

Blended Learning, Challenges, and Its Effects to Heis during Covid Pandemic: A Systematic Review

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Abstract

The use of blended learning necessitates academic exploration and attention. The study aimed to assess various challenges in implementing blended learning in the new normal and its effects on Higher Education Institutions. This evidenced-based research used a systematic review guided by the PICO framework and PRISMA search process. The study revealed that BL provides promising results in delivering quality teaching and learning even during the COVID-19 pandemic. Various literature further revealed several roadblocks encountered by learners, teachers, and administration in implementing BL in HEIs. Opportunities were also documented by different authors on how BL improves efficiency and optimum delivery of instruction, as well as individual and collaborative skills, knowledge, and attitude development. The study concludes that using BL ensures continuity of learning in Higher Education Institutions amidst academic restrictions in the new normal. Addressing numerous challenges affecting learners, teachers, and administrators can improve the implementation of BL in the new normal, and blended learning contributes to positive academic performance, engagement, growth, opportunities, and teaching-learning outcomes for both teachers and learners.

Keywords: Blended Learning, Higher Education Institutions, COVID-19 pandemic, systematic review

1. Introduction

Does blended learning warrant scholarly attention? Rasheed, Kamsin & Addullah (2019) perceive blended learning as the most effective and popular in delivering flexible, timely, and continuous learning adopted by most educational institutions. Similarly, Anthony, Adzhar, Awanis, Anis, Danakorn, Aziman, and Gan (2020), observed that blended learning (BL) gained advantage over other learning modalities because it utilizes both traditional and online teaching approaches. For the past years, BL has been trending on an upward trajectory among Higher Education Institutions (HEIs) worldwide as the educational landscape gears up to welcome the fourth industrial revolution. Although BL is widely known to have an academic advantage over other learning modalities, Moskal, Dziuban & Hartman (2013) reported that practitioners struggle with implementing BL in their area. This calls for a thorough evaluation of the various pros and cons of implementing BL, especially during the

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COVID-19 pandemic.

Blended learning involves a mixture of modalities that are carefully combined to complement each other (Rasheed, A.,2020). Specifically, Park & Shea (2020) sees blended learning as an educational approach that combines traditional face-to-face instruction with online learning. It is believed that blending online and face-to-face learning offered students more fruitful channels of getting linked with peers and instructors (Shea & Bidjerano, 2011). Another documented advantage of BL is that it provides a more integrated approach to the teaching-learning process where different learning environments like face-to-face and web-based learning are mixed, intending to provide the most efficient and effective instruction experience (Anthony et al., 2020; Muhuro and Kang'ethe, 2020). Teaching and learning with the aid of BL practices are driven by global imperatives such as globalization, modernization, and incorporating diverse learning ICT strategies to improve the quality of education, especially during the COVID-19 outbreak. Moreover, it is also the identified solution to surmounting educational challenges in higher education to meet the academic needs of 21st-century learners (Bordoloi, 2020; Muhuro and Kang'ethe., 2020; Fauzia et al., 2020).

In contrast, various challenges were observed in several research studies published online. Rasheed et al. (2019) find it difficult to identify all BL challenges due to the rapid advancement of technological innovations and the complexity of human behavior. In a similar study, it was noted that research conducted from 2014 to 2018 is more focused on students' challenges in the online component of blended learning. In addition, Shamsuddin and Kaur (2020) recommend that further research be conducted on the readiness of other sectors in blended learning, such as the readiness of teachers, institutions, or technology and education supports to provide a well-rounded understanding of blended learning implementation. Several studies among HEIs using BL observed educational transformation worldwide; however, only a few explored the implementation and effects of this learning modality on learners, teachers, and administrators. Hence, an in-depth literature exploration of the practice/ implementation of BL among HEIs is essential.

At present, HEIs worldwide are mandated to deliver educational innovation by adopting the new normal approach to teaching and learning during this pandemic. All institutions were required to continue educational processes despite academic restrictions. One of the initiatives conducted by the Philippine government is the limited face-to-face modality, which is one of the components of BL. The idea of face-to-face with online instruction is not new prior to the pandemic (Boelens, Wever & Voet, 2017; Garrison & Kanuka, 2004; Graham, 2006). However, few studies have investigated the challenges encountered in implementing BL incorporating both face-to-face and online instruction.

Previous literature pointed out the need to systematically review research studies published in recent journals to capture its effect during the COVID-19 outbreak. Also, it is vital to check various challenges in implementing BL in the new normal and its impact on HEIs. The focus should be both face-to-face and online approaches and their pros and cons to provide a comprehensive review of BL in the new academic arena.

Research objectives

The study aimed to explore various challenges in implementing blended learning in the new normal and its effects on Higher Education Institutions. Specifically, it sought to:

- Determine key challenges “how and why” in implementing blended learning in Higher Education Institutions among learners, teachers, and administrators.

- Identify the effects of the blended learning approach on Higher Education Institutions.

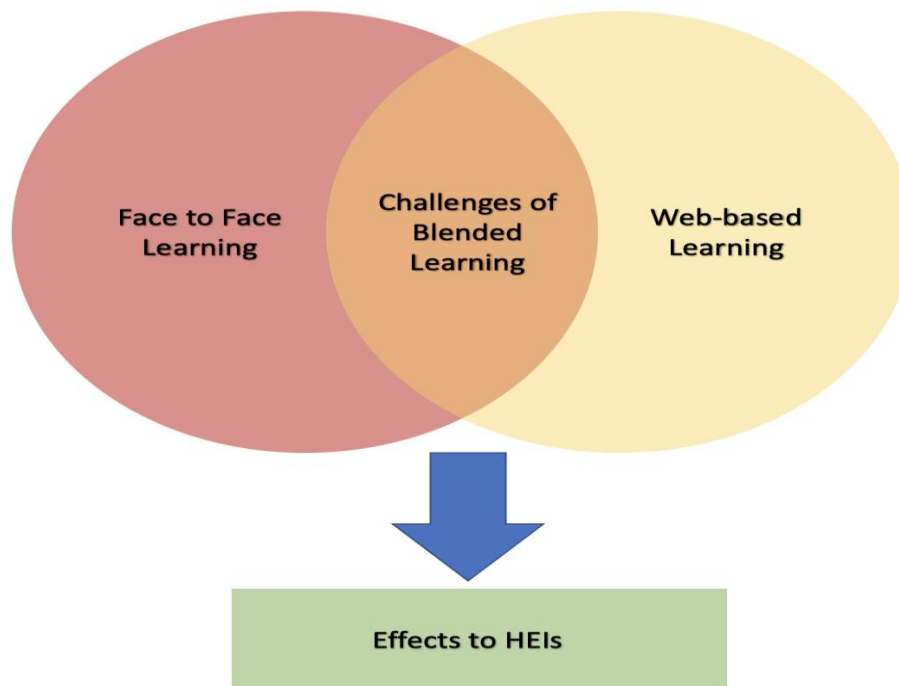


Figure 1. *Conceptual Framework on Key Aspect of Blended Learning*

2. Conceptual Framework

This study was anchored on the concept of the Blending with Purpose model of Picciano (2009). Picciano proposes a blending with-purpose model, which posits that BL should seamlessly integrate multiple modalities driven by pedagogical objectives, to meet the needs of a broad spectrum of students. Pedagogical goals which may be supported include content delivery, social/emotional support, dialectic/questioning activities, reflective opportunities, collaborative learning, and learning evaluation/assessment; these are presented within the model with their concomitant technology.

As blended learning draws attention to HEIs with the infusion of web-based technologies into the learning and teaching process, it is essential to integrate the Blending with Purpose model. This new educational paradigm requires the combination of computer-mediated instruction along with face-to-face classes, driven by program objectives to improve the teaching and learning process (Anthony, B. et al., 2020; Ahmed, Arshad, & Tayyab, 2019; Bond, Marín, Dolch, Bedenlier, & Zawacki-Richter, 2018; Shamim & Raihan, 2016; Tømte, Fossland, Aamodt, & Degn, 2019; Willis, Lynch, Fradale, & Yeigh, 2019). Figure 1 illustrates the instructional delivery, which is face-to-face learning (classroom lectures, individual or group discussions, laboratory activities, assessment skill practices, etc.) and technology-mediated or online learning (recorded lectures/videos, chat rooms, webcasts, online tutorials, etc.) which when combined is the innovative approach of educational delivery known as blended learning. This study looks into various literature to ascertain the challenges encountered by HEIs, specifically among learners, teachers, and administration. Overall, examining the effects of the use of the BL approach on HEIs will be understood.

3. Methodology

This evidenced-based research used a systematic review to explore the key challenges “how and why” in implementing blended learning in the new normal and its effects on HEIs. The study utilized online available peer-reviewed studies focusing on Blended Learning among HEIs.

Eligibility Criteria

An inclusion and exclusion criteria were utilized to keep the review more focused. The selection criteria were based on the PICO framework. The study includes Higher Education Institutions as our population, Blended learning as an intervention investigated compared to the traditional learning approach, and the outcome looks into the effects of blended learning on HEIs. Further, studies that explore the conduct of blended learning in higher education institutions and the challenges experienced in blended learning will be part of this paper. It must also be a full-text peer-reviewed with a quantitative or mixed-method design published in 2019-2021. Also, this study includes the identification of research methods, the year of research publication, and the country of origin among the literature reviewed were identified.

In terms of exclusion criteria, published articles that do not include a blended learning approach; news reviews; meeting abstracts; and editorial letters, especially those without original data, were excluded from this study. Also, all non-English texts, whether published or peer-reviewed, were not included.

Information Sources

A comprehensive literature review of publicly peer-reviewed available journals published in the past three years was conducted. Only 2019-2021 research studies were included to capture current challenges encountered by Higher Education Institutions in implementing blended learning in the New Normal. The search process will use the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines. There will be three online databases, namely Google Scholar, ProQuest, and an interface EBSCOhost. The search will be undertaken from May to August 2021.

Literature Search Strategy

Key search terms comprised of keywords such as “Blended Learning” AND “Challenges” AND “Higher Education Institutions” AND “New Normal” NOT “Online learning.” Keywords will be mixed to narrow down the literature and to capture essential studies for this investigation. Inclusion and exclusion criteria will be constantly used in the screening to search for eligible literature.

Selection Process

Using the PRISMA search protocol, the study identified a total of 1,040 related studies retrieved from three online data sources, of which 185 of them are from ProQuest, 438 studies from Google Scholar, and 417 literatures from EBSCOhost. In the first step, only nine were removed as it was a duplication of studies from other data sources. The inclusion and exclusion criteria narrowed down data to 11 from ProQuest, 97 studies in Google Scholar, and 48 from the EBSCO host. Full-text articles were then evaluated to reduce the number of literatures. Eligible sources decreased to only five from ProQuest, 37 from Google Scholar, and 24 from EBSCO host. Studies were further removed if not written in the English language and have no available full-text copy. A total of 30 research studies were part of the systematic review.

Risk of Bias Across Studies

The risk of bias was decreased using the Bolens, Wever & Voet (2017) review process, where researchers review literature independently. Two authors selected relevant studies by examining the title, abstract, and full paper against inclusion and exclusion criteria in the study. In case of doubt, the third author independently judged the gathered sources. Afterward, the authors discussed the eligibility of peer-reviewed journals until a consensus was reached.

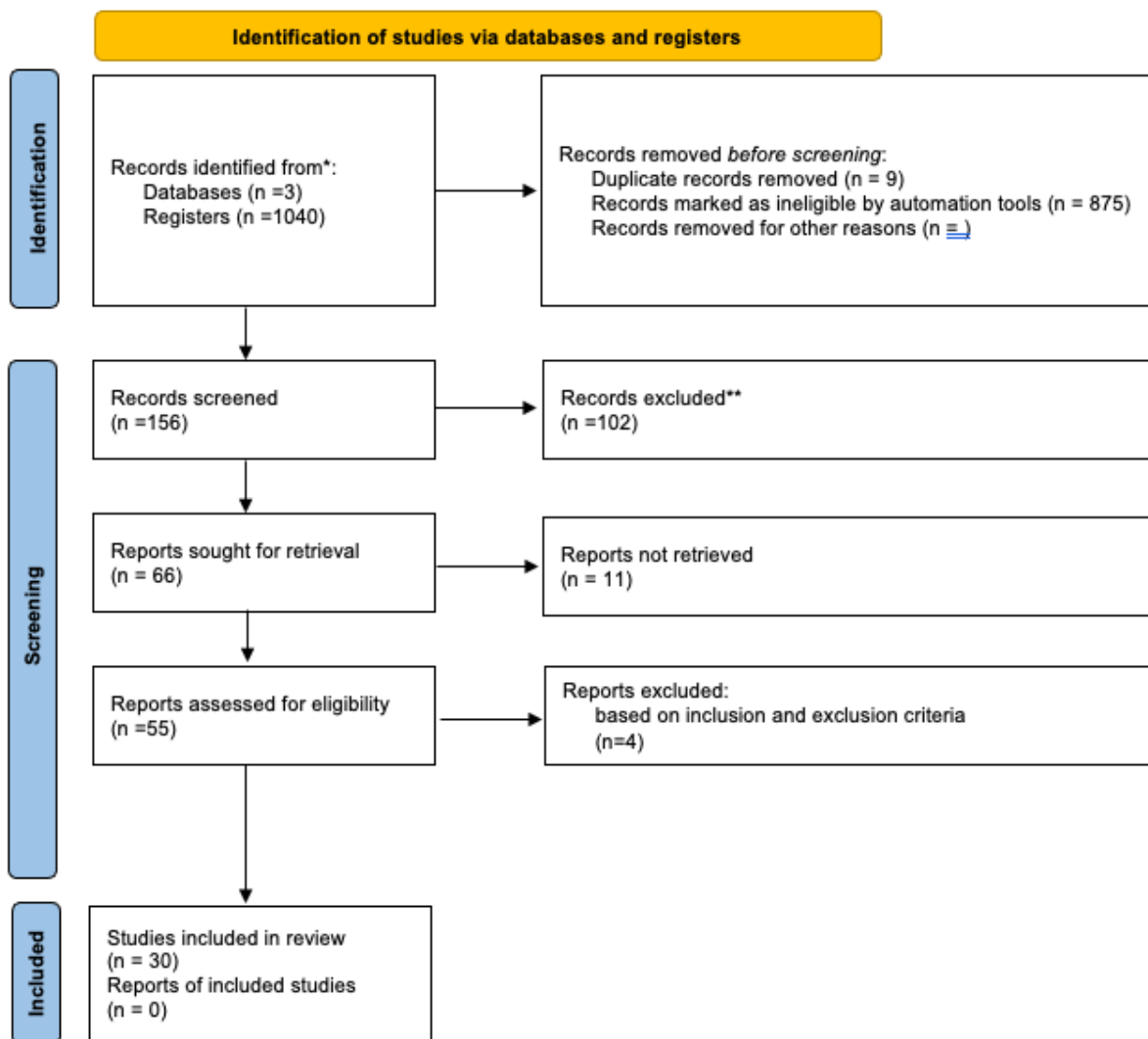


Figure 2. PRISMA flowchart for the Selected Articles

Overview of Systematic Review Studies

An overview of studies utilized in the paper was categorized by year, methods, and country of origin. In terms of the year conducted, there were 30 screened blended learning studies from 2019 to 2021. Figure 3 illustrates an increase in studies on BL as seen from 2019 (N=2) to 2020 (N=19), with 2020 being the highest with publications on BL adoption and implementation and 2021 (N=9). The frequency of these publications in 2019 could be accredited to the fact that the intensity of BL implementation in 2020 across HEIs has improved mainly in developed and developing countries worldwide.

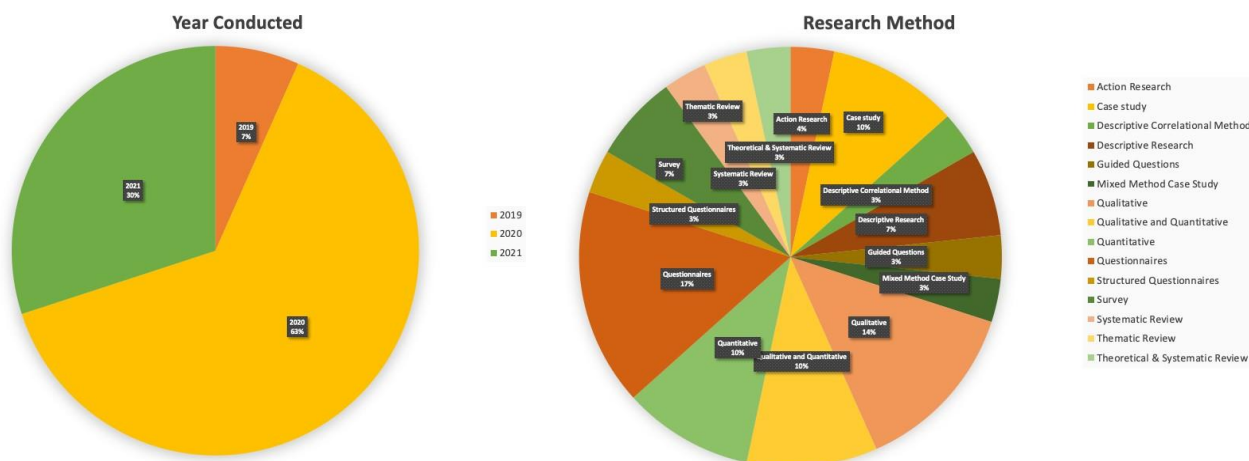


Figure 3. Distribution of selected BL studies by year and Research Methods

In relation to the research methodology applied in the 30 blended learning studies, figure 3 further revealed that questionnaire surveys are the most employed method for data collection (N=5, 62%), followed by qualitative studies (N=4, 14%). Case study, quantitative, and mixed methods with (N=10%) and studies such as Descriptive Research and Survey Methods with (N= 2, 7%); whereas the remaining studies all have (N=1, 3%). Furthermore, this result is consistent with the fact that questionnaire surveys are considered the most suitable tool when collecting data and validating constructs/factors in developed BL adoption model as well as in investigating students' and lecturers' perceptions towards BL practice in higher education (Ghazali et al. 2018; Ismail et al. 2018b).

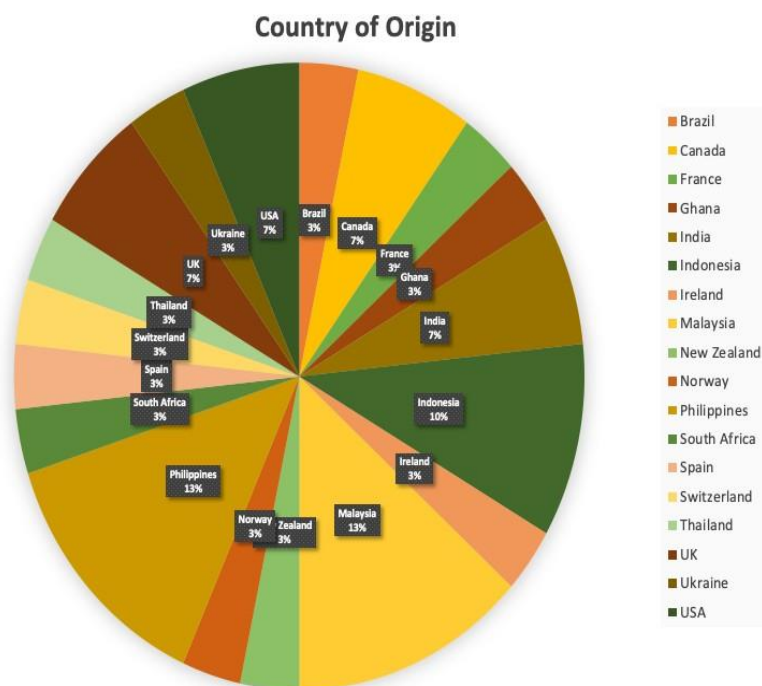


Figure 4. Distribution of selected BL studies in terms of Country of Origin

Regarding the country of origin, figure 4 illustrates the country of origin of the 30 research studies on BL adoption in Higher Education Institutions. Accordingly, most of these studies are conducted in the Philippines & Malaysia (N=4, 13%); this is based on the fact that the Memorandum No.4 series of 2020, which is the Commission on Higher Education's (CHED) Guidelines on the implementation of flexible learning in the Philippines mandating all the public and private HEIs to adopt the aforementioned learning modality. Likewise, in Malaysia, the Ministry of Education initiated an educational blueprint for all HEIs to adopt BL from 2015 to 2022 (Anthony, 2020).

In addition, the country Indonesia shows an (N=3, 10%); this is because the Ministry of Research, Technology and Higher Education (MoRTHE), Republic of Indonesia, responded to the development of advanced technology and its application to education, especially utilizing e-learning in higher education, MoRTHE launched a pilot project called SPADA-Indonesia. SPADA stands for Sistem Pembelajaran Daring, which translates to Online Learning System. SPADA-Indonesia is a program aimed at improving students' access to high-quality education through blended/hybrid learning (Chaeruman, U. A., Wibawa, B., & Syahrial, Z. (2018). Furthermore, Canada, India, the United Kingdom, and the United State of America have (N=2, 7%), while BL research studies consist of (N=1, 3%) for the rest of the countries.

4. Results & Discussion

Challenges in the Implementation of BL in HEIs

While the benefits of blended learning are apparent among numerous peer-reviewed journals, the documented challenges cause uneasiness among stakeholders in implementing BL during this pandemic. A comprehensive review of various challenges is vital in adopting BL among the three stakeholders: learners, teachers, and HEIs.

Learners

The literature review showed several challenges experienced by learners in different countries, as presented in Table 1. Six themes emerged in the literature search expressed as barriers to learning. These barriers are seen in ICT, feedbacking, internet connectivity, learning environment, socio-emotional learning, and instructional delivery.

The use of technology is essential in the implementation of blended learning. Anything that hinders the use of technology affects the education of students. One of the themes looks into the different barriers to Information Communication Technology (ICT), encompassing all essential technological support learners need to conduct BL. According to Busto, S., Dumbser, M., & Gaburro, E. (2021), educational institutions need to have high-quality views on the use of blackboard combined with high audio quality to enhance learning in a blended approach. Other technological support learners need is the provision of gadgets or digital tools to improve academic readiness in the new normal (Tuga, Jocson, & Mabunga, 2021; Sriwichai, 2020; Bordoloi, Das, & Das, 2021).

The lack of adequate user support was also expressed by the students. Since BL mode is a relatively new experience, there is a need for orientation from the onset of their programs to guide students. In a study conducted by Anthony, Kamaludin, Romli, Raffei, Phon,

Abdullah, & Ming (2020), they found that the absence of such orientation thrust students into a pool of confusion and not knowing what to do. Also, using Learning Management Systems (LMS) poses a challenge to learners. Getting lost in navigating LMS, unable to get notifications or access the online platforms and formats (Sriwichai, 2020; Anthony, et al., 2020, Rianto, 2020), and lack software skills (Jingco, Brombuela, Atienza, & Caparas, 2021; Bordoloi, et.al., 2021; Dridi, Radhakrishnan, Moser-Mercer, & DeBoer, 2020; Sriwichai, 2020) were also reported.

Providing appropriate and timely feedback is also seen as a challenge. Giving feedback in this study is defined as a communication tool instructor use to improve students' confidence, self-awareness, and readiness for learning. Common feedbacking barriers observed by different studies on BL include: (1) only a minimum level of direct personal interactions (Busto, Dumbser, & Gaburro, 2021; Setyaningsih, 2020); (2) direct response from the instructor is absent in asynchronous approach (Jingco, Brombuela, Atienza, & Caparas, 2021; Sriwichai, 2020); and (3) lack of timely feedback from the instructor (Jingco, et al., 2021; Sriwichai, 2020). Most of the reported barriers to learning are associated with the online component of blended learning. There are no cited challenges in face-to-face education. In fact, students still perceive face-to-face learning as essential for them, and they want to learn in a setting where teachers and peers are present (Jingco, 2021).

Another barrier to learning is the availability of internet connectivity. Most of the literature stated that an internet connection is a vital tool in enhancing online learning in BL. Internet connectivity both on and off campus, presented a tough challenge for students (Anthony et al., 2020). No to limited fast, reliable, and affordable internet connection is seen as a limiting factor that impacts the use of BL, making it challenging to access course materials, engage in discussion, follow lectures and submit requirements on time (Bordoloi, et al., 2021; Tuga, et al., 2021; Matvienko, Kuzmina, Yamchynska, Kuzmin, & Glazunova, 2021; Usita, 2021; Anthony, et al., 2020; Dridi, et.al., 2020; Viloo, 2020). Lack of consistent platforms, browsers, and software and incompatibility of ICT tools (Bordoloi, et al., 2021; Jingco, et al., 2021; Dridi, et al., 2020) and poor telecommunication infrastructure in remote locations create technical problems among learners (Dridi, et al., 2020).

Learning environments such as physical and environmental facilities are necessary to enhance learning in implementing BL. However, there are different barriers cited by several studies that hinder students' learning. One is the home environment of the learners. Focusing and paying attention online is difficult as distractors are present at home (Anthony et al., 2020; Sriwichai, 2020; Setyaningsih, 2020). In the face-to-face BL approach, class size hinders learning, as numerous students and large class sizes distract students' attention to class (Jingco et al., 2021; Setyaningsih, 2020). Students also find the presence and support of teachers, parents, and friends as essential to their learning success (Jingco et al., 2021; Setyaningsih, 2020; Sriwichai, 2020) and reported various tasks at home limits their time in complying with online requirements (Jingco et al., 2021).

Socio-emotional barriers are also observed among learners in the implementation of BL. Socio-emotional learning, as defined in this paper, is the process of developing self-

control and interpersonal skills among learners to cope with different academic challenges. The online component of BL isolates students, negatively impacting communication and quality of life (Matvienko et al., 2021; Tuga, et al., 2021; Sriwichai, 2020). Also, students exhibit a lack of personal motivation for online learning and find the online learning environment not inherently motivating (Jingco, et.al., 2021; Kelly, 2020); they also reported their struggles when it comes to taking responsibility and managing time for their own learning, hence finding it difficult to meet the demands of online blended learning (Kelly, 2020; Sriwichai, 2020). Students further emphasize that reducing traditional teaching and communication format with required self-discipline, autonomy, and time management skills is challenging to some students (Kastner, 2019). These socio-emotional barriers exhibit limited development of self-control and interpersonal skills among students, thereby showing poor coping skills when experiencing adversities.

Several barriers were revealed concerning the implementation of instructional delivery in the performance of BL. Instructional delivery refers to the implementation of learning modalities, the use of modules, and the percentage of online and face-to-face approaches. Notably, students find online sessions in BL time-consuming as numerous online activities are uploaded at the same time (Anthony et al., 2020; Rianto, 2020). They further recommend having 60% for face-to-face activities and 40% for online activities (Rianto, 2020), while other studies suggest 30% F2F interaction and 70% IT-mediated approach (Anthony et al., 2020). However, another paper stated lower face-to-face interaction with only 20% classroom teaching and 80% high-quality online learning (Owston, York & Malhotra, 2019). The preferences of the percentage of face-to-face learning depend on the preferential need of the institution. In the Philippine setting, the Commission on Higher Education (CHED) recommended 50% face-to-face classes and clinical exposure and 50% online classes for medical courses (De Vera & Duque, 2021). The Commission on Higher Education CHED (2021) further acknowledged that although flexible learning is deemed the most appropriate and safest pedagogical approach during the pandemic, there are specific competencies that only face-to-face delivery, especially among medical and allied courses, could address. Thus, this blended approach meets essential competencies not solely addressed by online classes, especially among skill-based programs.

Another challenge experienced by students in the instructional delivery is the learning material. They find online material insufficient and difficult to understand (Rianto, 2020; Sriwichai, 2020). Students caution that poorly designed online modules and long lectures during in-class components defeat the advantages of the two modalities and hinder their learning (Groen, Ghani, Germain-Rutherford, & Taylor, 2020). Also, inadequate essential knowledge of English vocabulary and grammar structures was mentioned as one of the challenges encountered through an online learning mode; students still perceived face-to-face learning as more important and helpful, and they want to learn in a setting where teachers and peers are with them (Sriwichai, 2020).

Table 1. *Learners Challenges Faced in the Implementation of BL*

Author	Challenges	Theme
Anthony, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A. E., Abdullah, A., & Ming, G. L. (2020)		
Bordoloi, R., Das, P., & Das, K. (2021)		
Busto, S., Dumbser, M., & Gaburro, E. (2021)	High-quality view of the blackboard audio quality. Provision gadgets or devices.	
Dridi, M. A., Radhakrishnan, D.,	Lack of experience, skills for digital tools, and use of LMS.	ICT barriers
Moser-Mercer, B., & DeBoer, J. (2020)	Lack of adequate user support. Absence of LMS orientation.	
Jingco, F. G., Brombuela, G., Atienza, D., & Caparas, E. (2021).	Inadequate learning management system or platform.	
Rianto, A. (2020)		
Sriwichai, C. (2020)		
Tuga, B. J., Jocson, J. V., & Mabunga, R. A. S. (2021)		
Busto, S., Dumbser, M., & Gaburro, E. (2021)	They need a minimum level of direct personal interactions.	
Jingco, F. G., Brombuela, G., Atienza, D., & Caparas, E. (2021)	Students expect direct response from the teacher/ instructor.	Feedbacking barriers
Setyaningsih, E. (2020)	Lack of timely feedback from the instructor.	
Sriwichai, C. (2020)		
Anthony, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A. E., Abdullah, A., & Ming, G. L. (2020)	No to limited Internet connectivity on and off-campus.	Internet connectivity barriers
Bordoloi, R., Das, P., & Das,	Difficult to access course materials and engage in discussions and follow	

K. (2021)	lectures.	
Dridi, M. A., Radhakrishnan, D., Moser-Mercer, B., & DeBoer, J. (2020).	Unable to submit on time -Lack of access to fast, affordable and reliable internet connections.	
Jingco, F. G., Brombuela, G., Atienza, D., & Caparas, E. (2021)	Poor telecommunication infrastructure in remote locations.	
Matvienko, O., Kuzmina, S., Yamchynska, T., Kuzmin, Y., & Glazunova, T. (2021)	Lack of consistent platforms, browsers, and software.	
Tuga, B. J., Jocson, J. V., & Mabunga, R. A. S. (2021).	Incompatibility ICT tools creates technical problems.	
Usita, M. (2021)		
Villoo, A. G. (2020)		
Anthony, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A. E., Abdullah, A., & Ming, G. L. (2020)	Focusing online is difficult with the presence of distractions at home.	
Jingco, F. G., Brombuela, G., Atienza, D., & Caparas, E. (2021).	Losing focus on learning in the classroom due to considerable class size.	Learning environment barriers
Setyaningsih, E. (2020)	Presence and support of teachers,parents, and friends are vital in students' learning success.	
Sriwichai, C. (2020)	Insufficient time due to tasks at home.	
Jingco, F. G., Brombuela, G., Atienza, D., & Caparas, E. (2021).	Self-isolation negatively impacts communication and quality of life.	
Kastner, J. A. (2019)	Lacked motivation to learn in online blended learning conditions.	
Kelly, O. (2020)	Lack responsibility for learning and find online learning environments not inherently motivating.	Socio-emotional learning barriers
Matvienko, O., Kuzmina, S., Yamchynska, T., Kuzmin, Y., & Glazunova, T. (2021).	Some students struggle to take responsibility for their own learning and meet the demands of blended learning.	
Sriwichai, C. (2020).		
Tuga, B. J., Jocson, J. V., & Mabunga, R. A. S. (2021)	Lack of time management.	

	Reduction of traditional teaching and communication format is challenging for some students.	
	Online sessions take a longer time 60% for face-to-face activities and 40% for online activities or 30% F2F interaction and 70% IT mediated learning and in some studies 20% classroom teaching and 80% high quality online learning.	
Anthony, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A E., Abdullah, A., & Ming, G. L. (2020)	Online materials were not sufficient and were difficult to understand.	
Groen, J., Ghani, S., Germain-Rutherford, A., & Taylor, M. (2020)	Inadequate essential knowledge of English vocabulary and grammar structures when learning on their own.	Instructional delivery barriers
Rianto, A. (2020)	Students still perceived face-to-face learning as essential.	
Sriwichai, C. (2020)	Poorly designed online modules and long lectures during in-class components defeat the advantages of the two modalities and hinder their learning.	

Teachers

The implementation of BL poses challenges among teachers worldwide. These challenges are reflected according to different roadblocks: technological, instructional delivery, and capability building experienced by teachers. The first technological roadblock is the limited technological materials, connections, and resources critical to delivering quality instruction. Common challenges experienced by instructors are their unfamiliarity with the use of ICT features (Bordoloi et al., 2021; Busto, Dumbser, & Gaburro, 2021; Alvarez, 2020); lack of ICT skills (Bordoloi et.al., 2021; Busto, et al., 2021; Usita, 2021; Alvarez, 2020); limited access to computer and other ICT facilities (Busto, et. al., 2021; Bordoloi, et al., 2021); and slow internet connectivity (Usita, 2021). In a study conducted by Alvarez (2020), even millennial instructors find blended learning, specifically on the use of Canvas, complex, time-consuming, and requires another instructor to check whether their work is done correctly.

Another roadblock is in the delivery of instructions. The delivery problems covered issues such as instructor's speed and clarity in delivering the lesson and language-related problems (Setyaningsih, 2020); late delivery of course materials and lack of sufficient academic advisors online and feedback (Fauziah, Basori, & Maryono, 2021; Jingco, et.al., 2021); more attention is given to gadgets than blackboards or any conventional teaching methodology (Suganthan, & Ramesh, 2020) and some lecture materials require the physical presence of an audience to meet the needs of the students (Busto et al., 2021). In another

context, lecturers struggle to possess technical ‘know-how’ to design activities that promote high levels of student engagement (Adams, Tan, Sumintono, & Oh, 2020; Kelly, 2020; Kastner, 2019).

In a study by Kastner (2019), teachers find BL longer to develop as it requires an elaborate lesson plan design, teaching materials, and technology support (Usita, 2021; Edwards, Davis, Hadwin, & Milford, 2020); thus, some of them are reluctant to accept this approach. Another difficulty observed in the adoption of new BL strategies is that it provides vast amounts of information that students must process independently (Busto, et. al., 2021), require monitoring to evaluate students’ engagement (Bordoloi, et.al., 2021; Fauziah, et.al., 2021; Setyaningsih, 2020), and affect faculty workload in the end (Adams, et.al., 2020; Kastner, 2019). In addition, Kelly (2020) observed the need to enhance teachers’ capacity to help students address their learning needs.

The last roadblock experienced by teachers focuses on their personal and professional capabilities essential to deliver BL effectively. The Capability building roadblocks include instructors’ poor confidence to engage in a blended learning approach due to a limited understanding of BL concepts (Alvarez, 2020), a lack the appropriate BL training and support (Bordoloi, et.al., 2021; Tuga, et.al., 2021; Matvienko, et.al., 2021; Kastner, 2019), and language barriers and poor promotion incentives for BL instruction (Bordoloi, et.al., 2021; Tuga, et. al., 202; Alvarez, 2020). In addition, Kastner (2019) emphasizes that faculty needs more implementation time, a strategic plan, collaboration, and shared resources in implementing BL. Although not all faculty are inclined to the BL approach (Alvarez, 2020), the promising effects of its implementation in HEIs are well documented.

Table 2. *Teachers Challenges Faced in the Implementation of BL*

Author	Challenges	Theme
	Limited access to computer laboratories.	
Alvarez, AV., Jr. (2020)	The use of ICT as “time-consuming”	
Bordoloi, R., Das, P., & Das, K. (2021)	Lack of technological capabilities of some faculty members	Technological Roadblocks
Busto, S., Dumbser, M., & Gaburro, E. (2021).	Poor internet connectivity	
Usita, M. (2021)	Lack of proper digital services	
	Requires ICT skills to maneuver technological tools	
Adams, D., Tan, M. H. J., Sumintono, B., & Oh, S. P. (2020)	Delivery problems covered issues such as instructor’s speed, and clarity in delivering the lesson and language-related problems.	Instructional Delivery Roadblocks
Bordoloi, R., Das, P., & Das, K. (2021)	Late delivery of course materials and lack of sufficient academic advisors online and	

Busto, S., Dumbser, M., & Gaburro, E. (2021)	feedback.	
Edwards, R. L., Davis, S. K., Hadwin, A. F., & Milford, T. M. (2020)	Necessary learning models that can arouse learning motivation and improve student learning outcomes.	
Fauziah, D. Z., Basori, B., & Maryono, D. (2021)	They give their attention more towards gadgets than blackboards or any conventional teaching methodology.	
Jingco, F. G., Brombuela, G., Atienza, D., & Caparas, E. (2021)	Requires an elaborate lesson plan design, teaching materials, and technology support.	
Kastner, J. A. (2019)	Some courses require the physical presence of an audience so that the lecture can be best adjusted to the needs of the students.	
Kelly, O. (2020)		
Setyaningsih, E. (2020)		
Suganthan, C., & Ramesh, P. S. (2020)	Lecturers must possess technical 'know how' to design activities that promote high levels of students' engagement in online learning.	
Usita, M. (2021)	Difficulties in adapting to new BL strategies have been criticized for providing vast amounts of information which students must process independently.	
	Innovation, workload, levels of institutional and technology support and quality assurance can affect BL adoption.	
	Concerns around course quality, rigour, and lack of interpersonal experiences.	
	Instructors should monitor both online and in-class engagement in BL.	
	Teachers' capacity in helping students learn needs to be enhanced.	
Alvarez, AV., Jr. (2020)	Poor confidence to engage in a blended learning approach.	
Bordoloi, R., Das, P., & Das, K. (2021)	Little or lack of understanding of blended learning concepts.	Capability-building
Kastner, J. A. (2019)		Roadblocks
Kelly, O. (2020)	Not all faculty members are inclined towards blended-based instruction.	
Martín-Martínez, L., Sainz, V., Rodríguez-Legendre, F.	Lack of faculty training and support,	

(2020)	language barriers, poor promotion
Matvienko, O., Kuzmina, S., Yamchynska, T., Kuzmin, Y., & Glazunova, T. (2021)	incentives for blended learning initiation. The faculty's skills in using online learning applications is important to be enhanced and applied in their instructional methods and strategies.
Tuga, B. J., Jocson, J. V., & Mabunga, R. A. S. (2021)	Needs more implementation time, lack of faculty acceptance, lack of strategic plan, lack of collaboration and lack of shared resources.
Usita, M. (2021)	

Administration

The HEI administration also experienced obstacles to the implementation of BL. Different literature reviews documented four barriers: ICT, academic program, policy, and facility. The first one is ICT obstacles, which refer to all technological challenges an institution encounters in implementing BL. Studies reported that institutions should invest more in establishing necessary infrastructure (Adel & Dayan, 2021; Tuga et al., 2021; Setyaningsih, 2020), ICT equipment and laboratories (Adel & Dayan, 2021; Tuga et al., 2021; Rianto, 2020), increase internet bandwidth (Adel & Dayan, 2021; Usita, 2021; Setyaningsih, 2020), technology integration (Matvienko et al., 2021), ICT maintenance (Adel & Dayan, 2021; Alvarez, 2020), purchase of communication and other media platforms (Tuga et al., 2021; Martín-Martínez, Sainz, & Rodríguez-Legendre, 2020) and improved ICT budget allocation (Tuga, et al., 2021; Alvarez, 2020; Setyaningsih, 2020).

The second obstacle revealed by various studies is related to the implementation of programs. Academic program obstacles assert that successful BL implementation requires alignment with the institution's mission and goals, consideration of the local context, along with a continuous long-term effort, as there is no "one size fits all" approach (Kelly, 2020). Institutional commitment is required to deal with the complex challenges through strategic policy planning (Bordoloi et al., 2021; Kelly, 2020), scheduling and provision of robust and reliable infrastructure, and investment of resources to harness the technology in enabling and sustaining a blended approach (Tuga, et al., 2021; Kelly, 2020; Rianto, 2020). In addition, the efficacious delivery of educational resources must consider the need for localization to accommodate learners' particular challenges and contextual factors (Rasheed, Kamsin, & Abdullah, 2020).

The presence or absence of academic policies affects the implementation of BL. A policy is a course of action adopted or proposed to guide faculty, students, or other stakeholders in implementing BL. Anything that is not written or presented is considered an obstacle to implementing BL. Several studies shared that the absence of policies and guidelines for online modality is pernicious to academic operations (Tuga et al., 2021; Alvarez, 2020). This is further supported by Bordoloi et al. (2021), stating the need to formulate a national policy to introduce LMS-based learning in HEIs and create its own institutional LMS to reach out to its learners. Tuga, et al. (2021) further emphasize the importance of continuing the review of university policies and services as a basis for introducing refinement in existing policies, especially in the implementation of BL. These practices are crucial to the formulation of new policies and institutional guidelines vital in the execution of a responsive and appropriate learning approach.

The last obstacle commonly reported by various authors is the presence of facilities. An educational facility is any space and equipment used to train, educate and stimulate learners. Anthony et al. (2020) stipulated the need for university managers to address the infrastructural bottlenecks that impact student BL adoption to enhance the students' learning experience. Moreover, Adel & Dayan (2021) emphasize the need to consider scalable plans for future work to increase the efficiency of infrastructures as needed; this includes upgrading lecture halls and audiovisual systems suitable for blended learning environment needed to enhance students engagement (Busto et al., 2021; Edwards, Davis, Hadwin, & Milford, 2020; Giridharan, 2020; Nerantzi, 2020). Another obstacle reported is the use of institutional facilities, such as labs and studios, specialized equipment, and spaces, as these equipment are unavailable in some institutions. Faculty are mandated by their institutions to be resourceful, creative, and innovative in delivering instruction during the pandemic (Alvarez, 2020; Nerantzi, 2020).

However, numerous literatures reported that the switch from physical classrooms to online learning spaces had taken a toll on institutions as budget allocations need to be realigned (Alvarez, 2020; Giridharan, 2020; Kelly, 2020) Despite the fact, many institutions were agile and has shifted to learning online, it was a mammoth task to transform the entire learning and teaching machinery online (Giridharan, 2020). Martín-Martínez, Sainz, & Rodríguez-Legendre, (2020) observed that higher education had been transformed by blended learning as it has required continuous teacher training in the application of resources and strategies to help students learn with the same effectiveness as in traditional teaching. Overall, the implementation of BL among institutions, as reflected in different studies, showed challenging measures from allocating budget to retrofitting facilities and continuous training among faculty.

Table 3. *Administration Challenges Faced in the Implementation of BL*

Author	Challenges	Theme
Adel, A., Dayan, J. (2021)	Invest more in infrastructure and internet bandwidth.	
Alvarez, AV., Jr. (2020)	Establishing necessary infrastructures to include software, hardware, office space, and internet access.	
Martín-Martínez, L., Sainz, V., Rodríguez-Legendre, F. (2020).	Deployment costs and IT infrastructure maintenance. Purchase of online communication platforms and other ICT equipment.	ICT Obstacles
	Insufficient funding, and slow technology integration.	
Matvienko, O., Kuzmina, S., Yamchynska, T., Kuzmin, Y., & Glazunova, T. (2021).	The system in the online platform needs to be upgraded. Increasing the number of internet laboratories, and the improvement of systems used in online platforms.	
Rianto, A. (2020)	Requires technological and digital media. Shortage of ICT facilities, poor maintenance of	

Setyaningsih, E. (2020)	available or existing ICT resources, lack of ICT budget.	
Tuga, B.J., Jocson, J.V., R.A.S (2021)		
Usita (2021)		
Bordoloi, R., Das, P., & Das, K. (2021)	Requires alignment with the institution's mission and goals, consideration of the local context, along with a continuous long-term effort, as there is no "one size fits all" approach.	
Kelly, O. (2020).	Institutional commitment is required to deal with the complex challenges posed by strategic policy planning, scheduling and provision of robust and reliable infrastructure and investment of resources to harness the technology in enabling and sustaining a blended approach.	
Martín-Martínez, L., Sainz, V., Rodríguez-Legendre, F. (2020)	The need to implement programs and the assistance provided to financially-disadvantaged students within the limitations imposed by budgetary requirements and procurement procedures.	Academic Program Obstacles
Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020).	Requires systematic planning, designing and careful formulations of the aims and objectives of education so as to create an effective teaching-learning process.	
Rianto, A. (2020).		
Tuga, B. J., Jocson, J. V., & Mabunga, R. A. S. (2021)	BL course activities need to be varied to make it more interesting following the learning process and to be easily understood.	
	Efficacious delivery of educational resources must take into account the need for localization to accommodate learners' particular challenges and contextual factors.	
Alvarez, AV., Jr. (2020)	BL is difficult to execute in a classroom environment due to the absence of institutional policies on the use of blended learning.	
Bordoloi, R., Das, P., & Das, K. (2021)	Continuing review of university policies and services as basis for introducing refinement in existing policies or formulation of new policies and institutional guidelines;	Policy Obstacles
Tuga, B. J., Jocson, J. V., & Mabunga, R. A.	Absence of policies and guidelines for flexible	

S. (2021)	learning, especially for the online modality.	
	Difficult to execute in a classroom environment due to the absence of institutional policies on the use of blended learning.	
	Formulate a national policy to introduce an LMS-based learning from school education to higher education or to create an institutional LMS to reach out to the learners.	
Adel, A., Dayan, J. (2021)	Managers of universities should address the infrastructural bottlenecks that impact student BL adoption to enhance the students' learning experience.	
Anthony, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A. E., Abdullah, A., & Ming, G. L. (2020)	Consider scalable plans for future work in order to increase the efficiency of infrastructures as needed.	
	All lecture halls of the department needed to be technically upgraded with an appropriate audio and video system.	
Busto, S., Dumbser, M., & Gaburro, E. (2021).	Achieving at the same time a sufficiently high audio quality both in the lecture hall and online.	
	Complex and relatively new technology needed to be handled by each professor during his/her blended lectures.	Facility Obstacles
Edwards, R. L., Davis, S. K., Hadwin, A. F., & Milford, T. M. (2020)	Design the learning environment so that the environment itself supports engagement.	
	Not being able to use institutional facilities, such as labs and studios, specialized equipment and spaces.	
Giridharan, B. (2020)	Institutions that had invested substantially in upgrading technology for learning and online systems.	
Martín-Martínez, L., Sainz, V., Rodríguez-Legendre, F. (2020).	The switch from physical classrooms to online learning spaces was thrust upon institutions.	
Nerantzi, C. (2020)	There is no doubt that higher education has been transformed by blended learning in recent years, requiring continuous teacher training in the application of resources and strategies.	

Effects of BL on Higher Education Institutions

The effects of BL on HEIs are well documented in several studies online. The presentation of this section is divided into three categories of stakeholders, namely learners,

faculty, and administration. This is to capture the unique BL benefits according to how it is perceived by the stakeholders.

Learners

Blended learning is observed to be a better platform that allows higher levels of interaction and communication with students (Suganthan & Ramesh, 2020; Kastner, 2019). It provides accessibility to the most diverse student population, extending learning outside the classroom boundaries (Alvarez, 2020; Kelly, 2020), making learners more in control of setting out their experiences (Adel & Dayan, 2021; Wear, 2021; Giridharan, 2020, Viloo, 2020), and learners become independent, responsible and motivated to pursue their own learning (Fauziah, Basori, Maryono, 2021; Wear, 2021; Austudillo, 2020; Martin-Martinez et al., 2020; Setyaningsih, 2020; Shamsuddin & Kaur, 2020).

The BL offers additional pedagogical value that results in a highly conducive student learning environment (Bordoloi et al., 2021; Kelly, 2020; Setyaningsih, 2020). The use of blended-based instruction allows more engagement, thereby increasing students' participation (Muhuno & Kangethe, 2021; Wear, 2021; Alvarez, 2020; Georgakopoulos, Chalikias, Zakopoulos & Kossieri, 2020; Nerantzi, 2020; Petronzi & Petronzi, 2020) and confidence (Adel & Dayan, 2021). This approach has made innovative achievements in providing hands-on skills, especially when engaging in an authentic setting of practice (Bordoloi et al., 2021; Muhuno & Kangethe, 2021; Shamsuddin & Kaur, 2020).

In terms of academic performance, Kelly (2020) observed that students on BL courses have higher academic achievement compared to those taught using fully face-to-face classroom teaching or online learning modes. This is supported by the study of Austudillo (2020), reporting that using BL has resulted in lower dropout rates and higher academic performance. Various literature revealed that university students gained the most critical competencies of problem-solving, computer skills (Matvienko et al., 2021; Shamsuddin & Kaur, 2020), and overall usefulness of electronic learning using the blending learning approach (Martin-Martinez et al., 2020).

Another interesting finding is the cost-effective educational opportunities BL provides to learners. The reduction of physical infrastructure and the use of technology-based instruction has reported significant cost savings among learners (Kelly, 2020). In contrast, there is limited extant research on the cost-effectiveness of BL, many claims that BL offers cost-effective opportunities through its ability to provide program access to an increasing student population using a reduced physical infrastructure (Kelly, 2020). This statement warrants further evaluation as we implement blended learning during this pandemic.

Teachers

Instructors' perceptions and experiences about blended learning provide additional insights that could help guide institutions in the process of developing the necessary strategies to improve the pedagogy and implementation of blended learning (Kastner, 2019). According to Groen et al. (2020), teachers who adopted the BL approach were more reflective of their teaching practices as they transformed their courses online from content providers and course designers to facilitators of learning. This is also supported by the study conducted by Austudillo (2020), who reported that teachers in BL fulfill the dual role of being designers of learning situations and mediators as well as facilitators and managers of learning. In a similar study, teachers also have a primary role in motivating students to use technology in academic activities. Several studies also stated that blended-based instruction leads to teaching and learning flexibility, improved teaching effectiveness, and innovation

(Alvarez, 2020; Georgakopoulos et al., 2020; Adel & Dayan, 2021).

Moreover, various studies revealed that BL promotes learning independence and opportunities for networked learning and interaction for teachers and students (Alvarez, 2020; Adel & Dayan, 2021; Bordoloi & Das, 2021; Groen et al., 2020). Furthermore, BL has capacitated the teachers in terms of enhancing their skills and updating their knowledge in the proper use of ICT-based technologies for delivering and receiving academic content (Bordoloi & Das, 2021) and strengthening the professional growth of rural-based science teachers in Botswana as well as bolstering the work of health practitioners in Malawi (Muhuro, P., & Kangethe, S. M., 2021). It is also fascinating to note that some academic staff made a positive observation of BL, specifically its affordability in the teaching and learning context (Alvarez, 2020). However, Kastner (2019) disclosed that less than 50% of instructors find it beneficial to learn about designing and developing blended learning courses. She further emphasized that an imminent and constant need for continuing professional development is essential for instructors to gain knowledge and develop their skills to keep up with the demands of the interrelated and dynamic world.

Administration

Studies showed that HEIs would benefit more in moving towards systematic and strategic adoption and implementation of blended learning (Kastner, 2019). Continued growth and optimum delivery of instruction are seen among institutions that have successfully implemented BL, becoming centers of lifelong learning (Kelly, 2020; Kastner, 2019). Through BL, it has mitigated the delivery of teaching and learning access regardless of time and space (Alvarez, 2020). Institutions become a center of sustainability culture associated with efficiency in delivering instruction (Muhuro et al., 2021; Kelly, 2020).

In a study conducted by Martín-Martínez et al. (2020), it was reported that BL is highly appropriate for use in a university context, where students must juggle and balance their studies with personal and work responsibilities. The amalgamation of online and face-to-face approaches offers the most significant benefits of distance education, together with some advantages of in-person teaching and online learning (Kelly, 2020; Martín-Martínez et al., 2020), especially during this pandemic. The application of BL methodologies represents a complementary element to teaching, which promotes individual and collaborative knowledge and skills development (Martín- Martínez et al., 2020).

5. Discussion

Blended Learning provides promising results in delivering quality teaching and learning even during the pandemic. The use of both online and onsite modalities compliments the statement of CHED that flexible learning is here to stay. CHED clearly articulated that HEIs must learn to mix and match available options depending on the students' and teachers' needs, connectivity, and health situation. Although blended learning has its roadblocks, it offers a transformational and realistic approach for programs to continue learning even when COVID-19 threatens institutions. Through BL, HEIs can opt for online modality when COVID incidences are high and onsite when cases are manageable. This setup is practical for skill-based programs like Bachelor of Science in Nursing.

The BSN program in the Philippines expects learners to demonstrate safe, appropriate, and holistic care using the nursing process, research, and evidence-based practice (CMO 15, s. 2017). The demonstration of expected competencies cannot be fully assessed using online modality, nor skills and attitude development can be holistically evaluated using

virtual platforms. This is further affirmed in the release of Joint Memorandum Circular No. 2021-001, recognizing the need for face-to-face learning in addressing critical competencies in providing safe and quality nursing care to clients across the lifespan. This scenario clearly depicts the use of BL in the nursing program.

As observed, BL has connected hypothetical scenarios to real-life situations in nursing during the COVID-19 pandemic. For two years, nursing students used to handle patients virtually, such as giving medications, nurse-patient interaction, and rendering nursing procedures online with no actual patients. These are make-believe scenarios developed by nursing instructors to address clinical skills during covid restrictions. Through limited Face-to-Face nursing, students' clinical skills were gradually addressed. It has somehow treated the incompetencies of learners in most basic nursing skills. However, the same with the foregoing studies, BL has challenged learners, teachers, and administrators in implementing this modality.

Locally, one of the major roadblocks experienced by learners in the use of blended learning, especially in the use of online modality are technology and environment-related requirements. Most learners cannot transcend to online modality due to poor internet connectivity in far-flung areas, and most have low-tech digital devices. Since most of the learners are technology savvy by nature, they can navigate Learning Management System (LMS) and other software conveniently. On the other hand, a conducive learning environment is also typical in local settings. For example, the homes of Filipino Nursing Students are not designed to mimic healthcare settings used to care for clients in the clinical set-up. Much more, learners don't have the equipment and supplies essential to rendering nursing procedures and the like.

Similarly, teachers also experience technology-related challenges. At the start of the pandemic, no one was prepared nor capacitated to do online teaching. Worst, some instructors were used to traditional F2F and considered themselves technology immigrants. The instructors were grappling with what modality to use during face-to-face restrictions. Same with various studies, migration to online modality was challenging for instructors due to connectivity, capability, and physical resource issues. These challenges were partially addressed when CHED allowed limited F2F where teachers could assess students' Skills, Knowledge, and Attitude (SKA) holistically.

The administration, on the other hand, must provide essential support in the conduct of BL. Addressing ICT, academic program, policy, and facility obstacles can aid students and teachers in successfully implementing BL in various courses. Although using BL requires exorbitant financial allocation, its long-term benefits for learners cannot be underrated. The foregoing studies clearly illustrated that the costs of BL investments outweigh the gain an institution will have in the future.

The future of the Philippine educational system will be shaped by the use of instructional modalities such as blended learning. As the study revealed the challenges and the advantages of BL to learners, teachers, and administration, HEIs should consider this new normal approach. Traversing in this new normal education requires all HEIs to adapt modalities like blended learning, as the traditional way of learning will no longer be the same.

Limitations

This systematic review study is limited to using the PRISMA framework, PICO strategy in selecting appropriate literature for comprehensive evaluation. Various inclusion and exclusion criteria were used to narrow down some literature. There are only three databases used in the study, limited to Google Scholar, EBSCOhost, and ProQuest, dated 2019 to 2021 only. The review findings were restricted to the use of Boolean operators, focusing only on blended learning, challenges and effects of blended learning, and Higher Education Institutions. Another limitation is the use of peer-reviewed studies, those that can be accessed fully and written in the English language. Nonetheless, the study is sufficient to illustrate various challenges and effects of blended learning among learners, teachers, and administrators of Higher Education Institutions.

6. Conclusion

Based on the findings of the study, the following conclusions were drawn: (1) blended learning offers a promising educational approach to ensure continuity of learning in Higher Education Institutions amidst academic restrictions in the new normal; (2) addressing various challenges affecting learners, teachers, and administrators can improve the implementation of BL in the new normal; and (3) blended learning contributes to positive academic performance, engagement, growth, opportunities, and teaching learning outcomes for both teachers and learners.

7. Recommendations

In light of the findings of the study, it is recommended to:

- Commission on Higher Education. May use the results as a basis for creating policies & guidelines in implementing blended learning among institutions.
- Higher Education Institutions. The results of the study articulated the benefits of using blended learning and the challenges encountered by learners, teachers, and administrators in the New Normal. HEIs with skill-based programs may adopt the findings to ensure the smooth implementation of blended learning.
- Future Researchers. Exploration of the actual use of blended learning among HEIs, using other research methods/modalities, is suggested.

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