Implementing a Hybrid Educational Model in Private Universities in Bangladesh: A Comprehensive Investigation of Evolving Teaching Methods to Enhance Education while Optimizing Financial Resources

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Abstract

This research delves into a hybrid pedagogical framework and its relevance in tertiary education, particularly in developing countries like Bangladesh. The study examines the surge of online education during the COVID-19 pandemic, which extended from primary to tertiary levels, and the subsequent adoption of a new educational approach known as Hybrid Education post-pandemic. Hybrid learning blends conventional teaching tools like computer labs and interactive whiteboards with modern educational software. Many educational institutions embrace this approach, and the research compares the progress of hybrid education in developed nations with the situation in Bangladesh. It proposes innovative strategies for private universities in Bangladesh to implement a cost-effective method to enhance the education sector. This study aims to identify the most effective hybrid learning model for achieving course outcomes and successful implementation. Additionally, it concentrates on practical implications derived from King Mongkut's University of Technology Thonbury, Thailand, which could potentially enhance the quality of education, teaching, and research activities in Bangladesh. This research equips educators to create effective learning environments and promote knowledge acquisition through a thoughtfully designed hybrid education model.

Keywords

Hybrid Education, Distance Learning, Learning Environment, Teaching Model, Learning Outcome.

Introduction

The appearance of hybrid learning in educational environments is changing the pedagogy of traditional teaching and learning practice. Hybrid learning combines face-to-face and online teaching into one cohesive experience. It means almost half of the class sessions are held on-campus, while the other half have students attending it online. Although that may sound like a cut-and-dry formula, much preparation is needed, especially in Bangladesh, to ensure the advanced blended learning method works well. Regarding this, it can be said that **established educational practices are fundamentally changing their**

relationship with their environments **(Simons, Van der Linden, and Duffy, 2000; Tynjälä, Välimaa, and Sarja, 2003).** All these changes can be noticed in various sectors**- established roles of the facilitators, altered resources and locations, modified teaching materials, and extended learners' thoughts.**

Previous research has shown that during the pandemic time of COVID-19, hybrid learning was the most suitable form of education because it harmonizes traditional and electronic learning. This is because, during the lockdown period, the well-being of health had become the main concern for individuals, and the next step was the plan to reopen the educational institutions. Also, the tertiary academies were thinking of continuing their curriculum in a new genre; for this, **within a short while, university teachers had to adapt to the latest e-learning during the pandemic time and where digital competence was key (Mavridi, 2020).** Similarly, In response to the escalating impact of COVID-19 in Thailand, King Mongkut's University of Technology Thonburi (KMUTT) launched urgent measures and a work-from-home policy during the phase of the COVID-19 to cope with the disease and protect the students and university's staffs. One of KMUTT's central aims was to deal with the new normal during the crisis and after the crisis of COVID-19.

A similar situation occurred in Bangladesh, where teachers (especially of tertiary level) were asked to take classes and deliver lectures online using different digital platforms, such as Google Meet, zoom, and Moodle. Still, the authorities of various private universities in Bangladesh needed to take more initiative to guide them properly. Although they had arranged some online workshops, webinars, and virtual and physical training sessions, all these were not enough to run a class, keeping the learners' attention within a specific time limit in **terms of how universities can open and under which conditions, and how remote learning can be used to complement the reliance on physical universities in times of need (Worldbank, 2020, Schleicher, 2020).** The thought behind the pedagogy of hybrid learning relates to different media serving to present learning content, excellent availability of online content, well-executed interactions of teacher-student, student-student, and student-teaching content, and above all, the availability and adoption of learning materials to the students. In short, **one of the main advantages of hybrid learning is that learning which can provide students with a sense of community that other methods cannot offer, and that positively affects learning success (Department of Education and Skills, Ireland 2020).**

Many people might now consider "hybrid" and "blended" to be two words of a similar technique, but in reality, these are totally different terms from one another. Regarding the Hybrid Education system, **Hatters and Horn (2012) state that Hybrid learning (blended or hybrid learning) is a flexible term. Another term often used for hybrid learning is blended learning.** That difference is based primarily on the proportion of face-to-face and online sessions and instructional material in a given course. Hybrid refers to teaching that is roughly balanced between its two formats (think 50/50) and blended refers to a mostly traditional face-to-face course that also incorporates a few class lectures' worth of online instruction (think 25/75). **Hybrid learning (blended learning or hybrid learning) is a flexible term; another term often used for hybrid learning is blended learning (Reasons; Valadares & Slavkin, 2005).** Hybrid learning aims to ensure the need for students' participation and enable them to acquire knowledge from anywhere without bothering geographical boundaries, thus leading to enlarged flexibility. Hybrid learning has spread globally since learners from different regions can attend and study in their preferred educational institutions outside their countries. In multiple research studies, students' comfort and satisfaction have been stated/ documented. To improve hybrid courses, **undergraduate students**

suggested more training in the use of technology and recording synchronous sessions for later review (Bonakdarian, Whittaker, & Bell, 2009; Wood, 2010).

Nevertheless, due to its several benefits, the innovation of hybrid learning will remain since it holds a promising future for institutions, including schools, universities, training institutes, learners, and teachers. **According to Hatters and Horn (2012), it can be said that one of the main advantages of hybrid learning is that hybrid learning can provide students with a sense of community that other methods cannot provide, and that positively affects learning success (Yang, 2014; UNESCO, 2020). Also, to Hatters and Horn (2012), the advantages are as follows: a) time: Learning is no longer limited to the day of school or school year; b) place: Learning is no longer limited to the classroom; c) the learning process: Learning is no longer limited to the work methods used by the teacher.** However, there is a need to identify the best use of online instruction and how to implement the tools of online **learning management systems (Sauers & Walker, 2004).** Therefore, Bangladesh should focus on adopting the effectiveness of hybrid learning in developing the education system.

Background of context

The concept of a "learning environment" is broader than a traditional classroom, as the present context in which learning is situated has become widespread. **As one of the cornerstones of the concept of learning environments, we can introduce an equivalent concept of "curriculum," which can be defined in its most basic form as a "plan for learning" (Van den Akker, 1999).** That is to plan a classroom where digital technology can be implemented. **Goodyear (2001) presents a more extensive definition and states that "a learning environment consists of the physical and digital setting in which learners carry out their activities, including all the tools, documents and other artifacts to be found. Besides the physical and digital setting, it includes the socio-cultural setting for such activities."** A future classroom can be made with the teachers' instruction using physical and digital platforms. Here, the teacher will play the role not only as an instructor but also as a facilitator. In some of these, **the focus is on the role of information and communication technology (ICT), as in the "innovative learning environment" (Kirschner, 2005), which should have the necessary technological, social, and educational affordances to provide opportunities to learn.**

In line with this, the European University Association (European University Association 2021) imagines future universities to be without walls, meaning that universities will be open and engaged in society while at the same time retaining their core values. The campus environment will be open, flexible, and transformative, sharing standard information through knowledge, research, education, invention, and culture. **These transformative spaces are also conceptualized as post-digital learning spaces, aiming to open up institutional spaces to form universities beyond traditional dichotomies (O'Bryrne and Pytash 2015).** This means physical teaching and learning will merge with e-learning environments in post-digital learning and teaching. **Feenberg (2019) states that within post-digital learning spaces, the digital will be integrated and inherent in the everyday actions, interactions, and experiences of teaching and learning.**

In the late 1900s, the initiation of computers and the internet marked a significant move in the e-learning system. This improvement in education led to its remarkable progress in recent eras. **In 1989, the University of Phoenix introduced its online educational program using CompuServe (Kentnor, 2015).** Other education and training institutions were unified in the late 1990s and 2000s. They started teaching online classes for those students who could not attend in-person classes. Thus, the initial step of

online classes confronted various challenges. **Educators need to understand that online learning requires a different pedagogy (Kentnor, 2015).** They also needed to be more knowledgeable about online teaching methods.

Nevertheless, the technique of delivering online courses has continuously changed to overcome all the hurdles. Nowadays, in advanced countries, many educational and training institutions, such as colleges, universities, and tertiary institutions, have combined hybrid learning into their course curriculum. For instance, **massive open online courses have become more common and widespread in delivering college instruction (Kurzman, 2013).** Nevertheless, these higher education institutions still maintain face-to-face course delivery as well. This combined approach has led to the development of hybrid learning. Therefore, the scientific revolution enabled the growth of distance learning and the subsequent expansion of hybrid learning.

Over the last 15 years, more consideration has been given to learning and teaching environments, **with many researchers claiming that flexible spaces better meet the needs of a diverse student population (Amoroso 2014; Joy et al. 2013; Wang et al. 2018). JISC, a not-for-profit company in the UK that was set up to provide computing support for education, suggested in their report (2006) that a learning space should be able to motivate learners and promote learning as an activity, support collaborative as well as formal practice, provide a personalized and inclusive environment, and be flexible in the face of changing needs.** As mentioned above, hybrid or distance learning is not a new trend, as the concept came across in the mind of the researchers a long time ago; thus, it has evolved over the past years to its current state. **Distance education dates back to the early 18th century when correspondence education emerged (Kentnor, 2015).**

In recent years, with the rapid innovation of technology and network coverage, the means of education in advanced countries like- the USA, UK, Canada, Australia, Japan, China, South Korea, etc. are improving gradually. However, this process is slower in a developing country, Bangladesh, compared to other countries. At an early stage, this kind of online learning mode received lots of criticism everywhere. Still, later on, educators combined this online education with traditional face-to-face campus education and formed the most remarkable way of learning, hybrid learning. **Hybrid learning, also relevant in this context, is a pedagogical approach that combines face-to-face instruction with computer-mediated instruction (O'Byrne & Pytash, 2015).** Hybrid learning still lacks sufficient research as a new training mode. A continuous unconventional teaching method has led to different modern learning spaces within and outside educational boundaries. It can be said that technology is the foremost transformative force in this regard, and the impact of digital literacy across an educator's educational practice is proving it daily. **Irvine (2020) emphasized the importance of focusing on the meaning of concepts to create a shared understanding for future hypothetical discourse.** She outlined the main terms: hyflex, multi-access, (synchronous) blended, and (synchronous) hybrid. **The HyFlex (hybrid-flexible) model was developed by Beatty (2007, 2019) and is considered an amalgamation of hybrid**, i.e., combining a modal of both online and face-to-face education setting, and flexible, as students may choose any option according to their convenience and comfort. With support from the Canada Foundation for Innovation, **Irvine introduced the multi-access learning model at the 2009 AACE EdMedia Conference and then expanded on the idea in a 2013 article (Irvine et al. 2013; Irvine 2020).** The model includes four levels of access: (1) face-to-face, (2) synchronous online, (3) asynchronous online, and (4) open access. **Hybrid and blended both refer to combining modes (Lakhal et al. 2017); however there is another term called synchronously has later been added (see, e.g., Shi et al. 2021; Zydney et al. 2020)** as, without

this specification, blended or hybrid are also used to describe learning situations running online and offline as dichotomies in which learning could take place either online or offline. **For example, Ladd (2020) (Dean of the San Francisco campus) mentioned in his article that he is reserving the term 'hybrid' for educational experiences where the students in a class group are either all online or all face-to-face in a classroom together.**

Thus, during COVID-19, when there was a lockdown all over the country from 2020 to 2021, this learning method was applied in Bangladesh. However, it could have been more successful as most students were not interested in attending online classes. According to them, it is better to understand the lesson in an offline class rather than online. However, various factors worked behind such a mentality. Although **difficult for some students, completing a hybrid course may promote improvement in time management, organization, and self-management skills (Kenney & Newcombe, 2011).** Moreover, some level of synchronous online learning is possible in many developing countries**. Still, in many places where internet connection is unstable, and teachers and students lack digital devices, learning through digital devices, where it occurs, is likely to be asynchronous, with homework or recorded lessons sent through emails, phones, or television (Rosmin & Muhammad Rosli, 2020).**

Existing studies on hybrid learning (HL) mainly focus on its effectiveness. **These studies measure students' performance (Willson, 2008), perceptions (Walker et al., 2020; Willson, 2008), and reflections on the implementation of HL (Willson, 2008)**. So, to describe an e-classroom with both people online and in-person simultaneously, **Ladd (2020) put forth the term 'concurrent classroom.' Other less common terms are synchromodal (Bell et al. 2014)** and dual-mode teaching, meaning that both online and classroom-based instruction is provided in a course simultaneously. **The term dual-mode is used within CETL (Centre for the Enhancement of Teaching and Learning) at the University of Hong Kong. Recently, Nørgård (2021) also introduced the concept of hybridity,** which means both physical and digital forms coincide.

This paper focuses on the effectiveness of the hybrid education system and its environment at the tertiary level that crosses the traditional classroom boundaries in Bangladesh. **Huang (2010) examined the internal difficulties and external challenges of a hybrid e-learning program at a university in Taiwan that used the 'Four Elements' model of 'cost, service, quality and flexibility' and the 'Structure-System-Process paradigm deployment of resources.' Huang argued that the program was expected to develop a competitive advantage with these models in place.** Bangladesh is a country where digital learning has been introduced very recently. As this country is not financially solvent, This research findings will highlight the opportunity to take education one step further by implicating hybrid education within a limited amount of the economy. **Some studies of online learning at universities and schools in developing countries exist. These studies indicate the unpreparedness of students, especially those from lower-income backgrounds, for online learning for reasons of internet connectivity, anxiety and stress related to online learning, as well as a lack of technology skills (Al-Kumaim et al., 2020; Cheok et al., 2017; Ismail et al., 2020).** Also, **The available studies cite factors that influence the effectiveness of HL, including time constraints, student confidence, resources, services, cost, etc. (Huang, 2010; Walker et al., 2020; Willson, 2008).** Thus, **There is a need to think beyond the mere replication of physical teaching/lectures in online learning and for better-quality learning platforms and learning content (Al-Kumaim et al., 2020; Ismail et al., 2020).** Instead of merely combining, connecting, or joining aspects of learning, especially in the private universities, the

researchers will try to discover new course materials and learning features and also want to show how they might be integrated and merged.

Statement of Purpose

The purpose of this study is to look into different features of hybrid learning perceived by various institutions of the first world countries and to propose a unique design at the tertiary level, especially in the private universities of Bangladesh, which will be within the economy and could include- student participation, innovative approaches, flexibility, upgrade course content and lessons with a compelling and informative pedagogy. **Another innovative approach is that hybrid learning allows students to benefit from the best practices of both in-person and remote instruction (Ilgu & Jahren, 2015).**

According to **The University of Wisconsin-Bothell's Learning Technology Center**, The schedule and structure of hybrid courses can vary significantly from one class to another at the same institution, and it also depends on the financial stability of a particular organization. This highlights the pedagogical flexibility characteristic of the hybrid model. **According to Ilgu and Jahren (2015), hybrid learning allows students fewer contact hours with their instructors.** Therefore, learners can engage in other activities, such as part-time jobs, without undermining their regular schedule. **They can easily balance their duties through this teaching method (Ilgu & Jahren, 2015).** It is the responsibility of the facilitator of a hybrid course to typically design teaching material online or face-to-face, depending on the learning goals, course objectives, content, and available resources. **In the classroom, the instructor must be able to lead and facilitate discussions and authentic interactions (Blier, 2008). The instructors' role includes creating a clear, organized structure and selecting user-friendly tools (Gray & Tobin, 2010).** Similarly, the face-to-face versus online work timetable can be organized in quite different ways that may reflect not only pedagogical criteria but also the particular circumstances of the instructor and their learners. **Providing online recordings and notes of previous sessions was also deemed valid (Yudko, Hirokawa, & Chi, 2008).**

Generally, one can distinguish between the analytical or explanatory sciences and the design sciences (Collins, Joseph, and Bielaczyc, 2004; Van Aken, 2005). Analytical or descriptive inventions try to understand how phenomena can be explained and focus on delivering pure knowledge problems. **The main interest of the design sciences is to spread effective knowledge to support the design of solutions to field problems by competent professionals dealing with educational reform (Van Aken, 2004).** In the context of this paper, this means a professional educational system that could be handled inside the classroom using technology. Also, as an initial solution to bridge the gap between educational research and practice, **a new methodological approach was introduced focusing on so-called "design experiments" (Brown, 1992) and "design science" (Collins, 1992), and has since received growing attention (Sandoval and Bell, 2004).** Other related terms include **"design experimentation," "design-oriented research," and "design-based research" (The Design-Based Research Collective, 2003).**

Conceptual Framework

To create such a model, we also need to keep in mind **the main motives for initiating design research in educational sciences stems from the desire to increase the relevance of research for educational policy and practice (Gravemeijer and van Eerde, 2009).** The research aims to address theoretical questions about new teaching and learning contexts, that is, **to study learning phenomena in the real world and go beyond narrow measures of learning (Collins *et al*., 2004 in Akkerman *et al.*, 2011).**

The educational design focuses on finding designs to create a new learning environment where all the students from both online and offline can attend the class simultaneously and find solutions to upcoming obstacles, as it will be implemented in a developing country like Bangladesh. **Its outcomes can vary from optimal or alternative solutions to a set of design principles or guidelines to reach an optimal solution (Van den Akker 1999). Van den Akker (1999) distinguishes three forms of curriculum representations: (1)** *intended***, the underlying vision of a curriculum and the intentions as specified; (2)** *implemented***, the interpretations by its participants and the actual curriculum in action; and (3)** *attained***: the learning experiences and outcomes of a curriculum.** These three forms can be applied to the concept of hybrid learning environments. The plans and designs of a hybrid learning environment (*intended*) are taken by its participants (teachers) and implemented to become a hybrid learning environment-in-action in the form of the socio-economic structure in which participants carry out their activities (i*mplemented*) and lead to the chosen teaching-learning experiences and its outcomes, knowledgeable, professionals be able to manage with societal progress.

As an object of design, we chose a minimum budget, digital learning environments, and moderated course materials. Besides eliminating geographical boundaries, hybrid learning facilitates education since it reduces educational costs and related inconveniences. **Hybrid learning is more cost-effective than traditional learning (Ilgu & Jahren, 2015).** Subsequently, institutions can accommodate more learners in smaller classrooms as some will join the class virtually. Regulating hybrid courses or programs can be more affordable for educational and training institutions.

Moreover, some studies indicate that asynchronous distance education has a lower investment cost than synchronous distance education. This process is called asynchronous, which does not require students (both online and offline) when the teacher is teaching. Therefore, students who are not financially solvent can get an education from their desired universities because hybrid learning increases access to education by eliminating geographical boundaries, reducing educational costs, and mitigating associated inconveniences.

A design perspective added more importance since the learning environment concept is more comprehensive than the typical classroom. **One such approach is to adopt appropriate pedagogies for hybrid learning to maximize its strengths while minimizing its shortcomings (O'Byrne & Pytash, 2015).** In a general classroom, the facilitator's agenda and the students' roles are clear: the teacher delivers lectures, and the students acquire that knowledge. The space has a very common set-up. Mostly, the stationery is the whiteboard, benches, and some paper materials- books, articles, and written assignments, including pens and other necessary stuff. There will be a routine of hourly lectures. However, when this setup is being broadened into multiple educational environments that add participants from distant places through technology such as digital learning platforms, computers, and so on, it becomes much more complex. **Engeström (2007) notes that design research in the educational sciences has shifted the focus of attention from isolated individuals to entire learning environments or learning ecologies (Akkerman, Bronkhorst, and Zitter, 2011).** It becomes necessary to design the learning environment in advance and align all the different elements and perspectives in an organized way. We should note **Engeström's view (2009) that is critical of the concept of "learning environment"** as an over-simplification. He states that **the "plethora of attributes" (like innovative, collaborative, powerful, real-life) are used to "sell a wishful image of future learning in which all good qualities of human interaction come true"** and raises the naïve prospect that designing such kind of learning environment

will automatically come to lime-light intended learning outcomes. However, it is easy to understand that he stated these remarks about computer-supported learning environments with broader relevance.

An advanced pedagogy is needed to implicate hybrid learning. It includes- balancing the duties of educators, **thereby preventing them from compromising the quality of instruction they deliver to students (Ilgu & Jahren, 2015).** It also improves learning outcomes among students with ground-breaking approaches; for example, **educators in elementary, primary, and secondary schools can increase their use of video tutorials to help learners at different levels (Shand & Farrelly, 2018).** Therefore, hybrid learning involves peer engagement where students can share and learn from each other by cascading. Lastly, it can catch up with learners' attention by keeping them active in almost every routine class and reduces student absenteeism. **In terms of content mastery, an experimental study found that students in both a traditional and a hybrid computer course attained comparable achievement and knowledge retention scores (Delialioglu & Yildirim, 2008).**

Hypothesis

There are various prospects for hybrid education, so implementing hybrid education in teaching seems a complex process. This research aims to present a hybrid model that can be used as a learning method for higher education in Bangladesh. To ensure a positive outcome, this model will determine some principles of multimedia that can be implemented in hybrid classrooms. This had some hypotheses mentioned below.

1. A practical model compared to the traditional learning model.
2. Hybrid learning introduces more innovative ideas, and the practical implications of those ideas make the class enjoyable.
3. To maintain the redundancy and coherence principles, it becomes easy for the respondents to use both the multimedia segmentation principles and spatial and temporal connections principles.
4. Visual materials, usually moving images, better explain language contents than many written texts on the screen.
5. A hybrid learning model is more effective when critical multimedia messages are divided into smaller parts than presented as a single nonstop unit.

A possible hybrid classroom model

There are various hybrid education models, and in Bangladesh, a combination of the Concurrent and Asynchronous hybrid models can be implemented, incorporating certain elements and omitting others. The Concurrent Hybrid model involves conducting online and offline classes simultaneously, allowing on-campus and remote students to attend classes together. This facilitates real-time interaction, smooth delivery of instructions, and student-teacher interactions through live-streaming.

On the other hand, the Asynchronous hybrid model entails recording on-campus instruction for students who cannot physically attend classes due to being located far away. However, this model does not involve live streaming. Therefore, a potential approach would be having on-campus and remote students attend classes simultaneously, with two-way interaction, seamless instructional delivery, and live-streamed and recorded student-teacher interactions. If students miss the live classes, they will have the option to watch the recorded sessions later. In this proposed model, students can attend classes online or offline, as attendance and short quizzes will be conducted online. For presentations, students will have the choice to participate either in-person or online. However, midterm and final exams will be administered centrally

on campus. Additionally, students will require permission or a link from their course teachers to view the recorded classes later, allowing teachers to track the attendance of absent students.

During the COVID-19 pandemic, many well-known private universities adopted the practice of recording classes so that absent students could access the recordings later with the teachers' permission. In addition, KMUTT launched the urgent work-from-home policy during COVID-19 to handle digital resources to deal with the new standard teaching methodology during and after the pandemic. This approach enables teachers and university authorities to monitor the success rate of hybrid classrooms.

Working assumptions

- Students with legitimate reasons can skip the in-person class and participate in the class online.
- Students residing in remote areas are also welcome to join the physical classrooms at any point during the semester, as online and offline students receive regular attendance monitoring from the teacher.
- The instructor will consistently come to the campus to conduct classes.
- Each classroom will have at least one computer, suitable audio equipment, and a projector.
- In-person students will be seated in a U-shaped arrangement to ensure clear visibility of the online students through the projector.
- The university is required to make payment and obtain a smooth internet connection and permission from Google Recorder to record the classes.
- The teachers' folder will store and maintain all classroom records, and students interested in watching the videos will be provided with recorded class links for a specific duration.

Research Methodology

The researchers followed the method of qualitative research where they used both primary and secondary resources to get vast knowledge on Hybride education and collected related information to implicate the idea in their research paper. As their primary resources, they have gathered data by making open-ended questionnaires and conducting interviews with 25 faculty members of different levels of private universities in Dhaka, Bangladesh. The primary objective is to gather information regarding the awareness of the teachers in these departments regarding the implementation of the innovative hybrid lecture prototype. Additionally, it aims to ensure that they are informed about it, while comprehensively defining the scope of activities and outcomes for each development phase within this educational system.

The study involved lecturers from various departments like English, Agriculture, Business Administration, LAW, Textile, Civil Engineering, Pharmacy, Computer Science and Engineering, Mechanical Engineering, General Education, and Electrical and Electronic Engineering. Lecturers of Learning Media, and some students of Physics Education. To further the research, there were two types of open-ended research questions, descriptive and brief, based on the knowledge of the current faculty members working in different private universities. These universities are categorized into four types- The most Advanced and old, Average, Low, and the most recent. It has also focused on the teaching facilities, the modernity of the classroom, and learning materials.

All the questions have been made based on the research questions closely related to teaching activities. These research findings can significantly impact today's teaching style and improve teachers' teaching ability using advanced technology.

Research Questions

I.   Research Questions: (Broad)

1. What is the current implication/situation of the hybrid education system among the private universities of Bangladesh?
2. How to execute the hybrid education system among tertiary-level students in a developing economic country like Bangladesh?
3. What teaching methods can be created by a hybrid education system to make an effective learning environment compared to the advancement of first-world countries?

II.   Questions for Teachers: (FGD)

1. Do you have any idea about the hybrid education system? What do you think about it?
2. Is the "Hybrid Education System" familiar among the students and teachers of Bangladesh? What are the different impacts of a hybrid education system? What could be the benefits of it? Explain
3. Do you think following a hybrid education system for tertiary-level students is essential? Why/ Why not?
4. Do you think all private universities have enough resources to conduct offline and online classes simultaneously? Why/Why not?
5. Does your University follow a hybrid education system? Could you provide an example of your class where you applied a hybrid/blended teaching process?
6. Is it challenging for developing countries like Bangladesh to follow the first-world countries' hybrid education systems? Why/why not?
7. Do you know the use of different advanced technological tools to conduct a hybrid classroom? Explain with an example.
8. What methods of teaching can make a hybrid classroom enjoyable? Name some.
9. Is it too expensive/ costly for a country like Bangladesh to conduct a hybrid class like a first-world country? Why/why not?
10. Do you think the hybrid education system in Bangladesh can improve the quality of learning, teaching, and research activities of different private universities? Explain.

Data collection and analysis

Data from the interviews:

Following the compilation of responses to the interview questionnaire, the researchers identified various types of feedback from the teachers. Nevertheless, the research paper exclusively incorporates the findings that align with the consensus of the majority of respondents. Addressing the current state of the hybrid education system in private universities in Bangladesh, teachers from higher-ranked universities expressed a positive attitude toward this approach. They possess ample resources and financial support from the authorities. However, they need more knowledge and confidence to implement this modern education system due to limited training effectively. Conversely, respondents from mid-tier universities reported needing more resources but more financial support for adopting the hybrid education system. Finally, lower-ranked and newly established university teachers shared their challenges, citing inadequate resources, a lack of knowledge, and insufficient financial support as barriers to implementing hybrid education facilities in their institutions.

In light of introducing the hybrid education system for tertiary-level students in a developing economy like Bangladesh, educators from higher-ranked universities emphasized the necessity for comprehensive

training in technological advancements and effective material development for successful implementation in hybrid classrooms. Following this, respondents from mid-tier universities called for substantial financial support to train teachers and adequately establish well-functioning hybrid classrooms. Finally, instructors from lower-ranked and recently launched universities pointed out that implementing a hybrid education system is feasible if university management takes the initiative to gather sufficient resources with minimal cost and effort for setting up a hybrid classroom. They emphasized that a basic setup comprising a projector, screen, internet connection, and a PC is all that's needed for a hybrid classroom.

Regarding developing effective teaching methods for a hybrid education system compared to educators in more developed countries, teachers from higher-ranked universities recommended utilizing platforms like Google and Moodle. These platforms could facilitate activities such as quizzes, handout sharing, conducting classes, and recording lectures through audio and video recording. They also suggested creating online teaching materials with engaging visual and audio-visual content. In addition, instructors from mid-ranked universities mentioned the use of PowerPoint presentations, consistent email communication, Google Docs and Drive, Zoom, Slack, and various social media platforms for teacher-student communication. Teachers from average-ranked universities could not provide insights into technologically advanced teaching methods as they needed more experience with such platforms in their classrooms. Instead, they emphasized the importance of maintaining traditional face-to-face, student-centered classrooms.

Data from the FGD:

In the Focus Group Discussion (FGD), the researchers found that teachers from different ranked private Universities in Bangladesh shared different responses-

- **Higher-Ranked Universities Teachers:** Teachers from higher-ranked universities expressed that they were familiar with the concept of a hybrid education system. They mentioned having practiced this kind of teaching during the COVID-19 pandemic. According to one of their statements, **"During COVID-19, students got exposure to online classes, and later, we followed blended classes for a while, but now it's not in practice. However, this hybrid classroom concept can positively change the education system."** This suggests that they have experience with combining in-person and online learning methods.

Thus, during the discussion, it was noted that respondents from higher-ranked and lower-ranked universities were unaware that "hybrid" and "blended" education systems are distinct concepts. This indicates that there might be confusion or a need for a clearer understanding of the terminology used in education.

- **Mid-Tier and Lower-Ranked Universities Teachers:** Similar to the few teachers from higher-ranked universities, teachers from mid-tier and lower-ranked universities also expressed some ideas about blended education systems. They may have been exposed to a mix of in-person and online teaching methods but were unaware of the differences between hybrid and blended learning. However, the mid-ranked and average ranked university's majority respondents shared that they do not know much about the hybrid education system as it is a new idea introduced in Bangladesh. Yet, a mid-ranked university respondent said, **"we heard about hybrid classrooms, and we think It would be a fantastic idea for students who cannot join classes for various issues."**

In this context, it's essential to clarify the terminology to ensure that educators and stakeholders understand the terms "hybrid" and "blended" education. Hybrid education typically refers to a model

where students engage in both in-person and online learning simultaneously, while blended education combines traditional in-person teaching with online elements, but not necessarily at the same time. This distinction is essential for effective communication and planning in the education sector.

Even the feedback of other FGD questions highlights several key points:

a. **Familiarity with Hybrid Education:** High-ranked universities are more familiar with the concept of hybrid education, as they have the technological resources and have implemented elements of it during the COVID-19 pandemic. In contrast, mid-ranked and average-ranked universities are less familiar, possibly due to limited resources.

b. **Impacts and Benefits**: High-ranked university respondents believe hybrid education can have several benefits, such as enabling students from distant areas to participate, saving time and energy due to traffic issues, and fostering technology-friendly students. However, they acknowledge challenges like tracking student concentration. Mid-ranked and average-ranked university respondents are less certain about its benefits due to limitations in resources and infrastructure.

c. **Resources for Hybrid Education:** Respondents across the board agreed that not all private universities in Bangladesh have enough resources, funding, and infrastructure to conduct offline and online classes simultaneously. This resource constraint is a significant hurdle to implementing a hybrid education system.

d. **Examples of Hybrid Education:** High-ranked university respondents mentioned platforms like Google Meet and Zoom during the pandemic for hybrid teaching, while mid-ranked and average-ranked university respondents do not seem to have implemented hybrid education to the same extent.

2. Challenges in Developing Countries: Implementing a hybrid education system in Bangladesh is seen as challenging due to economic stability, sustainable internet connections, and ethical considerations. There needs to be more certainty about whether students are ready to adapt to this new learning environment.

a. **Use of Technological Tools:** High-ranked university respondents are more aware of advanced technological tools, such as Zoom, Google Meet, and various online materials. Mid-ranked and average-ranked respondents need to be more confident about these tools.

b. **Cost Considerations:** The cost of implementing a hybrid education system is viewed differently across different university ranks. High-ranked university respondents believed it could be cost-effective if done efficiently, while mid-ranked universities emphasized the importance of choosing the suitable devices and services. Average-ranked universities find it expensive due to the country's developing status. One of their combined thoughts is- "**All the private universities need more resources to conduct offline and online classes.**"

c. **Impact on Quality of Learning and Research:** High-ranked and mid-ranked university respondents believed that hybrid education could improve the quality of learning teaching, and research activities by connecting students and faculty with a broader range of resources. They also see it as an opportunity for innovation and creativity. Average-ranked university respondents also anticipated positive changes from implementing a hybrid education system. While looking at the average-ranked universities, researchers found the response that "**It is essential to know how many students are ready to take the responsibility to make the videos, audio, and give online exams.**"

In summary, while high-ranked universities in Bangladesh are more open to a hybrid education system and believe it can bring significant benefits, mid-ranked and average-ranked universities are more cautious

due to resource limitations. The consensus is that implementing a hybrid education system in Bangladesh presents challenges and opportunities that require careful consideration and investment.

Tentative Solutions

1. Teachers' Training

Mastering the theory does not mean implementing it effectively in one's teaching field. With the help of the Ministry of Education of the People's Republic of Bangladesh, the private sector can arrange educational training programs of the hybrid teaching system to emphasize the use of technology based on everyday teaching and learning processes.

2. Raising Teachers' Interest

In Bangladesh, a maximum number of teachers are not very interested in adopting the advanced technological changes in the teaching process. Hence, such kind of teacher training can increase their interest in applying new specialized tools, making updated teaching materials, following the process of hybrid teaching, and using that in the classroom.

During COVID-19, all the educational institutions converted their physical classroom teaching process into online platforms where the teachers learned to use various teaching tools, such as Microsoft PowerPoint, Google Meet, Google Forms, zoom, moodle, educational videos, social media, etc. Therefore, the universities should promote such technological materials into everyday teaching so that the teachers can raise their interest in a hybrid education system.

3. Motivatinging The Teachers of Different Ages

If we divide the teachers into different age groups, young teachers find it easier to use new technology rather than senior ones. Thus, the teachers, including every age group, should help and encourage each other to get easy access to technology usage. Moreover, the admins can make short tutorials on different teaching materials as a demo for the teachers for hybrid education. This support can motivate teachers of all ages to accept and implement the upgraded teaching style.

4. Funding for Teachers' Training

Bangladesh is a developing country, so we face financial insolvency in every working sector. Therefore, all educational institutions need funding to send teachers abroad for further research and training (own government country or financially solvent organizations).

5. Classroom Setting

An ideal but affordable hybrid classroom requires a minimum of a computer with a proper sound system, a microphone (for a large classroom), a projector sharing one screen for the lesson and another one for those students who will attend the classes online, also proper sitting arrangements for the students who will attend the classes face-to-face; instead of a digital board a whiteboard can be used, Marker of different colors.

6. Taking Exams by Applying Dual System

In a hybrid classroom, exams can be taken by hardcopies and softcopies, for example- pen or pencil and paper, and teaching software (google form, moodle, etc.) where there will be less chance of cheating.

7. Stable Internet Connection

Poor internet connection is a common problem in Bangladesh. To make hybrid classrooms in Bangladesh universities, the Government and private sectors have to ensure stability to run the classes smoothly.

8. UGC changing rules

All the private universities can urge UGC to add and approve hybrid education systems into Bangladesh's academic curriculum and a proposed economically friendly classroom setting.

Significance

This research is worth considering since this study discusses various techniques and methods to successfully implement the hybrid education system in a developing country like Bangladesh. This research brings new perspectives and opens up many areas of the hybrid education system in Bangladesh for further investigation. Hence, the findings of this research will help practitioners, policymakers, and researchers with a clearer picture of various ways and effectiveness of the hybrid education system.

Limitations

This research only focuses on the tertiary-level students of Bangladesh, and teachers were the only participants to share various benefits, challenges, and ways to implement the hybrid education system in the classroom successfully. Moreover, to collect the data, this research solely relied on the FGD(Focus group discussion) with three private university teachers in Bangladesh. Therefore, the findings may not cover the broad population of tertiary-level teachers in Bangladesh and may not apply to different countries since the study only focuses on Dhaka, the capital city of Bangladesh. Lastly, the findings may be limited to the experiences shared by the participants since no survey, classroom observations, or quantitative measurements were present in the study.

Consent

Informed consent was obtained from the participants, research sites, and relevant authorities. The researcher protected participants' rights, including self-determination, privacy, autonomy, confidentiality, fair treatment, and protection from discomfort and harm.

Conclusion

This study on implementing a hybrid teaching and learning system in Bangladesh at the tertiary level is timely and relevant, given the global shift towards blended and online education due to the COVID-19 pandemic. Here are some key points and considerations that we have given while doing this research: Definition of Hybrid Learning, Comparison with First-World Countries, Cost-Efficiency, Effectiveness and Course Outcomes, Case Study about King Mongkut's University of Technology Thornbury (KMUTT) in Thailand, the importance of training faculty members, Student Readiness, Research Implications, Recommendations to Conclude the study by providing actionable recommendations for private universities in Bangladesh, Policy Implications, and Data Collection which included surveys interviews, or case studies. Due to Ethical Considerations, it has some limitations also. The research has the potential to significantly contribute to enhancing higher education in Bangladesh. It can serve as a valuable reference for institutions considering the adoption of hybrid learning models.

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