

Students' Preference of Technology Enabled Learning during Covid-19: A Study on Higher Education Institution of Bangladesh

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Abstract

After the spread of COVID-19 the world witnesses a quick technological shift in the education sector and the demand for technology-enabled learning is increasing. The objective of this study is to find out students' preference in technology-enabled learning during COVID-19 in the context of Bangladesh. In order to conduct this study mixed methods have been used where a survey questionnaire has been chosen for the quantitative purposes and focus group discussions has been chosen for the qualitative purpose. 100 students have been selected as a sample for the survey questionnaire and 7 students have been selected for focus group discussions to find out their feedback towards technology-enabled learning during COVID-19. The findings of the study indicates that almost all of the students in the tertiary level of Bangladesh prefer technology-enabled learning for various reasons. During the COVID-19 pandemic learners willingly participated in technology-enabled learning in order to resume their study, to avoid session jot, and to maintain their mental health strong as technology-enabled learning during COVID-19 help them to interact with their friends and teachers. As a 21st-century learners most of them want technology-enabled learning after the COVID-19 pandemic also and want it in their learning process.

Keywords: Technology-enabled learning, COVID-19, 21st-Century Learners

Introduction

Background of the Study:

Education system of the world faced a new challenge of academic closure in 2020 where Covid-19 pandemic forced many traditional educational institutions to learn remotely (Ewing & Cooper, 2021). Considering the health hazard, World Bank advised educational regulators of its member countries to introduce and implement online education by ensuring proper infrastructural facilities with a view to compensating the loss those educational institutions are facing (World Bank, 2020). University Grants Commission (UGC) acts as a regulator in Bangladesh who is very enthusiastic to promote technology enabled learning during COVID-19 pandemic. In order to save the academic year of the university students UGC urged both the private and public universities to adopt technology enabled learning (TEL) as a new normal solution during COVID-19 pandemic (Hasan & Islam, 2020). In Bangladesh there are 108 private universities and 50 public universities (Akter, 2017). Initially most of the universities were not interested to adopt technology abled learning during COVID-19. But later on, most of the private universities and some public universities adopt technology enabled learning in order to address the possible solutions in continuing higher education during the lockdown period (Shama & Ikbal, 2020). At the very outset different stakeholders e.g., teachers, students, administrators, regulators, and the government faced some implementation challenges in technology enabled learning but after that they prefer to engage in technology enabled learning during the COVID-19 pandemic wave.

Statement of the Problem:

Like other countries, in Bangladesh educational institutions remain closed considering the outbreak of COVID-19 from March 2020 (Moralista & Oducado, 2020). During COVID-19 as an alternative to traditional face-to-face learning both the teachers and students adopted technology enabled learning by the usages of different online platforms e.g., Facebook, Zoom, Google classroom, Google meet, Microsoft Teams for online teaching and learning (Fami, 2020). Most of the teachers have proper traditional pedagogical skills but lacked the necessary pedagogical skills in technology enabled learning (Archambault & Crippen, 2009; Chen et al., 2018) which is true for Bangladesh. Besides that, inadequate accessibility to supportive resources, lack of online training, lack of technical support are the challenges faced by the teachers in technology enabled learning (Moore-Adams et al,2016). As like as instructors' students face several challenges i.e., poor network, lack of technological support, and lack of digital skills (Shrestha et al., 2022). Despite having these challenges most of the students participated in technology enabled learning during COVID-19. But question arises whether students prefer in technology enabled learning or not and if prefers what are the reasons of their preference in technology enabled learning.

Objectives of the study: The objectives of the study are:

1. To find out students' participation in technology enabled learning during COVID-19.
2. To investigate why learners, prefer technology enabled learning during COVID-19.
3. To explore the challenges and possibilities of technology enabled learning in Bangladesh.

Research Questions: The study tries to address the following research questions which are:

1. How students participated in technology enabled learning during COVID-19?
2. Why students prefer technology enabled learning during COVID-19?
3. What are the challenges and possibilities of technology enabled learning in Bangladesh after COVID-19?

Significance of the Study:

There exist few studies which discuss students' preference of technology enabled learning during the COVID-19 in the context of Bangladesh. With a view to finding out students' preference of technology enabled learning during the COVID-19 this research has been conducted. The contribution of this research is to help policy makers to set instructional practice and institutional goals about technology enabled learning in the near future. In addition to that, this study will help different stakeholders to introduce technology enabled learning in the 21st century by observing the true findings of the learners' responses. This study will help teachers to improve the current teaching-learning situation for the sustainable learning.

Literature Review

Technology Enabled Learning

Technology enabled learning (TEL) can be termed as computer-assisted learning, networked learning, and e-Learning (Keppell, Suddaby & Hard, 2011; Tay & Lim, 2013; Walker et al., 2014). Application of digital technology in the teaching and/or learning of the educational context is known as Technology-Enabled Learning (Kirkwood & Price,2014). In TEL teachers play the crucial role of agent between the technology and the students. TEL helps students to have a clear understanding about the topic (Dori & Belcher, 2005). In spite of having some limitations students prefer e-Learning/TEL over traditional learning (Bhuiyan,2020). Little research around the world have been conducted on students' preference of TEL during COVID-19. In the Bangladesh's context few studies have been conducted on TEL. But no studies have been conducted on the learner's preference of TEL during COVID-19. This study will mitigate the gap of the existing literature on the tertiary level student's preference of TEL during COVID-19 and will contribute to the future direction of online education of Bangladesh to be more effective in the students' learning process.

Research Methodology:

Research Design

In order to conduct this study mixed methods research design has been used. Mixed methods research yields better results in terms of quality and scope as it combines both quantitative and qualitative approaches (Creswell & Plano Clark, 2018). The aim of this study was to know about the student's preference of TEL during COVID-19. With a view to having a clear understanding numeric as well as descriptive data has been collected as it was an unexplored area of research.

Description of the Research Context

The students of the private and public universities of Bangladesh have been considered while conducting this study. During COVID-19 whether students preferred TEL or not is the consideration of the research among the 50 public universities and 108 private universities students.

Sampling of the Research Participants

The students of the higher educational institutions are the participants of this research. Total 100 respondents are considered as samples in the survey to conduct this research. 7 students from 5 different universities are selected for focus group discussion (FGD). Simple random sampling has been used in the survey questionnaires in collecting the quantitative data while for collecting qualitative data convenience sampling has been used in FGD.

Gender of the Participants

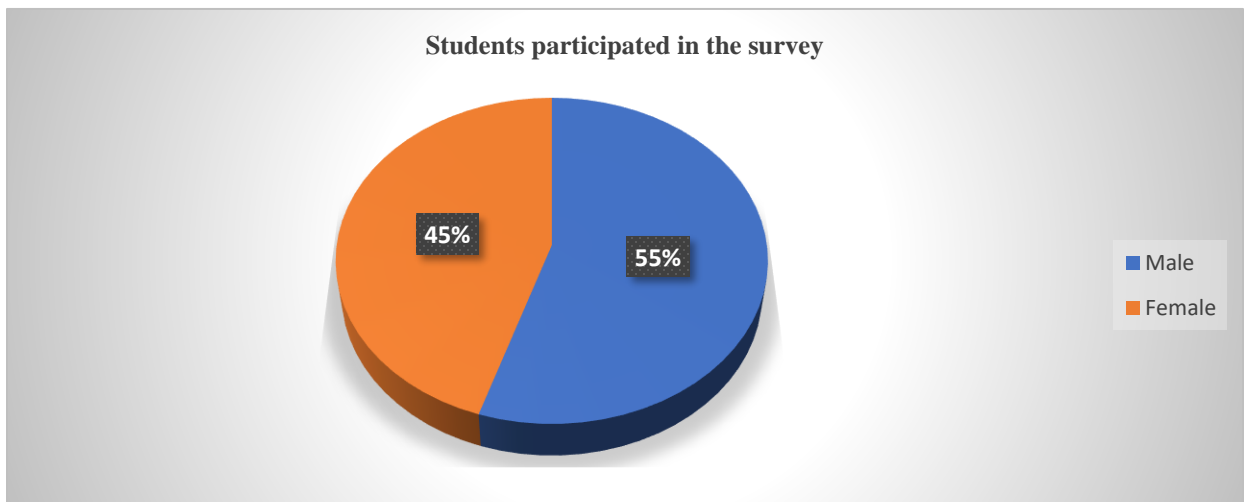


Figure-01: Learners participated in the survey questionnaire (gender wise)

The respondents (students) who participated in the survey identified males (55%) and females (45%) according to the Figure 1. Figure 2 demonstrates that according to the program 58% students belongs to Bachelor program and 42% belongs to Master's program. 32 students were from Business administration, 24 from Economics, 12 from English, 9 from CSE, 7 from Pharmacy, 5 from IPE, 4 from EEE, and 7 from Statistics (Figure-3). Students from 10 different universities of Bangladesh which are: Notre Dame University Bangladesh, South East University, Ahsanullah University of Science and Technology, Daffodil International University, Sher-e-Bangla Agricultural University, Daffodil International University, Bangladesh Open University, East West University, Dhaka International University, University of Asia Pacific has been participated in the survey.

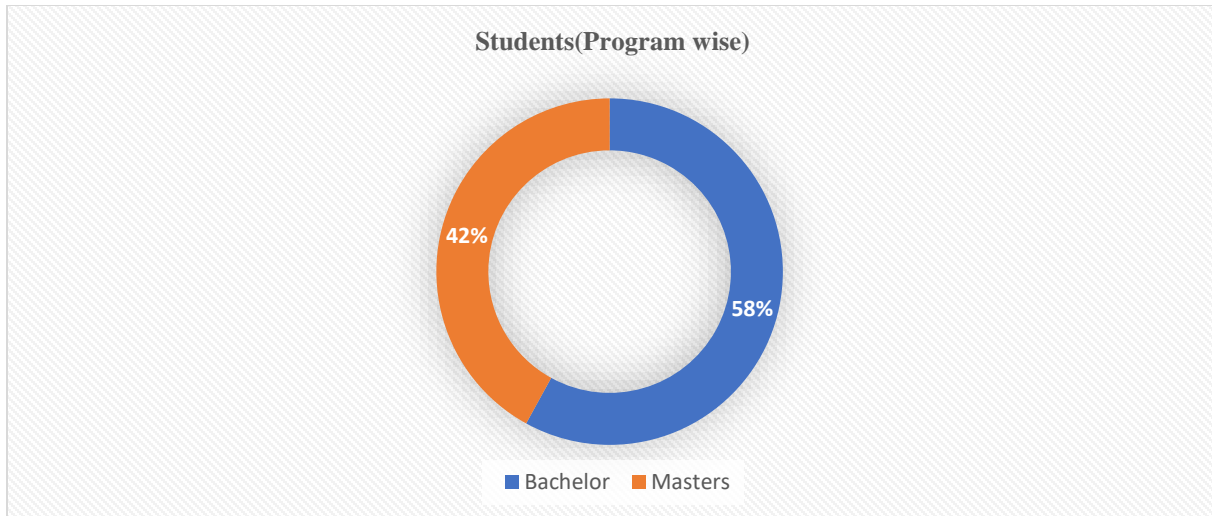


Figure-02: Students participated in the survey questionnaire (program wise)

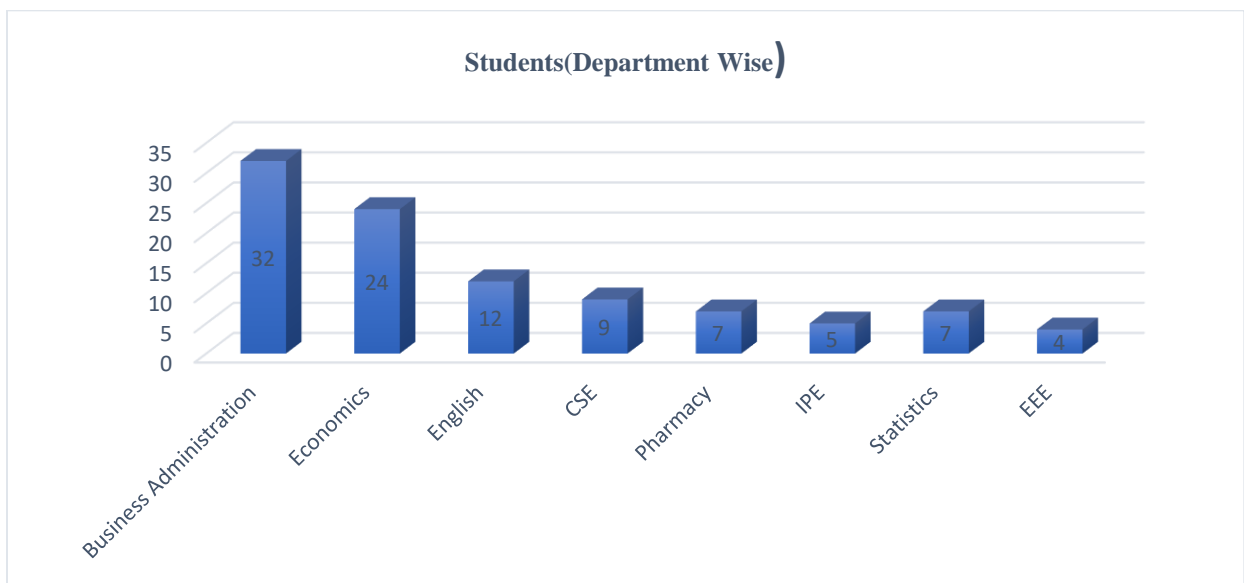


Figure-03: Students participated in the survey questionnaire (department wise)

Method of Data Collection

In order to collect quantitative data from the students a well-structured questionnaire has been developed. By using Google form the questionnaire has been designed. The link has been shared on different online platforms. One FGD session has been arranged through convenience sampling in order to collect qualitative data from the students. Table 1 provides an overview of the research methodology.

Table-01: Overview of the Research Methodology

Research Question	Approach	Method	Instrument	Sampling method
1. How students participated in technology enabled learning during COVID-19?	Quantitative Qualitative	Survey Focus Group Discussions	Questionnaire FGD Schedule	Simple Random and Purposive Sampling
2. Why students prefer technology enabled learning during COVID-19?	Quantitative Qualitative	Survey Focus Group Discussions	Questionnaire FGD Schedule	Simple Random and Purposive Sampling
3. What are the challenges and possibilities of technology enabled learning in Bangladesh after COVID-19?	Quantitative Qualitative	Survey Focus Group Discussions	Questionnaire FGD Schedule	Simple Random and Purposive Sampling

Pilot Study

30 responses from the total sample size have been considered in order to conduct the pilot study. The value of the Cronbach’s Alpha derived from the 30 survey is .85 which is greater than the minimum threshold level of .70 (Mohajan, 2017).

Limitation of the study:

This study has some limitations i.e., the study has been conducted in a limited scale of 100 participants. If more participants have been added different scenario may come out about the student’s preference of TEL during COVID-19. The respondents of this study are University going students. If the responses are collected from college and school level students then result will be quite surprising. The participants those who are selected for FGD on the basis convenience sampling may represent biasness problem.

Results and Discussion:

Research Question-01: How students participated in technology enabled learning during COVID-19?

In survey responses out of 14 questions 3 are related to answer the research question-01 which discusses how students participated in TEL during COVID-19. In the survey questionnaire it is asked whether students took part in TEL or not? 100 out of 100 learners responded that they took part in TEL during COVID-19 (Figure:04)

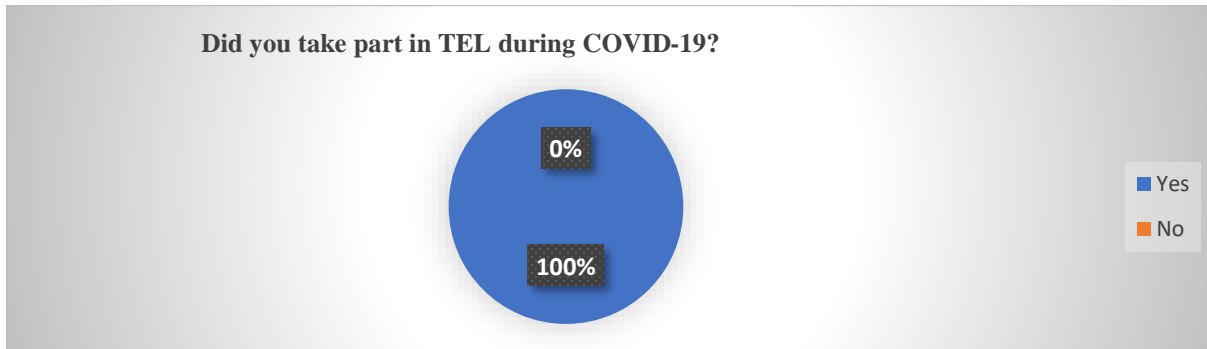


Figure-04: Students’ participation in TEL

In the second question it is asked how frequently they involved in TEL during COVID-19. 52% students responded that they always participated in TEL during COVID-19, 23% students participated in TEL sometimes, 20% often engaged in TEL while 9% never participated in TEL. (Figure:05)

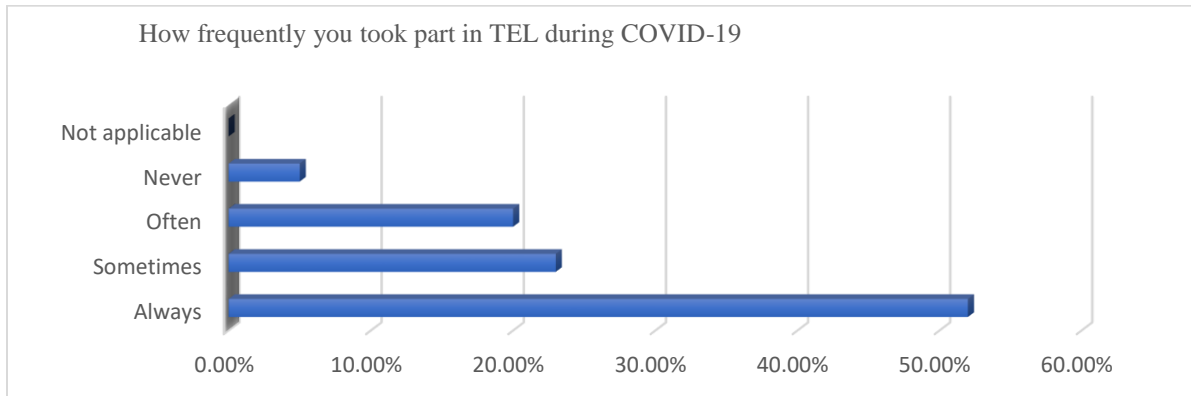


Figure-05: Students’ frequency of participation in TEL

According to the figure-06 it is shown that 40% of the students have used audio, video, raise hands, and chat option during synchronous virtual classes during COVID-19. 25% students responded that sometimes used audio, video, raise hands, and chat option when they need this option. 20% students often used this option while 15% students never used option. Never indicates that they were not active during TEL.

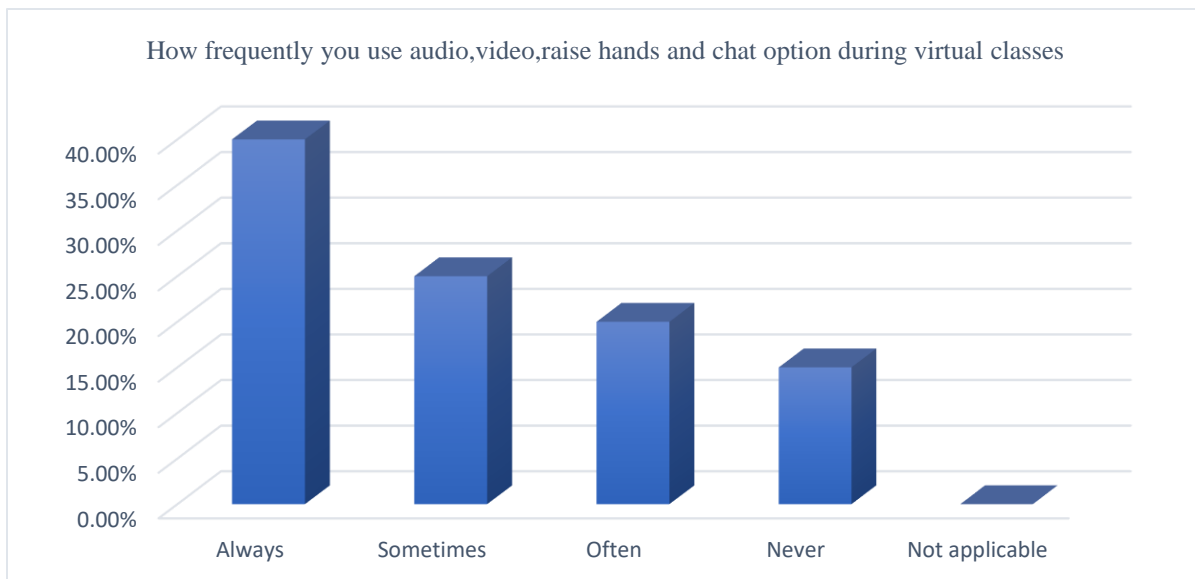


Figure-06: Students’ frequency of active participation in TEL

In order to have an in-depth understanding about students’ participation in TEL an FGD has been conducted where everybody participated with their valuable opinions One of the FGD participants narrated that:

I personally prefer TEL. During COVID-19 where there was academic closure, strict lockdown TEL comes as a blessing. I always took in TEL and my participation was active..... (Participant:04)

One of the participants are not in favor of TEL and argued that:

There is no need of TEL during COVID-19. We all are in a catastrophe and in the danger of death. Introduction of TEL and active participation on that time was not possible. Sometimes I took part in TEL and my participation was not that much good (Participant:03)

Defending the logic another participant enumerates that:

After March,2020 we all are in a dilemma what will be the conditions of our study. Government closed all sorts of face-t-face class in order to reduce the health hazard. Our valuable academic year faced academic jam. As a student we need to complete our study as soon as possible because our family want that we will be employed soon. TEL is a perfect substitute of face-to-face class. I always participated in TEL during COVID-19 (Participant:06)

Research Question-02: Why students prefer technology enabled learning during COVID-19?

In survey responses out of 14 questions 4 are related to answer the research question-02 which discusses why students prefer TEL during COVID-19. In the survey questionnaire it is asked whether students think that TEL is the substitute of face-to-face class or not. took part in TEL or not. 51% strongly agreed and 19% agreed that during COVID-19 TEL worked as the substitute of face-to-face class. 20% students remain neutral while 10% students disagreed that TEL is not the substitute of face-to-face class. (Figure:07)

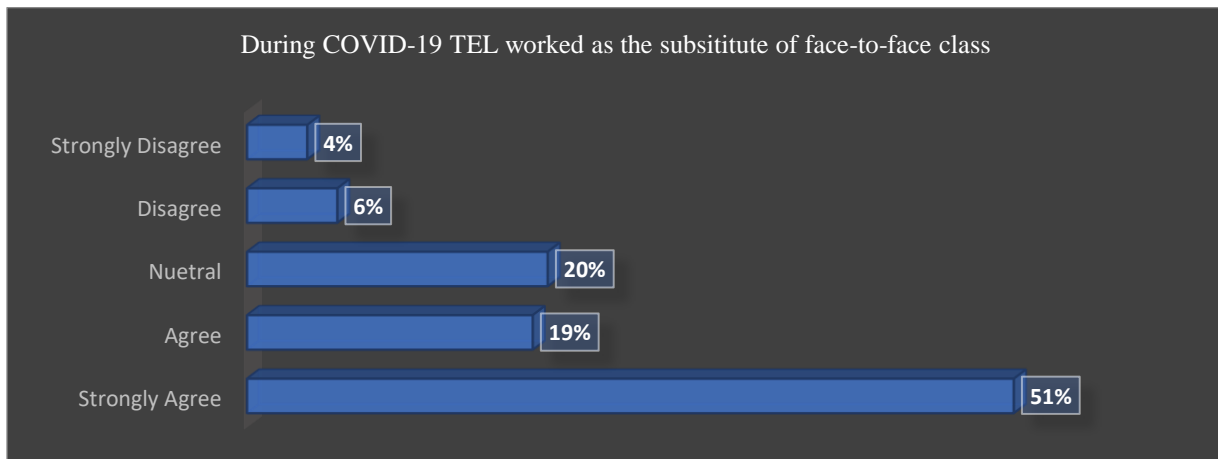


Figure-07: During COVID-19 TEL worked as the substitute of face-to-face class

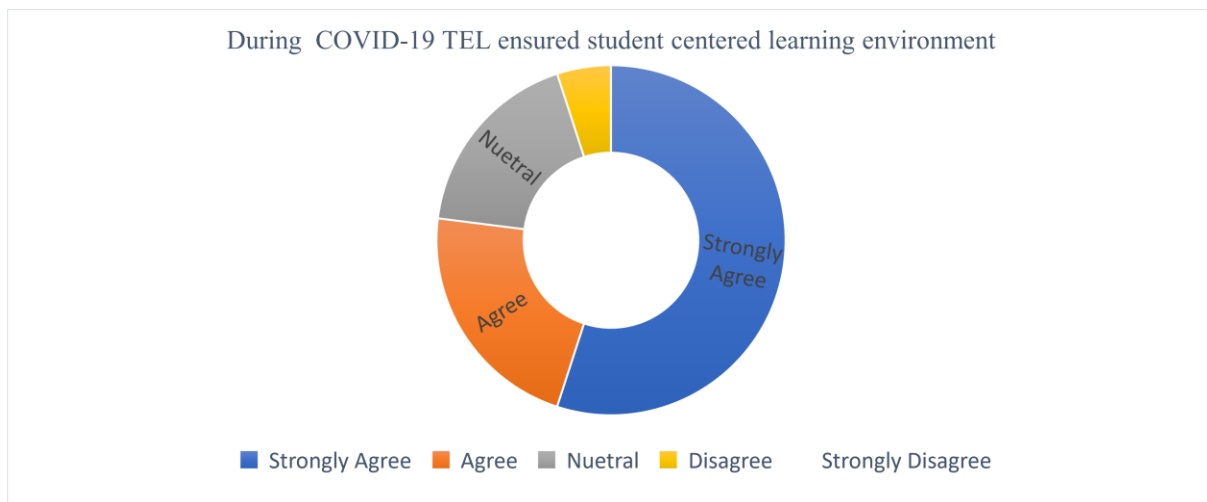


Figure-08: TEL ensured student centered learning environment

Most of the students prefer TEL because according to the Figure:08 it is shown that 77% students believe that TEL ensured student centered learning environment. 18% remain neutral while only 5% disagree with this which indicates that TEL is a student friendly teaching-learning approach. During COVID-19 TEL enables student centered learning environment which motivates students to choose TEL.

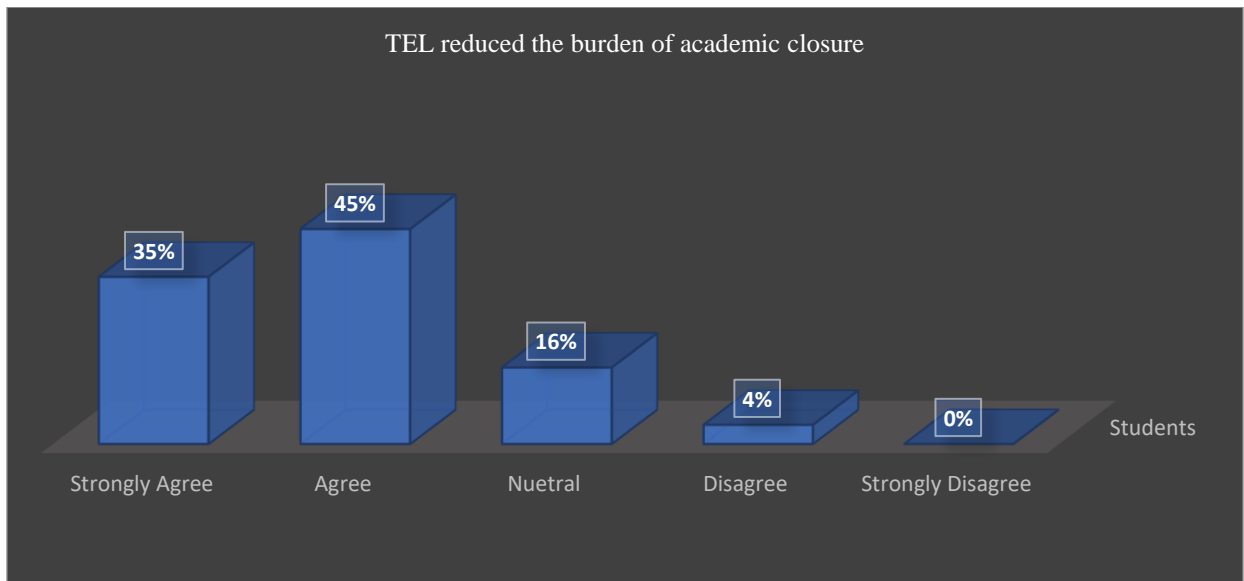


Figure-09: TEL reduced the burden of academic closure

When novel corona virus spread rapidly and there exists no chance of resuming academic face-to-face session then most of the academic institutions resume their academic activities through TEL. 35% students strongly agreed and 45% students agreed that TEL reduced the burden of their academic closure. 16% remain neutral while only 4% disagree with the statement. Most of the students prefer TEL because it helped them to reduce the burden of academic closure (Figure-09).

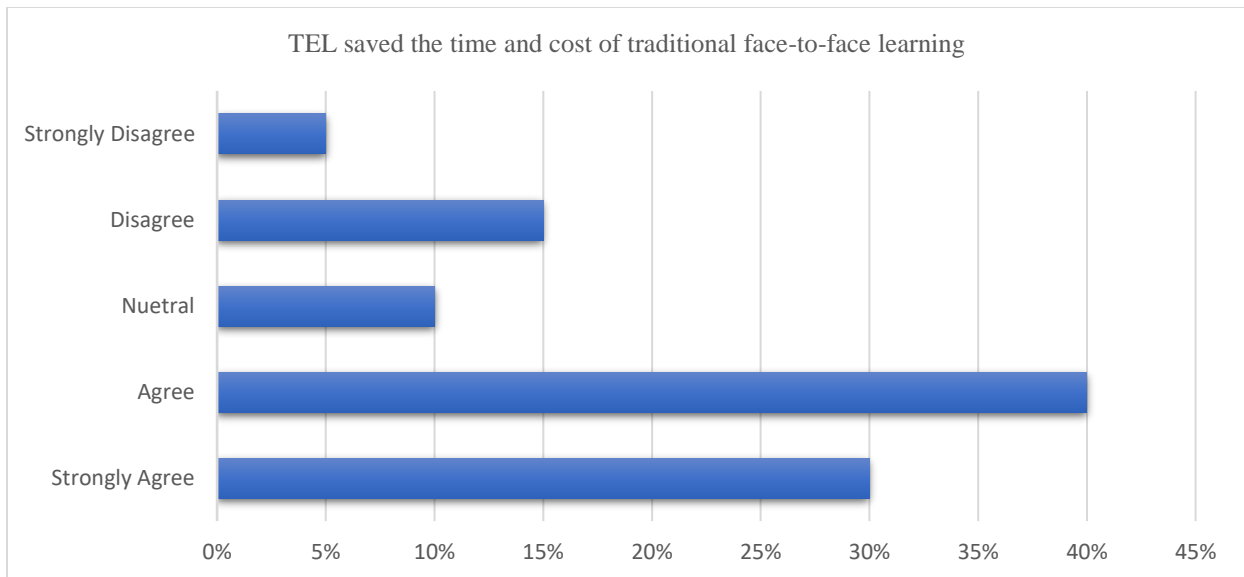


Figure-10: TEL saved the time and cost of traditional face-to-face class

Students prefer TEL because they think that TEL save the time and cost of traditional face-to-face learning. In a country like Bangladesh where for 1 hour class 3-4 hours have been spent due to heavy traffic jam TEL is a possible

way out which saves the valuable time and money of the both teachers and students. 70% students are in favor of the statement while only 20% of the students do not agree with this. 10% remain neutral (Figure-10). Majority of the students who participated in TEL during COVID-19 enjoyed TEL and want TEL in the near future.

In FGD session most of the students responded and outlined why they prefer TEL during COVID-19. One of the participants narrated that:

During the lockdown period we all were in such a catastrophic situation that we could not think that we will survive the next day. There was no option of continuing the academic session. After sometimes when TEL started as an alternative to traditional face-to-face learning we started enjoying because it resumes our academic session, faculty members provide digital material, teachers were attentive to listen the problems of the students, teachers conduct class in organized way and we learn and interact as like as face-to-face class.... (Participant:01)

Other participants added that:

During COVID-19 we reap up the benefits of TEL. Before novel corona virus we were not used to TEL. But during COVID-19 we actively participated in TEL and feel its relevance in the 21st century. During the COVID-19's difficult time we continued our study, we interact and learn as like as face-to-face class. We shared our feelings, ideas and stress among our friends, and teachers through the help of TEL..... (Participant:07)

Research Question-03: What are the challenges and possibilities of technology enabled learning in Bangladesh after COVID-19?

In survey responses out of 14 questions 4 are related to answer the research question-03 which discusses the challenges and possibilities of TEL in Bangladesh after COVID-19. In the survey questionnaire it is asked whether there exists lack of technical support and lack of appropriate online learning environment in TEL or not. 59% students thought that in TEL there exists lack of technical support and lack of appropriate learning environment for the students which considered as one of the challenges of TEL. 16% students remain neutral while 25% students disagreed with the statement (Figure-11)

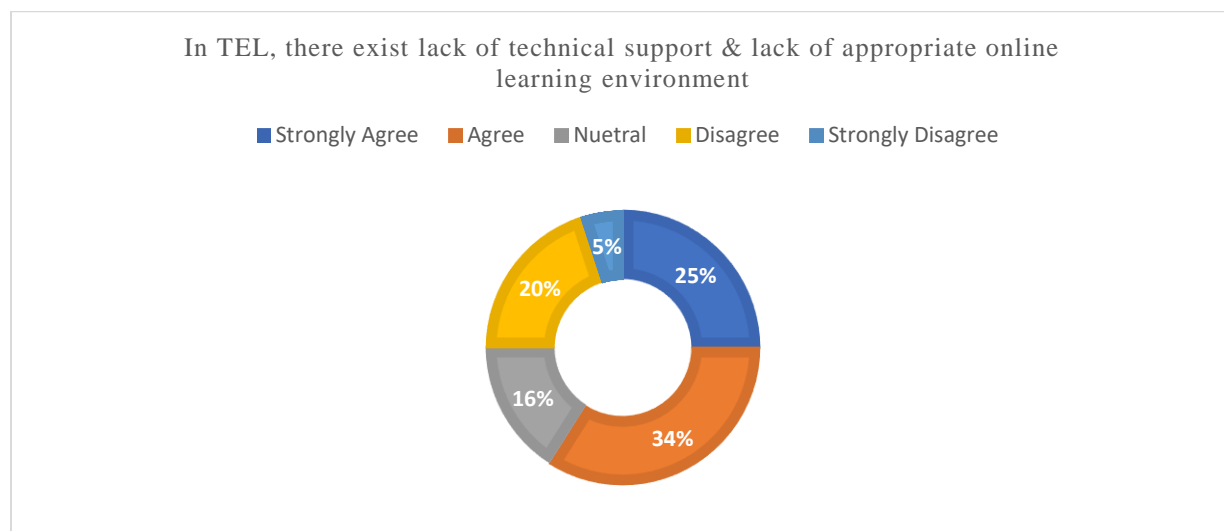


Figure-11: In TEL, there exists lack of technical support & lack of appropriate online learning environment.

According to the Figure-12, 68% students believe that most of the faculty members do not have proper pedagogical skills for TEL. They applied traditional pedagogical skills in TEL. 11% remain neutral. 21% students did not agree with the statement and thought that faculty members have pedagogical skills for TEL. Lack of having proper pedagogical skills is considered as the challenges of TEL.

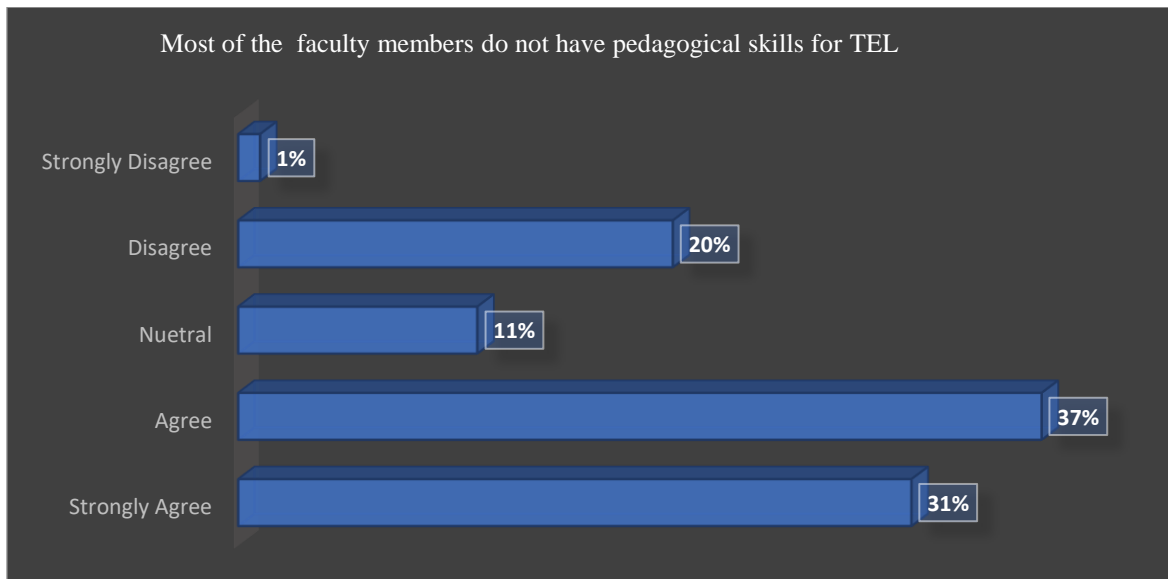


Figure-12: Most of the faculty members do not have pedagogical skills for TEL

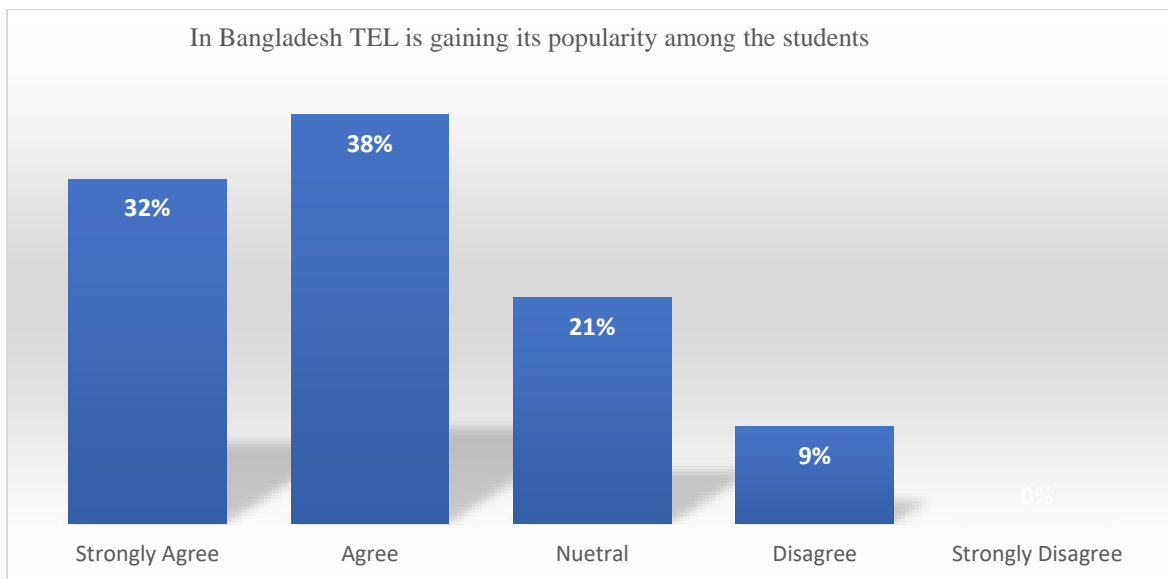


Figure-13: In Bangladesh TEL is gaining its popularity among the students

Earlier introduction and implementation of TEL was a myth but the quick spread of novel coronal virus, lockdown make TEL popular among the students. 70% of the students believe that in Bangladesh TEL is gaining its popularity among the students while only 9% disagreed with the statement. 21% remain neutral (Figure-13). Popularity of TEL among the students is considered as the possibilities of TEL after COVID-19.

According to the Figure-14, 75%(majority) of the students responded that they want TEL along with traditional learning after COVID-19 while only 25% students do not want TEL. The willingness of the students to participate in TEL after COVID-19 considered as one of the major possibilities of TEL in Bangladesh.

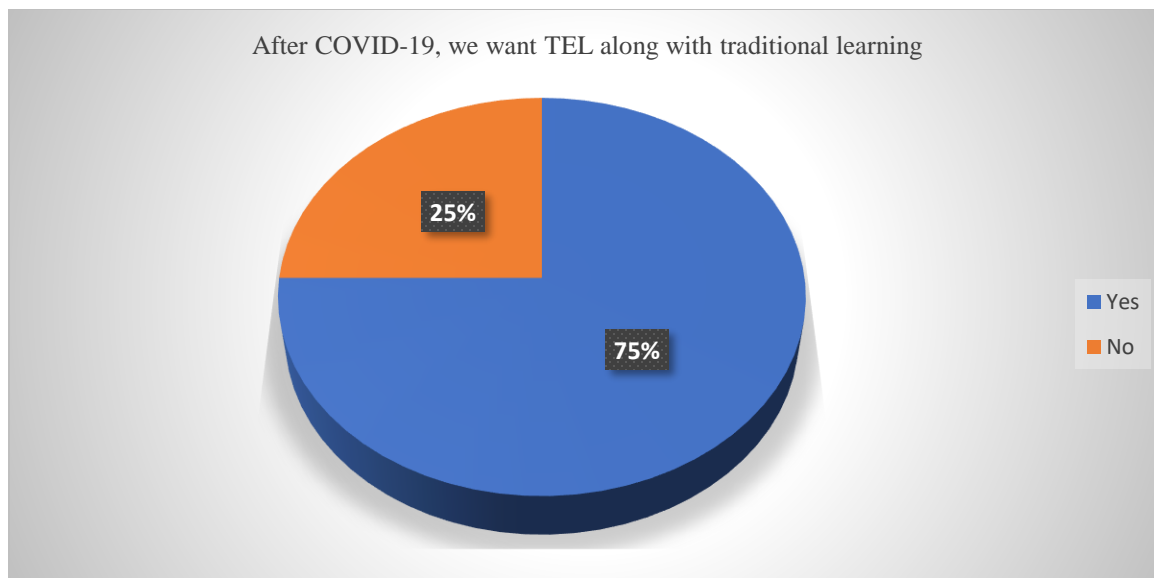


Figure -14: After COVID-19, students want TEL along with traditional learning

In the FGD session almost all of the students agree that in Bangladesh TEL has great opportunities and in order to tackle unavoidable circumstance there is no alternative to introduce TEL in the near future. Stating the challenges of TEL one of the FGD participants narrated that:

In TEL there exists lack of technical, technological and institutional support. Faculty members do not have sufficient training to conduct online classes, disseminate online materials. Most of the students do not have strong internet connect, appropriate digital devices, and personal room to attend synchronous virtual classes.... (Participant:02)

Stating the possibilities one of the participants argued that:

In Bangladesh TEL has huge opportunities. During COVID-19 regulators, university authorities, teachers and students felt the importance of TEL in the academic activities. If proper technical, technological, and institutional support and pedagogical training has been provided then TEL will ensure better outcome. TEL creates student-centered learning environment where faculty members conduct class in an organized way. TEL saves the time and cost. By participating in TEL, we need not go to the classroom in the midst of traffic jam. Our productive time has been saved. (Participant:05)

Conclusion:

Educational institutions world-wide has been closed by government directives in response to Covid-19 (Reimers & Schleicher, 2020). During the lockdown period it became a challenge to continue face-to-face traditional learning. World Bank encourages the educational regulators of every country to adopt TEL as a solution to new normal situation in order to reduce the health hazard (World Bank, 2020). In Bangladesh as an educational regulators UGC provided guidelines to the private and public universities to adopt TEL during COVID-19 pandemic (Hasan & Islam, 2020). In response to the direction of UGC, initially most of the universities were not interested to adopt technology abled learning during COVID-19. But later on, they adopt technology enabled learning in order to address the possible solutions in continuing higher education during the lockdown period (Shama & Iqbal, 2020). The key objective of this study is to find out students' preference of TEL during COVID-19 considering the challenges and possibilities in the context of higher education of Bangladesh. The findings of this study reveal that almost all of the learners participated actively in TEL during the COVID-19 pandemic. They prefer TEL because they consider TEL as a substitute of traditional learning, TEL ensured student centered learning environment, TEL reduce the burden of academic disclosure, and TEL save the time and cost of the students. But they outlined several challenges e.g., there exist lack of technical, technological, institutional support, and proper learning environment, faculty members do not

have pedagogical training on TEL. According to DeAlwis and David (2020), poor internet connection of the rural students, lack of pedagogical skills in online teaching, and lack of proper learning environment are considered as the challenges of TEL. In spite of having those challenges, TEL has possibilities i.e., TEL becomes popular among the students and teachers, in TEL resources become available and the learning scope get widened. In Bangladesh COVID-19 creates the opportunity of TEL in higher education and address the demand of 21st century TEL should be adopted along with traditional learning.

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