

Long Paper

Challenges of Nursing Students in Online Synchronous Collaborative Learning Tasks

Roison Andro Narvaez
St. Paul University, Philippines
rnarvaez@spup.edu.ph
(corresponding author)

Ronalyn Topacio
St. Paul University, Philippines

Elaine Alamo-Lim
St. Paul University Philippines

German Verosil, Jr.
St. Paul University, Philippines

Ma. Visitacion Gumabay
St. Paul University, Philippines

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Abstract

Purpose – The goal of this research is to see if the various educational software used in virtual classes helps nursing students learn better. It also tries to discover the difficulties associated with integrating those educational applications into synchronous collaborative group assignments.



Method – This study used the descriptive mixed-methods approach, consisting of a survey tool and a qualitative descriptive observation. A total of 200 nursing students (66 males and 134 women) from different nursing universities in the Philippines took part in this study.

Results – The study showed nursing students' difficulties when working in synchronous collaborative assignments in an online learning environment. By and large, the number of obstacles and tactics that each student had to overcome varied. According to nursing students' remarks, the resources available to them, their relationships with professors and classmates, and the school's present online learning regulations and policies all affected their online collaboration challenges and approaches. As a result, they must be viewed as multiple factors interacting. When combined with the pupils' socioeconomic circumstances, the imposed lockdowns worsened the problems were they already suffering due to the pandemic.

Conclusion – The findings provided a deeper understanding of the link between learning materials, learners, and learning outcomes in an online learning environment, as well as a multi-perspective on how and why a wholly online learning environment can be successfully implemented.

Recommendations – Researchers could go deeper into the topic by interviewing teachers and learning from their viewpoints and experiences to gain a more complete picture of the issue and how distinct components interact with or influence one another.

Research Implications – This study stressed the critical nature of preparation, beginning with the imperative that higher education institutions possess emergency response capabilities and be prepared in the event of another catastrophe. National and institutional policies, procedures, and standards, technical infrastructure and resources, instructional delivery, staff development, potential disparities, and coordination among key stakeholders are just a few of the critical areas that require immediate attention.

Keywords – collaborative learning task, online learning, nursing education, COVID-19

INTRODUCTION

The world's technology has advanced at an exponential rate in recent years. In most countries, education systems have incorporated technology into learning and teaching for both learners and instructors. While the advent of the COVID-19 pandemic in 2020 triggered educational and economic transformations that continue to impact the world to this day, the insistence on technology integration in education has become a necessary component of the teaching-learning process. Davies and West (2014) defined technology integration as the efficient use of educational technology to achieve desired learning outcomes.

According to a study conducted by Asiyai (2014), there are numerous benefits to integrating information and communication technology (ICT) into teaching and learning in institutions, including increased instructional efficiency, increased student interest in learning, student-centered learning, increased collaborative networking, and improved student performance. Despite the potential benefits of technology integration in education, some constraints and challenges prevent it from occurring, particularly in third-world or developing nations. Also, Ramorola (2013) revealed the difficulties they face, including the absence of a technology policy to guide schools through the implementation process, technophobia, or teachers' fear of using technology, a lack of equipment such as computers, printers, and relevant educational software, parents who are unable to provide for their children's technological needs, and a lack of computer literacy among teachers.

Dotong et al. (2016) conducted a study titled *Barriers to Educational Technology Integration in Contemporary Classroom Environment* that delves deeper into the extent to which technology is integrated into contemporary classroom environments across Association of Southeast Asian Nations (ASEAN) countries with probable reasons for educational technology integration were identified as inadequate financial and material support, human capital, supervisory support, and behavioral and environmental difficulties. According to Pagunsan-Sumbise and Montecalvo (2021), schools' challenges in integrating ICT are a lack of internet and air conditioning connectivity, a lack of school leaders' connections with stakeholders to promote ICT insufficient equipment in public high schools, and a lack of proper teacher training.

BACKGROUND

In recent years, it has been clear that incorporating technology into education, particularly synchronous learning, has both advantages and disadvantages to consider. The Glossary of Education Reform (2014) defines synchronous learning as the use of educational, instructional, and learning modalities that occur simultaneously but not in the same place. Typically, the phrase refers to a variety of televisual, digital, and online learning environments in which students study in real-time but do not get in-person teaching from professors, coworkers, or classmates, as opposed to traditional classroom settings. A few examples of synchronous learning include instructional video conferences, interactive webinars, online chats supported by chat, and the simultaneous broadcast and delivery of courses. Additional definitions include synchronous learning, which is described as a mode of instruction that involves both students and teachers being in the same place at the same time at the exact location. This holds for both in-person classes and live online meetings that are attended by the entire class or smaller groups of participants. Asynchronous learning occurs when students cooperate to complete assignments and activities while being accompanied by an instructor who can offer guidance and assistance throughout the process (Finol, 2020).

Synchronous online learning, which is often enabled by media such as

videoconferencing and chat, can benefit e-learners in the formation of learning communities by allowing them to collaborate with others. Because questions are asked and answered in real-time, synchronous e-learning is considered more engaging by both learners and teachers, and it is essential for avoiding misinterpretation (Hrastinski, 2008). According to Cheng & Chau (2016), the interaction problem contributes to the lower overall quality of online education and learning. The effective use of technology in online learning environments can boost the engagement and cooperation between teachers and students (Bower, 2019; Gonzalez et al., 2020). The lack of interaction in online learning environments is a crucial barrier to success (Anderson, 2010).

As reported by Blasco-Arcas et al. (2013), there is a favorable relationship between student involvement and active learning, which leads to improved learning performance. Students' views of learning and satisfaction are enhanced as a result of enhanced communication between professors and students (Paswan & Young, 2017). In this environment, educational approaches can be combined with the adaptive communication and interaction capabilities of online settings to improve academic achievement, perceived learning, and overall pleasure, all of which can be improved (Anderson, 2013). Considering computer and communication technology as a way of implementing a pedagogical method and delivering instructional resources in an online learning environment is essential when designing a pedagogical method for use in an online learning environment (Arenas, 2015).

In addition, adopting the most beneficial technique for utilizing these technologies, particularly in synchronous collaborative work, can bring several significant advantages. Synchronous online learning, which is usually supported by media such as videoconferencing and chat, can aid e-learners in the formation of learning communities, according to the National Center for Education Statistics. Because questions are presented and answered in real-time, synchronous e-learning is perceived as more welcome by both learners and teachers. It is essential for preventing misinterpretation of information (Hrastinski, 2008). As a result, Cheng and Chau (2016) have discovered that the interaction problem is a significant constraint on the overall quality of online education.

Given the pieces of literature mentioned, the researchers would like to discover the difficulties associated with integrating educational applications into synchronous collaborative group assignments in nursing education and make necessary recommendations as nursing educations and students adjust to the new normal.

SUPPORTING LITERATURE

Theories and Models that Support the Interventions

SAMR Model. This model by Puentedura (2006) will serve as a foundation for understanding the role of technology integration in synchronous collaborative group projects to improve the quality of education given through technology and essentially

improve the teaching and learning process by concentrating on determining the techniques and tactics for learning content. Additionally, when combined with technology integration, the SAMR Model demonstrates that it can assist in minimizing or eliminating difficulties in asynchronous collaborative projects.

Bloom's Digital Taxonomy. Bloom's Digital Taxonomy was designed by Andrew Churches (2008). An update to Bloom's Revised Taxonomy that takes into account new behaviors, actions, and opportunities for learning as technology has improved and spread. This adaptation is mostly based on Anderson's (2016) new taxonomy, but it incorporates additional digital technology and cognitive objectives (Churches, 2008). Because of the qualities of Bloom's Revised Taxonomy, it is necessary to use them as a scaffolding for developing online learning activities that are tailored to the needs of our students for them to achieve their stated purpose as efficiently as possible.

Educational Applications Used in Synchronous Collaborative Group Tasks

The COVID-19 pandemic precipitated societal and economic transformations that have repercussions to this day. Additionally, it precipitated an emergency shift away from traditional face-to-face classes and toward alternative educational modalities such as modular, online, and blended learning in the Philippines. Thus, teachers and students faced just one option: adapt to the new circumstances. Institutions have developed and implemented online education programs to meet expanding educational demands (Gonzales, 2020). As a result, as the country attempts to adjust to what has been labeled the "New Normal," it is past time to study alternate modes of education beyond the physical classroom.

Numerous studies have been undertaken to ascertain the effectiveness and dependability of various educational programs in conducting synchronous collaborative group work such as Zoom, Google Meet, Facebook, Messenger, and Kahoot! (Rahayu, 2020; Borges & Mello-Carpes, 2015; Roscoe, 2014; Avila & Cabrera, 2020; Lomas & Biggs, 2016; Edwards, 2021; Wang, 2020). All of these studies indicate beneficial effects for synchronous group collaboration activities.

Synchronous Collaborative Group Tasks

The importance of synchronous cooperation in online education cannot be overstated. Real-time data and information transfer between instructors and students are accomplished through the use of an internet-based communication platform (Albertos Marco et al., 2013; Curtis & Lawson, 2019; Park & Bonk, 2007). Also required are real-time feedback, debate, and rapid alignment of participants' ideas. Due to the widespread use of synchronous collaboration in traditional classrooms, it is not surprising that the majority of virtual classrooms contain several synchronous collaboration assignments within their curriculum. This is because the utilization of collaborative learning in the classroom has a direct impact on the overall quality of a student's learning experience (Curtis & Lawson,

2019).

In addition, there are online collaborative group projects that take place outside of the direct supervision of the teacher's office. These assignments are completed by students for the benefit of their classmates. Students who communicate outside of class find that virtual lounges and instant online chat apps are popular options (Martin & Bolliger, 2018).

Haythornthwaite (2019) revealed that a teacher allows his pupils to participate in collaborative group projects that include both public and private contact amongst group members. His live teaching session is broken up into groups, which he assigns to each student. Afterward, he directs them to private chat rooms where they can share thoughts and make suggestions for reporters. Students must participate in synchronous collaborative group projects that take place in real-time online. Synchronous collaborative projects, as a result, include any online task that requires immediate communication and response time.

The synchronous collaboration strategies described above can be applied in an online or virtual learning environment as well as in the classroom. Participation in collaborative activities during online sessions is a requirement for all students.

Educational Applications for Synchronous Collaborative Group Tasks

It has been recognized for many years that collaborative task-based learning benefits students' cognitive growth. Laal and Ghodsi (2012) said in their study "Benefits of Collaborative Learning" that collaborative learning provides students with more benefits than individualistic and competitive efforts, resulting in a greater number of accomplishments and productivity. Additionally, the same research indicates that it improves learners' psychological health, social competence, and self-esteem, as well as their support system. However, after the COVID-19 pandemic struck everyone, rapid changes happened, and the ideal paradigm of 'collaborative learning' in schools was profoundly challenged.

Social interaction is becoming an increasingly important subject, particularly in the field of education. To prevent the transmission of such viruses, students, instructors, and other educators are now required to hold online classes; this means that the majority of communication between students, professors, and other educators now occurs electronically. UNESCO (2020) (as cited in Mondol & Mohiuddin, 2020) estimates that 80 percent of the world's learners, or 1,379,344,914 students, are being kept out of educational organizations by country-wide closures. As a result, educational institutions worldwide are today confronted with a variety of components and issues related to teaching and learning processes.

Additionally, by going deeper into the students' problems, it becomes obvious that another significant challenge they face is the difficulty of group assignments in

online/synchronous classrooms. Chang and Kang (2016) expound on the premise that collaborative work in an online environment is undoubtedly hampered by the absence of physical presence, the demand for technology skills, the absence of human relationships, and the absence of content-related tasks. Additionally, according to Koh and Hill (2009), group work in the synchronous setting is not particularly commendable due to several flaws, including (1) a lack of community, (2) a lack of connection, and (3) communication difficulties, which may include delayed responses and unfamiliarity with classmates. In general, the studies' findings suggest that collaborative task activities in an online/synchronous environment are impossible to perform without facing several obstacles and difficulties.

Numerous educational institutions, including nursing, have begun to integrate technology. In any case, education's future is intimately related to it. Schools' only hope under adverse circumstances, like the present COVID-19 pandemic, is to integrate technology. This graphically demonstrates the idea that the only remaining alternative is adaptability.

Technology Integration in Synchronous Collaborative Group Tasks

Face-to-face schooling has been supplanted by virtual learning environments. It evolves and becomes increasingly focused on online education. Many people, on the other hand, are having difficulty adjusting to this new normal as a result of these developments. Experts, particularly in the field of education, have been debating how to deliver a high-quality education while also addressing the worldwide problem identified by COVID19. Today's educational and learning procedures are significantly more challenging than they were before the epidemic. Academic experts, on the other hand, have developed a variety of tactics and approaches to the teaching and learning process, which are still in use today. Online learning environments are classified into three types: synchronous, asynchronous, and hybrid. By integrating e-activities such as an instructor's lecture with the possibility of question-and-answer sessions, synchronous learning environments offer collaborative learning (Salmon, 2013). On the other hand, synchronous sessions require both students and professors to be present at the same time. While students in asynchronous environments can complete a single activity at their leisure, a hybrid online environment combines synchronous sessions with a variety of asynchronous e-activities (Perveen, 2016). On the other hand, this new learning environment facilitates the use of a range of teaching methods. One of them is the incorporation of technology into the learning processes. Additionally, according to Bozeman (2000), the term "technology" refers to knowledge or information regarding a product's use, application, and manufacturing process, as well as the technology embedded in the product. Technology has shown to be immensely advantageous in the context of education, notably in the delivery of lessons and the acquisition of knowledge by students.

Meanwhile, It is the process of integrating technological resources into teaching and learning, according to Edutopia (2007), that is called technology integration. into daily

classroom activities and school administration. According to Francisco et al. (2021), educational apps, as well as social media platforms, are used because they facilitate communication between educators and peers. Internet access is one of the most frequently encountered difficulties that many professors and students have during online sessions. Many students may lack the high bandwidth or robust internet connection required for online courses, resulting in academic failure. (Saminathan, 2020). Due to a lack of financial resources, they also lack access to the Internet, instructional materials, and the essential equipment for online learning. (Barrot et al., 2021). The researchers uncovered the following publications that are pertinent to this study to bolster the study's thesis, which is that it is critical to investigate the barriers to technology integration in a synchronous collaborative group task. Anderson (2016) focused his study, "Successful Online Learning Collaboration: Peer Feedback and Technology Integration in English Composition Courses," on the classroom's use of technology to expand students' learning beyond the classroom and to build collaborative learning groups. According to the findings of the investigation of technology integration and collaboration across six courses, effective online collaboration tools should be adaptable to the addition of other tools and services.

Additionally, the findings corroborated a recent study that indicated some consumers consider 'privacy' when deciding which technology to employ. When it comes to selecting tools and assessing the impact of technology on their overall learning, students appear to prioritize accessibility and convenience. Yilmaz's (2020) study examined the prospective teachers with science education in pedagogy's critical and creative thinking, multidimensional 21st-century skills, and change in academic achievement as a result of technology integration. The findings indicate that integrating technology into the educational process should be gradual and accompanied by well-prepared educational content. This environment fosters participants' cognitive, emotional, and behavioral loyalty, as well as academic performance. Participants should be brought to the center of the applications while also integrating technology, and the process should be structured collaboratively so that they may both enjoy and fully participate in the process.

Finally, Sandybayev's (2020) research examines students' motivation to utilize E-Learning as a critical component of their education, particularly in the context of business education. Active use of interactive features, particularly BlackBoard Learning (BBL), promotes motivation and, as a result, learning outcomes.

The incorporation of technology into the teaching and learning processes has a profound effect. Students retain more content when they participate in higher-order thinking, in-depth comprehension, and knowledge production (Lee & Choi, 2017). Students can participate in a variety of online activities by sharing knowledge within their virtual learning settings. Because it is an online course, the nature of teacher-student contact is also altered. On the other side, issues during the online synchronous session are to be expected, as some participants are still adjusting to the circumstance. Because not every child has access to all internet resources and even technology, this may put certain children

at a disadvantage. Another factor to consider is their degree of commitment; not everyone is motivated to do their fair part because not everyone has access to the necessary technologies, resulting in a dependency environment. As a result, technology should be gradually integrated into the educational process, along with well-prepared instructional materials. Significantly, initiatives that include participants and are accessible to everyone should be highlighted.

OBJECTIVES

The researchers observed and documented the difficulties associated with technology integration with the use of the Learning Management System (LMS) in the synchronous collaborative group tasks of nursing students in the new normal.

The study aimed to answer the following questions:

1. In synchronous collaborative tasks, what educational applications/software/LMS are used?
2. In the new normal education, what synchronous collaborative group tasks are assigned to nursing students
3. What are the challenges in using educational applications/software/LMS for synchronous collaborative group tasks?
4. What are the nursing student's perceived strategies to overcome challenges in using educational applications/software/LMS for synchronous collaborative group tasks?

METHODOLOGY

Research Design

The study used a descriptive mixed-methods approach to address the research problems raised previously. The researchers were able to collect sophisticated data regarding students' experiences in online learning, specifically collaborate group tasks in synchronous sessions, and were able to gain a comprehensive understanding of the phenomena from the students' perspective. The researchers employed qualitative descriptive observation, specifically naturalism. Naturalism is based on the idea that things are coherent, consistent, and predictable when they are placed in a real-life situation in a natural environment (Bhaskar, 2013). Because the main goal of this study was to observe learners who were exposed to various synchronous collaborative group tasks with technology integration, qualitative observation, particularly naturalism was used. The observation was determined problems and solutions in this type of learning environment. As a result, the researchers were passive observers throughout the entire process.

Sample and Sampling Methods

The setting of this study is a higher education institution in the Philippines. A

convenience sampling consisted of eligible 200 students of all year levels who experienced online learning during the pandemic (66 males and 134 women) from different universities in the Philippines were selected. The age ranges from 17 to 25 years ($x = 19.81$; $SD = 1.80$). The study period started between October 2022 to December 2022.

Instrumentation and Data Gathering Procedure

An informed consent including anonymity and confidentiality of the respondents' have been obtained, and a URL to access the online survey were sent via emails and various online platforms. All data was generalized with no identifying information was sought, including the name of their respective universities was anonymized. A retrospective self-report questionnaire, as well as a focused group discussion (FGD), were used to gather information. A self-report questionnaire was chosen since the variables were connected with affective responses and attitudes, and this was considered to be acceptable (Araujo et al., 2017; Barrot, 2016). The questionnaire was divided into four sections: (1) personal information, (2) background information about the online learning conditions for synchronous learning, (3) a rating scale for challenges encountered during synchronous collaborative tasks, and (4) an open-ended section. In the end, the open-ended questions sought information about any additional difficulties that the nursing students encountered, any impact the pandemic had on the severity or scope of those difficulties, and any strategies nursing students made to surpass the eight various types of difficulties they encountered while participating in online learning. On the FGD, nursing students were asked about their perceptions of the variables mentioned. The relevant authorities in the university have given their approval to the FGD process. To ensure that the questionnaire was clear and correct and substantive, and face valid, two professional educators and researchers examined it.

Data Analysis

The researchers used both quantitative and qualitative analyses to address the research subjects. The researchers entered all of the data into an excel file for the quantitative analysis. Mean scores (M) and standard deviations (SD) were determined to determine the degree of difficulty nursing students had while learning online. 4.18 to 5.00 (very), 3.34 to 4.17 (extremely), 2.51 to 3.33 (moderately), 1.68 to 2.50 (to some extent), 0.84 to 1.67 (to a small amount), and 0 to 0.83 (not at all/negligible) were the mean scores for each description. The equal-interval scale was chosen because it provides more accurate and valid data than other scales (Cicchetti et al., 2006).

The researchers used the conceptual framework's specified categories and the transcribed FGD for qualitative data to examine the nursing students' replies to open-ended questions. The researchers employed multilayer coding to classify the codes from the transcripts (Birks & Mills, 2011). To do so, categorized the pertinent codes from the participants' responses according to how similar or comparable their features and dimensions were. Then, to allowed for the emergence and construction of the first-

mentioned subcategories, undertook a continual comparative and progressive analysis of examples. To ensure the validity of the analysis, two coders independently assessed the qualitative data. The study's objectives, research questions, methodology, and codes and coding system are all familiarized by both coders. The researchers also organized a calibration workshop to address how to accurately analyze qualitative data. Between the two programmers, there was an 86 percent agreement. The coders debated any contradictions in the analysis until they achieved an agreement.

RESULTS AND DISCUSSION

The purpose of this study was to analyze nursing students' online learning, which relates to the online integration and synchronous collaborative group tasks experiences in higher education in the setting of the pandemic. The researchers investigated to find out more about the types of difficulties nursing students had, the impact of the COVID-19 outbreak on their online learning experience, and the solutions they used to overcome these difficulties. Compare to the previous studies, which contained both good and negative views on the use of technology in collaborative group work the research discussed more up to date information on the usage of modern integration and collaborative activities for student learning experience especially during the time of the pandemic, whereas online learning is a challenge for educators and students, especially in collaborative online learning.

Online Software/Applications/Learning Management Systems Used by Nursing Students

Student participation in online synchronous collaborative group tasks was supported through various primary and secondary platforms, as shown in Table 1. Those primary platforms are those that the nursing institutions were officially used by the professors and nursing students within a specific academic framework. In informal and spontaneous learning environments, secondary platforms are those that nursing students and teachers utilized to complement education delivery.

Challenges Experienced in Synchronous Collaborative Group Tasks

The mean scores and standard deviations for the degree of difficulty encountered by nursing students when participating in online learning are summarized in Table 2. Generally speaking, learners experienced the indicated difficulties in a somewhat difficult manner ($x = 2.62$, $SD = 1.03$), with values ranging from $x = 1.72$ (to a degree) to $x = 3.58$ (to a significant extent) (to a great extent). The learning environment was the most significant hindrance for nursing students ($x = 3.49$, $SD = 1.27$), which included distractions at home, time constraints on completing prerequisites for certain subjects, difficulty selecting learning locations, and creating study timetables, among others. Although not the least restrictive factor, technological literacy and competency ($x = 2.10$, $SD = 1.13$), which includes knowledge and training in the use of technology and technological intimidation and

resistance to learning technologies, was found to be the least restrictive factor. Nursing students also did well in the areas of internet access under Technological sufficiency challenges (TSC) and procrastination under Self-regulation challenges (SRC), which are two other areas in which they fared well. Although this is the case, more than half of nursing students (14 of 37 indications) assessed their problems as moderate, particularly in TCC ($x = 2.51$, $SD = 1.31$), SIC ($x = 2.77$, $SD = 1.34$), and LRC ($x = 2.93$, $SD = 1.31$).

Table 1. Participants' Online Learning Platform

Online Learning Platform	Classification			
	Primary		Supplementary	
	<i>f</i>	%	<i>f</i>	%
MS Teams	34	17.0	-	-
Edmodo	22	11.0	-	-
Twitter	-	-	-	-
Google Classroom	31	15.5	-	-
Canvas	50	25.0	-	-
Moodle	43	21.5	-	-
Zoom	20	10.0	-	-
Messenger	-	-	169	84.5
Discord			31	15.5
Twitter	-	-	-	-
Skype	-	-	-	-
Viber	-	-	-	-
Others	-	-	-	-
	200	100.00	200	100.00

A query about other problems experienced elicited responses from 181 nursing students out of 200 nursing students. Only 18 replied relating to physical discomfort ($N = 5$) and 13 responses related to financial issues ($N = 13$) were excluded from the analysis because they did not fall into the seven categories that had been determined. S66 and S121 stated that he "not always having money to load." when it comes to his eyes and head, S108 expressed his dissatisfaction by saying, "If the class session included three hours spent in front of a device, my eyes and headache." Similarly, S194 stated that "prolonged exposure to technology, particularly laptops, causes body pain and headaches." Physical financial obstacles were identified by S66 as "not always having money to load." At the same time, S121 indicated that "I'm not sure when we'll be able to afford to budget our money rather than purchasing basics."

Table 2. The Extent of Nursing Students' Challenges during the Online Synchronous Collaborative Group Task

CHALLENGES	\bar{x}	SD
Self-regulation challenges (SRC)	2.37	1.16
1. I delay tasks related to my studies so that they are either not fully completed by their deadline or have to be rushed to be completed.	1.84	1.47
2. I fail to get appropriate help during online classes.	2.04	1.44
3. I cannot control my thoughts, emotions, and actions during online classes.	2.51	1.65
4. I have limited preparation before an online class.	2.68	1.54
5. I have poor time management skills during online classes.	2.50	1.53
6. I fail to properly use online peer learning strategies (i.e., learning from one another to facilitate better learning, such as peer tutoring, group discussion, and peer feedback).	2.34	1.50
Technological literacy and competency challenges (TLCC)	2.10	1.13
7. I lack competence and proficiency in using various interfaces or systems to control a computer or another embedded system for studying.	2.05	1.39
8. I resist learning technology.	1.89	1.46
9. I am distracted by overly complex technology.	2.44	1.43
10. I have difficulties in learning new technology.	2.06	1.50
11. I cannot effectively use technology to facilitate learning.	2.08	1.51
12. I lack knowledge and training in the use of technology.	1.76	1.43
13. I am intimidated by the technologies used for learning.	1.89	1.44
14. I resist and/or am confused when getting appropriate help during online classes.	2.19	1.52
15. I have a poor understanding of directions and expectations during online learning.	2.16	1.56
16. I perceive technology as a barrier to getting help from others during online classes.	2.47	1.43
Student isolation challenges (SIC)	2.77	1.34
17. I feel emotionally disconnected or isolated during online classes.	2.71	1.58
18. I feel disinterested during an online class.	2.54	1.53
19. I feel unease and uncomfortable in using video projection, microphones, and speakers.	2.90	1.57
20. I feel uncomfortable being the center of attention during online classes.	2.93	1.67

Table 2. The Extent of Nursing Students' Challenges during the Online Synchronous Collaborative Group Task (continuation)

CHALLENGES	\bar{x}	SD
Technological sufficiency challenges (TSC)	2.31	1.29
21. I have insufficient access to learning technology.	2.27	1.52
22. I experience inequalities concerning access to and use of technologies during online classes because of my socioeconomic, physical, and psychological condition.	2.34	1.68
23. I have outdated technology.	2.04	1.62
24. I do not have Internet access during online classes.	1.72	1.65
25. I have low bandwidth and slow processing speeds.	2.66	1.62
26. I experience technical difficulties in completing my assignments.	2.84	1.54
Technological complexity challenges (TCC)	2.51	1.31
27. I am distracted by the complexity of technology during online classes.	2.34	1.46
28. I experience difficulties in using complex technology.	2.33	1.51
29. I experience difficulties when using longer videos for learning.—	2.87	1.48
Learning resource challenges (LRC) _____	2.93	1.31
30. I have insufficient access to library resources.	2.86	1.72
31. I have insufficient access to laboratory equipment and materials.	3.16	1.71
32. I have limited access to textbooks, worksheets, and other instructional materials.	2.63	1.57
33. I experience financial challenges when accessing learning resources and technology.	3.07	1.57
CHALLENGES	\bar{x}	SD
Learning environment challenges (LEC) _____	3.49	1.27
34. I experience online distractions such as social media during online classes.	3.20	1.58
35. I experience distractions at home as a learning environment.	3.55	1.54
36. I have difficulties in selecting the best time and area for learning at home.	3.40	1.58
37. Home set-up limits completing certain requirements for my subject (e.g., laboratory and physical activities).	3.58	1.52
AVERAGE	2.62	1.03

Nursing Student's Perceived Strategies to Overcome Challenges in Online Synchronous Collaborative Group Tasks

Ultimately, the study's primary purpose was to determine how nursing students

overcome the multiple online learning hurdles encountered. According to Table 4, the most often used methods by nursing students were resource management and utilization (N = 181), assistance seeking (N = 155), technical aptitude enhancement (N = 122), time management (N = 98), and learning environment control (N = 73). It was not a surprise that the top two methods were also the most frequently adopted across all levels.

While resource management and utilization were the most popular strategies for TSC and LRC (N = 52 and N = 89, respectively), technical aptitude augmentation was the most popular strategy for TLCC (N = 77) and TCC (N = 38). SRC, SIC, and LEC nursing students reported that time management (N = 71), psychological support (N = 53), and learning environment control (N = 60) were the most often used approaches in their classes. The most consistent conduct is that of requesting assistance regularly.

Table 3. Nursing Students' Strategies to Overcome Online Learning Challenges

Strategies	SRC	TLCC	SIC	TSC	TCC	LRC	LEC	Total
Adaptation	7	1	11	4	10	10	17	60
Cognitive aptitude enhancement	2	3	0	0	2	4	2	13
Concentration and focus	13	2	7	0	4	5	12	43
Focus and concentration	0	3	0	0	0	0	0	3
Goal-setting	8	0	0	2	2	0	1	13
Help-seeking	13	42	2	36	16	28	18	155
Learning environment control	1	3	0	6	3	0	60	73
Motivation	2	0	4	0	5	1	0	12
Optimism	4	5	9	15	9	2	3	47
Peer learning	3	2	6	0	1	0	0	12
Psychosocial support	3	0	53	1	0	0	0	57
Reflection	6	0	0	0	0	0	0	6
Relaxation and recreation	16	1	13	0	7	0	0	37
Resource management & utilization	3	11	0	52	20	89	6	181
Self-belief	0	1	11	0	1	0	1	14
Self-discipline	12	3	3	6	3	1	4	32
Self-study	6	0	0	0	0	1	0	7
Technical aptitude enhancement	0	77	0	7	38	0	0	122
Thought control	6	0	2	0	1	1	3	13
Time management	71	3	2	10	4	3	5	98
Transcendental strategies	2	0	0	0	0	0	0	2

PROPOSED INTERVENTIONS AND RECOMMENDATIONS

The following under the observed problems are specific problems about the general research gaps presented in the previous paragraphs. In a parallel column are the proposed interventions which relate to the study as shown in Table 4.

Table 4. Observed Problems and Proposed Interventions

Observed Problems	Proposed Interventions
<p>Video and audio materials for activities are given through hyperlinks that can be inaccessible if students have limited/ no internet connection.</p> <p>A limited class period leads to insufficient time for synchronous collaborative group tasks.</p>	<p>Use technological tools or LMS that display the learning materials in an instant or that feature which do not need outside hyperlinks to access.</p> <p>Design materials and create activities that can be done within the online class period.</p> <p>Use the best technological tool that best suits the current setup and will help students finish the task in the given period.</p>
<p>Non-participative students</p> <p>Tendency to answer in-chorus during participation</p>	<p>Formulate activities in the lesson plan that will cater to the needs of the different types of learners.</p> <p>Utilizing classroom management in the online setup.</p>
<p>Limited or unavailable technology tools, resources, or gadgets of students.</p> <p>Uncontrollable problems that disrupt online class sessions and activities (power interruption and poor network or internet connection)</p>	<p>Design and develop feasible collaborative group tasks considering the students' privileges.</p> <p>Provide pre-recorded discussion in case of uncontrollable circumstances (power interruption and poor network or internet connection) and consider the students who have limited/no internet connection.</p>
<p>Students lack knowledge of different software and applications that are used in synchronous collaborative group tasks.</p>	<p>Discover helpful applications that can be used in conducting online activities.</p> <p>Use 'user-friendly' software and applications</p>
<p>Variation of students' ICT skills (poor to great ICT skills)</p>	<p>Inform the students about the types of devices that will be used in the class, such as Wi-Fi/mobile data and android phones (or any phones that can access Google Meet or Zoom).</p>
<p>Student monitoring of group activities during synchronous class</p>	<p>Use an inductive learning approach. Encourage students to speak and participate.</p>

CONCLUSION AND RECOMMENDATIONS

The current study examined nursing students' difficulties when working in synchronous collaborative assignments in an online learning environment. By and large, the number of obstacles and tactics that each student had to overcome varied. According to nursing students' remarks, the resources available to them, their relationships with professors and classmates, and the school's present online learning regulations and policies all affected their online collaboration challenges and approaches. As a result, they must be viewed as multiple factors interacting. When combined with the pupils' socioeconomic circumstances, the imposed lockdowns worsened the problems were they already suffering due to the pandemic.

While most research indicated that the most common obstacles nursing students face in online courses were related to technology use and competency (Rasheed et al., 2020), the situation in developing nations during pandemics was somewhat different. According to the survey's findings, the learning environment, which includes distractions at home (e.g., noise) and space and amenity limits in the classroom, was the most challenging hurdle for children to overcome. The study's findings indicated that nursing students' online learning challenges during the pandemic were distinct from those encountered in a pre-pandemic online learning environment. Due to the lockdown, nursing students' educational opportunities (such as internships and laboratory experiments) were severely constrained, as were their interaction with peers and teachers.

The study's findings have a wide variety of prospective ramifications. This study stressed the critical nature of preparation, beginning with the imperative that higher education institutions possessed emergency response capabilities and be prepared in the event of another catastrophe. National and institutional policies, procedures, and standards, technical infrastructure and resources, instructional delivery, staff development, potential disparities, and coordination among key stakeholders were just a few of the critical areas that required immediate attention. As a result, the researchers gained from the findings, a better understanding of the various challenges that nursing students, particularly those from low-resource countries with limited internet connectivity and insufficient home learning environments, may face as time transitions to a completely online educational environment. To mitigate the pandemic's harmful effects, schools with similar learning environments should use the findings of this study to develop and implement their learning continuity plans.

Additionally, this research would arm nursing students with the knowledge necessary to identify possible solutions to the problems confronted. This information was critical for effective policy and decision-making and the future deployment of online learning programs in the nursing academe and other programs. Thirdly, educators may be able to create effective remedies to the issues identified, particularly in the most critical areas, due to the findings. Additionally, the results provided a deeper understanding of the link between learning materials, learners, and learning outcomes in an online learning

environment and a multi-perspective on how and why a wholly online learning environment can be successfully implemented. Researchers could go deeper into the topic by interviewing teachers and learning from their viewpoints and experiences to gain a more complete picture of the issues and how distinct components interact with or influence one another. Future research may shed light on the factors affecting students' online learning experiences that are related to their teachers. Examining nursing students' ages, genders, and degree programs might help researchers to better understand the distinct difficulties and techniques they are confronted with. Although the survey covered a large number of nursing students in the Philippines, only undergraduate nursing students were included in the study.

REFERENCES

- Albertos Marco, F. A., Penichet, V. M., & Gallud, J. A. (2013). Collaborative e-Learning through Drag & Share in Synchronous Shared Workspaces. *Journal of Universal Computer Science*, 19(7), 849–911. doi:10.3217/jucs-019-07-0894
- Anderson, K. B. (2016). Successful online learning collaboration: Peer feedback and technology integration in English composition courses. *Arab World English Journal*, 3, 258-287. doi: 10.2139/ssrn.2831527
- Anderson, T. (2010). Getting the mix right again: An updated and theoretical rationale for interaction. *International Review of Research in Open and Distance Learning*, 4(2), 9–14. doi: 10.19173/irrodl.v4i2.149
- Anderson, T. (2013). The theory and practice of online learning. Athabasca University Press. Retrieved from https://ufdcimages.uflib.ufl.edu/AA/00/01/17/00/00001/99Z_Anderson_2008-Theory_and_Practice_of_Online_Learning.pdf
- Araujo, T., Wonneberger, A., Neijens, P., & de Vreese, C. (2017). How much time do you spend online? Understanding and improving the accuracy of self-reported measures of Internet use. *Communication Methods and Measures*, 11(3), 173–190. doi: 10.1080/19312458.2017.1317337
- Arenas, E. (2015). Affordances of learning technologies in higher education multicultural environments. *Electronic Journal of E-Learning*, 13(4), 217-227. Retrieved from <https://academicpublishing.org/index.php/ejel/article/view/1729/1692>
- Asiyai, R. I. (2014). Assessment of information and communication technology integration in teaching and learning in institutions of higher learning. *International Education Studies*, 7(2). doi: 10.5539/ies.v7n2p25
- Avila, E. & Cabrera, Jr., H. (2020). The use of Facebook group in distance learning during the time of covid-19 pandemic. *PalArch's Journal of Archaeology of Egypt/ Egyptology*. 17(6), 1862-1863. doi: 10.17485/ijst/2019/v12i34/127382
- Barrot, J. S. (2016). Using Facebook-based e-portfolio in ESL writing classrooms: Impact and challenges. *Language, Culture and Curriculum*, 29(3), 286–301. doi: 10.1080/07908318.2016.1143481

- Barrot, J., Llenares, I., & del Rosario, L. (2021). Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines. *Education and Information Technologies*. doi: 10.1007/s10639-021-10589-x
- Bhaskar, R. (2013). *The possibility of naturalism: A philosophical critique of the contemporary human sciences*. Routledge.
- Birks, M., & Mills, J. (2011). *Grounded theory: A practical guide*. Sage.
- Boelens, R., De Wever, B., & Voet, M. (2017). Four key challenges to the design of blended learning: A systematic literature review. *Educational Research Review*, 22, 1–18.
- Blasco-Arcas, L., Buil, I., Hernández-Ortega, B., & Sese, F. J. (2013). Using clickers in class. The role of interactivity, active collaborative learning and engagement in learning performance. *Computers & Education*, 62, 102-110. doi: 10.1016/j.compedu.2012.10.019
- Borges, S. & Mello-Carpes, P.B. (2015). Undergraduate students as promoters of science dissemination: a strategy to increase students' interest in physiology. *Advances in Physiology Education*, 39(2), 133-136. doi: 10.1152/advan.00120.2014
- Bower, M. (2019). Technology-mediated learning theory. *British Journal of Educational Technology*, 50(3), 1035- 1048. doi: 10.1111/bjet.12771
- Bozeman, B. (2000). Technology transfer and public policy: A review of research and theory. *Research Policy*, 29, 627-655. doi: 10.1016/S0048-7333(99)00093-1
- Chang, B. & Kang, H. (2016) Challenges facing group work online, *Distance*
- Cheng, G., & Chau, J. (2016). Exploring the relationships between learning styles, online participation, learning achievement and course satisfaction: An empirical study of a blended learning course. *British Journal of Educational Technology*, 47(2), 257-278. doi: 10.1111/bjet.12243
- Churches, A. (2008). Bloom's Digital Taxonomy Retrieved from https://www.researchgate.net/publication/228381038_Bloom's_Digital_Taxonomy
- Cicchetti, D., Bronen, R., Spencer, S., Haut, S., Berg, A., Oliver, P., & Tyrer, P. (2006). Rating scales, scales of measurement, issues of reliability: Resolving some critical issues for clinicians and researchers. *The Journal of Nervous and Mental Disease*, 194(8), 557–564. doi: 10.1097/01.nmd.0000230392.83607.c5
- Curtis, D. D., & Lawson, M. J. (2019). Exploring collaborative online learning. *Online Learning*, 5(1). doi: 10.24059/olj.v5i1.1885
- Davies, R. S., & West, R. E. (2014). Technology integration in schools. In *Handbook of research on educational communications and technology* (4th ed., pp. 841–853). Springer New York. Retrieved from <https://lidtfoundations.pressbooks.com/chapter/tech-integration-from-bates/>
- Dotong, C. L., De Castro, E. L., Dolot, J. A., & Prenda, M. T. B. (2016). Barriers for educational technology integration in contemporary classroom environment. *Asia Pacific Journal of Education, Arts & Sciences*, 3(2), 13–20.
- Edutopia. (2007). What is successful technology integration? *Edutopia*. Retrieved from <https://www.edutopia.org/technology-integration-guide-description>

- Edwards, L. (2021). What is Kahoot! and How Does it Work for Teachers? *Tech & Learning*. Retrieved from <https://www.techlearning.com/how-to/what-is-kahoot-and-how-does-it-work-for-teachers>
- Finol, M. O. (2020). *Asynchronous vs. Synchronous Learning: A quick overview*. Retrieved from <https://www.brynmawr.edu/blendedlearning/asynchronous-vs-synchronous-learning-quick-overview> doi: 10.1002/ase.1966
- Francisco, C.D.C., Ababa, J.E.A., Joven, C.S.M., Santiago, J.B., Mostajo, Y.J.O., Pascual, S.T., Bucasas, J.C., Javillonar, J.D.D., De Vera, S.J., & Bocao, J.M., (2021). The use of educational applications on the student's academic performance. *International Journal of Multidisciplinary Studies*, 1(5), 92-99.
- Glossary of Education Reform Great Schools Partnership (2014). *Synchronous Learning*.
- Gonzales, J. (2020). The best online learning platforms in the Philippines. *Daydreaming in Paradise*. Retrieved from <https://daydreaminginparadise.com/the-best-online-learningplatforms-in-the-philippines/>
- Gonzalez, T., De La Rubia, M. A., Hincz, K. P., Comas-Lopez, M., Subirats, L., Fort, S., & Sacha, G. M. (2020). Influence of COVID-19 confinement on students' performance in higher education. *PLoS One*, 15(10), e0239490. doi: 10.1371/journal.pone.0239490
- Haythornthwaite, C. (2019). Facilitating Collaboration in Online Learning. *Online Learning*, 10(1). doi: 10.24059/olj.v10i1.1769
- Hrastinski, S. (2008). *Asynchronous and Synchronous E-Learning*. EDUCAUSE. Retrieved from <https://er.educause.edu/articles/2008/11/asynchronous-and-synchronous-elearning>
- Koh, M. H., & Hill, J. (2009). Student Perceptions of Group Work in an Online Course: Benefits and Challenges. *Journal of distance education revue de l'éducation à distance*, 23(2), 69–92.
- Laal, M., & Ghodsi, S. (2012). Benefits of collaborative learning. Retrieved from <https://www.sciencedirect.com/science/article/pii/S1877042811030205>
- Lee, J., & Choi, H. (2017). What affects learner's higher-order thinking in technology-enhanced learning environments? The effects of learner factors. *Computers & Education*, 115, 143-152. doi: 10.1016/j.compedu.2017.06.01
- Lomas, N., & Biggs, J. (2016). Facebook 'Messenger Day' is the chat's app's new Snapchat Stories clone. *TechCrunch*. Retrieved from <https://techcrunch.com/2016/09/30/messenger-day/>.
- Martin, F. & Bolliger, D.U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning*, 22(1), 205- 222. doi:10.24059/olj.v22i1.1092
- Mondol, S., & Mohiuddin, M. G. (2020). Confronting Covid-19 with a Paradigm Shift in Teaching and Learning: A Study on Online Classes. *International Journal of Social, Political and Economic Research*, 7(2), 231–247. doi: 10.46291/IJOSPERvol7iss2pp231-247
- Pagunsan-Sumbise, G., & Montecalvo, F. (2021). Emerging trends and challenges in information and communications technology integration among public secondary

- schools in Samar, Philippines. *Asian Journal of Resource Management & Governance*.
<https://ojs.nwssu.edu.ph/index.php/ajrmg/article/view/8>
- Park, Y. J., & Bonk, C. J. (2007). Is Online Life a Breeze? A Case Study of Promoting Synchronous Learning in a Blended Graduate Course. *MERLOT Journal of Online Learning and Teaching*, 3(3).
- Paswan, A. K., & Young, J. A. (2017). Student evaluation of instructor: A nomological investigation using structural equation modeling. *Journal of Marketing Education*, 24(3), 193-202. doi: 10.1177/0273475302238042
- Perveen, A. (2016). Synchronous and asynchronous E-Language learning: A case study of virtual university of Pakistan. *Open Praxis*, 1(8), 21-39.
<https://files.eric.ed.gov/fulltext/EJ1093436.pdf>
- Puentedura, R. R. (2006). *Transformation, technology, and education in the state of Maine*. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1036281.pdf>
- Rahayu, D. (2020). Students' e-learning experience through a synchronous Zoom web conference system. *Journal of ELT Research: The Academic Journal of Studies in English Language Teaching and Learning*, 5(1), p. 68–79.
- Ramorola, M. Z. (2013). Challenge of effective technology integration into teaching and learning. *Africa Education Review*, 10(4), 654–670. doi: 10.1080/18146627.2013.853559
- Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020). Challenges in the online component of blended learning: A systematic review. *Computers & Education*, 144, 103701. doi: 10.1016/j.compedu.2019.103701
- Roscoe, R. D. (2014). Self-monitoring and knowledge building in learning by teaching. *Instructional Science: An International Journal of the Learning Sciences*, 42(3), 327-351.
<https://www.jstor.org/stable/43575232>
- Salmon, G. (2013). *E-tivities: The key to active online learning*. Routledge.
- Saminathan, V. (2020). Problems of online classes. *International Journal of Academic Research Reflector*, 9(6), 1-3. doi: 10.6084/m9.figshare.13573550
- Sandybayev, A. (2020). The impact of e-learning technologies on student's motivation: Student centered interaction in business education. *International Journal of Research in Tourism and Hospitality (IJRTH)*, 6(1), 16-24.
- UNESCO.(2020). Dashboards on the Global Monitoring of School Closures Caused by the COVID-19 Pandemic. *Institute of Statistics*. Retrieved from <https://covid19.uis.unesco.org/global-monitoring-schofol-closures-covid19/>
- Wang, A. (2020). *Dozens of studies show learning benefits of using Kahoot!*. Retrieved from <https://kahoot.com/blog/2020/07/01/dozens-of-studies-show-learning-benefits-of-kahoot/>
- Yilmaz, A. (2020). The effect of technology integration in education on prospective teachers' critical and creative thinking, multidimensional 21st century skills and academic achievements. *Participatory Educational Research*, 2(8), 163-199. doi: 10.17275/per.21.35.8.2