This was to establish a point of comparison among the two groups of students. Then, the participants were asked to respond in a survey questionnaire to determine their perception towards alternative learning activities used in virtual learning environment.

The questionnaire consists of three parts. The first part is the personal information which determined the student's email address, age, sex, civil status, and how they support their studies. The second part of the questionnaire is composed of five questions regarding their familiarity and experiences on synchronous teaching and learning process. This includes multiple-choice type questions, check boxes, and supply-type questions.

The third part of the questionnaire is composed of six questions regarding their familiarity and experiences on asynchronous teaching and learning process. A final question on which mode better facilitates teaching and learning is also included. Their final grades in the course were obtained from the teacher who handled the course.

Data Analysis

Two groups of college students were the focus of this study. The first group, controlled group, was graduates of senior high school and were taught using face-to-face interaction in the normal classroom setup and enrolled in a certain state university under the teacher education program during the First Semester, AY 2019 – 2020. The second group was graduates of SHS in the new normal and enrolled in the same university under the same program during the First Semester of the following year.

Demographic profiles were collected among these participants. Also, their perceptions towards alternative learning activities were sought. These were done through an online survey via Google forms that were sent to the participants. These two groups were also compared in terms of their academic performance. In order to establish some point of comparison for the said two groups, it was necessary to determine if there exists no significant difference in their academic performance prior to admission to college. In this regard, independent samples t-test was used to accomplish the task.

Once no significant difference has been established in the two groups, their final grades were compared and tested for significant differences to determine whether the use of alternative learning activities will have the same effect to student's academic performance when they were taught using face-to-face classroom setup. Also, Cohen's d was used to describe the effect size on the teaching methodology used. Table 1 shows the transmutation of midterm grades.

Table 1. Standard Transmutation Table for All Courses

Grade	Equivalent
1.00	96.70 – 100.00
1.25	93.40 – 96.60
1.50	90.10 – 93.30
1.75	86.70 – 90.00
2.00	83.40 – 86.60
2.25	80.10 – 83.30
2.50	76.70 – 80.00
2.75	73.40 – 76.60
3.00	70.00 – 73.30
4.00	50.00 - 69.90
5.00	Below 50
INC	Passed the course but lack some requirements
Dropped	If unexcused absence is at least 20% of the total class hours

Ethical Considerations

Informed consent from the campus administrator, department chair, registrar, and students were obtained using relevant documentation before the conduct of the study. This includes a letter of request addressed to the campus administrator, department chair, and registrar. To protect their basic rights, privacy, and confidentiality, all direct identifiers were removed. All participants were given fictive names as well as the instructor of the course. This is an important step that none of the participants will be recognizable. All the gathered data were treated with utmost confidentiality and was used solely for the completion of the study.

Results

Students' Characteristics

Among the 99 students who participated in this research, 78 were female and 21 were male. Most of the students are 19 years old (see Table 2).

Table 2. Students' Demographic Profile

Demographic Profile	Frequency (n=99)	Percent (%)
Age		
18 – 20	61	61.62
21 – 23	20	20.20
24 – 26	9	9.09
27 – 29	4	4.04
30 – 32	3	3.03
33 – 35	1	0.01

36 – 38	0	0
39 – 41	1	0.01
Sex		
F	78	78.79
M	21	21.21
Civil Status		
Single	85	85.86
Married	13	13.13
Single-parent	1	1.01
How is your study being supported?		
Scholarship	18	18.18
Working Student	24	24.24
Parental Support	63	63.64
Others	12	12.12

Students' Perception towards Alternative Learning Activities

Students were asked about their familiarity of alternative learning activities in terms of synchronous and asynchronous teaching and learning activities. Results are presented in Table 3. In terms of familiarity with synchronous learning activities, 42.42% are very familiar, 51.52% are familiar, 3.03% are somewhat familiar, and 3.03% are not familiar. On the other hand, 48.48% are very familiar, 48.48% are familiar, 3.03% are somewhat familiar, and 0 are not familiar with asynchronous learning activities.

Table 3. Students' Familiarity with A/Synchronous Teaching and Learning Activities

Students' familiarity with a/synchronous teaching and learning activities	Synchronous Teaching and Learning Activities		Asynchronous Teaching and Learning Activities	
	Frequency (n=99)	Percent (%)	Frequency (n=99)	Percent (%)
Very familiar	42	42.42	48	48.48
Familiar	51	51.52	48	48.48
Somewhat familiar	3	3.03	3	3.03
Not familiar	3	3.03	0	0

When asked as to whether the teaching and learning could be better taught/learned a/synchronously or not, 60.61% of the participants reiterated the conduct of synchronous teaching and learning due to a more responsive discussion between the students and instructor which lead to a better understanding of the lesson. In addition, students viewed that some lessons cannot be learned through readings and self-study which is why the presence of the instructor and social interaction is vital in learning. On the other hand, 30.30% of the participants reiterated the conduct of asynchronous teaching and learning because it promotes independent learning. Meanwhile, 9.09% of the students were undecided (see Table 4).

Table 4. Students' Perception on A/Synchronous Teaching and Learning

Students' perception on a/synchronous teaching and learning	Frequency (n=99)	Percent (%)
Teaching and learning could be better taught/learned synchronously	60	60.61
Teaching and learning could be better taught/learned asynchronously	30	30.30
Undecided	9	9.09

Already one-hour synchronous sessions were conducted during the semester, so the students were asked in the next question about the desirable duration of the session (see Table 5). Four options were given in this regard: 20, 30, 40 and 50 minutes. They were also given the option to give other comments. Majority reiterated that synchronous sessions should be up to 50 minutes only. This was due to some internet connectivity and screen time issues.

Table 5. Desirable Duration of Synchronous Sessions

Desirable duration of synchronous sessions	Frequency (n=99)	Percent (%)
20 minutes	3	3.03
30 minutes	18	18.18
40 minutes	6	6.06
50 minutes	48	48.48
Others (1-2 hours)	24	24.24

When asked about the most helpful activities in asynchronous mode of learning, "email", "quizzes", "assignments", "modules/lecture/handouts", "video discussion" and "online platforms" options were given, the students' responses showed that module/lecture/handouts and video discussion were the most helpful activities (see Figure 2).

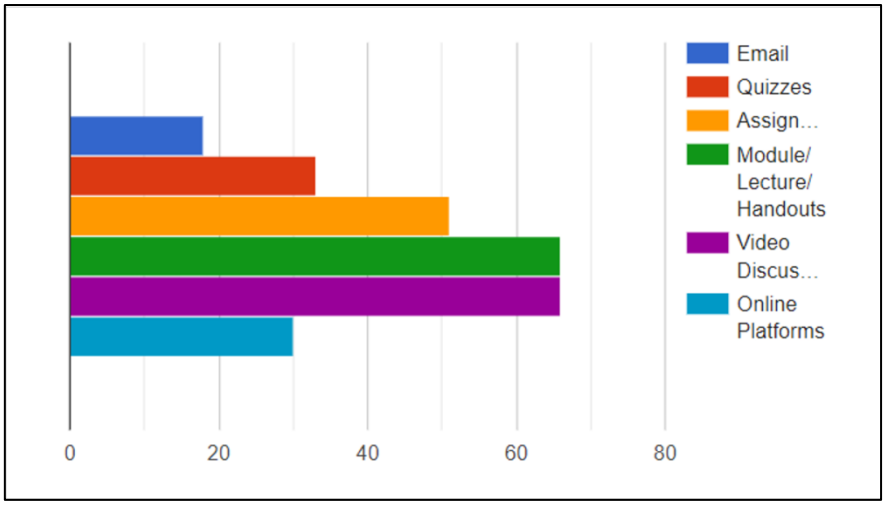

Figure 2. Helpful Activities in Asynchronous Mode of Teaching and Learning

When asked whether they actively participate in synchronous session, 69.7% responded yes and 30.3% responded not active. Some (30.3%) students could not afford to be active participants of synchronous sessions due to lack of gadgets, internet connectivity issues, or other work schedules (see Figure 3).

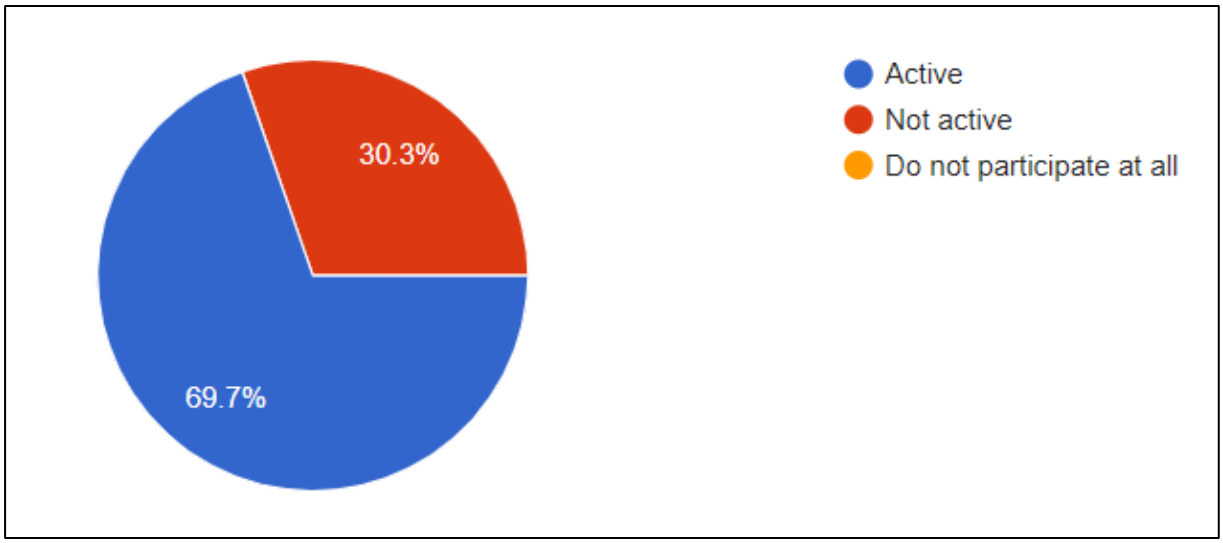

Figure 3. Students' Participation in Synchronous Session

In addition, they were asked whether a/synchronous activities helped them improve their academic performance. In synchronous activities, 78.79% replied yes, as it allows for a more dynamic exploration of topics, ideas, and concepts and 21.21% others replied no. In asynchronous activities, 48.48% replied yes, as it develops students' to be more independent and responsible for their own learning and 27.27% others replied no as it makes them less motivated and unproductive to learn alone.

Table 6. Students' Perception if A/Synchronous Activities Helped them Improve their Academic Performance

Students' perception if a/synchronous activities helped them improve their academic performance	Synchronous Activities		Asynchronous Activities	
	Frequency (n=99)	Percent (%)	Frequency (n=99)	Percent (%)
Yes	78	78.79	72	48.48
No	21	21.21	27	27.27

The research also sought participants' opinion about the strongest and weakest points of asynchronous learning activities. Majority of the respondents agreed that the strongest point of asynchronous learning activities is that it allows for independent learning as shown in Figure 4. Further, the absence of active presence in the discussion has been the weakest point of asynchronous learning activities as shown in Figure 5.

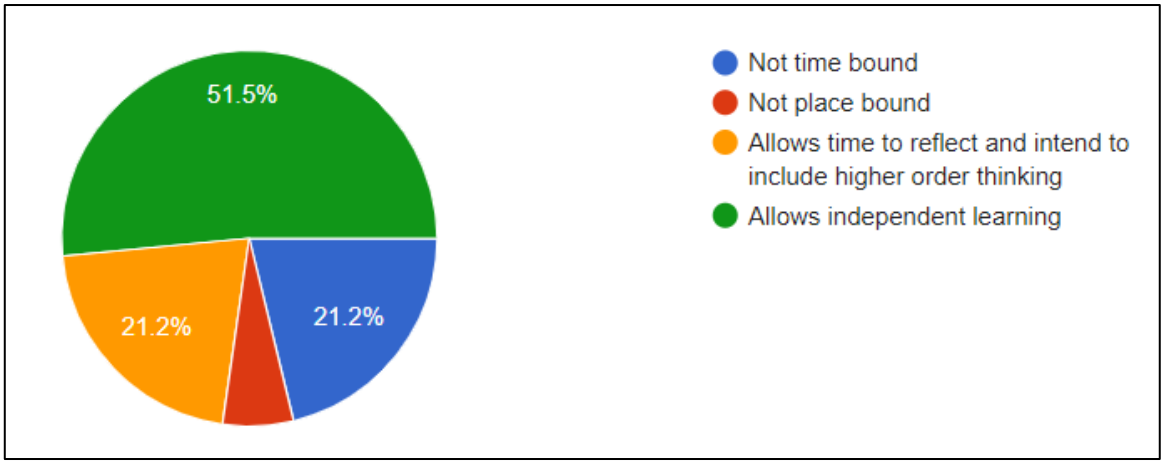

Figure 4. Strongest Points of Asynchronous Learning Activities

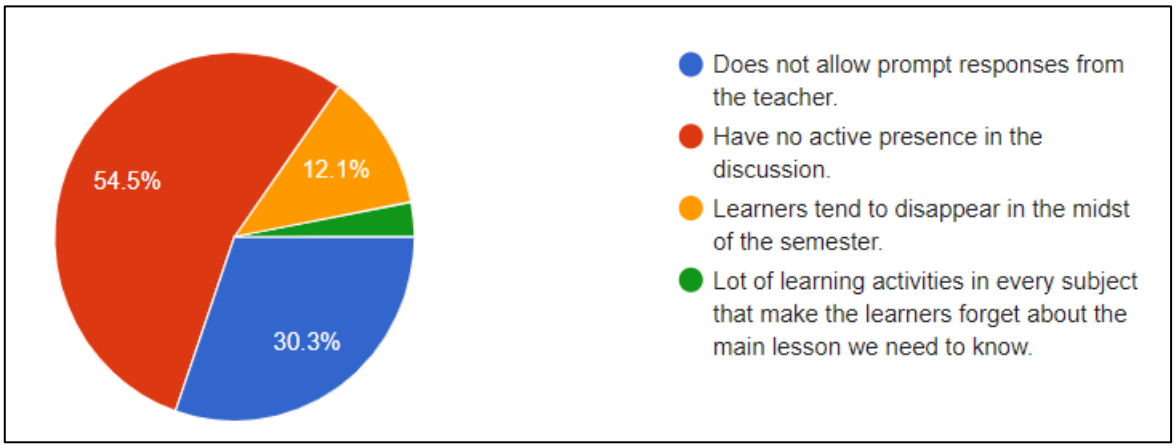

Figure 5. Weakest Points of Asynchronous Learning Activities

In the survey on which mode better facilitates the teaching and learning process, most of the respondents chose the combination of synchronous and asynchronous learning modality as shown in Figure 6.

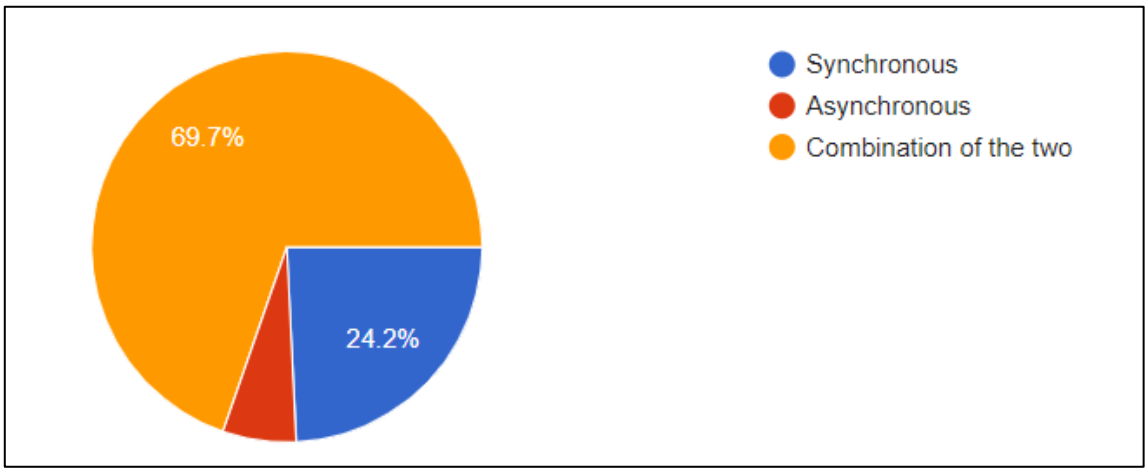

Figure 6. Students' Perceptions on the Mode that Better Facilitates Teaching and Learning

Students' Performance

The Senior High School grades of the students were collected from the university registrar. The first batch, consisting of 39 students under the face to face learning modality has a mean SHS grade of 87.66 and standard deviation of 3.95 on their Senior High School academic performance. On the other hand, the second batch of 60 students under the asynchronous learning modality has a mean of 88.28 on their Senior High School academic performance, with standard deviation of 2.88.

Their academic performance during their Senior High School was determined to establish a point of comparison for the students' academic performance in face to face learning activities from their asynchronous learning activities. Table 7 shows that there is no significant difference in their performance during Senior High School (SHS). Then they can be compared as to their performance in the face to face and alternative learning activities.

Table 7. Students' SHS Academic Performance

Statistics	Students from face to face learning mode	Students from alternative learning mode
Mean	87.66	8.28
Standard Deviation	3.95	2.88
n	39	60
t-Statistic	-0.766	
p-Value	0.223	

Final grades for each group were collected and were compared using independent samples t-test. Results are shown in Table 8. Students who were taught with face-to-face learning modality (mean =2.84, sd =c 0.765) has significantly higher academic performance than those students who were taught with alternative learning modality (mean = 3.15, sd = 0.910) with $t = -2.169$, $p < 0.05$. Hence, teaching and learning activities could still be better in face-to-face learning modality but alternative learning mode could still be used to further the learning during this time of pandemic.

Table 8. Students' Academic Performance in terms of Midterm Grades

Statistics	Students from face to face learning mode	Students from alternative learning mode
Mean	2.84	3.15
Standard Deviation	0.765	0.910
n	39	60
t-Statistic	-2.169	
p-Value	0.032	

Conclusion

The COVID-19 outbreak greatly affected the education sector. Various alternative learning activities were considered by the tertiary education including the synchronous and asynchronous mode of online learning. This study showed that most students are familiar with the conduct of the said alternative learning activities. They reiterated that teaching and learning could be better taught/learned synchronously in a desirable duration of 50 minutes only. When it comes to asynchronous mode of learning, the use of video discussions and modules/lectures/handouts appealed most helpful to the learners. Majority of the students actively participate s in synchronous session as it allows for a more dynamic exploration of topics, ideas, and concepts. Moreover, asynchronous learning activities develop them to be more independent and responsible for their own learning. Overall, students preferred the combination of synchronous and asynchronous mode of learning in effectively facilitating the teaching and learning process. Further, students who were taught with face to face learning modality has a significantly higher academic performance than those students who were taught with alternative learning modality. Hence, teaching and learning activities could still be better in face-to-face learning modality but alternative learning mode could still be used to further the learning during this time of pandemic.

The study found out that the strongest point of asynchronous learning modality is that it allows for independent learning. On the other hand, its weakest point is the absence of active presence in the discussion and that the combination of synchronous and asynchronous learning activities better facilitate the teaching and learning process. Therefore, the authors recommend establishing constant feedback and communication with the students during the conduct of alternative learning activities.

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Author Information

Gerry Mae T. Silvero
https://orcid.org/0000-0001-5166-4876
Cavite State University – Tanza Campus
Bagtas, Tanza, Cavite
Philippines
Contact e-mail: *gerry.silvero@cvsu.edu.ph*

Mildred A. Sebastian
https://orcid.org/0000-0001-9921-6861
Cavite State University – Tanza Campus
Bagtas, Tanza, Cavite
Philippines

Mary Joy Angelique R. Mojica
https://orcid.org/0000-0003-1694-5036
Cavite State University – Tanza Campus
Bagtas, Tanza, Cavite
Philippines