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## **Assessing the Possibilities and Speculations of Blended Teaching-Learning (BTL) Based on the Online Teaching-Learning (OTL) Experience during COVID-19 in Bangladesh**

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**Abstract.** This research paper investigates the potential and viability of implementing Blended Teaching Learning (BTL) in Bangladesh, drawing on the lessons learned from the COVID-19 Online Teaching Learning (OTL) practice experiences. The study specifically focuses on examining the advantages and challenges encountered by teachers and students in online classes during the pandemic. Through a mixed-methods approach, including questionnaire surveys, interviews, and focus group discussions (FGDs), data was collected from secondary-level teachers and students in Bangladesh. The findings highlight the dedicated efforts made by educators and students in embracing and adapting to online education during the COVID-19 crisis. Furthermore, the study identifies hindering factors, such as inadequate infrastructure, limited network availability in rural areas, lack of access to devices, insufficient training and skills, and socioeconomic disparities among guardians. Despite these challenges, the research underscores the willingness of teachers and students to embrace the BTL approach in the "new normal" educational landscape. Overall, this study provides insights into the potential for implementing BTL in secondary schools in Bangladesh, highlighting both the opportunities and obstacles that need to be addressed for its successful implementation.

**Keywords.** COVID-19, Blended Learning, Online, Education, Bangladesh, Teaching-Learning, Crisis

### **Introduction**

The COVID-19 pandemic, caused by the coronavirus's widespread transmission, has profoundly impacted various aspects of society, including the education sector, with millions of infections and fatalities reported globally (Lall & Singh, 2020). The pandemic has disrupted educational systems worldwide, leading to the closure of schools and universities. According to Caringal-Go et al., (2021), over 800 million learners have been affected by the pandemic, necessitating alternative approaches to ensure the continuity of education. During the past year (2020-2021), OTL has gained significant prominence as countries grappled with the challenges of lockdowns posed by the pandemic. Advancements in technology over the past few decades

have already revolutionized the lives of students, with the majority now owning smartphones, computers, laptops, and other internet-enabled devices. This widespread access to the internet has empowered learners with a multitude of options and opportunities for remote learning from anywhere (Pokhrel & Chhetri, 2021). In the context of Bangladesh, the first COVID-19 case was reported on March 8, 2020, by the Institute of Epidemiology, Disease Control and Research (IEDCR). Subsequently, face-to-face education was suspended on March 18, 2020, as a precautionary measure (Rahman & Sharma, 2021). To ensure continuity in the education of primary, secondary, and high school students, as well as university learners, the government decided to implement distance education methods. As a result, more than 50 million students in Bangladesh began engaging in OTL modalities amid the pandemic. Additionally, various other organizations and educational institutions themselves have taken distinctive initiatives to ensure the continuity of teaching-learning processes during this challenging time. Following the Sangsad TV initiative, OTL gained prominence as a vital mode of learning in Bangladesh (Khairul Haque Emon et al., 2020). With the prolonged closure of educational institutions due to the COVID-19 pandemic, various platforms and institutions swiftly adapted to provide OTL. Students and teachers turned to virtual classrooms, video conferencing, and BTL management systems, using apps (i.e.: Zoom, Google Meet) marking a significant shift towards digital learning in Bangladesh's education landscape. By continuing the OTL sequences, Bangladesh can focus on applying the BTL approach in education. This paper has analyzed the possibilities and speculations of BTL based on the OTL experience during COVID-19 in Bangladesh. This research has also aimed to explore the involvement of students in such OTL approaches and assess the effectiveness of these initiatives as alternative methods of learning in Bangladesh, with a specific focus on secondary-level students. By assessing the possibilities and speculations surrounding BTL in the context of the COVID-19 experience, this study seeks to contribute valuable insights into the efficacy and potential outcomes of BTL in the secondary education system of Bangladesh.

### **Blended Teaching Learning (BTL)**

Blended teaching-learning (BTL) is an educational approach combining traditional face-to-face instruction with online or digital resources and activities to enhance the learning experience (Digest & 2010, 2010). BTL combines traditional classroom instruction with online and digital resources. It emphasizes student-centered learning, promotes active participation, and allows for flexible scheduling and personalized instruction. BTL integrates technology, encourages collaboration, and provides opportunities for self-paced learning, enhancing student engagement and achievement.

### **Online Teaching-Learning (OTL)**

Online Teaching Learning (OTL) refers to the process of imparting knowledge and facilitating learning through digital platforms, such as virtual classrooms and online resources, using technology as the primary medium (Kim et al., 2006). OTL covers the requirement of incorporating online components in BTL. By utilizing digital platforms and online resources, OTL fulfills the need for virtual instruction, content delivery, and interactive activities in the blended learning approach. It enables educators to seamlessly integrate technology and online tools into the learning process, enhancing student engagement and accessibility. OTL also refers to Distant Teaching-Learning.

### **The connection between OTL and BTL**

In the context of Bangladesh, the establishment of BTL relies heavily on ensuring a robust OTL system. Addressing the various challenges is imperative to achieve this goal. By adequately addressing these concerns and generating an effective OTL framework, BTL can be successfully implemented in Bangladesh. A well-designed and comprehensive OTL system will facilitate the integration of online components, fostering flexibility, engagement, and access to a diverse range of educational resources (Shohel et al., 2021). Consequently, it will pave the way for the effective implementation of BTL and contribute to the advancement of education in Bangladesh.

### **Objectives of the study**

Several studies have demonstrated the difficulties and potential of OTL in secondary education during the COVID-19 period. Bangladesh was not accustomed to this type of teaching and learning before. During the pandemic, the use of online learning platforms began. This may continue to have a positive impact on our secondary education. Consequently, the purpose of my research was to -

- determine the engagement of teachers and students in OTL during the COVID-19 pandemic
- investigate the benefits and drawbacks of OTL in secondary education in Bangladesh
- find out the perceptions of the teachers and students about the strategies that can be employed to effectively implement BTL methods to achieve desirable outcomes

### **Literature review**

The COVID-19 pandemic has prompted a growing interest in blended teaching and learning (BTL) at the secondary level in Bangladesh (Shohel et al., 2021). BTL combines face-to-face instruction with online modalities, offering flexibility, interactive learning experiences, and personalized approaches (Pulham et al., 2018). Yen et al. (2018) argue that blended learning can enhance student engagement, motivation, and academic performance. Given the widespread adoption of online education during the pandemic, BTL has become essential in ensuring educational continuity and addressing the challenges posed by school closures (Singh et al., 2021). In Bangladesh, where the education system has been significantly impacted, exploring the possibilities and speculations surrounding BTL implementation is crucial (Chowdhury, 2020). According to Khan (2021), blended teaching and learning (BTL) has emerged as a potential solution to bridge the gap of lost education at the secondary level caused by the COVID-19 pandemic. The prolonged closure of schools and the shift to online education have disrupted the traditional learning process, leading to significant learning gaps among secondary-level students (Singh et al., 2021). By integrating both in-person and virtual learning experiences, BTL provides opportunities for students to engage with course materials, interact with peers and teachers, and access educational resources beyond the limitations of physical classrooms (Tynan et al., 2013). This blended approach helps to mitigate the adverse effects of interrupted education, ensuring continuity in learning and providing students with the necessary support to catch up on missed concepts and skills (Arnesen et al., 2019). By leveraging technology and incorporating innovative teaching strategies, BTL can effectively fill the gap of lost education and facilitate a smoother transition to a new normal in the secondary education landscape during and beyond the COVID-19 pandemic (Pulham et al., 2018). BTL has the potential to become a transformative new medium of education for secondary-level students in the post-pandemic "new normal" life (Education, 2021). As educational institutions navigate

the changes brought about by the pandemic, BTL offers a flexible and innovative approach that combines face-to-face instruction with online components (Van Doorn, 2014). By seamlessly integrating technology into the learning process, BTL can provide students with a dynamic and interactive educational experience. This new medium allows for personalized learning, adaptive instruction, and the integration of multimedia resources, fostering a student-centered approach that promotes critical thinking and problem-solving skills (Dziuban et al., 2018). BTL also offers opportunities for collaboration and global connectivity, preparing students for the increasingly digital and interconnected world (Pacheco, 2021). As education adapts to the evolving landscape, BTL has the potential to revolutionize the secondary-level learning experience, equipping students with the skills and knowledge necessary to thrive in the post-pandemic era (Pacheco, 2021).

This understanding can inform the improvement of pedagogical practices, effective use of technology, and development of educational policies for secondary-level education, both in conventional and online settings.

### **Methodology of the study**

The study is mixed in nature where both qualitative and quantitative data were collected and analyzed simultaneously. A purposive sampling technique was used to nominate 160 (one hundred and Sixty) students at the secondary level and 32 (thirty-two) teachers at the secondary level. At the commencing stage, 8 (eight) randomized districts were selected from Bangladesh's 8 (eight) divisions. Then randomly one Upazilla (Sub-district) was selected from each of the districts. For ensuring variations, using purposive sampling, 10 (ten) students and 2(two) teachers from a district's municipal/city corporation area (which is considered an urban area) and 10 (ten) students and 2(two) teachers from the same districts selected Upazilla's rural area participated in the survey.

**Table 1**

|                    | <b>Teachers</b> | <b>Students</b> | <b>Total</b> |
|--------------------|-----------------|-----------------|--------------|
| <b>Per Upazila</b> | 2x2 = 4         | 10x2=20         | 24           |
| <b>Overall</b>     | 4x8 = 32        | 20x8 =160       | 192          |

*(8 Upazilas randomized from 8 districts from 8 separate divisions)*

Questionnaires were administered to collect data from the participants. In this project, survey research was carried out in which a primary data collection instrument was used by developing a semi-structured questionnaire to collect information regarding the objectives of the research. To get a better insight, 8 (eight) individual interviews and 5 (five) FGDs were arranged also through purposive sampling. The quantitative data were later analyzed using descriptive statistics of frequencies and percentages and qualitative data were analyzed thematically. For data analysis, the responses from the questionnaire have been converted into percentages, except for the elaborated ones. The open-ended questions from both the questionnaire and the interviews have been analyzed in detail.

The following table represents the students' study level for the questionnaire:

**Table 2.** Level-wise number of students

| Variables  | Class six | Class Seven | Class Eight | Class Nine | Class Ten | Total |
|------------|-----------|-------------|-------------|------------|-----------|-------|
| Frequency  | 20        | 23          | 37          | 40         | 40        | 160   |
| Percentage | 12.5      | 14.375      | 23.125      | 25         | 25        | 100   |

### Sampling: Purposive Sampling

Secondary data were collected from various secondary sources, including books, journal articles, newspapers, research reports, websites, and so on.

After collecting both primary and secondary data, the data were analyzed in terms of descriptive statistics to seek the answer to the research objective. During the time of conducting research, ethical issues, including voluntary participation, consent of the respondents, right to privacy, etc. were considered consciously.

### Data analysis and findings

#### Questionnaire Survey

This section particularly focuses on the frequency distribution and percentages of the opinion of the students and teachers regarding the engagement of teachers and students in distance education during the COVID-19 pandemic. Here, opinions on different aspects were collected to assess the benefits and drawbacks of OTL, a significant part of BTL in secondary education in Bangladesh.

Analysis has been made based on the frequency distribution of the opinion of the respondents; We used here Microsoft Office Excel. A questionnaire containing 31 items was used to gather data from the students and teachers of the secondary level. A total of 192 respondents, students (160) and teachers (32) responded to the survey, and data were analyzed using frequency and percentages.

#### Conducted Online Classes during COVID-19

Table 1 shows the frequency and percentage of students who participated in online classes during the Covid-19 period. Among the 160 respondents, 121 students (75.625%) attended online classes regularly, 25 (15.625%) attended sometimes, 14 (8.75%) attended rarely, and no one reported never attending online classes.

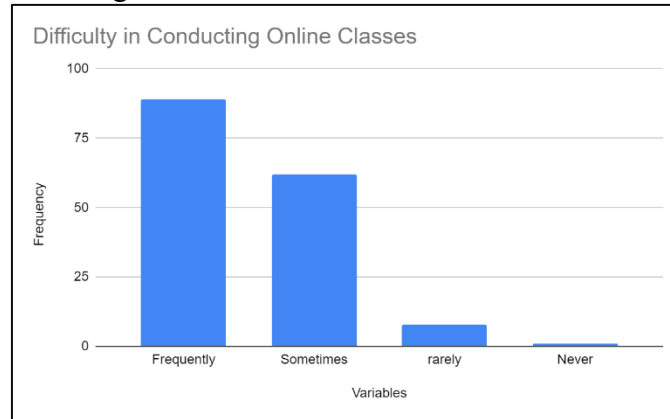
**Table 3.** Frequencies and Percentages of Students who participated in Online Classes during COVID-19

| Variables  | Regularly | Sometimes | Rarely | Never | Total |
|------------|-----------|-----------|--------|-------|-------|
| Frequency  | 121       | 25        | 14     | 0     | 160   |
| Percentage | 75.625    | 15.625    | 8.75   | 0     | 100   |

#### Difficulty faced by students in taking classes

In Chart 1, the difficulty levels faced by students in taking online classes are presented. Among the 160 respondents, 89 students (55.625%) frequently experienced difficulties, 62 (38.625%)

experienced difficulties sometimes, 8 (5%) experienced difficulties rarely, and only 1 student (.625%) reported never facing difficulties.



**Figure 1:** Frequency of difficulties faced by students for online classes.

### ***OTL Friendly Environment at Home***

The availability of a friendly learning environment at home during OTL is presented in Table 2. Among the 160 respondents, 35 students (21.875%) reported having an all-time friendly environment, 48 (30%) reported having it often, 72 (45%) reported having it roughly, and 5 (3.125%) reported never having a friendly environment.

**Table 4.** Frequencies and Percentages of OTL-Friendly Environment at Home

| Variables  | All time | Often | Roughly | Never | Total |
|------------|----------|-------|---------|-------|-------|
| Frequency  | 35       | 48    | 72      | 5     | 160   |
| Percentage | 21.875   | 30    | 45      | 3.125 | 100   |

### ***Effective Learning Approach (Online/Offline/Blended)***

The preferred mode of learning is discussed in Chart 2. Among the 160 respondents, 20 students (12.5%) preferred offline learning, 4 (2.5%) preferred online learning, 121 (75.62) preferred BTL, and 9 (5.63%) mentioned that it depends on the facilities or content and teaching skills.

**Table 5.** Frequencies and Percentages of Effective Learning Approach (Online/Offline/Blended)

| Variables  | Online | Offline | Blended learning | Depends on the facilities | Depends on the content and teaching skills | Total |
|------------|--------|---------|------------------|---------------------------|--|-------|
| Frequency  | 4      | 20      | 121              | 9                         | 6  | 160   |
| Percentage | 2.5    | 12.5    | 75.62            | 5.63                      | 3.75                                       | 100   |

### ***Interested in BTL in the Future***

This chart presents students' interest in studying online or distance learning in the future. Among the 160 respondents, 108 students (67.5%) expressed interest, 16 (10%) reported no interest, 21 (13.125%) mentioned that it relies on institutions and teachers, and 15 (9.375%) mentioned that it depends on the course and certificate.

**Table 6.** Frequencies and Percentages of students who are interested in BTL in the Future

| Variables  | Yes  | No | Relies on institutions and teacher | Depends on the course certificate | Total and |
|------------|------|----|------------------------------------|-----------------------------------|-----------|
| Frequency  | 108  | 16 | 21                                 | 15                                | 160       |
| Percentage | 67.5 | 10 | 13.125                             | 9.375                             | 100       |

**Most Used Apps for OTL**

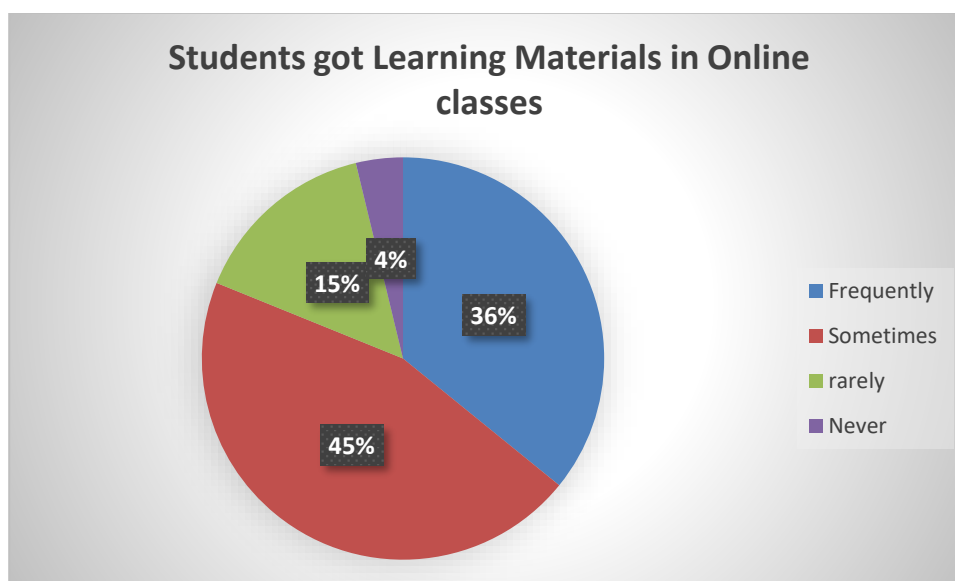
Table 12 showcases the most used apps for distance education. Among the 160 respondents, Zoom was the most used app, with 132 students (82.5%) using it. Facebook and Google Classroom were used by 6 students (3.75%) and 20 students (12.5%), respectively, while Telegram was used by 2 students (1.25%).

**Table 7.** Most used apps for OTL

| Variables  | Zoom | Facebook | Google Classroom | other | Telegram | Total |
|------------|------|----------|------------------|-------|----------|-------|
| Frequency  | 132  | 6        | 20               | 0     | 2        | 160   |
| Percentage | 82.5 | 3.75     | 12.5             | 0     | 1.25     | 100   |

**Teachers Providing Study Materials**

This chart indicates whether teachers provided learning materials at the end of the online classes during COVID-19. Out of the 160 participants, 57 students (35.625%) reported frequent provision of learning materials, 72 (45%) reported occasional provision, 24 (15%) reported rare provision, and 6 (3.75%) reported never receiving such materials.



**Figure 2:** Frequencies of students getting learning materials in OTL.

### ***Suitable Subjects for Online Classes***

This showcases the most suitable subjects for learning online according to the students. Among the 160 participants, 11 students (6.875%) considered Math and Science as the most suitable subjects, 30 (18.75%) considered Bangla and English suitable, 110 (68.75%) considered BGS, Religious, and Value Education suitable, and 9 (5.625%) mentioned other subjects.

**Table 8.** Suitable subjects for students to participate in online classes

| <b>Variables</b>  | <b>Math, Science</b> | <b>Bangla, English</b> | <b>BGS, Religious, and Value Education</b> | <b>others</b> | <b>Total</b> |
|-------------------|----------------------|------------------------|--|---------------|--------------|
| <b>Frequency</b>  | 11                   | 30                     | 110  | 9             | 160          |
| <b>Percentage</b> | 6.875                | 18.75                  | 68.75                                      | 5.625         | 100          |

### ***Difficult Subjects to Learn Online***

This table presents the most difficult subjects for learning online according to the students. Among the 160 respondents, 90 students (56.25%) mentioned Math and Science as the most difficult subjects, 38 (23.75%) mentioned Bangla and English, 18 (11.25%) mentioned BGS, Religious, and Value Education, and 14 (8.75%) mentioned other subjects.

**Table 9.** Difficult subjects for students to participate in online classes

| <b>Variables</b>  | <b>Math, Science</b> | <b>Bangla, English</b> | <b>BGS, Religious, and Value Education</b> | <b>others</b> | <b>Total</b> |
|-------------------|----------------------|------------------------|--|---------------|--------------|
| <b>Frequency</b>  | 90                   | 38                     | 18   | 14            | 160          |
| <b>Percentage</b> | 56.25                | 23.75                  | 11.25                                      | 8.75          | 100          |

### ***Teachers have got ICT Training***

Table 26 indicates whether the surveyed teachers had received ICT training. Among the 32 teachers, 27 teachers (84.375%) had received ICT training, while 5 (15.625%) had not.

**Table 10.** Teachers' ICT Training

|              |    |        |
|--------------|----|--------|
| <b>Yes</b>   | 27 | 84.375 |
| <b>No</b>    | 5  | 15.625 |
| <b>Total</b> | 32 | 100    |

### ***Teachers have conducted online class Time Per Week***

Table 27 showcases the frequency of online classes per week among the surveyed teachers. Among the 32 respondents, 2 teachers (6.25%) had 3-5 online classes per week, 11 (34.375%) had 6-9 online classes, 16 (50%) had 10-14 online classes, and 3 (9.375%) had 15-19+ online classes per week.

### ***Teachers' Perception of Learners' Expertise in Participating in OTL***

The table shows that out of the 32 teacher-respondents, 9 (28.125%) considered learners to be experts in participating in online classes, while 3 (9.375%) viewed them as inexperienced. The majority of respondents, 15 (46.875%), believed learners to have mediocre skills, and 5

(15.625%) thought their skills were below average. These perceptions shed light on the perceived competency levels of learners in online class participation.

**Table 11.** Teachers' Perception of Learners' Expertise in Participating in OTL

| Variables  | Expert | Inexpert | Mediocre | Below average | Total |
|------------|--------|----------|----------|---------------|-------|
| Frequency  | 9      | 3        | 15       | 5             | 32    |
| Percentage | 28.125 | 9.375    | 46.875   | 15.625        | 100   |

### ***Most Suitable Subjects to Teach Online***

According to the table, among the 32 respondents, 5 (15.625%) educators identified Math and Science as the most suitable subjects for online teaching, while 8 (25%) mentioned Bangla and English. The majority of educators, 17 (53.125%), considered subjects like BGS, Religious, and Value Education to be well-suited for online instruction. Only 2 (6.25%) respondents mentioned other subjects as suitable for online teaching.

**Table 12.** Most suitable subjects for teachers to conduct online classes

| Variables  | Math, Science | Bangla, English | BGS, Religious, and Education | value others | Total |
|------------|---------------|-----------------|-------------------------------|--------------|-------|
| Frequency  | 5             | 8               | 17                            | 2            | 32    |
| Percentage | 15.625        | 25              | 53.125                        | 6.25         | 100   |

### ***Most Difficult Subjects to Teach Online***

Based on the responses of the 32 educators, Math and Science were perceived as the most difficult subjects to teach online by 16 (50%) respondents, followed by Bangla and English mentioned by 8 (25%) educators. Subjects like BGS, Religious, and Value Education were seen as challenging by 4 (12.5%) respondents, while another 4 (12.5%) mentioned other subjects as presenting difficulties in online instruction.

**Table 13.** Most difficult subjects for teachers to conduct online classes

| Variables  | Math, Science | Bangla, English | BGS, Religious, and Education | value others | Total |
|------------|---------------|-----------------|-------------------------------|--------------|-------|
| Frequency  | 16            | 8               | 4                             | 4            | 32    |
| Percentage | 50            | 25              | 12.5                          | 12.5         | 100   |

### **The Focus Group Discussion (FGD)**

FGD is used for collecting in-depth data. The researcher conducted the FGD session. (5X5=25) students participated in the discussion session. An FGD guideline with semi-structured questions was followed. All the participants were both male and female students from secondary school. The participants gave their opinion on some topics presented by the researcher. Here the participants are labeled as 1, 2, 3, 4, 5, .....25. The FGD session was spontaneous as all the participants freely discussed the presented topic. This section covers a brief overview of the FGD conducted.

### ***How Teachers Conducted Classes during the COVID-19 Pandemic***

In the FGD, participant 8 said, “In general my teachers use Zoom for online classes and Google Classroom for tests. They preferred audio meetings rather than video meetings. Participant 10 said, “My teachers provided recorded class and sometimes used Zoom audio and video meeting.” Most of the participants agreed that their teachers most of the time used audio, sometimes video Zoom meetings, and Google Classroom. Their teachers usually provided recorded classes for better understanding, which is a clear component of BTL.

### ***Techniques and Methods for Conducting Classes***

Participant 11 said, “My teachers used to lecture and question-answer methods more.” Participant-13 added a demonstration method. Participant 19 told that her teacher arranged an interesting Quiz for them. However, the majority part of the students agreed that techniques and methods depended on the subjects, if the teacher taught students Bangla, and English their teaching method might be different from Science and related subjects. In the literature part teacher preferred role-play and lecture methods, and in math, the science teacher used demonstration.

### ***Difficulties faced during OTL***

Almost all students said in the FGD that they had difficulties involving themselves in distance education. Participant 8 said she had neither a smartphone nor an internet connection. Participant 13,18,21 supported her. Participants 3, and 5 said they had a Wi-Fi connection but the network was very poor, especially in the rainy season. Some participants said that their environment was not friendly for online classes. Other students complained the internet cost was expensive; they had no proper knowledge of ICT.

### ***Students’ Circumstances of Getting Help from Family for OTL***

Some students said their families were not supportive of online classes due to their busy schedules, and lack of IT and subject knowledge. Participant 17 said that their parents were illiterate so how could they teach her? Participants 19, 22, and 24 said they had very supportive family members like elder siblings and parents who took care of their education, and if they did not understand anything, those siblings helped them. Participant 9 said if he had faced any problem doing math, his father used to help him a lot. Participant 11 said, “My elder brother is a student of Pharmacy so he solved science-related problems.”

### ***Students having Training Sessions from the School for Online Classes***

“What was taught in the session?” Most of the students replied that they had received technology-based online sessions from educational institutions. Participant 9 said, “In the ICT session, my teachers taught me how to install Zoom and Telegram, how to open Google Classroom, how to submit an answering script using Cam-Scanner, etc. Other students supported him. Participants 11, 13, and 18 disagreed with that and said they did not understand that much in the ICT session so the session was not fruitful for them. Participant 21 said, “In Technology-based training, I learned how to create a Gmail account and how to send HW, Test paper.”

### ***Drawbacks of Online Teaching-Learning***

Participant 1 said that poor internet connection was the biggest drawback of Online Teaching-Learning. Everyone agreed with Participant 1. Many of the students talked about the

complexity of technology and they were not experts in using digital devices so the technical issue was common for many. Some said it had been an expensive education because of technology, and internet connection so not everyone could afford it. Some students said about the pedagogy, that the way teachers taught online was not understandable to all. Participant 12 said, "Though it was not face-to-face learning so sometimes it was difficult to ask questions." Another participant added, "If the teacher was not efficient in online teaching the learning outcome would be dissatisfactory to us." Some participants talked about their unsuitable environment and unfriendly family members' attitude toward distance learning. Some students said that "uninteresting speaking style and presentation, vague words, indirect learning system, inappropriate assessment system, baseness made this education unproductive." Many students emphasized the fact of their not having a smartphone, and unavailability of classes because of their guardians' work outside.

### ***Advantages of OTL***

Most students highlighted the comfortable learning environment and flexibility of online education, and some participants mentioned that it was not time-consuming and they learned many things in a short period. Few participants answered that in distance education they got recorded classes. So, they could understand the topic very well and did not need to ask questions frequently to the teacher.

### ***Recommendation for Successful BTL***

Participant 12 said, "Every teacher and student needs ICT training, it is a must for online classes." No one denied the recommendation. Participant 9 said, "If every teacher gives slides, lecture sheets, and recorded classes, that will be better for online classes." Participant 13 said, "Government should focus on an internet connection, especially in rural areas." Participant 19 said, "Teachers should use interesting methods and techniques, they should repeat difficult topics." Participant 7 said, "It will be good to pay attention to proper time management." Other participants supported her.

### **The Interview Analysis**

Detailed responses were collected from the teacher educators through a set of 7 questions in an interview setting. However, to conduct the interview, we contacted the school authorities and then interviewed the teachers at the appointed time. The teacher educators' interviews had been conducted face-to-face and over the telephone.

### ***About Students' Performance in OTL***

In response to the question, "How was the performance of students in online classes during the Corona period and how did they learn?", a teacher said -

The performance of the students was not so bad but they usually did mistakes in submitting test papers, some students especially those from lower socio-economic conditions did not have good smartphones or laptops for online classes so they missed many classes. Some Students had not the proper ICT knowledge or ICT training they were not properly ready for distance education. Some students did not respond properly in an online class, they tried to skip difficult topics even though they did not want to answer questions in online classes, and some of the videos so I did not recognize very well who was not a serious student. The teacher explain

that students could learn in various ways, there were so many online materials, and they had textbooks which were provided by NCTB, school.

Another teacher said, “Every class I gave students homework so when they did homework when teacher students giving and taking CT, homework it was effective for finishing the syllabus.” Another teacher Said, “My students learned from group work, lecture method, demonstration, etc.” For most of the teachers during the COVID-19 period, the performance of students in online classes was not very good. Because most of the students could not purchase digital devices due to financial problems. Even those who were able to buy could not respond properly due to a weak network. But in this case, those who have good financial conditions have benefited, they have no problem with digital devices and networks. But their number is very less.

### ***Problems encountered while conducting OTL***

Teachers said, “My main problem was in the beginning, I didn't know how to take classes, because I had no experience of taking online classes before. I did not get the network properly, sometimes due to which I felt that the students had some difficulty in understanding the reading. I think students have the same problem. The OTL platform is brand new for them; it took time to learn its usage. Also, there are financial problems. Besides, there was a lack of a suitable environment. Other teachers answered that most of the problems were network related. Due to internet problems, communication in class was interrupted and the non-cooperation of some students also created problems. Besides, it was not possible to collect readings from all the students due to time constraints, there was less opportunity for assessment. Difficult subjects were problematic for teachers to teach and students to understand. Most of the students were living in villages and faced network problems.

### ***Teachers' ICT training***

In response to the question, “What did you learn from ICT training, and how is it beneficial to distance education?” Almost every teacher had gotten the ICT training except 3 teachers had denied it. One teacher said that “I did not receive any training. Two workshops are conducted in own institution where the technique of taking classes through Zoom app is taught.” Some teachers said, “From ICT training I learned how to use the Internet successfully and teach online to students with ease. Another teacher said. “Learned the following from the training: 1. Creating content 2. Presenting the class through PowerPoint.” Other teachers replied, “In the training, we were mainly taught about ICT classroom management and making videos and presentations.” One teacher said that he had received training from Muktopaath and that was so beneficial to him, there was an important session for Making videos and presentations.

### ***Methods and Techniques Used for OTL***

In response to the question, “Discuss which teaching methods and techniques you follow during online classes?” Teachers Said, “Most of the time I used the lecture method. Generally, I try to take communicative method classes like offline classes. Emphasis is placed on student participation. Another teacher said that she used the discussion method. Most of the teachers used the demonstration method, lecture method, and question-answer method. One teacher said, “I followed the teacher-centered lecture method during online classes and used quizzes, and debate for students; so that they can give their opinions spontaneously. One teacher said that he followed her way and used a mixed method.”

### ***Effective Method? (Online/Offline/Blended)***

The teachers were also asked, “Which do you think is a more effective learning system (online, offline, blended learning), and justify your opinion?” Almost every teacher considered that blended is the best for an effective learning system. One teacher said, “Online is effective to keep pace with today's world. But in a populous country like Bangladesh, where most people are poor, only online is not for everyone. A blended approach is useful in this case.” Another respondent said, “Of course, offline classes are more effective. This is because distance medium has annoying interruptions and it is difficult to fully ensure student participation so offline or face-to-face learning is very convenient in the current situation of our country. Another teacher said, “I think offline learning is more effective in the Bangladesh context. Because it can make eye contact with the students and it is easy to know who is understanding the reading and who is not. As a result, various steps can be taken for the student accordingly.” However, the majority of the teachers had their like to follow a blended learning system.

### ***Preparation for each Class of OTL***

In response to the question, “Discuss the preparation before taking an online class.” One teacher said, “I used to read and understand my course material first. Then I would check if my network connection is fine. Another teacher said, “Before the class, I would prepare PowerPoint slides and take the class according to the syllabus. Another respondent said, “I used to prepare whatever I was going to teach. Since it was an online class, I used to ensure an internet connection. I used to inform all the students about the teacher’s account and password and the scheduled time. I used to take demo classes before online classes. I used to join with 2 devices at home and check if everything is fine. So almost every teacher took preparation and followed lecture notes.

### ***Effectiveness of OTL***

In response to the question, “How do you evaluate the effectiveness of Online teaching learning as a teacher?” Teachers have a mixed attitude toward distance education. Some of them shared their positive views like, “Online learning deserves a lot of praise. I see it positively.” Another said, “I find offline classes more effective. However, in special needs online classes, there is a need for teacher-student interaction. Besides, it is necessary to improve the internet management of the country. Skills can be enhanced through further training and workshops.” On the other hand, some teachers do not accept it cordially, they shared their views as an online learning program for covid period is very effective for emergency periods. But this program is not suitable in a country like Bangladesh forever. It can never be a substitute for offline methods. But it is an effective method during any pandemic. Temporary problems can be removed but not permanent solutions.”

## **DISCUSSION**

The education of Bangladesh is making strides toward establishing BTL, but there are several considerations to evaluate its readiness comprehensively. Infrastructure development, including internet connectivity and access to digital devices, remains a priority. While urban areas are witnessing advancements, rural regions still face challenges in terms of reliable internet access and technological resources. Bridging this digital divide is crucial for equitable BTL implementation across the country (Dziuban et al., 2018). Our study has shown that there is a need to enhance digital literacy among students and teachers. Providing training and support to

educators on effectively utilizing online platforms, digital tools, and interactive resources will empower them to deliver high-quality BTL experiences. Similarly, equipping students with the necessary digital skills to navigate virtual environments and engage in online learning is essential for BTL. Furthermore, affordability and accessibility of technology are important considerations. Ensuring that students from all socio-economic backgrounds have access to devices and internet connectivity is vital for creating an inclusive BTL ecosystem. Collaboration among stakeholders is also key. Engaging government bodies, educational institutions, and private sector organizations in coordinated efforts can foster a conducive environment for BTL. This includes sharing best practices, implementing policies that promote digital learning, and allocating resources for infrastructure development and capacity building (Chowdhury, 2020). Our study displayed that, during the COVID-19 pandemic, secondary schools in Bangladesh have taken a significant step towards OTL. With the concept of Blended Teaching Learning (BTL) encompassing both online and offline components, the offline aspect is already in place. However, it is crucial to establish a robust OTL system to complement the existing offline practices. The successful implementation of COVID-19 practices, which integrate online learning, should be continued alongside regular schooling to pave the way for the establishment of an effective BTL approach. By combining the benefits of both online and offline methods, BTL can enhance educational outcomes and provide a flexible and inclusive learning environment for students.

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