

# Covid-19 Aftermath of Higher Education in Bangladesh: A Shift Towards Hybrid Course Delivery

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## ABSTRACT

COVID-19 brought a massive shift to the teaching and learning practices in higher education in Bangladesh. Although many universities in Bangladesh have started hybrid education, including both online and offline education styles, many students still need help with this hybrid process. The study aimed to evaluate the modifications made to teaching and learning strategies due to COVID-19 and to find the prospect of a shift towards Hybrid course delivery in higher education in Bangladesh. The study followed a quantitative method where the data collection was done through a close ended questionnaire using multistage sampling consisting of both stratified and simple random sampling. Students from 20 universities, whether public or private participated in this study. The study stratified the data with 20 responses per university and analysed 400 responses. The data was analysed using SPSS software for descriptive statistics, cross tabulation and chi square test. By conducting the Chi-square test ( $p > 0.05$ ), the overall results of the study revealed that the universities conducting online classes, exams during the pandemic or not have no significant impact on the students preferring a hybrid course delivery. This is because the wave of digitalization has spread and made students accustomed to online education, courses and teaching platforms making them believe that Hybrid course delivery is a unique opportunity to combine the best aspects of both in-person and online learning, address the limitations of traditional classroom models, is cost effective and more flexible. The findings of this study will assist addressing the existing research vacuum in this field and help policymakers, administrators, educators, academicians, University Grant Commission (UGC) authorities, related ministries, and university authorities to rethink the process of Higher Education in Bangladesh.

## INTRODUCTION

The current status of higher education has been reshaped drastically after COVID-19 pandemic in Bangladesh. At present, the perception of higher education has changed in cost of the universities in Bangladesh. Many Universities have started online education during lock-down of Pandemic (Brac, 2020) . The effectiveness and outcomes made many universities interested in continuing online education in Bangladesh. So, most of the universities wanted to conduct both online and offline education after COVID-19 pandemic. This is where the concept of Hybrid Course Delivery came from (Prothom Alo, 2021). Some famous universities of the country such as – Dhaka University, Jahangirnagar University, Shahajalal University of Science and Technology (SUST), Bangladesh University of Professionals (BUP), North South University (NSU), and so on are following hybrid course delivery methods for conducting both online and offline education for more effective outcomes in higher education.

It should be noted that the University Grants Commission (UGC) estimates that there are close to 4.1 million students enrolled in higher education nationwide. About 0.3 million attend 44 state universities, and the remaining 0.4 million attend 103 private institutions. Around 3.4 million students are enrolled in higher education programs at the several colleges that comprise National University. Although many universities in Bangladesh have started hybrid education including both online and offline education style, many students still face many problems in this hybrid process. To attend the online classes or receive the study materials from online, students need a proper electric device, proper net with good speed, proper applications to attend in online classes and so on (Miroshnikov, 2021). Many students cannot afford these requirements due to financial issue, unavailability in markets, unaffordable cost etc. Many students cannot communicate with the lecturers and professors during online classes due to bad internet connection, load-shedding and so on. Some students even find it hard to communicate in online classes because of inexperience of online education system, doing online classes in front of family. The problems go on and on. (Shrestha, Haque, Dawadi, & Giri, 2021). This problem was present during COVID-19; and still these problems are present after COVID-19 in higher education. Hence, Exploring the impact of post-pandemic education for these students is crucial (Masud, Hussain, & Roza, 2022). Thus this paper aims to evaluate the modifications made to teaching and learning strategies in higher education of Bangladesh as a result of COVID-19. In doing so, the paper specifically aims at comparing the pre-COVID 19, during-COVID 19 and post-COVID 19 teaching and learning strategies used in higher education of Bangladesh. It also tries to identify the prospects and challenges of Hybrid course delivery in higher education of Bangladesh.

## RESEARCH METHOD

The study followed a quantitative method with a focus on objective measures and the statistical, mathematical, or numerical analysis of information gathered via the questionnaires. Data collection was done using multistage sampling consisting of both stratified and simple random sampling. The data has been collected through primary (close-ended questionnaire) sources. To bring out the proper information the study only surveyed students who had experienced online classes during Covid - 19 and therefore only the students from final year, masters or graduated ones were selected for data collection. Using Chochran's formula the study collected more than 385 responses. Students from 20 universities, irrespective of being private and public, participated in this study. The study stratified the data with 20 responses per university and analysed a total of 400 responses. The respondents were selected randomly. The data was analysed using SPSS software for descriptive statistics, cross tabulation and chi square test.

## LITERATURE REVIEW

Online education had huge impact in our education sector during the pandemic. As a result, many students and faculties of universities across the country wanted hybrid education. Bashir, Bashir, Rana, Lambert, & Vernallis (2021) in their article, have given a very good and conscience review about higher online education. They have taken online survey of 151 students during August 2020 and revealed that most of the students had positive review of online open book assessments. Most students said they had good internet connectivity and didn't have any technical issues. In spite of requests for more participatory lectures, only half of the students felt comfortable conversing via video cameras when remote learning and online classrooms were introduced. Free text responses showed that some students reported an uncomfortable home workspace and a lack of necessary items like a desk, showing how remote working may worsen social and digital inequality - notably for students from lower-income families. Lockdown caused a wider range of detrimental effects, including a decrease in mental wellbeing, difficulty concentrating, difficulty sleeping, and dissatisfaction with healthcare access (Bangladeshpost.net, n.d.).

Masud, Hussain, & Roza (2022) in their article have stated some valuable information regarding hybrid learning in Bangladesh Higher education during COVID-19. They used mixed method to analyze the data and according to their assessment, if universities can establish a solid institutional framework for effectively managing all of the e-resources, adopting a hybrid learning method will be successful. Additionally, implementing a solid institutional structure will help to raise education quality in the post-COVID era (Daniel, 2020).

According to (Ahmed, Bhuiyan, Helal, & Banik, 2020), the post-COVID scenario for Bangladesh's higher education system presents a difficulty because this is the country's first experience with such a pandemic and because the education system depends on onsite, face-to-face communication. The teaching and learning processes have come to a complete halt due to the sudden closure of sine die, which is a significant loss for the educational system (Setyawan, 2019). Since COVID-19 may not completely disappear overnight, conducting classes online can effectively make up for this loss. Therefore, hybrid instruction must be used in order for teachers and students to preserve their social distance while still engaging in academic pursuits.

When the pandemic first started, (Shohel, Roy, Ashrafuzzaman, & Babu, 2022) discovered in their study based on empirical data and an online survey that most colleges found it extremely difficult to embrace online teaching and learning strategies. This transformation was impacted by a variety of variables, such as readiness, scarce resources, including money, insufficient digital literacy, internet connectivity, and appropriate physical and virtual infrastructure (Payoneer, n.d.). But they also came across that the COVID-19 pandemic had opened up new possibilities for educators and other professionals to investigate diverse professional development activities by experimenting with various digital approaches through practice and reflection (Sun C. , 2020) . In addition, they investigated how teaching and learning might be affected both immediately and over time by future approaches to emergency preparedness in the educational system.

The digital learning ecosystem, according to (Shahriar, et al., 2022) in their article, allowed flexibility in time, location, and pace, which was a lifesaver during the COVID-19 crisis. From the standpoint of human resources (HR), the e-learning culture has made it possible for organizations to quickly accept the new standard, ensure sustainable continuity of organizational development, and assure respectable work and growth both within and between enterprises (Murphy, 2020). Following the setback, firms were able to quickly adapt to the new normal thanks to the use of e-learning and flexible working circumstances, which resulted in a substantial paradigm change in Bangladesh's corporate sector and organizational culture.

According to a recent study, students consider Zoom, Google Meet, Google Classroom, and LMS to be quite basic learning technologies (Fuady, Sutarjo, & Ernawati, 2021). While Zoom is regarded as the most user-friendly application/platform of the group, LMS is deemed to be more complex than the other three media. The results of their investigation also show that people perceive learning media as being beneficial.

(Khan, Rahman, & Islam, 2021) found some fascinating data when researching online education in this country. According to study, students are more interested in self-directed learning and agree that online courses are more suited to their needs. In the midst of a crisis, the online course has cultivated a deep bond between the students and the instructors, leading to good suggestions as well as a successful conclusion that helps students avoid numerous fears that remain when they are experiencing an unprecedented coronary crisis (Arnové, 2020). Although teaching online learning presents both students and teachers with a number of difficulties, the good news is that there is no doubt that holding courses online is an admirable step adopted by the current administration to prevent the loss of students' academic activities.

(Nour & Shaoun, 2021) from their qualitative and descriptive study using a mixed method for the purposive sampling collected data analysis explained that similar to the majority of other nations,

Bangladesh underwent a significant overhaul to its educational system beginning in March 2020. This transition was prompted by the COVID-19 pandemic. Their research also recommends tactical steps that could help to reduce the drawbacks of online learning, such as the temporary implementation of a new policy and the involvement of local residents. In that situation, it will help to describe all the vulnerabilities and obstacles of online education in Bangladesh if tasks and obligations at the macro, mezzo, and micro levels are precisely specified and implemented. The community members would make sure they were present in every specific activity for online and offline classes, such as serving as a channel for communication between parents and teachers, keeping up with local administration, and organizing social awareness and volunteer campaigns, in addition to the main plan of distance learning via online and offline classes.

According to the qualitative research by (Rouf, Hossain, Habibullah, & Ahmed, 2022) the majority of students reported that online classes could be more difficult than traditional classroom ones due to technological limitations, the digital divide, a lack of devices, poor connectivity, a poor learning environment, technophobia, delayed responses, and the teacher's inability to manage the material and communication tools effectively. Online education was found to be advantageous since it offered learners flexibility and adaptability. The university websites were filled with well-organized content that included uploaded recorded videos. In order to increase students' knowledge of the subject matter, the students also mentioned the need for interactive sessions with tests and assignments at the end of each lesson (Maitra & Robinson, 2020).

Mostly the previous studies have aimed to look into the problems and challenges faced by both teachers, students and institutional authorities during the COVID 19. This study also looks into the challenges and prospects but its focus is specifically on the hybrid course delivery. But in contrast to the previous studies made, this study aims to address the comparison of the teaching and learning methods used pre, during, and post COVID 19. It is particularly because no study has been conducted in this prospect of evaluating the modifications made to teaching and learning strategies in higher education of Bangladesh as a result of COVID-19. Thus this study aims to address this gap in the literature.

## RESULTS AND DISCUSSION

### Result

#### 1. Demographic Profile

From the survey, we have found out that 79% of the total respondents of our survey are female and 21% are male. And in level of education, we have found out that 66.5% of our total respondents are students of Final year, 22.5% are graduates, and 11% are from the master's level. To bring out the proper information the study only surveyed students who had experienced online classes during Covid - 19 and therefore only the students from final year, master's, or graduated ones were selected for data collection.

Students from 20 universities, irrespective of being private and public, participated in this study.

Table 1. Demographic Profile

Demographic Profile	N (%) out of (400 data) 100%
<b>Gender</b>	
Female	21%
Male	79%
<b>Level of Education</b>	
Final Year	66.5%
Graduate	22.5%

Masters	11%
<b>Name of the Institution (alphabetically)</b>	
Ahsanullah University of Science and Technology	5%
AIUB	5%
Bangladesh Agricultural University	5%
Bangladesh University of Professionals	5%
Begum Rokeya University, Rangpur	5%
BGMEA University of Fashion & Technology	5%
BRAC University	5%
BSMRMU	5%
BUET	5%
BUTEX	5%
Comilla University	5%
Independent University	5%
Islamic University of Technology	5%
Jagannath University	5%
Jahangirnagar University	5%
MIST	5%
National University	5%
North South University	5%
SUST	5%
University of Dhaka	

## 2. Comparison of The Teaching and Learning Strategies Used in Higher Education of Bangladesh

COVID-19 brought a massive shift to the teaching and learning practices in higher education of Bangladesh. The study intended to compare these teaching and learning strategies. Therefore, the study inquired into the reading material providing techniques followed by the teachers for all three time periods - before, during and after the COVID-19 Pandemic.

Table 2. Mediums and Platforms used for Online Class

Medium/Platform	Before COVID-19	During COVID-19	After COVID-19
Zoom	3.75 %	64.75%	48.75 %
Google Meet	3 %	38 %	29 %
Microsoft Teams	3 %	12 %	10%
Google Classroom	3.5%	8%	3.5 %
Bux	-	-	2.5%

The findings indicate that before the pandemic the online platforms used for classes and meetings like zoom, google meet etc were not that popular. 3.75% students from different universities used zoom, 3% used Google meet, 3% used Microsoft teams for conducting classes online. But During COVID-19 this trend reached its peak where zoom was used as an online platform to conduct classes by 64.75% university students. The second most used online platform was Google Meet; 38% students from different universities used this platform. Microsoft Teams and Google Classroom come after Google meet with having 12% and 8% university-students respectively. These platforms have been also used after the pandemic and still many university-students are using these platforms till this day. As usual, Zoom is the most used platform as 48.75% students of different universities use Zoom for attending online classes. With 29% university

students as users, Google Meet is the second most used online platform. After Google Meet, Microsoft Teams is the third most used online platform with 10% university-students as users. Google Classroom is the least used online platform with 3.5% of the total university-students. Now, some universities have also created their own online platform for online study; for example: Bux.

In case of online examinations, universities mostly preferred in person examination trends in Bangladesh. Still a few evidence was found from the respondents that 4.75% students from different universities in different courses had encountered online platforms for exams, for example 4.75% zoom, 4.5% Microsoft teams and only 1% in Google meets. But during COVID-19 as the educational institutions went online, they developed some of their own university learning management systems like Bux in Brac university, LMS in BUP to conduct online examinations, submit assignments, check plagiarism and so on, during this period a number of online tools and mediums were used for conducting online examinations. The most popular one is zoom with 66.5% students reporting it to be used in their universities. Other platforms like Google meet (21%), Microsoft Teams (12%), Google Classroom (15%) were also frequently used. Some other platforms were Bux (5%), Google form (5.5%), Canvas (3.5%), LMS (2%), Google docs (1%) and Discord (1%). After the pandemic being over and regular life resumed the study found that still some of the popular platforms are being used for online exams, for example zoom (12.25%), Microsoft Teams (8.5%), Google meet (6%) and Google classroom (2.5%) for assignment submission, evaluation etc.

Table 3. Mediums and Platforms used for Online Exams

Medium/Platform	Before COVID-19	During COVID-19	After COVID-19
Zoom	4.75 %	66.5%	12.25%
Google Meet	1 %	21%	6 %
Microsoft Teams	4.5%	12%	8.5 %
Google Classroom	-	15%	2.5%
Google form	-	5.5%	-
Bux	-	5%	-
Google Docs	-	1%	-
LMS	-	2%	-
Canvas	-	3.5%	-
Discord	-	1%	-

There has also been a major shift seen in the teaching and learning practices in higher education of Bangladesh. Specially in the reading material providing technique has changed a lot. Before the pandemic teachers mostly provided reading materials during class as lectures or as printed sheets. The first one reported in this study is 75.75% and the later 48%. But during the pandemic, rightfully this practice changed as giving printed sheets was not at all possible and only 29.25% were provided during class as lectures. After the pandemic however it is seen to be a downward trend when compared as 66.25% provide study materials during class and 43.5% as printed sheets.

The popular device, pendrive, for sharing reading materials was not an option during the pandemic but its popularity or use also reduced from 26% before COVID-19 to 21% after COVID-19. The use of mails however has increased from being 29% before the pandemic, to 39.5% during the pandemic and remained quite the same (38.5%) after the pandemic.

Other online platforms like Posting on social media, google classroom or sharing on google drive has also gained more popularity over the pandemic. During the pandemic their usage was the highest but

even after the in-person classes being resumed they haven't lost their zeal for the ease of use, effectiveness and adaptation by both the students and the teachers.

Table 4. Reading Material Providing Technique

Reading Material Providing Technique	Before COVID-19	During COVID-19	After COVID-19
Materials were provided during class as lectures	75.75%	29.25%	66.25%
As printed sheets	48%	-	43.5%
Materials were provided after classes using pen drive	26%	-	21%
Through Mails	29%	39.5%	38.5%
Posted on social media platforms (Facebook/WhatsApp group)	17.5%	29%	20.5%
Google Classroom	36.5%	77%	63.5%
Google Drive	25.5%	44%	33%

### 3. Prospects of Hybrid Course Delivery in Higher Education of Bangladesh

At present, frequency of online class has been pretty much impressive. Although 20.5% of the respondents have claimed that their universities have never conducted online classes after COVID-19, but 47% respondents informed that their universities have conducted online classes when they felt necessary. 8% of the university students informed that they get weekly online classes in their universities. 5.5% of the respondents often get online classes in their universities. 19.5% university students rarely get online classes in their universities.

Table 5. Frequency of Online Class

Frequency of Online Class	Percentage
Weekly	8%
Often	5.5%
Only when necessary	47%
Rarely	19.5%
Never	20.5%

There are some notable reasons for conducting online classes. Most of the respondents claimed that online classes are conducted on the basis of the teacher's convenience. 52.5% of the respondents claimed that this is the major reason for conducting online classes at their universities. 21.75% percent university students informed that the online classes in their universities are conducted on the days of political movements and 20% of the university students informed that the online classes in their universities are conducted on the days of natural calamity.

Table 6. Reasons behind conducting Online class

Reasons behind conducting Online class	Percentage
To ensure Hybrid learning through routine online classes	15.5%
Conducted on the days of Political movements	21.75%
Conducted on the days of natural calamity	20%
Conducted on the basis of the teacher's convenience	52.5%
Not applicable	30%



We have also surveyed the perceptions of the university students about hybrid education. 25% of the respondents strongly agreed that hybrid Education offers a unique opportunity to combine the best aspects of both in-person and online learning. 28% of respondents just agreed on this statement. 26.50% stayed neutral. 11% of the respondents disagreed with this statement, and 9.50% strongly disagreed. The second perception statement was - 'Hybrid Education allows educators to innovate and address the limitations of traditional classroom models'. 20% of the respondents strongly agreed with this statement. 36% of the respondents just agreed with the statement. 26.50% were neutral. 11% disagreed with this statement and 9.50% strongly disagreed. Third statement was - 'Hybrid Education is cost effective'. 33.50% of the respondents strongly agreed with this statement. 38% of the respondents just agreed with the statement. 24% were neutral. 2% disagreed with this statement and 2.50% strongly disagreed. Our last perception statement was - 'Hybrid Education offers a more flexible schedule'. 38.50% of the respondents strongly agreed with this statement. 32.50% of the respondents just agreed with the statement. 19.50% were neutral. 3.50% disagreed with this statement and 6% strongly disagreed.

Table 7. Prospects of Hybrid Education

Prospects	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Hybrid Education offers a unique opportunity to combine the best aspects of both in-person and online learning.	25%	28%	26.50%	11%	9.50%
Hybrid Education allows educators to innovate and address the limitations of traditional classroom models	20%	36%	26.50%	10.50%	7%
Hybrid Education is cost effective.	33.50%	38%	24%	2%	2.50%

#### 4. Challenges of Hybrid Course Delivery in Higher Education of Bangladesh

From the study we found out two specific challenges that students of universities in Bangladesh are facing in hybrid education. The first challenge is - 'Hybrid Education creates complexity'. 13% of the respondents strongly agreed with this challenge. 29.50% of respondents just agreed on this challenge. 34% stayed neutral. 16% of the respondents disagreed with this challenge, and 7.50% strongly disagreed. The second challenge is - 'Hybrid Education fails to ensure equality'. 23% of the respondents strongly agreed with this challenge. 24.50% of respondents just agreed on this challenge. 28% stayed neutral. 12.50% of the respondents disagreed with this challenge, and 12% strongly disagreed.

Table 8. Challenges of Hybrid education

Challenges	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Hybrid Education creates complexity	13%	29.50%	34%	16%	7.50%
Hybrid Education fails to ensure equality	23%	24.50%	28%	12.50%	12%



Table 9. Tabulation and Chi-Square Tests

**Did your university conduct 'online' classes during COVID-19? \* Which form of Education do you prefer the most? Cross tabulation**

		Which form of Education do you prefer the most?			
		in person	online	Hybrid	Total
Did your university conduct 'online' classes during COVID-19?	yes	Count 180	Count 22	Count 180	Count 382
		% within Did your university conduct 'online' classes during COVID-19? 47.1%	% within Did your university conduct 'online' classes during COVID-19? 5.8%	% within Did your university conduct 'online' classes during COVID-19? 47.1%	% within Did your university conduct 'online' classes during COVID-19? 100.0%
	no	Count 6	Count 0	Count 12	Count 18
		% within Did your university conduct 'online' classes during COVID-19? 33.3%	% within Did your university conduct 'online' classes during COVID-19? 0.0%	% within Did your university conduct 'online' classes during COVID-19? 66.7%	% within Did your university conduct 'online' classes during COVID-19? 100.0%
Total		Count 186	Count 22	Count 192	Count 400
		% within Did your university conduct 'online' classes during COVID-19? 46.5%	% within Did your university conduct 'online' classes during COVID-19? 5.5%	% within Did your university conduct 'online' classes during COVID-19? 48.0%	% within Did your university conduct 'online' classes during COVID-19? 100.0%

Table 10. Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.108a	2	.211
Likelihood Ratio	4.029	2	.133
N of Valid Cases	400		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is .99.

The study conducted a chi-square test to figure out the effect of online class adaptation during COVID-19 on the future prospect of hybrid education in higher education of Bangladesh. The Chi-square test was not significant,  $\chi^2 (1, N = 400) = 3.108$ ,  $p > 0.05$ , with phi coefficient of 0.88, proving that it does not matter whether the university conducted online classes, exams during the pandemic or not but the students prefer a hybrid course delivery as the wave of digitalization has spread and made students accustomed to online education, courses and teaching platforms. The cross tabulation results better describe this as the table shows among the 382 total respondents whose universities conducted online classes, of them the number of students preferring In-person Education and Hybrid Education are equal. While among the 18 respondents not having any online classes during COVID-19, of them 12 prefer Hybrid Education and only 6 prefer full Online education but no one prefer to have a full online educational setting.

## Discussion

The aim of this study was to compare the changing teaching and learning strategies after the COVID-19 pandemic in higher education of Bangladesh. Therefore, the study looked into the pre-COVID 19, during Covid 19 and post-COVID 19 teaching and learning practices like class conducting platform, exam conducting platform and reading material sharing techniques used in higher education of Bangladesh. The results revealed that online platforms like zoom, google meet etc were less popular before the pandemic but during the pandemic these platforms along with many other ones gained popularity and made people accustomed to their usage. The convenient that they provided their users kept them still

popularly in use even after the in-person classes and regular life being resumed after the pandemic. This shift is positively accepted in the higher education of Bangladesh. The popular reading material sharing techniques have also been digitalized. The study found that there has been a significant shift from traditional methods of printed sheet sharing, sharing class lectures only through Pendrive to now reading materials being shared through google classroom, Google drive, or mail and even being shared on social media platforms like Facebook/WhatsApp groups mostly. Several studies have gained similar findings. A recent study by (Fuady, Sutarjo, & Ernawati, 2021) demonstrate that students believe Zoom, Google Meet, Google Classroom, and LMS to be reasonably simple learning tools. LMS is thought to be more difficult than the other three mediums, however Zoom is thought to be the easiest application/platform of the bunch. The findings of their study also demonstrate that the usefulness of learning media is viewed as having positive advantages.

The study aimed at finding out the prospect of Hybrid Course Delivery in higher education of Bangladesh. Results of this study revealed that Hybrid course delivery is a unique opportunity to combine the best aspects of both in-person and online learning, address the limitations of traditional classroom models, is cost effective and more flexible. These findings are similar to several prior studies. Thus according to (Hilli, Nørgård, & Aaen, 2019), higher education has the ability to encourage students to learn in a way that transcends conventional dichotomies and obstacles. Online education also minimizes the distance of learning and promotes the scholarship of teaching ( Larreamendy-Joerns & Leinhard, 2006). Hybrid education is perceived to be useful and effective in ensuring better and flexible time management and remote learning opportunity (Hall & Villareal, 2015).

The study also found that not all respondents think that Hybrid education can be complex with the risks of there being any unequal learning environment, digital divide, and so on. Whereas according to (Sun & Chen, 2016) it is necessary to ensure well designed course content, ell prepared instructors as well as motivated interaction between teachers and students to utilize the best outcomes of online learning. They also emphasized on the creation of an online learning community and rapid advancement of technology. Effective teachers are known to be essential to students' performance in online courses and the success of online programs (Meyer & Jones, 2012). But there are studies stating that hybrid education can let students take advantage of the unique communicative methods that it offers to them (Casey, 2013). Also (Rouf, Hossain, Habibullah, & Ahmed, 2022) found in their study that many students reported that online classes could be more difficult than traditional classroom ones due to technological limitations, the digital divide, a lack of devices, poor connectivity, a poor learning environment, technophobia, delayed responses, and the teacher's inability to manage the material and communication tools effectively. But in this study most of the students do not perceive Hybrid education to be complex or promoting inequality.

## CONCLUSION

It goes without saying that hybrid education is having a significant impact on Bangladeshi higher education. Yes, there are a number of issues and drawbacks that are seriously impeding the advancement of hybrid education. The development of hybrid education in Bangladesh should receive appropriate attention from both the government and university administrations. As the article aimed at comparing the teaching and learning method used pre, during and post COVID 19, and found that though before the pandemic the tendency of using online tools were very less among students and teachers but it increased tremendously during the pandemic. But even after the pandemic, this tendency did not just vanish but rather remains as a 'necessary' practice. This speaks for the prospect of hybrid course learning in Bangladeshi higher education.

The purpose of the article was also to outline the opportunities and difficulties associated with hybrid course delivery in Bangladeshi higher education. Following research, it was found that the majority of study participants desired a hybrid education system and believed it would be both financially and academically beneficial. In order to ensure that hybrid education proceeds as intended, all higher education students should be able to afford electronic devices and internet service; university administrations should guarantee that all students participate in online courses; all students should have equal opportunities for active engagement and communication in online courses; and university administrations should create a schedule that is sufficiently flexible to allow students to become accustomed to the online and offline learning environments and avoid complications. There exist numerous alternatives and problems that may be explored or resolved; nevertheless, they require appropriate oversight and coordination from governmental and academic authorities. Governments and academic authorities need to step up and tackle the issues in order to advance hybrid education.

## REFERENCES

- Ahmed, I., Bhuiyan, M. M., Helal, M. A., & Banik, N. (2020). Hybrid Instruction: Post COVID-19 solution for higher education in Bangladesh. *International Journal for Modern Trends in Science and Technology*, 6(10), 20–25. <https://doi.org/10.46501/IJMTST061004>
- Arrove, R. F. (2020). Imagining what education can be post-COVID-19. *PROFECTS*, 43-46. <https://doi.org/10.1007/s11125-020-09474-1>
- Bangladeshpost.net. (n.d. ). Online Classes offer little help to higher education. Retrieved from Bangladeshpost.net: <https://bangladeshpost.net/posts/online-classes-offer-little-help-to-higher-edn-37741>
- Bashir, A., Bashir, S., Rana, K., Lambert, P. A., & Vernallis, A. B. (2021). Post-COVID-19 adaptations; the shifts towards online learning, hybrid course delivery and the implications for biosciences courses in the higher education setting. *Frontiers in Education*, 6. <https://doi.org/10.3389/feduc.2021.711619>
- Brac. (2020). A Rapid Assessment Impact of COVID-19 on Education in Bangladesh. Retrieved from Brac.net: <http://www.brac.net/program/wp-content/uploads/2020/07/Rapid-assessment-impact-of-COVID-19-education-in-Bangladesh.pdf?fbclid=IwAR0gptxwHSBLBsiii5HLsGzFfroELwt-XnCg1EIJBjvu>
- Casey, G. (2013). Social Media in the Classroom: a Simple yet Complex Hybrid Environment for Students. *Journal of Educational Multimedia and Hypermedia*, 5-24.
- Daniel, S. (2020). Education and the COVID-19 pandemic. *PROSPECTS*.
- Fuady, I., Sutarjo, M. A., & Ernawati, E. (2021). Analysis of Students' Perceptions of Online Learning Media During the COVID-19 Pandemic (Study of E-learning Media: Zoom, Google Meet, Google Classroom, and LMS). *Randwick International of Social Science Journal*, 51-56. <https://doi.org/10.47175/rissj.v2i1.177>
- Hall, S., & Villareal, D. (2015). The Hybrid Advantage: Graduate Student Perspectives of Hybrid Education Courses. *International Journal of Teaching and Learning in Higher Education*, 69-80.
- Hilli, C., Nørgård, R. T., & Aaen, J. H. (2019). Designing Hybrid Learning Spaces in Higher Education. *Artikler publisert i Dansk*.
- Khan, M. M., Rahman, S., & Islam, S. A. (2021). Online Education System in Bangladesh during COVID-19 Pandemic. *Creative Education* 12(02), 441-452. <https://doi.org/10.4236/ce.2021.122031>

- Larreamendy-Joerns, J., & Leinhard, G. (2006). *Going the Distance With Online Education*. SAGE.
- Maitra, S., & Robinson, J. A. (2020). *Higher Education After COVID-19*.
- Masud, A. A., Hussain, S., & Roza, M. A. (2022). Hybrid Learning in Bangladeshi Higher Education: Does Adaptation Matter during COVID-19? *Society & Change*, XVI(1), 35-59.
- Meyer, K., & Jones, S. (2012). c. *Journal of Asynchronous Learning Networks*, 5-18. <https://doi.org/10.24059/olj.v16i1.211>
- Miroshnikov, D. (2021). Education's Hybrid Future: What We Know from Research. Retrieved from Campus Technology: <https://campustechnology.com/articles/2021/07/21/educations-hybrid-future-what-we-know-from-research.aspx>
- Murphy, M. A. (2020). COVID-19 and emergency Learning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy*, 1-14. <https://doi.org/10.1080/13523260.2020.1761749>
- Nour, S., & Shaoun, S. P. (2021). Online Education and Community Participation in Bangladesh: Challenges and opportunities to ensure Inclusive learning during COVID-19 School closure. *Indian Journal of Public Administration*, 67(4), 620-638. <https://doi.org/10.1177/001955612110445>
- Payoneer. (n.d.). E-Learning in the Wake of a Pandemic. Retrieved from [pubs.payoneer.com/docs/elearning-in-the-wake-of-a-pandemic.pdf](https://pubs.payoneer.com/docs/elearning-in-the-wake-of-a-pandemic.pdf) [Accessed 24 Aug. 2020].
- Prothom Alo. (2021). Hybrid learning: Start of a new education system. Retrieved from [en.prothomalo.com/youth/education/hybrid-learning-start-of-a-new-education-system](https://en.prothomalo.com/youth/education/hybrid-learning-start-of-a-new-education-system)
- Rouf, M. A., Hossain, M. S., Habibullah, & Ahmed, T. (2022). Online classes for higher education in Bangladesh during the COVID-19 pandemic: a perception-based study. *PSU Research Review*. <https://doi.org/10.1108/PRR-05-2021-0026>
- Setyawan, H. (2019). Blended Method: Online-Offline Teaching And Learning, On Students' Reading Achievement. *English Education: Jurnal Tadris Bahasa Inggris*, 12(1), 22-23.
- Shahriar, S. B., Arafat, S. Y., Islam, I., Nur, J., Rahman, S., Khan, S. I., & Alam, S. I. (2022). The emergence of e-learning and online-based training during the COVID-19 crisis: an exploratory investigation from Bangladesh. *Management Matters*, 20(1), 1-15. <https://doi.org/10.1108/MANM-01-2022-0007>
- Shohel, M. C., Roy, G., Ashrafuzzaman, M., & Babu, R. (2022). Teaching and Learning in Higher Education in Bangladesh during the COVID-19 Pandemic: Learning from the Challenges. *Education Sciences*, 12(12), 857. <https://doi.org/10.3390/educsci12120857>
- Shrestha, S., Haque, S., Dawadi, S., & Giri, R. A. (2021). Preparations for and practices of online education during the COVID-19 pandemic: A study of Bangladesh and Nepal. *Education and Information Technologies*, 243-265. <https://doi.org/10.1007/s10639-021-10659-0>
- Sun, A., & Chen, X. (2016). Online Education and Its Effective Practice: A Research Review. *Journal of Information Technology Education: Research*, 157-190.
- Sun, C. (2020). Research on the Application of SPOC Online and Offline Hybrid Teaching Mode in College English Curriculum. *IOP Conference Series: Materials Science and Engineering*, 750, 012170. <https://doi.org/10.1088/1757-899X/750/1/012170>