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Blended Learning Implementation at Bangladesh Open University

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Abstract: Implementing blended learning is challenging for low- and middle-income countries' universities, including open universities. Limited studies addressed this issue by exploring strategic approaches to implement blended learning at open universities in low- and middle-income countries. The study aimed to formulate strategic approaches to implement blended learning at Bangladesh Open University (BOU). To that end, the narrative literature review method was used in this study. Thereby, purposively selected 38 peer-reviewed research articles related to blended learning within ten years were analyzed. The document analysis method was also utilized, i.e., data from the BOU website was collected and analyzed. To formulate the strategic approaches, the study analyzed the recent concepts, benefits, and challenges of blended learning. In addition, blended and face-to-face learning were also compared in terms of concept, application, and limitations. Based on these, this study offered a set of strategic approaches to implementing blended learning at BOU, including adapting the blended learning policy, customizing the BOU learning management system software, and converting the existing curriculum from traditional learning to blended learning mode. Policymakers of BOU and other similar open universities will benefit from this study regarding addressing the issue of implementing blended learning.

Keywords: blended learning, implementation, strategic approaches, Bangladesh Open University

INTRODUCTION

Bangladesh Open University (BOU) is the only public university in Bangladesh that offers programs through Open and Distance Learning (ODL) mode. This university aims to foster the development of human resources by providing standard education. BOU strives to accomplish its objectives by incorporating technology into its instructional process. Recently, the university has endeavored to shift its operations from conventional ODL to technology-based ODL. As a result of this significant change, the university has already developed a customized Learning Management System (LMS), along with 450 electronic books, BOU Web TV, BOU Web Radio, and BOU Interactive Virtual Classroom (IVCR) (Bangladesh Open University, 2024). However, Bangladesh is facing challenges in developing an entirely online learning environment. The infrastructure of educational institutions is designed to be suitable for the traditional face-to-face mode. Learners and teachers also lack readiness for online learning. They are encountering difficulties adequately preparing for fully online learning due to limitations in technology resources, abilities, and attitudes toward using these tools in an online educational environment

(Ahmed et al., 2022). Blended learning could address these challenges by amalgamating face-to-face and online learning, which could be used to provide the benefit of online as well as offline learning. Recently, the University Grant Commission (UGC) of Bangladesh developed a national blended learning policy named 'Policy on blended learning for Bangladesh'. UGC urges the universities of Bangladesh to implement blended learning to cope with the digital teaching-learning ecosystem (University Grants Commission of Bangladesh, 2022). Therefore, implementing blended learning is essential for BOU's transformation process to simultaneously leverage the advantages of online and face-to-face learning and comply with the UGC blended learning policy (Bangladesh Open University, 2024). Concerning blended learning in Bangladesh, few studies have been conducted, and the studies that explored strategies for implementing blended learning at BOU were limited (Ahmed et al., 2024). However, before implementing blended learning, it is essential to develop an implementation strategy by carefully examining the concepts, advantages, and challenges associated with blended learning.

Thus, this study presented crucial insights into blended learning's recent concept, advantages, and challenges, which were significant for implementation. In addition, this study compared the benefits and limitations of blended learning in terms of face-to-face learning. The study concluded by suggesting strategic approaches for implementing blended learning at BOU. These strategic approaches will drive BOU to adopt blended learning that is suited to Bangladeshi students' learning context, encompassing the development of blended learning instructional methods, materials, and evaluation tasks. Hence, this study will serve as a comprehensive guideline for BOU and similar other open universities in the world to establish and sustain crucial elements of blended learning, including the utilization of e-modules, online individual exercises, online forum discussions, virtual seminars, learning management systems (LMS), interactive video conferencing, and a web-based evaluation system.

RESEARCH METHODS

This study followed a qualitative research method. To this end, a literature review was utilized, specifically the narrative literature review method. The six-step guideline of Templier and Paré (2015) was employed to carry out the narrative literature review (Figure 1). In selecting the literature, purposive sampling was used, i.e., literature related to the research questions was selected, and only peer-reviewed published literature within the years 2015-2025 was selected, i.e., inclusion criteria were peer-reviewed literature and published within the last ten years. Based on the research questions, 38 pieces of literature were purposively selected. Additionally, the document analysis method was also utilized, i.e., data from the BOU website was collected and analyzed. Based on the research questions, deductive themes were selected to analyze the collected data, e.g., concept, advantages, and challenges of blended learning, comparison of blended learning, and implementation of blended learning. Findings were presented accordingly.

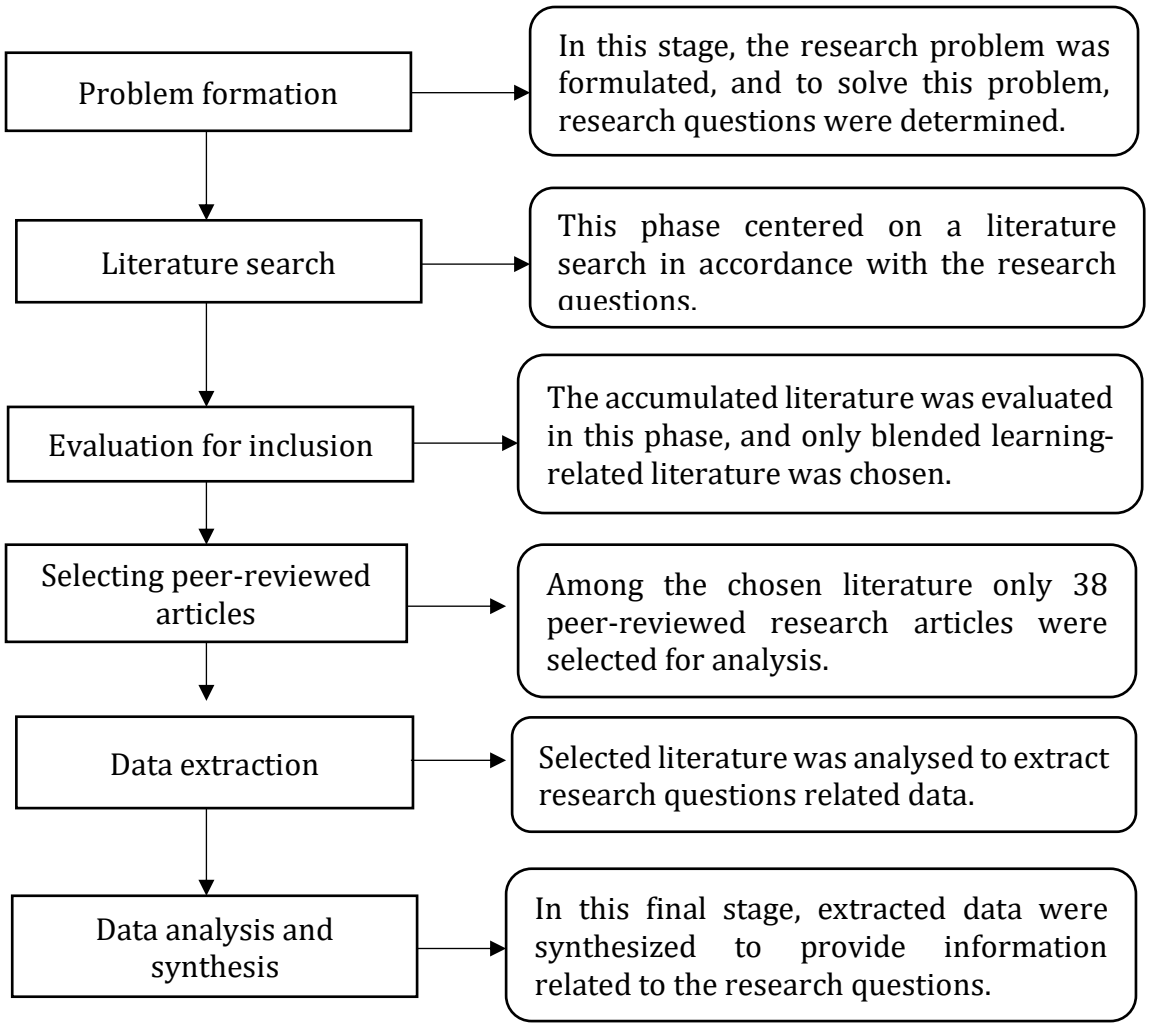

Figure 1. Research Process

RESULTS AND DISCUSSION

The recent concept of blended learning

Blended learning is an innovative educational strategy that mitigates the shortcomings of both conventional in-person instruction and fully online learning, offering an alternate mode of instructional design (Antonelli et al., 2023; Kang & Seomun, 2018; Syamsuddin & Jimi, 2019; Wang & Liu, 2024). It can be interpreted from multiple perspectives. For instance, it refers to an instructional design that carefully blends traditional in-person learning with online learning (Atmacasoy & Aksu, 2018; Wang & Liu, 2024). According to Al-Mekhlafi et al. (2025), Blended learning integrates conventional learning with technology-based e-learning approaches. To clarify the two key terms of BL, Al-Mekhlafi et al. (2025) described 'Conventional learning' as a face-to-face instructional process and 'technology-based e-learning approaches' as the application of technologies, such as e-books and online modules, offering synchronous and asynchronous features. Regarding these twofold learning opportunities, several researchers, such as O'Byrne and (Raes et al. 2020), introduced blended learning as hybrid learning.

On the other hand, Hrastinski (2019) argued that blended learning encompasses more than mere technological integration; it systematically integrates various elements, including contexts, learning resources, delivery media, and pedagogical techniques to achieve learning objectives. Several scholars have recently suggested that it is significant to establish a singular pedagogical design for blended learning rather than regarding it as a composite of two distinct components in-person instruction on-site and online learning (Bozkurt & Sharma, 2021; Hrastinski, 2019). Therefore, in this digital learning ecosystem, blended learning is a carefully designed instructional strategy that merges online and face-to-face instructional design, using various instructional methods and media in specific proportions that consider students' specific contexts and learning needs, including synchronous and asynchronous learning opportunities. This conceptualization aligns with the definition proposed by other researchers (Bozkurt & Sharma, 2021; Hrastinski, 2019; Moore et al., 2017).

Wang et al. (2015) developed the Complex Adaptive Blended Learning Systems (CABLS) framework, which provides a comprehensive lens to understand the holistic approaches of blended learning. Wang et al. (2015) said that the CABLS framework seeks to improve understanding of the dynamic and flexible nature of blended learning. This framework posits that blended learning comprises six interrelated subsystems, all of which exert a reciprocal effect on one another. The six subsystems are the learner, teacher, technology, content, learning support, and institution. Wang et al. (2015) mentioned that while the learner occupies the central position in the model, all subsystems are interrelated and exert reciprocal effects in a dynamic and non-linear fashion, like any complex system. The CABLS framework is an all-encompassing framework that facilitates the examination of the fundamental components of blended learning. The framework allows newcomers to blended learning to thoroughly analyse the fundamental interrelated components necessary for developing and implementing a blended learning approach.

Advantages of blended learning

The advantages of blended learning in modern education can be categorized into learner and institutional benefits. Regarding learners' perspectives, according to Medina (2018), blended learning enhances student participation by allowing them to access two forms of resources, e.g., online and offline. Additionally, it provides opportunities for collaborative and self-paced learning. Consistent with this finding, Moore et al. (2017) contended that blended learning enhances the achievement of educational objectives relative to conventional in-person instruction and entirely online learning because it empowers learners to acquire knowledge autonomously. These significant findings are also supported by Castro (2019). Conversely, according to Atmacasoy & Aksu (2018), the in-person component of a blended mode course has a favorable and productive influence on learners' social interaction, whilst the online component offers advantages such as prompt feedback, varied resources and convenient assessment of progress.

Regarding institutions' perspectives, Cahyani et al. (2021) found that blended learning offers both synchronous and asynchronous learning options, allowing institutions to create a favorable, cost-efficient, and adaptable learning environment. Besides, its inherent flexibility in terms of location and timing greatly diminishes the operational expenses of an educational program. Regarding this, Maloney et al. (2015) conducted an economic review using a randomized controlled experiment. They found that blended learning resulted in a 24% reduction in costs compared to the face-to-face method. Furthermore, studies by Medina (2018) and Syamsuddin & Jimi (2019) mentioned that BL incorporates several instructional techniques, including collaborative,

community, and individualized learning. These facilities facilitate the transition of institutions from a teacher-centered to a learner-centered educational paradigm.

Blended learning is widely applied in several educational domains due to its recognized advantages. For instance, Atmacasoy & Aksu (2018) stated that blended learning is more appropriate for conducting pre-service teacher education than traditional in-person, face-to-face, and entirely online learning. Moreover (2019) agreed that blended learning has a beneficial outcome on the instruction of listening skills based on their completion of action research. Furthermore, a meta-analysis by Li et al. (2019) explored that blended learning, compared to in-person face-to-face learning, was more effective in improving the knowledge and satisfaction of nursing students. Thus, studies by Al-Mekhlafi et al. (2025) & Ma'arop & Embi (2016) explored that blended learning is effective for tertiary education. Alkhatib (2018) & Dakduk et al. (2018) argued that blended learning could potentially enhance engineering education, technical and vocational education, business education, and medical education.

Challenges of blended learning

Blended learning has several challenges from the perspectives of learners, teachers, and institutions. From learners' perspectives, most challenges are related to a lack of learners' readiness. For example, blended learning, a type of learning that incorporates technology, encounters multiple obstacles associated with technology. The constraints encompass the learners' lack of a dependable technological infrastructure, restricted availability of consistent and high-speed internet, inadequate ICT resources, and a deficiency in ICT skills and motivation (Ahmed et al., 2022).

On the other hand, increasing technological skills and developing positive attitudes toward applying technology in education are two challenges teachers face (Ahmed et al., 2022). Other challenges include coping with the new blended learning ecosystem, effectively incorporating technology into instructional practices, and developing instructional resources and assessment tasks. While blending various aspects of blended learning, teachers are also required to involve learners in both synchronous and asynchronous learning processes and consider the learners' learning contexts (Ahmed et al., 2024).

Medina (2018) examined the challenges that institutions face. These are raising awareness among learners about online resources for self-learning, ensuring consistent technical support for learners, monitoring learning environments, updating the blended learning curriculum to incorporate the latest educational technology, and ensuring the availability of suitable online resources. Boelens et al. (2017) identified three complex decisions that institutions must make when implementing blended learning: defining the level of flexibility, maintaining a balance of contact between learners and instructors, and supporting individual learning processes. Institutions must develop strategies to address these challenges within a defined timeframe. According to Medina (2018), strategic plans must be designed to address these difficulties successfully. These plans not only improve the effective execution of blended learning but also aid in achieving institutional objectives.

Comparison in terms of conceptualization

The face-to-face mode is often regarded as the fundamental teaching method in which a teacher imparts knowledge to learners. This technique necessitates an in-person presence of both the teacher and learners, and teaching activities must occur in a designated classroom or teaching area. Thus, it is a direct and efficient method of imparting knowledge and skills from an educator to learners in a regulated setting (Rivera, 2017).

On the other hand, blended learning is an innovative instructional method that strategically combines in-person face-to-face learning with e-learning (Al-Mekhlafi et al., 2025). In this context, 'conventional learning' refers to the conventional method of teaching and learning in a physical classroom. In contrast, 'e-learning' refers to using technologies that may be accessed synchronously and asynchronously (Aljawarneh, 2020). Nevertheless, Al-Mekhlafi et al. (2025) contended that blended learning goes beyond integrating technologies into a program. Instead, it systematically integrates educational resources, delivery media, and pedagogical techniques. It is a pedagogical method that combines face-to-face and virtual learning, incorporating various teaching methods and delivery platforms cohesively while considering the learning environment and the capabilities of the learners. For instance, the utilization of printed and electronic books, the university website to disseminate educational resources, and the implementation of pre-recorded lectures for asynchronous learning (Ahmed et al., 2024). In this regard, Wang et al. (2015) argued that blended learning comprises six interrelated subsystems, all of which exert a reciprocal effect on one another. The six subsystems are the learner, teacher, technology, content, learning support, and institution. This definition aligns with the perspectives of other researchers, such as (Hrastinski 2019, Moore et al. (2017; Rasheed et al. 2020).

Comparison in terms of application

Although new teaching methods, such as online and blended learning, have emerged, face-to-face instruction still holds significant value due to its distinct advantages (Tichavsky et al., 2015). It is appropriate for facilitating practical sessions where learners must gain knowledge through experiential activities (Hurlbut, 2018). Furthermore, the educators' real-time performances, encompassing their vocal delivery, body language, and interactions between educators and learners, inherently foster a synchronous and dynamic learning environment (Tichavsky et al., 2015). Moreover, Adnan & Anwar (2020) argued that learners preferred this technique more in classroom activities than online activities due to increased engagement and immediate feedback. Therefore, considering these advantages, educational institutions worldwide utilize this method significantly.

Conversely, utilizing blended learning is currently considered a substitution that minimizes the inconveniencies of traditional face-to-face and fully online methods (Hass & Joseph, 2018; Kang & Seomun, 2018). The online element of blended learning facilitates learners' acquisition of technological proficiency, while the face-to-face component positively influences learners' social interaction (Atmacasoy & Aksu, 2018). It is employed to transition from teacher-centered to learner-centered pedagogical methods because it is versatile, accommodating several instructional methods (Syamsuddin & Jimi, 2019). In addition, blended learning is widely employed to foster economies of scale in educational institutions by reducing operational costs. As a reference, Maloney et al. (2015) performed a randomized controlled trial to evaluate the economics of blended learning. Their findings prove that blended learning is 24% less expensive than the face-to-face technique for educating a student. Although cost reduction may adversely affect academic assistance for learners, Go et al. (2024) explored those learners participating in blended learning during their final year experienced heightened satisfaction, self-efficacy, and work competence. They can be prepared for employment if they view themselves as self-efficacious and have sufficient support from a suitable source in a blended learning environment.

Comparison in terms of limitations

The face-to-face approach is constrained by the emerging digital learning

ecosystem, particularly regarding its restricted ability to incorporate instructional technologies (Sezer et al., 2017). Despite the availability of PowerPoint and Web 1.0 tools (Rivera, 2017), the absence of other technologies such as e-books, Learning Management Systems (LMS), and Web 2.0 and 3.0 tools constrain the technological potential for educational applications. In addition, it is inherently constrained by in-person learning restrictions that limit the availability of flexible and asynchronous learning opportunities (Sezer et al., 2017). Furthermore, despite its historical significance, this system cannot achieve operational economies of scale, making it expensive for institutions and learners.

Conversely, blended learning does have its drawbacks. For instance, the online component of blended learning primarily depends on technology, making it challenging to execute in areas with limited internet access and inadequate technological infrastructure (Yağcı et al., 2016). Additional limitations pertain to institutional capabilities, such as providing current technology, enhancing learners' understanding of web-based resources, and delivering prompt technical support to learners (Byrka, 2017). Other limitations encompass a lack of empirical research, the challenge of adapting BL to different contexts, the shortage of established standards, and the conceptual framework within an online environment. Overcoming these challenges is essential for effectively applying blended learning, especially challenges linked to institutional readiness. In this aspect, strategic approaches based on institutional strength and challenges may resolve this matter.

Strengths of BOU for implementing blended learning

As per the national education policy of Bangladesh, Bangladesh Open University will be a technology-based university (Ministry of Education, 2024). To accomplish this objective, the university is endeavoring to digitize its operations, facilitating the application of BL. For example, in terms of advancing technological infrastructure, it has established an e-learning center, five IVCRs throughout the country, an e-platform, a customized LMS, an online YouTube channel, web TV, and radio. Additionally, it established an open repository for educational resources and converted more than 450 traditional texts into electronic versions. These e-books are accessible through the BOU e-books website. According to the studies of Byrka (2017) & Ma'arop & Embi (2016), these are the essential technology-related requirements for a university to implement BL.

Furthermore, this university possesses adequate facilities, a skilled workforce, and an extensive network throughout the country to facilitate learners in Bangladesh. The university comprises over 150 full-time faculty members, over 1000 support staff, 82 regional offices, libraries, dependable internet service, a fully equipped media center with live broadcasting capabilities, a quality assurance cell, 1502 study centers nationwide, and 2500 tutors for diverse programs. Additionally, it has established international partnerships with over 10 prestigious organizations and collaborations with more than three universities. Thus, according to Byrka (2017), all these factors are essential for successfully implementing blended learning.

Challenges of BOU for implementing blended learning

Many challenges still need to be addressed in the overall structure of BOU. Based on the review of the relevant literature above, this study has classified the challenges into two categories: pre- and post-implementation. Before facing implementation challenges, empirical research on learners' preparedness for blended learning is absent. This is because learners engaging in blended learning should possess technological proficiency and self-directed learning abilities. Additionally, there is a challenge in creating awareness among the learners regarding blended learning. This lack of understanding has been highlighted by Atmacasoy & Aksu (2018) & Medina (2018). Moreover, there is

insufficient study regarding the preparedness of this university's academic members, tutors, and support staff. Byrka (2017) has also pointed out this gap. Furthermore, Bangladesh has no national BL policy or framework. Developing a curriculum involves creating a teaching method, adapting learning materials per the online learning context in Bangladesh, managing an amalgamation of face-to-face and online sessions, and ensuring a balance between ongoing and final examinations (Boelens et al., 2017; Medina, 2018).

On the other hand, several challenges must be addressed after implementing this educational program. According to Medina (2018), the challenges encompass overseeing both in-person and online tutorial sessions nationwide, guaranteeing learner engagement, delivering consistent ICT services, frequently revising the curriculum, ensuring accessibility and quality of tailored educational resources, and rigorously complying with bureaucratic intricacies and the university's academic calendar.

Strategies to meet the challenges of implementing blended learning at BOU

Before implementing BL models, it is essential for this university to adopt a blended learning policy. The university should adopt the BOU learning management system software and transform the curriculum from traditional to blended learning. Furthermore, the subsequent tactics should be implemented to surmount obstacles. A survey will be conducted to assess the preparedness of students and the university, and appropriate actions will be implemented based on the findings. According to Hunt (2015), this includes creating educational materials with input from experts both domestically and internationally, organizing publicity activities to raise consciousness, designing software to monitor study centers and student activities, developing a rubric for fair evaluation, and adhering to the academic calendar.

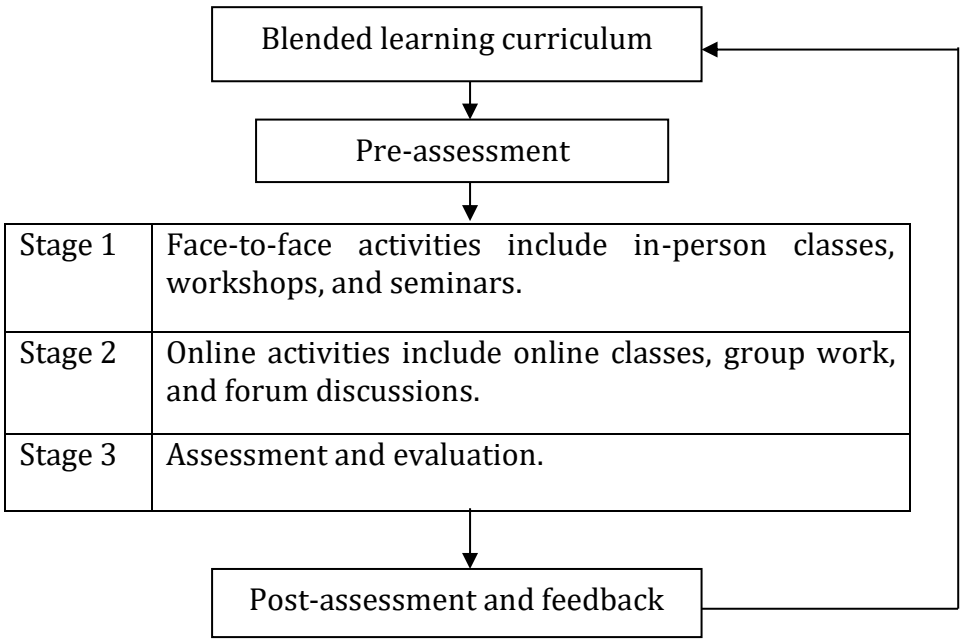

Figure 2. Blended learning curriculum

Based on the studies by Alkhatib (2018) & Byrka (2017), BOU could redesign its existing curriculum to include different programs, from traditional to blended learning. Figure 2 presents a blended learning curriculum design for BOU. The first stage will involve face-to-face interactions, educational presentations, visual illustrations, and hands-on exercises (Byrka, 2017). The next stage will take place in an online format.

Notably, at this stage, every student must submit their assignments to the Learning Management System (LMS) as a formative assessment. In the third stage, a face-to-face component will again be used, and in-person assessment tasks will be graded using a checklist. Upon completion of the third stage, participants will undergo a post-assessment, which will be compared to the pre-assessment to evaluate the participants' achievement. The feedback learners provide will be thoroughly considered before developing the instruction manual for the upcoming cohort.

CONCLUSION

The study explored strategic approaches to implementing blended learning at BOU based on the recent concepts, benefits, challenges, and comparisons of blended learning. Recently, blended learning has been considered an innovative instructional strategy that offers more benefits than traditional face-to-face instructional design in this digital learning ecosystem. The application of blended learning is increasing worldwide, including open universities of low- and middle-income countries. To implement blended learning at BOU, this study offered a set of strategic approaches, including adapting the blended learning policy, customizing the BOU learning management system software, and converting the existing curriculum from traditional learning to blended learning mode. It can precisely adjust its existing programs to conform to the principles and practices of blended learning and satisfy the criteria for blended learning. It can develop a blended learning quality evaluation framework to ensure quality and continuous improvement. Additional empirical research is required to assess the effectiveness of blended learning with the preparation level of BOU learners and teachers.

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