IJERE International Journal of Educational Research Review

International Journal of Educational Research Review

Can Blended Learning be the New-Normal in Higher Education of Bangladesh?

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Article History:
Received 10.09.2020
Received in revised form 06.06.2021
Accepted
Available online 01.10.2021

This study attempted to find out the scopes and challenges of implementing blended learning. 230 university students were selected using the 'convenience sampling' technique. In this study, most of the tertiary level students had attended online classes from cities and they were not satisfied with the assessment process of online classes as well as found difficulty in understanding technical courses. Many respondents also perceived that blended learning would be helpful for the slow learners, would help to develop digital literacy, would decrease the hours of traditional classes though overall learning might be increased. However, students felt that unstable internet connection was the biggest challenge for the implementation of blended learning. Most of the respondents thought that lack of necessary devices/technologies, lack of motivation for self-regulated learning, lack of interaction between facilitators and students, and lack of proper assessment strategies were the challenges for implementing blended learning in higher educational institutions.

Keywords: Blended learning (bl), higher educational ınstitutions (HEIs), distance learning, e-learning, digital literacy.

INTRODUCTION

The ideas of online learning (also known as distance learning or e-learning), totally digital technology-based learning (Al-Busaidi, 2013), emerged in the earlier part of the last century, which primarily used the communication facilities like the mail, telephone, and then television (Brut, 2006). To effectuate the exchange of knowledge and ideas, various components like audio, video, computer, and communication technologies are getting preference in online learning (Bailey & Davis, 2018). The contemporary education system tries to generate metacognitive skills among students which will help the learners to grow awareness, understanding, monitoring, and manipulate their cognitive progress (Pintrich et al., 1991) and make them able to plan, monitor, and evaluate their learning process (Rahman et al., 2010). However, it is quite impossible to generate metacognitive skills in students by using only traditional or online learning as each process has its shortcomings. Thus, the idea of Blending Learning (BL) approaches has emerged to form the right strategy, content, and format for the right people at the right time (Singh, 2003). Driscoll (2002) pinpointed four different concepts denoted by the term BL: a combination of a) web-based technology, b) pedagogical approaches, c) IT (instructional technology) with face-to-face training, and d) job-related tasks with instructional technology. Another conceptualization is provided by Carman (2005), who described BL as a blend of theories that promotes self-paced flexible learning. Singh (2003) asserted that BL offers an opportunity to combine multiple delivery modes or dimensions and to properly utilize both asynchronous and synchronous tools to address each learner's learning necessities and preferences. Oghenevwede (2015) mentioned BL as a combined learning strategy with the most effective and optimal outcome.

Most of the researchers found BL significant. The benefits of BL as presented in the literature can be summarised as flexible, convenient, interesting in terms of learning environment, increase in the learning level and performance, ensure permanence of knowledge, increase the motivation and interaction of students, cost-effective (Carman, 2005; Finch, 2008; Collis, 2003; Osguthorpe & Graham, 2003; Young, 2002), self-paced (Carman, 2005), flexible concerning time, place, and pace of student learning (Chowdhury, 2019), student-centered in terms of recognizing the requirements and perspectives of different types of learners (Heinze & Procter, 2004; Chowdhury, 2019),

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facilitate critical, complex, creative, and higher-order learning (Garrison & Kanuka, 2004), ensure the metacognition and better achievements of the learners (Suwono et al., 2017).

In contrast, the findings of some research presented several challenges of implementing the BL in Higher Educational Institutions (HEIs). In South Africa, Tshabalaha et al. (2014) conducted a case study to identify the challenges faced by academic staff in adopting BL, by investigating the academic staff's perception of BL. It was summarized that "the absence of a policy on BL, lack of faculty support, inadequate technological and computer skills, large class size, limited technological resources, inadequate staff training" hindered the adoption of BL (Tshabalaha et al., 2014). Hani (2018) remarked that the practical implication of BL in the universities of Bangladesh would be undoubtedly significant. However, to properly utilize the potential of BL, research on BL in the Bangladeshi context suggested that policy on BL should be developed addressing infrastructural needs, development of a program, and strategic planning (Hossain, 2013). To make policy, policymakers need to address students' perspectives and requirements also the challenges they face in online learning as a recent survey found that almost 50% of the student couldn't attend the online class due to the lack of device availability (Islam et al., 2020). As pointed out by Garrison and Kanuka (2004), it is inevitable for Campus-based HEIs to adopt BL approaches in a significant way. In Bangladesh, the number of empirical studies in the field of BL, unfortunately, is insufficient. Due to the Covid-19 emergency, Bangladesh has strived to adopt online learning in a limited format. But this experience can be useful to cope up with technology-based learning. Therefore, in this paper, we want to pinpoint students' perspectives addressing perceptions of online learning, scopes of blended learning, and challenges that hinder the implementation of BL in higher educational institutions of a developing country. To remove redundancy from this article, BL and HEIs will be used instead of blended learning and higher educational institutions respectively.

Research Questions

1. What are the current perceptions of tertiary level students' regarding online classes?
2. What are the perceived scopes of tertiary level students' in implementing BL in Bangladesh?
3. What are the perceived challenges of tertiary level students' in implementing BL in Bangladesh?
4. Do students' perceptions of scopes and challenges of implementing BL in HEIs vary based on their demographic factors (e.g., gender, residence, academic year, academic background and previous experience of online class)?

RESEARCH DESIGN and METHOD

Nature of the study

The study adopted a cross-sectional quantitative research approach to provide a 'snapshot' of students' (Cohen et al., 2017) perspectives of BL in three domains: current perception of online learning, scopes of BL, and challenges of implementing BL during the emergency. A cross-sectional research aims to obtain reliable data that make it possible to generate robust conclusions and create new hypotheses that can be investigated and analyzed with new research. Analytical studies seek to establish associations and relationships between two or more phenomena (called variables in the analysis process), and descriptive studies are only about the detailed and organized description of one or more phenomena, the quality of data required for study in addition to the systematization and standardization of the collection methods, also the strategy adopted to obtain them, which is called the design or, more correctly, the study design (Zangirolami-Raimundo et al., 2018). Here in this study, researchers have tried to organize the description of variables and sought to find an association between variables.

Population

According to the Bangladesh Bureau of Educational Information and Statistics (BANBEIS), there are a total of 856726 university students (BANBEIS, 2018) studying at 46 public and 107 private universities in Bangladesh (UGC, 2020). Therefore, all the students who were studying at the aforementioned universities are the population of this study. But a nationwide survey found that 40% of the students were attending online classes, among whom the majority (70%) were from private universities (Islam et al., 2020). To address the purpose of this study, therefore, the target population for this cross-sectional study was the university students of Bangladesh who had attended online classes.

Sample and sampling technique

This study employed the 'convenience sampling' technique which is a non-probability sampling technique where the participants are selected based on their availability and interest (Johnson & Christensen, 2013). A total of

230 students from various academic backgrounds were selected from universities in Bangladesh. In Bangladesh, the majority of university students have got the scope to attend online classes for the first time due to the covid-19 pandemic (Al-Amin et al., 2021). It was impossible to use the 'simple random sampling' technique and to reach an adequate number of respondents due to the pandemic. The study was based on the analyses of actual data of 230 students.

Demographic factors

The demographic data illustrated that 52.6% were male students where 47.4% were females. The majority of the students were from the cities (47.4%) while an around equal number of them were from suburbs and villages, 26.5% and 26.1% respectively. Among the students, 55.7% were from science background while the rest of them were from non-science background (i.e., arts, commerce, etc.). A large number of the students were studying in the first year of their undergrad degree (30.4%) while only a few of them were in the third year (10%). 22.2% and 26.4% were in the second and forth year of their undergrad course respectively while only 10.9% were postgraduate students. It was also notable that the bulk of them (85.7%) were never experienced online class before the pandemic while their counterparts (14.3%) reported that they had online class experience.

Table 1

Demographic Information of the Respondents (n= 230)

Demographics	Respondents	Percentage (%)
Gender:		
Male	121	52.6%
Female	109	47.4%
Residence:		
City	109	47.4 %
Suburb	61	26.5%
Village	60	26.1%
Academic Background:		
Science students	128	55.7%
Non-Science students	102	44.3%
Academic Year:		
Honors 1st Year	70	30.4%
Honors 2nd Year	51	22.2%
Honors 3rd Year	23	10%
Honors 4th Year	61	26.5%
Masters	25	10.9%
Online class experience before Covid-19:		
Yes	33	14.3%
No	197	85.7%

Instrument

The researcher employed a self-made questionnaire to collect quantitative data from the respondents. This questionnaire consisted of two sections. The initial section addressed the demographic information of the respondents such as gender, residence, academic background and academic year, etc. The final section had a quantitative questionnaire consisting of some closed-ended items to get participants' responses (Johnson & Christensen, 2014) about three domains: current perceptions of online learning, scopes of BL, and challenges of implementing BL. There was a total of 24 items: 6 items for the domain which addressed the current perception of online classes (i.e., comfortability, the scope of questioning answering, class performance, etc.), 10 items for the domain of scopes of implementing BL (i.e., flexibility, decreasing pressure, more scope of learning, learning outside the classroom boundary, self-regulated learning, etc.) and 8 items for the domain of the challenges of implementing BL in HEIs (i.e., problem in monitoring and interaction, lack of motivation and training for teachers, unstable internet, unavailability of devices, etc.).

Five response options of each statement of the quantitative questionnaire were (1) Strongly disagree (SD); (2) Disagree (D); (3) Neither agree nor disagree (N); (4) Agree (A); (5) Strongly agree (SA), making it a five-point Likert scale where the respondents could choose only one response to specify their level of agreement to a particular statement (Croasmun & Ostrom, 2011).

Validity and reliability of the instrument

Two steps were used to assess the validity and reliability of the instrument.

Step 01: Securing content validity and face validity:

To secure the validity of the instrument, the initial questionnaire was sent to two experts in the area of BL to determine whether the items were clear and understandable, and represent the respective domains.

Step 02: Measurement of reliability:

The coefficient of alpha or Cronbach's alpha was calculated to find out the internal consistency for each item of the instrument.

Table 2

Cronbach's alpha

Domain	Total Items	Cronbach's Alpha
Current perception of online learning	6	.75
Scopes of BL	10	.93
Challenges of implementing BL	8	.91

Data collection

A google form was created to collect the survey data from the respondents. The form was sent to the respondents via social media and email. To maintain the ethical issues, respondents were informed that their participation would be completely voluntary and no monetary value or any kind of advantages would be provided to them. Respondents, therefore, had to fill out a consent form before filling out the questionnaire.

Data analysis

The researchers administered both descriptive and inferential analysis. IBM SPSS Software version 25 was used to perform the analyses. The researchers measured frequency, mean, standard deviation to analyze and interpret the quantitative data. As the data set was non-normalized, the Mann-Whitney U test which is a nonparametric version of the parametric t-test was operated (McKnight & Najab, 2010).

RESULTS

Current Perception of Online Class

To address the first research question, students' perceptions were measured in terms of six criteria about online class. The findings reveal students' current perceptions of online learning. At a glance, the data indicates that students have a less significant mean for most of the components since a mean less than 3.00 is an indicator of a negative response. According to the data, it is noticeable that students are highly satisfied with the scope of questioning & answering (3.57) in contrast to understanding technical courses in the online classes (2.46) where they are least satisfied. Again, students have perceived that they do not feel comfortable in the online class (2.86). The main reason for feeling uneasiness in online classes can be that majority of them (85.7%) have never experienced online class before. Furthermore, they are less satisfied with their teachers' feedback (2.98), and the assessment process (2.68).

Table 3

Current Perception of Online Class

Items	Mean	SD
Comfortable in online classes	2.86	1.40
Scope of questioning & answering	3.57	1.44
Satisfied with the assessment process	2.68	1.31
Understanding technical courses	2.46	1.22
Academic performance is poor in the online classes	3.58	1.46
Satisfied towards feedback from the teacher	2.98	1.58

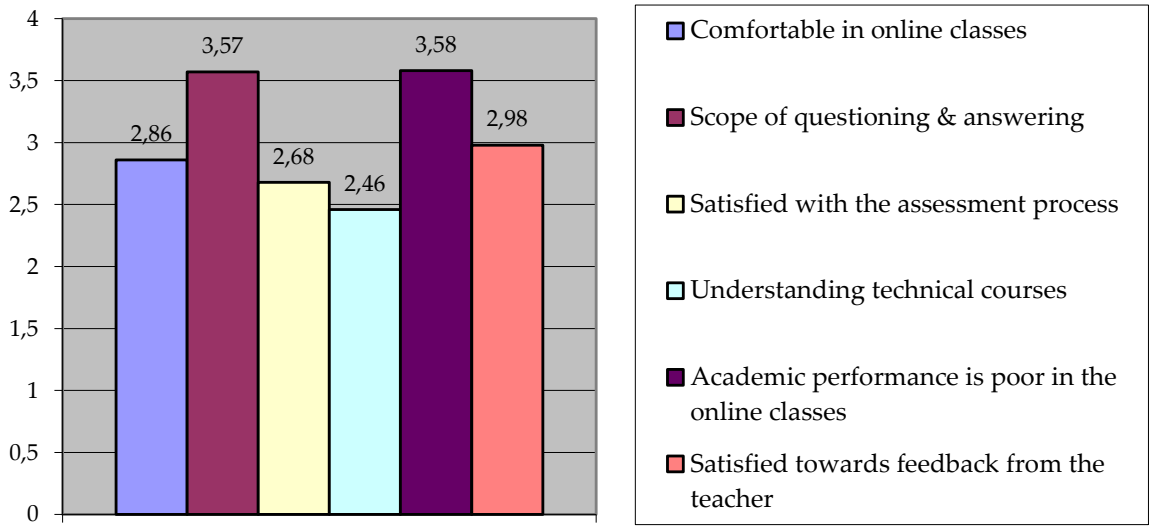
Additionally, they also have perceived their academic performance as poor (3.58) in the online class than in the traditional class. The reason for this may be that most of them could not adapt to the new environment of the online class. Another reason can be that their lack of knowledge in technology and attitude towards using technology for conducting class rather than a traditional class.

Besides, the values of standard deviation (SD) for these components are more than 1.00 (ranging from 1.22-1.58) which indicates that the responses are very scattered for each item.

For better visualization of the means, the mean score is shown in figure 01.

Figure 1

Current perception of online class



Scopes of Implementing BL in HEIs

To address the second research question, a total number of 10 questions were asked to the students. Overall, students have shown a very positive expectation about the scope of BL in terms of ten components as all the scores have a mean of more than 3.55. According to the mean score, it is crystal clear that BL will be greatly helpful for the slow learners (3.99) in contrast to the academic performance where the scope of improvement through the BL process is least (3.56). The data remarks that BL can improve digital literacy (3.94), which will help the learners to learn more (3.86) through a self-driven learning process (3.80).

Table 4

Scopes of Implementing BL in HEIs

Items	Mean	SD
The respondents can learn more outside the traditional class	3.86	1.37
The respondents may become self-driven	3.80	1.30
Respondent's activity may increase	3.76	1.35
BL will be helpful for the slow learners	3.99	1.30
BL is more flexible	3.78	1.29
BL will ease the pressure of learning in face-to-face classes	3.65	1.41
Blended learning might be joyful for the students	3.62	1.37
BL can decrease the hours of traditional courses	3.70	1.35
Digital literacy can be achieved/ improved through BL	3.94	1.30
Academic performance may improve through the BL process	3.56	1.39

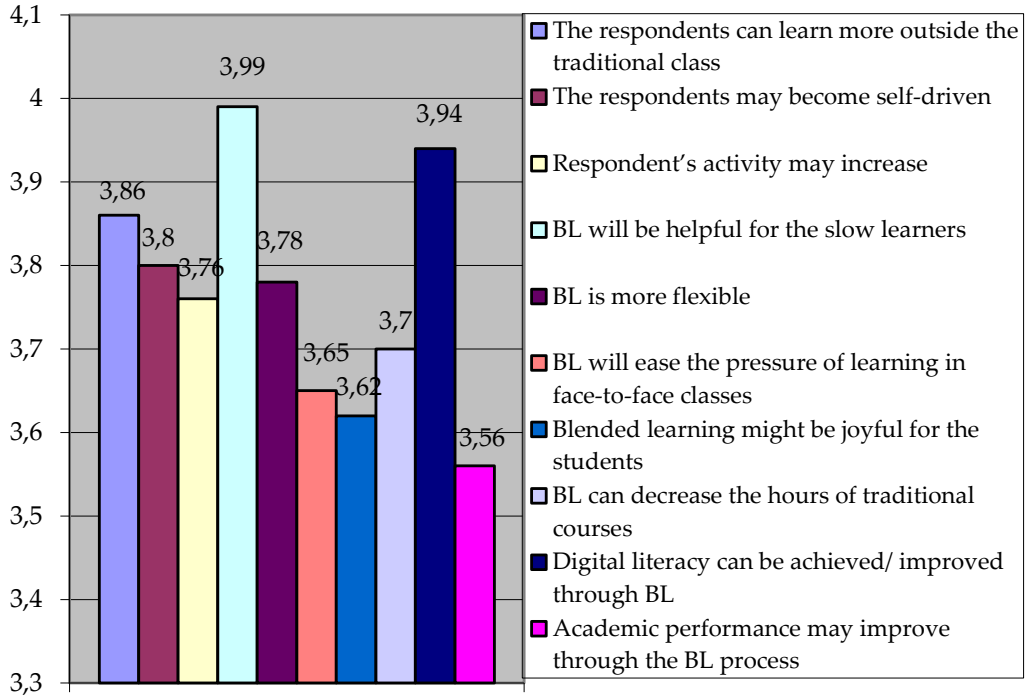
In addition to that, BL is flexible (3.78) to increase their activity (3.76) by decreasing the hours of traditional courses (3.70), and also by alleviating the pressure of learning in face-to-face classes (3.65). However, the mean score of joyful learning through the BL process is 3.62 which makes it the second- lowest scope provided by BL.

On the other hand, this data also has a high value of SD (<1.00) which indicates scattered mean scores for the components.

In figure 02, for better understanding, a visualization of all the mean scores for the items of the scopes of implementing BL in HEIs is given.

Figure 2

Scopes of Implementing BL in HEIs



Challenges of Implementing BL in HEIs

The third research question was about the students' perceived challenges of implementing BL in HEIs. To seek out the answers, 8 items were asked to the students. The data shows that all the items are perceived to be the great challenges for implementing BL since all the factors has a mean of more than 3.80. According to the mean scores, unstable internet connection (4.21) will pose the greatest challenge in the path of implementing the BL process

while the least challenge will be imposed by two components: the shifting process of the traditional mindset and lack of motivation for self-regulated learning as the mean score for both of them is 3.84.

Table 5

Challenges of Implementing BL in HEIs

Items	Mean	SD
Problem in monitoring students' activities	3.96	1.38
Lack of training for the students	4.00	1.37
Problems of assessing learners progress	3.96	1.34
Shifting of traditional mindset towards BL process	3.84	1.31
Lack of necessary devices/ technologies	4.11	1.29
Unstable internet connection	4.21	1.33
Lack of motivation for self-regulated learning	3.84	1.37
Lack of interaction between students-students and students- teachers	4.01	1.32

However, lack of necessary devices/ technologies, the interaction between students-students and students-teachers, and training for the students will also create a significant barrier in terms of implementing the BL in HEIs as their mean scores are 4.11, 4.01, and 4.00 respectively. Besides, regarding the problems of monitoring students' activities, and assessing the progress of learners will create the second-lowest but an equal number of drawbacks as they impose a similar mean score which is 3.96.

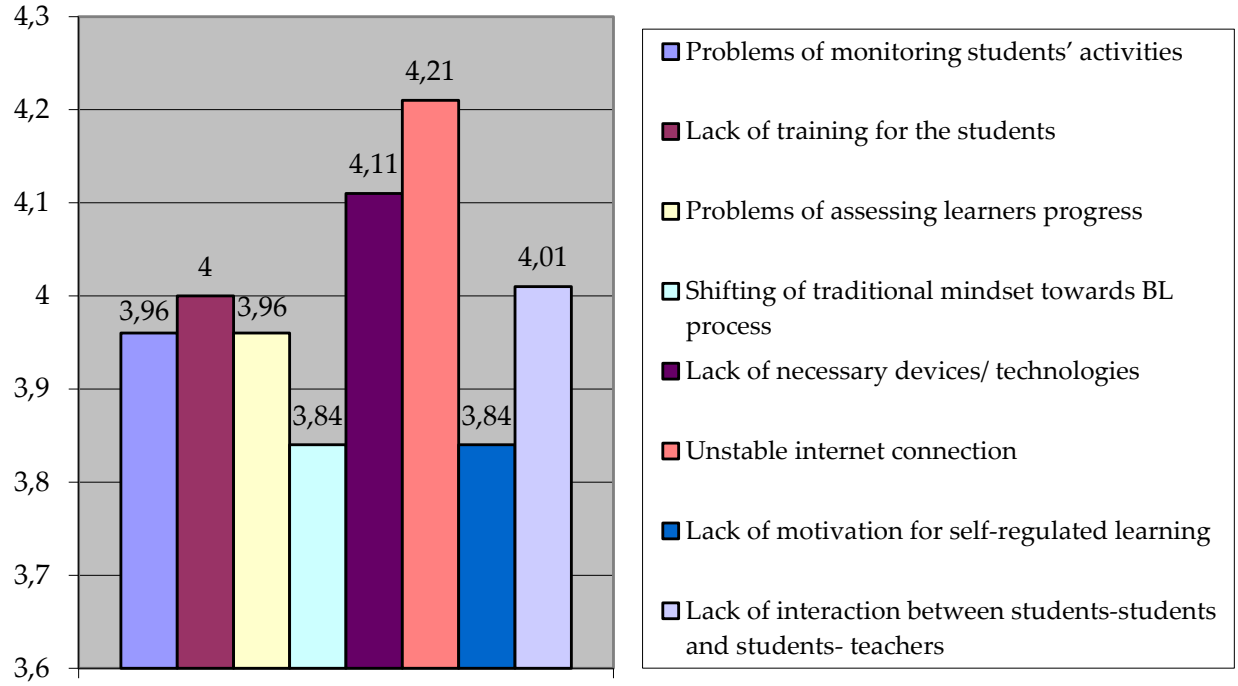
As mentioned earlier, most of the students were not familiar with online class. The majority of them were attending online class for the first time. Furthermore, in Bangladesh, students are adapted to the traditional classes, therefore, they may not be both financially and technically prepared for the online part of BL.

Similar to table 03 and table 04, this table also shows a higher value of SD (<1.00) for the factors. So, the responses are very scattered like the previous two tables.

In this regard, figure 03 presents the data for better understanding.

Figure 3

Challenges of Implementing BL in HEIs



Gender and Students' Perceptions

Table 6

Mann Whitney U Test for gender

Items	Mann-Whitney U	Z	p
Current Perception of Online Class			
Comfortable in online classes*	5347.500	2.57	.01
Satisfied towards feedback from the teacher*	5373.000	2.50	.01
Satisfied with the assessment process**	5084.500	3.12	.00
Understanding technical courses**	5163.500	2.96	.00
Challenges of Implementing BL in HEIs			
Problems of monitoring students' activities*	5388.500	2.55	.01

Note. *p< .05 and ** p<.01

To seek out the answer of the last research question, Mann Whitney U Test was administered. According to the Mann Whitney U Test, a significant difference has been found for 4 items of the domain of 'Current perception of online class' and 1 item for the domain of 'Challenges of implementing BL in HEIs' while no significant difference has been found for the domain of 'Scopes of implementing BL in HEIs' based on students' gender.

According to the mean ranks, female students' current perception of online class is higher than their counterparts. In contrast, male students have perceived that 'problems of monitoring students' activities' will be high while their counterparts thought differently.

Academic Background and Students' Perceptions

According to the Mann Whitney U Test, based on students' academic background, a significant difference has been found for 2 items of each of the domains of 'Current perception of online class' and 'Scopes of implementing BL in HEIs' while only 1 item has been found for the domain of 'Challenges of implementing BL in HEIs'.

Mean ranks reveal that students from non-science background score higher for 2 items of the domain of 'Current perception of online class' than the students from science background. On the contrary, students who are studying science related subjects have scored higher for 2 items of the domain of 'Scopes of implementing BL in HEIs' and also for only 1 item of the domain of 'Challenges of implementing BL in HEIs' than their counterparts.

Table 7

Mann Whitney U Test for academic background

Items	Mann-Whitney U	Z	P
Current Perception of Online Class			
Respondents get the scope of questioning & answering in online classes*	4690.00	2.12	.03
After the pandemic, the respondents want to continue online class with traditional class**	4247.50	2.89	.00
Scopes of Implementing BL in HEIs			
The respondents may become self-driven*	4684.00	2.46	.03
Respondent's activity may increase*	4610.00	2.01	.03
Challenges of Implementing BL in HEIs			
Lack of interaction between students-students and students-teachers*	4661.00	2.26	.02

Note. *p< .05 and ** p<.01

Residence, Academic Year, Previous Experience of Online Class and Students' Perceptions

As the data set was non-normalized, the Mann-Whitney U test was operated to find out whether students' perceptions vary based on their residence, academic year and previous experience of online class significantly. However, the findings have revealed no significant association among those.

DISCUSSION

It is depicted in Table 1 that only 26.1% of rural students attended online classes. One research found that 59 percent of rural households had no access to a smartphone and 49 percent did not have a computer (UNB News, 2020) which was regarded as a major problem of online learning (Abuhammad, 2020). The descriptive statistics also showed that the participation of male learners was higher (52.6%) than their female counterparts (47.4%). Chang et al. (2013) reported that males had a higher degree of self-regulated learning than females and they were more confident to complete an online course.

Perception of Online Class

The data provided information of 6 items regarding the opinion about the online learning platform. However, most of the students demonstrated unwillingness in online classes. The mean score was less than 3 towards comfortability regarding the online class. Bozionelos (2001) found that computer anxiety, a negative feeling towards computer technology, played a critical role in the discomfort, stress, or fear in front of a computer in using it. The average rating was found lower in understanding technical courses through online classes for the five domains where students were not satisfied with their teachers' feedback. Slower feedback from the instructor made them anxious and frustrated (Welker & Berardino, 2005). The students perceived their performance in online lectures as poor which was also supported by the previous results. Numerous studies pointed out that online learning had a negative impact on students' achievements (Ruiz, 2006; Bernard, 2004). On the contrary, Oye et al. (2014) and Keshavarz (2013) believed that e-learning would help students to improve their academic achievements in terms of reducing costs, saving time, and increasing accessibility of education as well as enhancing academic performance.

A negative attitude towards the assessment process reported that they were less satisfied with their teachers' assessment procedure which was also found in another research by Al-Amin et al. (2021). Students often cheat online since instructors cannot observe their activities. Besides, many instructors and administrators ignored the possibilities of malpractice during an online assessment which made the situation worse (Rowe, 2004). The perceptions of the students of different gender and academic backgrounds were different in terms of various factors regarding the online class.

Scopes and Challenges of Implementing BL in HEIs

There are several potential scopes for implementing a BL program though students showed unwillingness in attending online classes. Students showcased a highly positive attitude towards their expectations from the BL method. BL method can provide a way of building online skills as well as expanding technological capabilities. Blended e-learning with a traditional learning program may help to increase student knowledge. It enhances the effectiveness of knowledge through the ease of accessibility of learning materials by reducing the pressure of face-to-face learning (Rosenberg, 2002). In terms of convenience and flexibility, students appreciated the BL method for being able to continue their work at a suitable time and location without traveling (Pardo-Gonzalez, 2013). It can enhance the role of students which makes them more active. This method creates a motivating, exciting learning environment which makes the method joyful (Leithner, 2009). BL method creates a more comfortable environment for both slow runners and sprinters and if the learners are struggling with any particular topic, they can reach out to complementary web resources or get quick help from their instructor. However, another research found negative results for some of the factors (Aguilera-Hermida, 2020).

Despite many scopes in implementing BL, the current study also has highlighted the possible challenges perceived by the students if the BL is implemented. One of the main challenges identified was monitoring the activities of the students. Teachers will be unable to track the performances of learners in terms of what they are gaining through online classes. Similarly, the learners may face course content-related problems and their effectiveness. Less motivation will be another impediment in this learning method. Motivation is a skill that develops when learners are permitted to complete their tasks in their leisure time, not under pressure (Ruiz, 2006; Bernard, 2004). Additionally, the shortage of necessary devices such as computers, laptops, software-friendly tablets, or smartphones works as constraints in executing the BL approach. Difficulties, a commonly reported frustration, hinder conducting BL (Welker & Berardino, 2005; Hara & Kling, 2000). Poor internet connection does not permit the participants to incorporate the BL system. Moreover, Information Technology (IT) literacy, competency, and access may affect students' ability to engage in online discussion (King, 2002). Lack of social interaction is a huge challenge in the BL method. Smyth et al. (2012) depicted social interaction as a massive challenge of the BL method and reported that in terms of social interaction, the traditional method is better. Results revealed the adaptation challenge in terms of executing BL. Since most of the students in our country receive their primary and secondary education through the traditional learning format, it will be difficult for them to adopt the new version of the traditional method incorporating online learning methods.

Students' academic background and online learning experience were also found as the determiners for the reasons for such response. Students of science background seemed uninterested in continuing online classes after a

pandemic where non-science students were found positive about online platforms. One of the reasons for this difference may be the number of technical courses. As students of science background have more practical and technical courses than non-science students, it is easier for the non-science backgrounded to continue classes online as a part of BL.

CONCLUSİON

From the detailed discussion above, key findings emerge that there are some positives in online classes. Besides, from the previous studies, we can understand that it is BL that can make teaching-learning more effective. So, after this pandemic, online learning should not be diminished. Because online learning has unlocked a fresh prospect in teaching-learning activities in Bangladesh. From the previous studies, we have found out that BL or the association of traditional learning and online learning can be a new normal for effective learning at the tertiary level. In our study, we have tried to find out the scopes and challenges of BL. If we overcome the challenges it will be possible to implement BL in the future for a better learning environment. The study will also aid the government and policymakers to take essential steps to guarantee an up-to-date teaching-learning system.

We have also found that in this pandemic there is no other option than online learning for the safeguard of our students as well as the teachers. But after the pandemic, there is a possibility to complete evocation of online teaching-learning because so far it is not working that well as face-to-face or traditional learning. Device/technological issues and the unstable network have made it quite difficult for implementing BL as an effective teaching-learning medium. But BL can sustain online learning in the future and make the teaching-learning more efficient and easier for the students as well as for the teachers. However, for effective BL, a generalizable policy framework should be made by the educationists and researchers. The government should ensure 4G/5G network facilities in the nuke and corner of this country and also ensure some loans/subsidy to the students for buying necessary devices for their learning. Proper training for the students and teachers can ensure more effective online classes and if we think to abound blended classes it will be also helpful for both the teachers and the students towards a better teaching-learning environment. There is Center for teaching and learning (CETL) in every university here in Bangladesh, training of teachers and students in regular intervals could make BL more effective and sustainable. This research has been conducted in a shorter form with fewer respondents. Similar studies can be done on more students to overcome the limitation of this research. Studies can also be conducted over students and teachers of primary and secondary levels to determine an overall view and perception for BL.

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