Journal of Business Studies, Vol. 44, No. 1
DOI: https://doi.org/10.3329/dujbst.v44i1. 85126

Student Readiness and Experiences in Blended Learning: Implications for Sustainable Education in Bangladesh

Md. Rakibul Hoque*
Nymatul Jannat Nipa**

Abstract: *The global disruption of education caused by the COVID-19 pandemic has accelerated the adoption of blended learning worldwide. However, despite this growth, many students continue to lack the necessary knowledge and readiness for effective engagement in blended learning environments. This gap poses significant challenges to the implementation of blended learning. This study investigates the readiness and experiences of students in Bangladesh with blended learning. It develops and validates a theoretical framework to identify the key factors influencing the experience, readiness, and outcomes of blended learning. The research also explores the role of social support and learner attitudes in enhancing engagement and success. Additionally, the study advocates for the integration of the Rocketship Education model to help bridge digital divides through personalized and adaptive learning approaches. The findings have practical implications for the design of effective blended learning programs, improving graduate employability, advancing Sustainable Development Goals (SDGs), and preparing students for the 21st-century workforce.*

Keywords: Blended Learning, Adoption, Bangladesh, Readiness.

Received: 27/03/2024, Reviewed: 14/06/2024, Accepted: 23/08/2024, Published: 30, June 2025

1. Introduction

Since the onset of COVID-19, higher education worldwide has experienced a paradigm shift, marked by a significant increase in the adoption of blended learning (Alammary, 2024; Teane, 2024). In Parallel, blended learning has become increasingly popular in Bangladeshi higher education institutions, reflecting the country's response to pandemic-related disruptions as well as aligning with the broader global trend (Hossain et al., 2024). Notably, the integration and acceptance of blended learning in Bangladeshi higher education institutions has expanded significantly in recent years due to the potential breadth and flexibility that it can offer during the pandemic situation (Khalid & Al Sire, 2021). The

* Professor, Department of Management Information Systems, University of Dhaka, Dhaka, Bangladesh

** Associate Professor, Department of Management Information Systems, University of Dhaka, Dhaka, Bangladesh

Bangladesh government has shown a robust commitment to implementing a blended learning strategy in all educational institutions after acknowledging its potential (bdnews24, 2022). This dedication can lessen any future disruptions to education brought on by pandemics or other situations where physical mobility is restricted.

In order to successfully implement blended learning in all of the nation's educational institutions, the University Grants Commission (UGC) of Bangladesh, the highest regulatory body for higher education, has been aggressively introducing and scaling the necessary infrastructure, technology, and expertise (UGC, 2022). A safer learning environment, increased student engagement, effective resource usage, gaining insights from learning data, and new student enrollment are all possible outcomes of blended learning, according to earlier research done in Bangladesh (Chowdhury, 2020). All of these elements work together to enhance learning results.

While the common key success factors of blended learning are acknowledged to include learners' characteristics, teachers' attributes, course materials and objectives, and the quality of the learning environment (Min & Yu, 2023), a critical gap exists in the comprehensive understanding of the factors that significantly influence the experience and readiness of students for this mode of learning. Without such an understanding, of the critical factors influencing the experience and readiness of students for blended learning, the nationwide implementation of blended learning is neither viable nor sustainable (Adarkwah & Huang, 2023). This knowledge is therefore imperative for ensuring successful and efficient outcomes within the education landscape of Bangladesh.

Current research indicates that blended learning (BL) implementation in Bangladesh has not yet yielded satisfactory educational outcomes (Rahman & Nasrin, 2024). The persistently low student achievement levels reveal systemic deficiencies in national preparedness, hindering the effective adoption of BL methodologies (Islam et al., 2022). Educational institutions predominantly emphasize technological infrastructure - including reliable internet connectivity and digital devices - while neglecting critical examination of student preparedness and learning experiences in BL environments (Khan, 2021). This disproportionate focus on technical resources over learner-centric factors demonstrates a fundamental misalignment between institutional priorities and the essential requirements for successful BL implementation (Shakeel et al., 2023). The mere provision of technological tools without adequate consideration of student engagement strategies consistently results in suboptimal learning outcomes.

The effectiveness of BL is influenced by multiple factors, including perceived utility, system usability, and learner self-efficacy. Contemporary research continues to investigate

BL's pedagogical value across diverse contexts. Notable studies include Ma and Lee's (2021) examination of BL efficacy through motivational design principles, Ayub et al.'s (2021) comparative analysis of learning outcomes, and Anthony et al.'s (2021) application of Khan's Octagonal Framework to identify BL success factors. Additional contributions include Anaraki's (2018) case studies and systematic reviews, along with Jerry and Yunus's (2021) investigation of participant experiences. Collectively, these studies underscore the persistent need for research addressing BL implementation challenges.

Despite these international investigations, Bangladesh lacks empirical studies examining student readiness and experience factors within a theoretical framework. Effective BL integration requires systematic contextual adaptation rather than simple technological addition (Angawi & Tasir, 2024). While the "Blended Learning for Bangladesh" policy exists, its implementation lacks empirical grounding in local determinants of success. This knowledge gap prevents optimal utilization of BL benefits, particularly in addressing educational disruptions and advancing sustainable development goals. Identifying key influencing factors is crucial for enhancing BL effectiveness and facilitating successful classroom integration. This study develops and validates a theoretical framework to identify the key factors influencing the experience, readiness, and outcomes of blended learning in Bangladesh.

2. Literature Review

Blended learning projects require a strong theoretical foundation to be pedagogically effective, engage students, and improve learning outcomes. To determine the factors influencing the experience and preparedness of blended learning, researchers have employed a number of theoretical frameworks. Existing frameworks pinpoint the important elements, but discrepancies between conceptual and contextual focus highlight the gaps that need more research. The Blended Learning Preparedness Engagement Questionnaire (BLREQ) was used by Jerry and Yunus (2021) to determine preparedness differences by demographic (gender, age, and ethnicity). But by depending so much on self-reported statistics, they run the risk of confusing perceived readiness with actual capacity. An investigation into students' preparation for studying in a mixed learning setting was also carried out by Sriwichai (2020). The study used a thorough framework that included six dimensions such as classroom learning, online learning, online interaction, technology, learning flexibility, and study management. While their framework is vigorous, it lacks empirical validation across diverse socioeconomic contexts.

Additionally, to evaluate preparedness for implementing blended learning, researchers also used the theoretical framework put forward by Osman and Hamzah (2017). This theoretical viewpoint provides insightful information about the concept of readiness, which includes

elements like self-directed learning, independence in task completion, ease with using technology for learning, and competence with e-learning techniques. Nevertheless, by taking into account the distinct and independent measurable components as well as the connections between them, this framework runs the risk of compartmentalizing the concept of readiness, even though it is thorough. Ibrahim and Nat (2019) used self-determination theory (SDT) to identify the motivating factors influencing instructors in higher education institutions to embrace blended learning courses. This theoretical model serves as a valuable tool for educators, clarifying the interplay of extrinsic and intrinsic motivational determinants in blended learning integration while systematically mitigating the barriers often encountered in the adoption process.

On the other hand, Virani et al. (2023) used the impact of social influence, perceived usefulness, perceived ease of use, and content quality on individuals' attitudes and intentions to adopt Massive Open Online Courses (MOOCs) for blended learning. Further, Zhang et al. (2022) introduced a novel model, Unified Technology Acceptance and System Success (UTASS), which combines the Unified Theory of Acceptance and Use of Technology (UTAUT) with an updated version of the DeLone and McLean Information Systems Success Model. Within the UTASS model, four foundational determinants, system quality, information quality, social influence, and facilitating conditions, are the key factors influencing behavioural intention and use behaviour in blended learning. This integrated model not only provides a comprehensive framework but also serves as a potentially predictive model for understanding students' behavioural intentions and usage behaviour within blended learning contexts.

Anthony Jnr (2022) investigated the factors influencing lecturers' perceptions of blended learning in higher education using the Model of Personal Computer Utilization (MPCU) theory. The MPCU theory encompasses various factors, including social factors, effects towards use, complexity, job fit, long-term consequences, facilitating conditions, and experience in technology use, which significantly impact lecturers' perceptions toward blended learning. Sharif et al. (2021) employed the Technology Acceptance Model (TAM) to assess the readiness of students delved into various aspects, including students' awareness, skills, psychological and facilities readiness, along with their self-efficacy, willingness, and perceptions regarding the usefulness and challenges associated with blended learning. In another study, Chung et al. (2020) utilized the Online Readiness Scale (OLRS) developed by Hung et al. (2010) to assess the online learning readiness of university students in Malaysia during the COVID-19 pandemic. The OLRS evaluates online learning readiness across five dimensions: self-directed learning, learner control, computer and internet efficacy, online communication self-efficacy, and motivation for learning.

Pedagogical frameworks again expand the discourse. Bouilheres et al. (2020) used the RASE (Resources–Activity–Support–Evaluation) model to investigate the experience of Blended Learning in enhancing students' learning experiences. This model is founded on significant theoretical concepts, including constructivist learning environments, engaged learning, problem-based learning, technology-based learning environments, interactive learning environments, and situated learning. However, its focus on structural aspects overlooks affective dimensions like student anxiety. In contrast, Henaku (2020) employed a descriptive phenomenology design to systematically explore the online learning experiences and perceptions of college students in Ghana amidst the challenges posed by the COVID-19 pandemic. However, his study lacks theoretical grounding. Yates et al. (2021) used the Mobile Pedagogical Framework (MPF), which provides three key pedagogical characteristics (personalization, authenticity, and collaboration) that significantly influence learners' experiences when utilizing digital devices.

Prifti (2020) used a constructivist methodology to investigate how a mixed approach affects students' educational experiences. Perceived usefulness, perceived confusion, platform satisfaction, course satisfaction, accessibility, content, and overall learning experience were all investigated in his suggested theoretical model. The TAM was used in a different study by Alzahrani and O'Toole (2017) to investigate students' views on using the Internet and their experiences with it. In the Saudi Arabian educational system, the study concentrated on how these characteristics affected their desire for blended learning. Additionally, Jerry & Yunus (2021) used TAM to examine blended learning experiences in elementary school. According to the study, the participants were not exposed to or knowledgeable enough about blended learning.

In light of the coronavirus pandemic, Tang et al. (2021) investigated the variables affecting students' preparedness for live online instruction. Technology readiness, self-directed learning, learner control, motivation for learning, and online communication self-efficacy are the five essential components of the readiness model that Hung et al. (2010) established. Although the model's application by Tang et al. contributes to our understanding of online learning during pandemics, they also emphasized the necessity of adding more elements to the original framework in order to handle the particular complexity of crisis-driven educational situations. The absence of empirically validated frameworks that combine experience (a dynamic, process-oriented dimension) and preparation (a static, pre-learning condition) is noteworthy in the current study. Both are essential for the long-term adoption of blended learning. To bridge this gap, this study proposes a new theoretical model (Figure 1), aiming to offer a more comprehensive lens for understanding blended learning outcomes.

3. Conceptual Framework and Hypotheses Development

Based on a gap in existing studies, the authors propose a novel theoretical model by extending the theoretical model developed by Hung et al. (2010). This extension entails three factors from Prifti's 2020 research, namely, Platform Satisfaction (PS), Course Satisfaction (CS), and Online Learning Experience (OLE). These three constructs will allow to capture the dynamic experiential aspects of the blended learning environment. While PS ensures a user-friendly and reliable infrastructure that enables user engagement, CS ensures the quality and relevance of the course content (Sriwichai, 2020; Zhang et al., 2022). Thus, the new proposed model links readiness (a pre-condition) with experience (a dynamic process) in the blended learning environment, which was often disregarded in prior studies. In addition, online learning experience (OLE) encompasses the knowledge of the overall students' experience. Together, these three additional factors can collectively enhance the understanding of the factors that ultimately affect student learning outcomes and the predictive power of the proposed model. The constructs in the new theoretical framework are defined and hypothesized below.

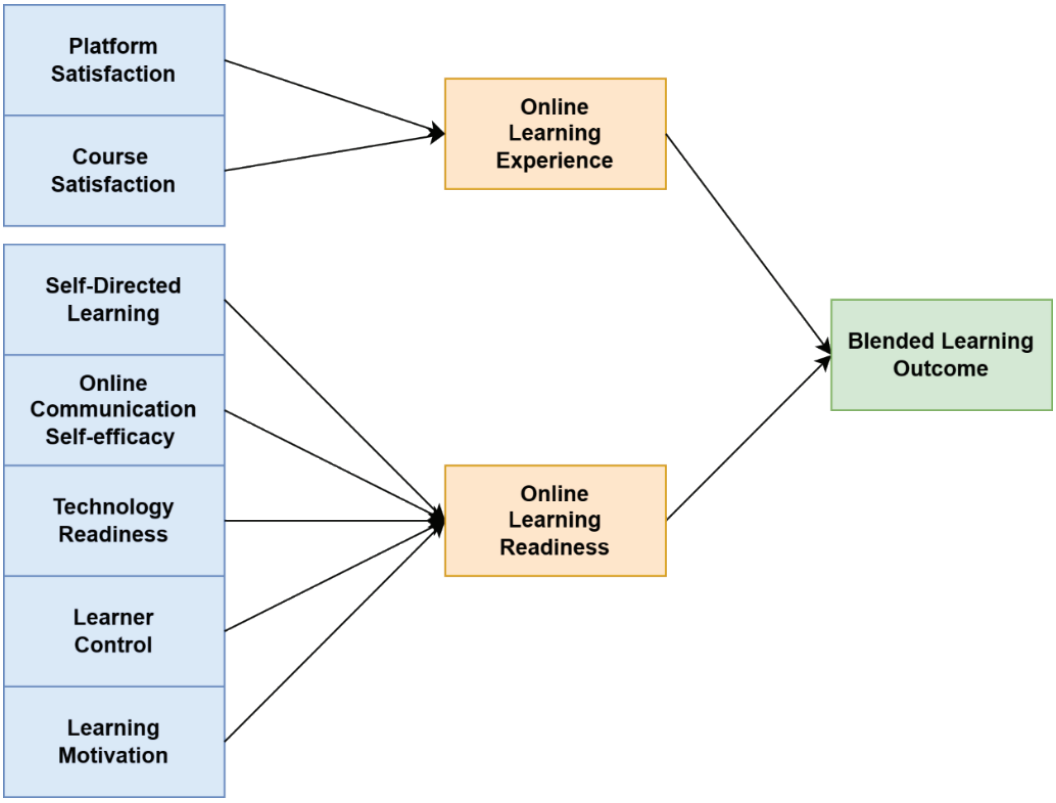

Figure 1: The conceptual model

3.1 Platform Satisfaction (PS)

Platform satisfaction is the measure of perceived satisfaction with the online learning platform they use in blended learning (Prifti, 2020). In the online learning context, the selection of learning platforms is regarded as an important that significantly influences the online learning process and contributes to student satisfaction (Sumarna et al., 2020). The study by Prifti (2020) reported that platform satisfaction positively affects the online learning experience of the users. Besides, satisfaction with online learning platforms can be related to learners' experiences (Abuhassna et al., 2020). Therefore, hypothesis 1 is:

Platform Satisfaction has a significant impact on the Online Learning Experience.

3.2 Course Satisfaction (CS)

Course satisfaction measures the perceived satisfaction with the online course they attain in blended learning (Prifti, 2020). Poor course design and inadequate pedagogy in online learning can potentially lower satisfaction levels among learners (Yu, 2022). The study of Almusharraf and Khahro (2020), Prifti (2020), and Palmer and Holt, (2009) reported that course satisfaction can positively affect the online learning experience of the users. Therefore, hypothesis 2 is:

Course Satisfaction has a significant impact on the Online Learning Experience.

3.3 Self-directed Learning (SDL)

Self-directed Learning is a constructive process in which learners autonomously regulate their learning by monitoring and establishing personal learning goals (Torun, 2020). In self-directed learning, the learner's objectives, employed learning strategies, decision-making processes, and outcome evaluation collectively form the basis of autonomous learning. Previous studies have shown that self-directed learning affects learners' readiness for learning (Hoang & Hoang, 2023; Torun, 2020). Therefore, hypothesis 3 is:

Self-directed Learning has a significant impact on Online Learning Readiness.

3.4 Online Communication Self-efficacy (OCS)

Online communication self-efficacy is a component of the broader concept of internet and computer self-efficacy (Chung, Noor, et al., 2020). It includes the ability to regularly communicate between teachers and students without the necessity for face-to-face interviews (Torun, 2020). In online learning, effective communication through the system is paramount in improving the likelihood of successful learning outcomes. The study by Ansari and Khan (2020) and Chung, Noor, et al. (2020) suggested that online communication self-efficacy plays a vital role in online learning that includes the activities

of text-based asynchronous communication, discussions, instant messaging, and active participation in online platforms. Therefore, hypothesis 4 is:

Online Communication Self-efficacy has a significant impact on Online Learning Readiness.

3.5 Technology Readiness (TR)

Technology readiness is defined as people's propensity to embrace and use new technologies for accomplishing goals at home and work (Tang et al., 2021). It is also referred to as computer/internet self-efficacy pertains to technical skills in using computers and the Internet (Cigdem, 2014). The incorporation of technology into education can evolve through technology integration, which is a complex process that requires readiness (Gestiardi et al., 2021). While innovativeness plays a crucial role in technology readiness, feelings of insecurity and discomfort typically act as barriers to users' technology readiness (Kim et al., 2020). Technological readiness is a predictive factor for students' adoption of online learning (Okuonghae et al., 2022). Evaluating technological readiness for online learning is essential before the implementation of online learning system for realizing the benefits of e-learning and mitigating challenges that may arise during the implementation process (Mosa et al., 2016). Therefore, hypothesis 5 is:

Technology Readiness has a significant impact on Online Learning Readiness.

3.6 Learner Control (LC)

The concept of learner control has changed in response to the rapid development of Information and Communication Technologies (ICTs). However, in a broader context, it can be defined as the degree to which learners can direct their own learning experience and process (Tang et al., 2021). In online learning environments, learners have the autonomy to tailor their educational experience by accessing content based on personal preferences, which empowers them to exercise control over their learning process (Torun, 2020). Also, it empowers them to make their own learning decisions, thereby demonstrating superior performance in the online learning setting compared to those who were not empowered (Rafique et al., 2021). Therefore, hypothesis 6 is:

Learner Control has a significant impact on Online Learning Readiness.

3.7 Learning Motivation (LM)

Learning Motivation is a state of empowerment that propels learners to participate in specific learning activities (Rafique et al., 2021). Hung et al. (2010) described that learning motivation is an individual's desires, attitudes, and preferences concerning online learning. It is a vital component of the learning process which is linked to engaging in learning

activities willingly devoid of external pressure. As a learning readiness factor, learning motivation demonstrates a significant impact on the intention to use online learning platforms (Hoang & Hoang, 2023). Furthermore, the motivation toward online learning significantly influences online learning readiness when assessing academic achievement (Torun, 2020). Therefore, hypothesis 7 is:

Learning Motivation has a significant impact on Online Learning Readiness.

3.8 Online Learning Experience (OLE)

The online learning experience encompasses interaction, the perception of study content, and the practical application of acquired knowledge (Deshwal et al., 2017). Besides, Goh et al. (2017) underscores the significance of designing online learning courses that optimize students' experiences, enhancing their learning outcomes. Also, Hachey et al. (2015) reported that students have better chances of successful outcomes with successful online experiences. In addition, when examining the impact of learning experience on the student's learning outcome, Asarta and Schmidt (2020) found that both online and blended learning experiences had a positive effect on outcomes for high-achieving students. Therefore, hypothesis 8 is:

Online Learning Experience has a significant impact on Blended Learning Outcomes.

3.9 Online Learning Readiness (OLR)

Online Learning Readiness refers to students' preparedness to engage in online learning effectively and their belief in succeeding in that environment (Chung, Subramaniam, et al., 2020). The dimensions of OLR are self-directed learning, learner control, motivation for learning, technology readiness, and online communication self-efficacy (Hung et al., 2010). It is a significant factor that may affect students' learning performance, satisfaction, and intention to use online learning (Hoang & Hoang, 2023). Wei and Chou (2020) investigated the influence of online learning performance on online learning performance. On the other hand, Firat and Bozkurt (2020) stressed measuring OLR for the successful online learning outcome. Therefore, hypothesis 9 is:

Online Learning Readiness has a significant impact on Blended Learning Outcomes.

4. Research Methodology

This study adopts a mixed-method approach, incorporating both qualitative and quantitative research methods. Because of a combination of quantitative data with in-depth qualitative insights, the mixed-method approach allows researchers to gain a more nuanced and comprehensive understanding of the factors influencing blended learning initiatives (Lane et al., 2021). In the qualitative phase, the researchers conducted five interviews and two

Focus Group Discussions (FGDs) with students in different Universities where the students participated in blended learning courses in rural and urban areas. This approach aims to identify context-specific factors influencing the determinants of the experience and readiness of students for blended learning. For collecting quantitative data, the researcher used the 5-Point Likert Scale in the questionnaire for data collection. The 5-Point Likert Scale enables participants to provide responses ranging from 1 to 5. On this scale, 1 indicates 'strongly disagree' and 5 indicates 'strongly agree'. The items comprising the constructs in the questionnaire were subjected to validity and reliability testing to ensure the accuracy and consistency of a measure.

The minimum required sample size was determined by using the "10-times rule" method that counts the maximum number of arrows directed towards a construct within a model and subsequently multiplying the count by 10 (Wagner and Grimm, 2023). The highest occurrence of arrows pointing to a construct is 9 (Figure 1) in our conceptual model. Thus, applying the "10-times rule" methodology, the minimum sample size is determined to be 90. Also, the minimum required sample size was determined using Slovin's Formula (Prasetya & Nawangsari, 2019; Steininger et al., 2022; Sugianingrat et al., 2020). The calculation below shows that the minimum required sample size (n) should be 278 with a population (N) of 100000000 and a 6% margin of error (e). Here the assumed population is more than the total university students in Bangladesh and the margin of error is within the recommended range of 4% to 8% (Setyadi et al., 2017).

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{100000000}{1 + 100000000 * 0.06^2}$$

$$n = 277.777$$

$$n = 278$$

After determining the sample size, the data were collected from university students who attended blended learning courses. The researchers collected data from 316 students from five public universities and three private universities by using a questionnaire. A team of field researchers pre-tested the questionnaire. In the data cleaning process, 13 questionnaires were excluded from analysis due to incomplete answers. Finally, 303 questionnaires were deemed eligible for analysis which is more than the minimum required sample size (n) of 278.

In the quantitative data analysis phase, the researchers tested nine hypotheses based on a conceptual theoretical framework (Figure 1). Also, the researcher employed the Structural Equation Modeling (SEM) technique (Mueller & Hancock, 2018) which is a combined method of both factor analysis and multiple regression analysis. SEM allows the examination of the structural relationships between measured variables and latent constructs in a conceptual model (Williams et al., 2009). Accordingly, researchers used SEM to investigate how various dependent and independent variables influence each other within the model. In this study, the Smart-PLS 3.2.8 software was used to conduct a two-stage Partial Least Squares Structural Equation Modeling (PLS-SEM) data analysis that consists of Measurement Model Assessment and Structural Model Assessment. On the other hand, In the qualitative data analysis phase, the researcher conducted a thematic analysis using the data collected from the interviews and Focus Group Discussion (FGD).

5. Findings

5.1 Demographic information

Table 1 presents the demographic information of the participants. The participants have different backgrounds in terms of gender, age, faculty, and education levels. There were more male participants (67%) than female participants (33%). The age distribution of the respondents showed that the most common age ranges were 18-25 years (63%), 26-30 years (26%), and 31-35 years (8%). The majority of the participants were from the business faculties and most of the participants have undergraduate degrees (61%).

Table 1: Demographic information of the participants

Measure	Items	Frequency	Percentage
Gender	Male	204	67%
	Female	99	33%
Age	20–25 years	191	63%
	26–30 years	79	26%
	31–35 years	25	8%
	Over 36 years	8	3%
Faculty	Science	90	30%
	Business	126	41%
	Arts	87	29%
Educational level	Undergraduate	186	61%
	Graduate	105	35%
	Post-graduate	12	4%

The interviewees informed us that Zoom, Google Meet, and Microsoft Teams are the most used platforms in Bangladesh for blended learning. However, other major platforms include GoToMeeting and Cisco Webex. The number of users, revenue, regional coverage, and cost of these prominent platforms are given in Table 2. It was found that Google Meet and Cisco Webex, respectively, cost $8 and $13.50 per user per month. However, they do not publish detailed data about revenue and users by region. Whereas, Microsoft Teams has over 270 million users globally and it costs $5 per user per month. Although Zoom has more than 300 million users and generates $2.65 billion yearly, it charges a higher price of $14.99 per user per month. Also, Zoom has a strong presence in North America, Europe, and Asia. Then, GoToMeeting has 80 million users and offers service for $12 per user per month, but lacks complete data about revenue. The findings show that Zoom dominates user count and revenue, while Microsoft Teams offers a cost-effective service.

Table 2: Platforms used in blended learning

Platforms used in blended learning	Number of Users (Million)	Revenue (Yearly)	Users by Region	Cost (Per user/per month)
Zoom	300+	$2.65 billion	Significant presence in North America, Europe, and Asia	$14.99
Google Meet	Data not available	Data not available	Data not available	$8
Microsoft Teams	270+	Data not available	Widely used globally, exact regional data not available	$5
GoToMeeting	80+	Data not available	Data not available	$12
Cisco Webex	Data not available	Data not available	Data not available	$13.50

Source: (Richter, 2024; Saasworthy, 2024; Watson, 2023)

5.2 Quantitative Data Analysis

5.2.1 Measurement Model

The Measurement Model Assessment is the initial stage of PLS-SEM analysis. To measure the respective constructs within the conceptual model, the items in the questionnaire are evaluated for consistency, reliability, and validity. This involves checking the internal

reliability, convergent validity and discriminant validity for each construct. To ensure satisfactory internal reliability, the values of Cronbach's alpha and composite reliability were examined. As represented in Table 3, the values of Cronbach's alpha and composite reliability exceed the recommended threshold of 0.70 (Ghorbanzadeh et al., 2023). This indicates that all the proposed constructs exhibit satisfactory levels of internal reliability.

Then again, the assessment of convergent validity involves examining factor loadings and average variance extracted (AVE) values (Table 3). It is recommended that the AVE values should be greater than 0.50 for convergent validity, and the factor loadings should exceed 0.7 to indicate robust relationships between each variable and the construct (Ardiansah et al., 2019). The findings presented in Table 3 reveal that all factor loadings and AVE surpass the 0.7 and 0.5 threshold respectively. Hence, the validity of the indicators in effectively measuring their respective constructs is ensured. Subsequently, the Heterotrait–Monotrait Ratio (HTMT) is calculated to assess discriminant validity, which is the degree of discrimination that the items have between different constructs. It is recommended that the HTMT ratio should be less than 0.9 (Ardiansah et al., 2019), and this criterion is met in the present study (Table 4).

Table 3: The Measurement Model

Constructs	Items	Loadings	Cronbach's alpha	CR	AVE
Platform satisfaction (PS)	PS1	0.903	0.853	0.903	0.701
	PS2	0.878			
	PS3	0.871			
	PS4	0.779			
Course satisfaction (CS)	CS1	0.931	0.913	0.945	0.852
	CS2	0.931			
	CS3	0.906			
Self-directed learning (SDL)	SDL1	0.786	0.851	0.707	0.770
	SDL2	0.858			
	SDL3	0.709			
	SDL4	0.803			
Online Communication Self-efficacy (OCS)	OCS1	0.810	0.734	0.832	0.554
	OCS2	0.722			
	OCS3	0.721			
	OCS4	0.720			
	TR1	0.961	0.840	0.859	0.609

Technology Readiness (TR)	TR2	0.712			
	TR3	0.718			
	TR4	0.738			
Learner Control (LC)	LC1	0.765	0.876	0.839	0.574
	LC2	0.700			
	LC3	0.761			
	LC4	0.955			
Learning Motivation (LM)	LM1	0.857	0.772	0.868	0.687
	LM2	0.833			
	LM3	0.796			
Online Learning Experience (OLE)	OLE1	0.827	0.834	0.889	0.668
	OLE2	0.819			
	OLE3	0.833			
	OLE4	0.789			
Online Learning Readiness (OLR)	OLR1	0.856	0.752	0.791	0.540
	OLR2	0.866			
	OLR3	0.818			
	OLR4	0.897			
Blended Learning Outcome (BLO)	BLO1	0.855	0.897	0.927	0.761
	BLO2	0.892			
	BLO3	0.854			
	BLO4	0.887			

Table 4: Heterotrait-monotrait ratio (HTMT) – Matrix

	BLO	**CS**	**LC**	**OLE**	**LM**	**OCS**	**PS**	**OLR**	**SDL**
BLO									
CS	0.120								
LC	0.663	0.059							
OLE	0.178	0.770	0.093						
LM	0.091	0.094	0.118	0.086					
OCS	0.109	0.085	0.097	0.076	0.652				
PS	0.139	0.091	0.066	0.900	0.100	0.087			
OLR	0.104	0.168	0.099	0.272	0.121	0.513	0.228		
SDL	0.229	0.130	0.229	0.134	0.611	0.688	0.131	0.598	
TR	0.749	0.055	0.718	0.069	0.112	0.081	0.064	0.074	0.292

5.2.2. Structural Model

The structural model assessment evaluates the relationships and effects observed among the constructs in the conceptual model. In this process, the analysis looked for the Path coefficient (β), T-statistics, and P-values to determine whether the proposed hypotheses are supported. Table 5 indicates that Online Communication Self-efficacy (OCS) (β = 0.040; p-value = 0.349) and Learning Motivation (LM) (β = -0.071; p-value = 0.143) have no significant influence on Online Learning Readiness (OLR) due to having p-values greater than the recommended value which is 0.05. Therefore, hypothesis 4 and hypothesis 7 are not supported.

Table 5: Summary of Structural Model Path Coefficients

No	Path	Path Coefficients (β)	T statistics	P values	Decisions
H1	*PS -> OLE*	0.635	14.305	0.000	Supported
H2	*CS -> OLE*	0.250	5.336	0.000	Supported
H3	*SDL -> OLR*	0.214	3.253	0.001	Supported
H4	*OCS -> OLR*	0.040	0.937	0.349	*Not Supported*
H5	*TR -> OLR*	0.468	7.445	0.000	Supported
H6	*LC -> OLR*	0.217	3.838	0.000	Supported
H7	*LM -> OLR*	-0.071	1.464	0.143	*Not Supported*
H8	*OLE -> BLO*	0.115	3.627	0.000	Supported
H9	*OLR -> BLO*	0.854	42.049	0.000	Supported

Table 5, on the other hand, demonstrates that Platform satisfaction (PS) (β = 0.635; p-value = 0.000) and Course satisfaction (CS) (β = 0.250; p-value = 0.000) have a strong influence on Online Learning Experience (OLE) with the p-values that are smaller than 0.05. Hence, hypothesis 1 and hypothesis 2 are supported. Similarly, hypothesis 3, hypothesis 5, and hypothesis 6 are supported because Self-directed learning (SDL) (β = 0.214; p-value = 0.001), Technology Readiness (TR) (β = 0.468; p-value = 0.000), and Learner Control (LC) (β = 0.217; p-value = 0.000), respectively have strong influence on Online Learning Readiness (OLR), where the p-values are smaller than 0.05. Lastly, hypothesis 8, and hypothesis 9 are supported as well and both Online Learning Experience (OLE) (β = 0.115; p-value = 0.000) and Online Learning Readiness (OLR) (β = 0.854; p-value = 0.000) have demonstrated significant influence on Blended Learning Outcome (BLO) where the p-values are smaller than 0.05.

Additionally, R^2 values (Table 6) were observed to assess the explanatory power of a model. An R^2 value above 0.67 is considered substantial, while values above 0.33 and 0.19 indicate

moderate and weak explanatory power, respectively (Purwanto, 2021). Therefore, the R^2 value for Online Learning Experience (OLE) is 0.671, which indicates that 67.1 per cent of the variance in Online Learning Experience (OLE) is explained by Platform satisfaction (PS) and Course satisfaction (CS) in combination. Then, the R^2 value for Online Learning Readiness (OLR) is 0.596, which indicates that 59.6 per cent of the variance in Online Learning Readiness (OLR) is explained by Self-directed learning (SDL), Online Communication Self-efficacy (OCS), Technology Readiness (TR), Learner Control (LC), and Learning Motivation (LM) together. Also, the R^2 value for Blended Learning Outcome (BLO) is 0.819, which indicates that 81.9 per cent of the variance in Blended Learning Outcome (BLO) is collectively explained by Online Learning Experience (OLE) and Online Learning Readiness (OLR).

Table 6: R^2 values

	R-square
Online Learning Experience (OLE)	0.671
Online Learning Readiness (OLR)	0.596
Blended Learning Outcome (BLO)	0.819

5.3 Qualitative Data Analysis

The analysis of the responses in the interviews and FGDs presents two key themes identified as related to learners' experience. Those themes are detailed categorically below.

5.3.1. Functionality

The interviewees opine that blended learning offers multifaceted functionalities such as learners' engagement, and interactivity, and facilitates the flexibility of learning which in turn enhances the learning experience. One interviewee has informed that learners' engagement has significantly improved due to participation in the blended learning environment as students can interact with the material through various multimedia resources, which keeps the learning process dynamic and stimulating. Another interviewee holds the view that the interactivity of blended learning platforms facilitates immediate feedback and personalized learning paths. This interactivity fosters a more active learning environment where students can actively participate in discussions, quizzes, and collaborative projects.

Moreover, another interviewee thinks blended learning indicatively facilitates the flexibility of learning and provides students with the convenience of accessing course materials. It allows them to complete their assignments at their own pace and schedule. Because of such flexibility, the learners enjoy the support of diverse learning styles which makes their education more accessible and inclusive. Moreover, another interviewee advocates for

blended learning, highlighting its adaptability, which allows educators to customize the curriculum according to the needs of their students. The interviewee also notes that the extensive interactivity in a blended learning environment creates a rich, student-centred learning atmosphere, contributing to enhanced academic outcomes and student satisfaction.

5.3.2. Effectiveness

The interviewees underscored the factors of students' self-confidence, internet self-efficacy, teachers' training and cheap and stable internet connection for the effectiveness of blended learning courses. For instance, when discussing various aspects of blended learning effectiveness, one participant mentioned that self-confidence is one of the key benefits they experienced when participating in the blended learning environment. Additionally, the participants believe that the blended learning course has enhanced their online self-efficacy by engaging them with interactive content and activities, such as forum discussions. It indicates that online digital resources provided for blended learning enhance their abilities, which is crucial for academic success and lifelong learning.

Further, the participants made suggestions about the design of blended learning environments and their effectiveness. They think that online platform design is instrumental for learning smooth participation, effectiveness and engagement. A well-designed and planned blended learning platform and environment must align with the required digital media to deliver an effective and seamless learning experience. Also, effective design involves teachers' training to ensure educators are equipped to facilitate both online and offline components of the curriculum. Additionally, trained teachers can guide students in navigating technical challenges and promote a supportive learning atmosphere.

Moreover, the respondents informed that the effectiveness of blended learning can be hindered by factors such as poor internet connection and power outages, particularly in rural areas. The interviewees believe these issues can affect students' ability to access online materials and disrupt the effectiveness of blended learning outcomes. To address these challenges, blended learning programs should incorporate additional plans such as providing downloadable resources and arranging offline activities. This approach ensures the continuity of learning processes even during technological disruptions or power outages.

6. Discussion

This study conducted a literature review on blended learning to investigate various theoretical models to develop a robust conceptual framework. The framework seeks to identify the determinants influencing the experiences and readiness of students for blended learning, while also evaluating their impact on the overall outcomes of this learning approach. Following a critical review of various theoretical models, the authors proposed an

integrative model that merges Hung et al.'s (2010) readiness framework with Prifti's (2020) experiential factors, thereby establishing a refined perspective for examining the determinants of blended learning in Bangladesh. This extension includes the constructs related to the learning experience used in the research framework by Prifti (2020). The findings revealed both confirmatory and contradictory insights.

The findings show that Platform Satisfaction (PS) and Course Satisfaction (CS) significantly impact the Online Learning Experience (OLE). The findings regarding Platform Satisfaction (PS) and Course Satisfaction (CS) respectively align with previous study findings by Zhonggen et al. (2019) and Prifti (2020). Therefore, the blended learning providers should focus on both the platform design and the course material which can play a significant role in determining learners' positive learning experience in the blended learning environment. Furthermore, Self-directed learning (SDL), Technology Readiness (TR), and Learner Control (LC) exerted significant influence on Online Learning Readiness (OLR) in the study, which is respectively supported by the study of Luu (2022), Cigdem (2014), and Engin (2017). Therefore, students with high Self-directed learning (SDL) skills, high Technology Readiness (TR), and strong Learner Control (LC) would be able to perform better as these factors improve their ability to adapt to the independent, flexible, and personalized nature of blended learning. In addition, both Online Learning Experience (OLE) and Online Learning Readiness (OLR) have shown significant effects on Blended Learning Outcome (BLO) and confirm the findings of previous respective studies by Asarta and Schmidt (2020) and Hoang and Hoang (2023). Hence, designers of blended learning programs should improve the aspects of the Online Learning Experience (OLE) and learning environment.

However, this study found that Online Communication Self-efficacy (OCS) and Learning Motivation (LM) have no significant impact on Online Learning Readiness (OLR) respectively contradicting previous research findings by Chung, Noor, et al. (2020) and Li et al. (2022). Therefore, these two factors do not explain the variation in Online Learning Readiness (OLR). This contradictory finding challenges the theoretical frameworks by Hung et al. (2010). One possible reason why Online Communication Self-efficacy (OCS) may not significantly affect Online Learning Readiness (OLR) is that the participants may already have attained self-efficacy in online communication through exposure to online learning platforms for a long time. Alternatively, cultural and structural factors in Bangladesh likely play a role. For instance, the prevalence of a hierarchical teacher-student structure in South Asian education systems may discourage open online communication, making OCS less critical. Similarly, the lack of impact from LM might be due to having

extrinsic motivators, like job prospects or grades, which in turn may outweigh intrinsic curiosity.

The qualitative part of the study explored the determinants of the learning experience and the learning readiness based on the interviews and FGDs where the participants have already had the experience of attending blended learning. The analysis revealed two key themes such as functionality and effectiveness. While sharing learning experiences, the participants reported that blended learning helped them to access diverse resources and collaborate with other learners in the class and teachers. They also experienced the ability to learn at their own pace and time. Hence, the learning experience in blended learning in terms of functionality includes the scope of engagement, interactivity, and flexibility in learning and accessibility.

Then, in terms of learning effectiveness, the participants have opined that blended learning has positively affected their learning outcomes, satisfaction, and internet self-efficacy which are crucial for online learning outcomes and academic performance. However, when sharing about the challenges they have faced, the common issues in the rural areas include the issue of poor internet connection, power outages, and lack of trained teachers, unlike urban areas. To address these issues, they recommended solutions such as delivering downloadable resources to students and teachers' training.

Further, based on students' experience in blended learning, they have given several recommendations to enhance the learning experience and effectiveness. The recommendations include ensuring social support to increase active interactions during blended learning participation and fostering a positive attitude. To address the issue of employment, two post-graduate students have suggested offering career-oriented courses through blended learning with a particular focus on Rocketship Education's model.

Based on the interview and FGD contents, the findings imply the need for technology enhancement to improve the quality of technology used in blended learning environments to ensure reliability and accessibility. This will help increase student motivation and satisfaction. Besides, the participants have underscored the need for social support for students, such as connections with instructors and peers, to enhance knowledge construction and academic performance in the blended learning environment. Participants in the FGD recommended the importance of promoting active interaction via online tools to facilitate knowledge construction through group discussions.

Participants also recommended fostering a positive attitude towards blended learning among students to enhance their self-efficacy and improve learning outcomes. Furthermore,

participants suggested designing and offering more career-oriented blended learning courses to contribute to the professional development of new undergraduate students.

The qualitative insights reveal that perceived effectiveness is achieved despite infrastructural deficits. It suggests students' avid adaptability to a blended learning approach. However, the quantitative insights discounted systemic barriers like rural power outages or urban-rural digital divides. For example, while Technology Readiness (TR) is significant, poor internet reliability in rural areas (as noted in FGDs) means TR alone cannot ensure readiness. This dissonance suggests the integration of systemic barriers in the model for future studies.

7. Recommendations for Policymakers

Based on the findings, policymakers should engage with stakeholders to design and deliver blended courses with quality, consistency, and relevance and ensure their alignment with the learning outcomes and the curriculum. In this process, the implementation of guidance and training programs by government institutions can enhance the quality assurance process. Furthermore, they should incorporate diverse assessment modes, including formative and summative methods, into blended learning activities to improve the overall outcomes. The institutions should also establish a blended learning committee to supervise, coordinate, and evaluate outcomes. For management issues, policymakers should oversee the management and coordination of blended learning by setting and enforcing the guidance.

According to qualitative insight, blended learning is an effective way to improve learning outcomes, satisfaction and internet self-efficacy. The policymakers should foster social support and a positive attitude to help the learners participate in interactive activities in the blended learning environment. The study also reveals the challenges in blended learning in rural areas, such as poor internet connection, power outages, and lack of trained teachers. To address these issues, the participants recommended to provide downloadable resources and providing training to teachers. The training programs should move beyond technical skills and address cultural resistance to interactive methods, which is needed for a better experience when engaging in blended learning.

Accordingly, adequate investments in learning management systems (LMS) and prioritising offering offline solutions (e.g., downloadable resources) in rural areas to bridge connectivity gaps. Further, a national blended learning committee should include rural stakeholders to co-design solutions. It will address the challenges of the rural-urban divide (e.g., power outages vs. teacher training gaps). Policymakers should establish a sustainable link between blended learning and SDG 4 (Quality Education) by targeting marginalized groups.

Moreover, they should also build an explicit link between blended learning and SDG 9 (Industry Innovation) through digital infrastructure.

As the FGD findings suggested, policymakers should also focus on career-oriented courses to address extrinsic motivators like employment. For that policymakers should adopt the Rocketship Education model. This education model was coined in the USA, which supports personalized learning in existing schools to propel student achievement. This model emphasizes personalized learning for each student, teachers as professionals, and deep parent and community involvement (Rocketship Education, 2015). It blends traditional classroom teaching with personalized learning through online adaptive technology, and small-group tutoring, to serve low-income, underserved communities who lack access to quality education. The benefits of the Rocketship Education model in blended learning include the ability to provide personalized learning through adaptive online tools and empower learners by reducing achievement gaps, particularly for underserved students. The application of adaptive learning tools and data-driven instruction in the Rocketship Education model can contribute at a large scale in build foundational skills in math, literacy, and digital literacy, which are critical to equip students not only with knowledge but also the practical skills, adaptability, and confidence needed to prosper in different careers. Also, the Rocketship Education model is highly scalable as the model focuses on optimizing resources through cost-effective tech integration.

Therefore, to incorporate the Rocketship Education model in blended learning in Bangladesh, the policymakers combine in-person teaching with mobile-friendly platforms (e.g., apps, SMS) to reach rural areas. To facilitate this process, policymakers can work to subsidize refurbished devices, and offer low-cost internet access, and offline tablets to overcome infrastructure gaps. Furthermore, government collaboration with local universities and NGOs is needed to train educators in blended learning pedagogy and data analysis. In Bangladesh's context, it can be a best case for successful implementation of blended learning which can bridge Bangladesh’s urban-rural education gap by blending tech with local cultural contexts. Furthermore, the models’ focus on teacher training and adaptive learning will ensure sustainability in resource-limited settings. The following steps can be taken for the successful implementation of the Rocketship Education model in Bangladesh:

Step 1: Partner with education technology providers to develop adaptive software and devices.

Step 2: Train teachers on blended learning and data analysis.

Step 3: Scale successful pilots using Rocketship’s scalable nonprofit model.

8. Practical Implications

For practice, the impact of this research is significant as the findings can be utilized to drive improvements in terms of blended learning readiness and outcome. The insights of this study would encourage learners and institutions to design career-oriented blended learning courses to address the employment issues in Bangladesh. The findings of this study will enable educators to continuously monitor and assess the effectiveness of blended learning initiatives and contribute to the achievement of Sustainable Development Goals 12, 13, and 4. However, blended learning also poses some challenges technological issues, pedagogical issues, assessment issues, and, management issues. To address the technological issues, the universities would be required to ensure the availability of technologies like LMSs, servers, open and interoperable systems, internet, and devices, followed by strategic investment, and dedicated technical support. For pedagogical issues, institutes must allocate resources for dedicated funding, training teachers, and promoting adaptability.

9. Theoretical Implications

Theoretically, the study has contributed to the existing literature by developing an extended theoretical framework based on the original model. Specifically, this study provides significant theory-based empirical evidence from a developing country perspective. However, this study has the limitation of not integrating certain factors, such as learning styles, system quality, institutional environment, and instructors' attitudes and methods, that may affect the learning experience and the overall explanatory power of the model. Therefore, future research could address these limitations and provide a more comprehensive understanding of the factors influencing blended learning outcomes.

Also, future studies might integrate other factors, such as age, cultural background, prior online learning experience, or prior academic performance to examine whether these factors can explain the variation in Online Learning Readiness (OLR) better. Overall, the examination of the proposed theoretical model has revealed that in addition to Blended Learning Outcome (BLO), Online Learning Experience (OLE) and Online Learning Readiness (OLR) in the context of blended learning in Bangladesh can be explained with good reliability and validity.

10. Conclusion

To fill a significant gap in the field of blended learning research, particularly in the context of Bangladesh, this study conveys insights into the determinants influencing student experiences, readiness, and outcomes in blended learning environments. This empirical study based on a robust conceptual framework offers a nuanced understanding of blended learning in Bangladesh. The quantitative insight shows that Platform Satisfaction and

Course Satisfaction influence students' online learning experience. In contrast, the study revealed that self-directed learning, technology readiness, and learner control significantly impact their online learning readiness. Additionally, the study highlights that online learning experience and online learning readiness are key determinants of blended learning outcomes. Hence, to improve blended learning outcomes, educators should focus on determinants that enhance students' online learning experience and their readiness.

Furthermore, the qualitative findings suggested ensuring technology enhancement, social support, fostering a positive attitude, and career-oriented courses for successful blended learning. In a qualitative study, the findings revealed a significant urban-rural divide and recommended addressing the fundamental infrastructure issues (e.g., lack of trained teachers, internet connectivity and uninterrupted electricity supply), as the technological readiness alone is insufficient for ensuring the efficacy of blended learning initiatives. Hence, this research offers actionable recommendations for policymakers, which include the need for targeted interventions to bridge the urban-rural digital divide. Specifically, the researchers recommend investments in learning management systems, offline solutions, and teacher training programs. Also, they suggested the Rocketship Education model as a tool for addressing Bangladesh's educational challenges regarding the digital divide and lack of career readiness. By addressing the identified challenges and implementing the recommended strategies, Bangladesh can advance towards fulfilling its Sustainable Development Goals significantly.

Theoretically, this study not only offers a novel theoretical framework but also provides empirical evidence from a developing country perspective. The limitation of this study opens a new avenue for future research where the researchers may consider additional factors such as demographic factors, cultural background, prior online learning experience, system quality, and institutional environment to increase the explanatory power of the theoretical framework. Overall, the insights in this study contribute to enhancing the outcome of blended learning needed for preparing students for the demands of the 21st-century workforce.

Acknowledgements

The authors gratefully acknowledge the technical and financial support provided by the **University Grants Commission of Bangladesh (UGC) and the** University of Dhaka, Bangladesh.

References:

Abuhassna, H., Al-Rahmi, W. M., Yahya, N., Zakaria, M. A. Z. M., Kosnin, A. B. M., & Darwish, M. (2020). Development of a new model on utilizing online learning platforms to improve

students' academic achievements and satisfaction. *International Journal of Educational Technology in Higher Education*, *17*, 1–23.

Adarkwah, M. A., & Huang, R. (2023). Blended learning for the "multi-track" undergraduate students in Ghana in an adverse era. *Scientific African*, *21*, e01772. https://doi.org/10.1016/j.sciaf.2023.e01772

Alammary, A. S. (2024). Blended learning delivery methods for a sustainable learning environment: A Delphi study. *Sustainability*, *16*(8), 3269.

Almusharraf, N., & Khahro, S. (2020). Students satisfaction with online learning experiences during the COVID-19 pandemic. *International Journal of Emerging Technologies in Learning (iJET)*, *15*(21), 246–267.

Alzahrani, M. G., & O'Toole, J. M. (2017). The Impact of Internet Experience and Attitude on Student Preference for Blended Learning. *Journal of Curriculum and Teaching*, *6*(1), 65–78.

Anaraki, F. (2018). The effectiveness of blended learning: A case study. *ABAC Journal*, *38*(2), 82–93.

Angawi, M., & Tasir, Z. (2024). Blended Learning Research: A Systematic Review and Identification of Future Research Gaps. *International Journal of Academic Research in Progressive Education and Development*, *13*. https://doi.org/10.6007/IJARPED/v13-i3/22216

Ansari, J. A. N., & Khan, N. A. (2020). Exploring the role of social media in collaborative learning the new domain of learning. *Smart Learning Environments*, *7*(1), 9. https://doi.org/10.1186/s40561-020-00118-7

Anthony Jnr, B. (2022). An exploratory study on academic staff perception towards blended learning in higher education. *Education and Information Technologies*, *27*(3), 3107–3133.

Ardiansah, M. N., Chariri, A., & Januarti, I. (2019). Empirical study on customer perception of e-commerce: Mediating effect of electronic payment security. *Jurnal Dinamika Akuntansi*, *11*(2), 122–131.

Asarta, C. J., & Schmidt, J. R. (2020). The effects of online and blended experience on outcomes in a blended learning environment. *The Internet and Higher Education*, *44*, 100708.

Ayub, N. B., Ahsan, M. H. B., & Azman, N. S. B. (2021). FACTORS DETERMINING BLENDED LEARNING RECEPTIVENESS AMONG MALAYSIAN ACADEMICIANS. *Labuan Bulletin of International Business and Finance (LBIBF)*, *19*(1), 118–133.

bdnews24. (2022). *Bangladesh to introduce "blended education" policy to avert learning gaps in future*. https://bdnews24.com/education/bangladesh-to-introduce-blended-education-policy-to-avert-learning-gaps-in-future

Bouilheres, F., Le, L. T. V. H., McDonald, S., Nkhoma, C., & Jandug-Montera, L. (2020). Defining student learning experience through blended learning. *Education and Information Technologies*, *25*, 3049–3069.

Chowdhury, F. (2020). Blended learning: How to flip the classroom at HEIs in Bangladesh? *Journal of Research in Innovative Teaching & Learning*, *13*(2), 228–242.

Chung, E., Noor, N. M., & Mathew, V. N. (2020). Are you ready? An assessment of online learning readiness among university students. *International Journal of Academic Research in Progressive Education and Development*, *9*(1), 301–317.

Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online Learning Readiness Among University Students in Malaysia Amidst Covid-19 Ellen Chung. *Asian Journal of University Education*, *16*(2), 45–58.

Cigdem, H. (2014). Effects of students' characteristics on online learning readiness: A vocational college example. *Turkish Online Journal of Distance Education*, *15*(3), 80–93.

Deshwal, P., Trivedi, A., & Himanshi, H. (2017). Online learning experience scale validation and its impact on learners' satisfaction. *Procedia Computer Science*, *112*, 2455–2462.

Engin, M. (2017). Analysis of Students' Online Learning Readiness Based on Their Emotional Intelligence Level. *Universal Journal of Educational Research*, *5*(n12A), 32–40.

Firat, M., & Bozkurt, A. (2020). Variables affecting online learning readiness in an open and distance learning university. *Educational Media International*, *57*(2), 112–127.

Gestiardi, R., Sarwanto, S., Chumdari, C., & Maryani, I. (2021). Using an technology readiness model to understand perceived usefulness of learning in the COVID-19 era. *International Journal of Elementary Education*, *5*(4), 631–638.

Ghorbanzadeh, D., Khoruzhy, V. I., Safonova, I. V., & Morozov, I. V. (2023). Relationships between social media usage, social capital and job performance: The case of hotel employees in Iran. *Information Development*, *39*(1), 6–18.

Goh, C., Leong, C., Kasmin, K., Hii, P., & Tan, O. (2017). Students' experiences, learning outcomes and satisfaction in e-learning. *Journal of E-Learning and Knowledge Society*, *13*(2).

Hachey, A. C., Wladis, C., & Conway, K. (2015). Prior online course experience and G.P.A. as predictors of subsequent online STEM course outcomes. *The Internet and Higher Education*, *25*, 11–17. https://doi.org/10.1016/j.iheduc.2014.10.003

Henaku, E. A. (2020). COVID-19 online learning experience of college students: The case of Ghana. *International Journal of Multidisciplinary Sciences and Advanced Technology*, *1*(2), 54–62.

Hoang, D. T., & Hoang, T. (2023). Ready or not? An exploration of university students' online learning readiness and intention to use during the COVID-19 pandemic. *E-Learning and Digital Media*, *20*(5), 442–459.

Hossain, M. K., Salam, M. A., & Akhond, M. R. (2024). Behavioral intentions of university teachers and students toward the adoption of the hyb-blended learning method: Evidence from Bangladesh. *Heliyon*, *10*(14).

Hung, M.-L., Chou, C., Chen, C.-H., & Own, Z.-Y. (2010). Learner readiness for online learning: Scale development and student perceptions. *Computers & Education*, *55*(3), 1080–1090.

Ibrahim, M. M., & Nat, M. (2019). Blended learning motivation model for instructors in higher education institutions. *International Journal of Educational Technology in Higher Education*, *16*(1), 1–21.

Islam, M. K., Sarker, M. F. H., & Islam, M. S. (2022). Promoting student-centred blended learning in higher education: A model. *E-Learning and Digital Media*, *19*(1), 36–54.

Jerry, M., & Yunus, M. M. (2021). Blended learning in rural primary ESL classroom: Do or don't. *International Journal of Learning, Teaching and Educational Research*, *20*(2), 152–173.

Jr, B. A., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A. E., Abdullah, A., Ming, G. L., Shukor, N. A., Nordin, M. S., & Baba, S. (2021). An integrative framework to investigate the impact of blended learning adoption in higher education: A theoretical perspective. *International Journal of Technology Enhanced Learning*, *13*(2), 182–207.

Khalid, Md. S., & Al Sire, S. (2021). Blended Learning at Universities of Bangladesh: Initiatives and Challenges during COVID-19 Lockdown. In *Blended Learning in Higher Education* (pp. 1–14). Blended Learning in Higher Education, Aalborg Universitetsforlag, Denmark.

Khan, M. (2021). Deploying Blended Learning in the New Normal Pedagogy: Challenges and Prospects in Bangladesh. *International Journal of Asian Education*, *2*, 531–538. https://doi.org/10.46966/ijae.v2i4.215

Kim, M. J., Lee, C.-K., & Preis, M. W. (2020). The impact of innovation and gratification on authentic experience, subjective well-being, and behavioral intention in tourism virtual reality: The moderating role of technology readiness. *Telematics and Informatics*, *49*, 101349. https://doi.org/10.1016/j.tele.2020.101349

Lane, S., Hoang, J. G., Leighton, J. P., & Rissanen, A. (2021). Engagement and satisfaction: Mixed-method analysis of blended learning in the sciences. *Canadian Journal of Science, Mathematics and Technology Education*, *21*(1), 100–122.

Li, G., Luo, H., Lei, J., Xu, S., & Chen, T. (2022). Effects of First-Time Experiences and Self-Regulation on College Students' Online Learning Motivation: Based on a National Survey during COVID-19. *Education Sciences*, *12*(4). https://doi.org/10.3390/educsci12040245

Luu, T. M. V. (2022). Readiness for online learning: Learners' comfort and self-directed learning ability. *Luu, TMV (2022). Readiness for Online Learning: Learners' Comfort and Self-Directed Learning Ability. International Journal of TESOL & Education*, *2*(1), 213–224.

Ma, L., & Lee, C. S. (2021). Evaluating the effectiveness of blended learning using the ARCS model. *Journal of Computer Assisted Learning*, *37*(5), 1397–1408.

Min, W., & Yu, Z. (2023). A Systematic Review of Critical Success Factors in Blended Learning. *Education Sciences*, *13*(5), 469.

Mosa, A. A., Mohd. Naz'ri bin Mahrin, & Ibrrahim, R. (2016). Technological Aspects of E-Learning Readiness in Higher Education: A Review of the Literature. *Comput. Inf. Sci.*, *9*(1), 113–127.

Mueller, R. O., & Hancock, G. R. (2018). Structural equation modeling. In *The reviewer's guide to quantitative methods in the social sciences* (pp. 445–456). Routledge.

Okuonghae, O., Igbinovia, M. O., & Adebayo, J. O. (2022). Technological Readiness and Computer Self-efficacy as Predictors of E-learning Adoption by LIS Students in Nigeri. *Libri*, *72*(1), 13–25.

Osman, N., & Hamzah, M. I. (2017). Student readiness in learning Arabic language based on blended learning. *International Journal of Applied Linguistics and English Literature*, *6*(5), 83–89.

Palmer, S. R., & Holt, D. M. (2009). Examining student satisfaction with wholly online learning. *Journal of Computer Assisted Learning*, *25*(2), 101–113.

Prasetya, R. Y., & Nawangsari, L. (2019). The influence of leadership style, organizational culture, and work motivation on organizational citizenship behavior for environment (OCBE) of the directorate general of fiscal balance's employees. *International Journal of Innovative Science and Research Technology*, *4*(12), 641–647.

Prifti, R. (2020). Implementation of blended learning in a higher education institution in Albania: An analysis of factors that affect students' learning experience. *International Journal of Innovation and Learning*, *27*(3), 233–253.

Rafique, G. M., Mahmood, K., Warraich, N. F., & Rehman, S. U. (2021). Readiness for Online Learning during COVID-19 pandemic: A survey of Pakistani LIS students. *The Journal of Academic Librarianship*, *47*(3), 102346.

Rahman, M. M., & Nasrin, S. (2024). Perceived service quality at higher education institutions: A study on the success factors of total quality management practices in Bangladesh. *Social Sciences & Humanities Open*, *10*, 100997.

Richter, F. (2024). *Infographic: Zoom's Revenue Skyrockets On Pandemic Boost*. Statista Infographics. https://www.statista.com/chart/21906/zoom-revenue/

Rocketship Education. (2015). *Rocketship Education Rocketship Mt. Diablo Petition*. https://www.rocketshipschools.org/wp-content/uploads/2017/09/Rocketship-Mount-Diablo-Petition-FINAL-CDE.pdf

Saasworthy. (2024). *Compare Zoom Pricing Against Competitors*. Www.Saasworthy.Com. https://www.saasworthy.com/product/zoom/pricing

Shakeel, S. I., Haolader, M. F. A., & Sultana, M. S. (2023). Exploring dimensions of blended learning readiness: Validation of scale and assessing blended learning readiness in the context of TVET Bangladesh. *Heliyon*, *9*(1).

Sharif, Z., Ariff, A. H. M., Abdullah, Z., & Bakar, F. A. (2021). Blended Learning Readiness And Its Way Forward: The Case Of Undergraduates Of Universiti Utara Malaysia. *Practitioner Research*, *3*, 99–120.

Sriwichai, C. (2020). Students' Readiness and Problems in Learning English through Blended Learning Environment. *Asian Journal of Education and Training*, *6*(1), 23–34.

Steininger, D., Mikalef, P., Pateli, A., & Guinea, A. (2022). Dynamic Capabilities in Information Systems Research: A Critical Review, Synthesis of Current Knowledge, and Recommendations for Future Research. *Journal of the Association for Information Systems*, *23*, 447–490. https://doi.org/10.17705/1jais.00736

Sugianingrat, I., Wilyadewi, I., & Sarmawa, I. W. G. (2020). Determination of entrepreneurship education, family environment, and self-efficacy on entrepreneurship interest. *Jurnal Economia*, *16*(1), 33–43.

Sumarna, N., Kansil, Y., & Hamid, R. (2020). The influence of online learning platform models during the COVID-19 outbreak on college student satisfaction levels in Southeast Sulawesi. *Proceeding Umsurabaya*.

Tang, Y. M., Chen, P. C., Law, K. M., Wu, C.-H., Lau, Y., Guan, J., He, D., & Ho, G. T. (2021). Comparative analysis of Student's live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector. *Computers & Education*, *168*, 104211.

Teane, F. M. (2024). Technological literacy and its influence on teachers' adoption of a blended learning approach. *Reading & Writing-Journal of the Reading Association of South Africa*, *15*(1), 426.

Torun, E. D. (2020). Online distance learning in higher education: E-learning readiness as a predictor of academic achievement. *Open Praxis*, *12*(2), 191–208.

UGC. (2018). *Strategic plan for higher education in bangladesh: 2018-2030*. https://ugc.portal.gov.bd/sites/default/files/files/ugc.portal.gov.bd/publications/c768558c_2126_41c5_83ab_4a17004eb1af/2020-10-20-10-45-e20b0b095947032e58b70c32314be187.pdf

UGC. (2022). *Policy on Blended Learning for Bangladesh*. https://ugc.gov.bd/sites/default/files/files/ugc.portal.gov.bd/policies/ddeb0952_f123_4d24_8ddf_53b9b24031f8/2022-06-06-06-44-a6a5dea173d2d0ec327b83f57cd55e24.pdf

Virani, S. R., Saini, J. R., & Sharma, S. (2023). Adoption of massive open online courses (MOOCs) for blended learning: The Indian educators' perspective. *Interactive Learning Environments*, *31*(2), 1060–1076.

Watson, P. (2023). *Has Microsoft Teams Growth Reached Its Peak?* Cavell Group. https://www.cavellgroup.com/microsoft-teams-growth/

Wei, H.-C., & Chou, C. (2020). Online learning performance and satisfaction: Do perceptions and readiness matter? *Distance Education*, *41*(1), 48–69.

Williams, L. J., Vandenberg, R. J., & Edwards, J. R. (2009). 12 structural equation modeling in management research: A guide for improved analysis. *The Academy of Management Annals*, *3*(1), 543–604.

Yates, A., Starkey, L., Egerton, B., & Flueggen, F. (2021). High school students' experience of online learning during Covid-19: The influence of technology and pedagogy. *Technology, Pedagogy and Education*, *30*(1), 59–73.

Yu, Q. (2022). Factors influencing online learning satisfaction. *Frontiers in Psychology*, *13*, 852360.

Zhang, Z., Cao, T., Shu, J., & Liu, H. (2022). Identifying key factors affecting college students' adoption of the e-learning system in mandatory blended learning environments. *Interactive Learning Environments*, *30*(8), 1388–1401.

Zhonggen, Y., Ying, Z., Zhichun, Y., & Wentao, C. (2019). Student satisfaction, learning outcomes, and cognitive loads with a mobile learning platform. *Computer Assisted Language Learning*, *32*(4), 323–341.