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PERCEIVED BENEFITS OR BARRIERS? THE ONLINE LEARNING EXPERIENCE OF BANGLADESHI UNDERGRADUATE STUDENTS

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ABSTRACT

Online learning has enabled universal access to higher education, eliminating obstacles such as employment, geographical location, and other disruptions. However, the transition from traditional classroom settings to online classes without any prior knowledge or training can be a significant challenge. This study investigated students' experiences with online learning by identifying the aspects perceived as benefits and barriers of online learning. We surveyed 266 undergraduate students from a private university in Bangladesh to gain a comprehensive understanding of their online learning experiences. The study utilized a qualitative research design, gathering data through narrative inquiry and analyzing it with a thematic analysis technique. The findings highlighted that academics, technology, health, concentration, and communication problems are perceived as barriers to online learning. On the other hand, the benefits include the flexibility of online learning and the acquisition of new knowledge and skills. Overall, the perceived barriers outweigh the benefits. Hence, the findings of this study will help researchers and policymakers to understand the opportunities and challenges of online teaching and learning in a poor resource-setting country like Bangladesh.

Keywords: *Online learning, perceived barriers, perceived benefits, undergraduate students, private university.*

INTRODUCTION

Online learning has facilitated universal access to education, eliminating traditional limitations imposed by factors such as work or geographical location (Garip et al., 2020). The term "online learning" has a variety of meanings. According to Howlett et al. (2009), online learning is "the use of electronic technology and media to deliver, support, and enhance both learning and teaching and involves communication between learners and teachers utilizing online content."

In recent decades, traditional pedagogy has radically transformed higher education because of the rapid advancement of information and communication technologies (ICTs). While some researchers argued that technology has not transformed education but rather rebuilt it, with teachers now using PowerPoint slides instead of the traditional chalk and board method, others argued that technology-based learning is just as effective as the traditional method, albeit at a relatively low cost (Anderson, 2008).

The COVID-19 pandemic has disrupted the teaching and learning practices (Sharma et al., 2020). Unlike many other sectors, the continuation of education during COVID-19 was made possible because of technological advancements and its accessibility (Priyo & Hazra, 2020). Developed countries have previously made considerable progress in incorporating online learning platforms into higher education, which is not the same for developing countries (Al-Azawei et al., 2016). The transition to online learning

was challenging and stressful, especially in developing countries where students and teachers highly rely on the conventional classroom structure (Ali & Magalhaes, 2008).

The benefits of educational technology include the ability for students to use digital applications and learn at their own pace, thus enabling critical thinking, improved communication, teamwork, and writing skills. Online learning has been shown to stimulate creativity by inspiring students to acquire and upgrade their existing knowledge (Pei & Wu, 2019). Furthermore, online classes are flexible, cost-effective, time-efficient, and increase tech skills (Hossain et al., 2024).

Apart from these benefits, there are numerous barriers to adopting online learning in higher education (Ali & Magalhaes, 2008). From the perspective of faculty members in developing countries, Zamani et al. (2016) identified three categories of obstacles: personal challenges, which include an individual's characteristics and behavioral tendencies; attitudinal inhibitors, which are directly linked to users' perceptions and beliefs about e-learning capabilities; and contextual inhibitors, which include external factors that include a lack of ICT expertise and organizational support for e-learning technology. However, students perceive online courses differently than traditional courses (Lemay et al., 2021). Even though students' perspectives on online learning are under-discussed, what little is known about their learning experiences during COVID-19 suggests that they faced obstacles such as an excessive workload, unsuitable study conditions, financial strain, and a lack of social connections (Yeung & Yau, 2022). Other drawbacks of online classes include mental health issues, technical obstacles, and home diversions (Hossain et al., 2024). Baticulon et al. (2021) identified technological, individual, domestic, institutional, and community barriers among students that cause dissatisfaction with online learning or hostility toward it.

According to the University Grants Commission of Bangladesh, as of 2020, there were 46 public universities and 105 private universities in Bangladesh. Following the official recognition of the COVID-19 pandemic as a global health crisis in March 2020, Bangladesh and other nations have implemented a nationwide lockdown (WHO, 2020). To ensure continuity of education, some educational institutions in Bangladesh, especially private universities, have moved from traditional classes to online classes (Islam & Mahmud, 2022; Shuvo & Mondal, 2022). In Bangladesh, only a few universities had introduced the learning management system before COVID-19. As a result, most universities were required to adapt to technology that enabled online learning by using platforms like Google Classroom, Zoom, Blackboard, and so on (Muthuprasad et al., 2021). However, the pandemic prevented universities from properly planning, designing, and developing online instructional programs, making the migration to online learning questionable (Adedoyin & Soykan, 2023). Despite technological difficulties, private university students in Bangladesh prefer online learning over in-person classes due to the pandemic (Shuvo & Mondal, 2022). However, students expressed dissatisfaction with online examinations and the grading policies (Priyo & Hazra, 2020).

Against this background, the study assesses university students' experiences with online learning by identifying the perceived benefits and barriers affecting its adoption. The inability to adapt to rapid shifts in the education system may give rise to negative outcomes, including increasing levels of academic disengagement and dissatisfaction. Failure to adequately address the unique challenges in the context of Bangladesh could exacerbate existing educational inequalities and hinder students' overall academic success.

METHODOLOGY

We adopted a qualitative research design for this study to elicit university students' narratives about the barriers and benefits of online learning. The findings are grouped into two broader categories: perceived barriers and perceived benefits.

Sampling and Data Collection Approach

This study employed a convenient sampling technique to recruit participants. We recruited the participants from our workplace, East West University, a private university in Bangladesh. The reasons

for using the convenience sampling technique were the challenges of data collection due to the lockdown during COVID-19 and the fact that participants could be easily reached.

A self-administered questionnaire was developed to collect data from the participants. The data were collected using Google Forms. We posted the form's link in Google Classroom. We asked the participants to write a brief description (open-ended) of "how they are dealing with their academic life during the COVID-19 pandemic" within five hundred words. The purpose of asking an open-ended question was to encourage participants to express themselves in their context, acknowledging that the experiences can differ. The socio-demographic characteristics of the participants, such as age, sex, academic year, faculty, residential status, family members, occupation status, and average monthly income, were also collected.

480 students were approached, with 321 responding to the survey. However, 266 valid responses were considered for this study after data cleaning. The reason for omitting 55 responses was that, as it was an open-ended question, some of the respondents could not provide a valid response.

We designed the questionnaire in English, and the participants answered the questions in the same language, as the university uses English as its medium of instruction. Participation was completely voluntary, and no form of incentive was provided.

Data Analysis

We transferred the collected data from Google Forms to Microsoft Office Excel for analysis. We primarily followed the six steps of thematic analysis as outlined by Braun and Clarke (2006). Initially, we reviewed the data to familiarize ourselves with the collected data. During this stage, sentences were color-coded for identification and sorting purposes, distinguishing positive from negative responses. In the subsequent step, codes were identified from the color-coded sentences and recorded in two separate columns: one for perceived benefits and the other for perceived barriers. Following this, the codes were examined to identify subthemes, which were then documented in a separate column. The subthemes were further refined under each theme. The process involved redefining, reorganizing, and naming the subthemes and their corresponding codes.

After the subthemes and codes were sorted and validated, the responses were numbered, facilitating descriptive analysis. Frequency analysis was used to obtain percentages for categorical variables.

Trustworthiness

To maintain the trustworthiness of this study, we relied on the principles of credibility, conformability, and dependability offered by Holloway and Galvin (2016). To ensure the credibility of this study, we used interview guidelines, persistent observation, and source triangulation (Dunn et al., 2017; Loh, 2013). Both authors conducted classes online during the COVID-19 pandemic and engaged in data collection for this project. Therefore, the authors were familiar with the challenges faced by the students during online classes and examinations. To ensure conformability, we conducted several peer debriefing sessions (Lemon & Hayes, 2020). We ensured reliability by conducting online interviews and avoiding face-to-face meetings during the COVID-19 peak period. In this sense, the respondents were encouraged to participate actively in this study.

Ethical Consideration

Informed consent was obtained electronically from each participant before proceeding with the interview questionnaire. We provide instructions on how to answer the question. We did not collect the email addresses of the participants. Therefore, the answer to the question was anonymous.

FINDINGS AND DISCUSSION

Table 1 provides the socio-demographic characteristics of the respondents. Out of 266 undergraduate students who participated in this study, the majority of the respondents were between the ages of 20 and 24, with a mean age of 21.75 years (±1.41). A higher percentage of responses were received from

females (56.7%). Most of the participants were in their sophomore year (42.1%), and the majority of them were from the faculty of Business and Economics (40.2%) and Science and Engineering (39.1%). The average family size of the respondents was 4.4.

Table 1. *Demographic Characteristics of The Respondents (Source: Developed from Survey)*

Variable	Categories	Count (N)	Percent %
Sex	Male	115	43.23
	Female	151	56.77
Age (years)	15-19	9	3.38
	20-24	246	92.48
	25-29	11	4.14
Faculty	Science & engineering	104	39.1
	Liberal arts & social sciences	55	20.68
	Business & economics	107	40.23
Academic Year	Sophomore year	112	42.11
	Junior year	91	34.21
	Senior year	63	23.68
No. of family members	2-3 members	45	16.92
	4-5 members	174	65.41
	6 & above members	47	17.67

Perceived Barriers and Benefits of Online Learning

This section intends to assess students' online learning experiences by identifying the barriers they encounter and exploring the aspects they perceive as benefits during the COVID-19 pandemic. After reviewing the codes, several subthemes were generated under the broader theme of perceived barriers and perceived benefits of online learning. The findings are presented as subthemes and codes under two broader themes.

Perceived Barriers of Online Learning. Within the realm of perceived barriers to online learning, the findings are presented under five sub-themes: academic-related barriers, technology-related barriers, health-related barriers, concentration barriers, and communication barriers. Each subtheme is comprised of multiple codes. Table 2 lists the subthemes and codes designated as perceived barriers.

Table 2. *Perceived Barriers of Online Learning*

Subthemes (Codes)	Frequency
Academic-related barriers	171
Exams	21
Results	33
Added workload	33
Lack of practical knowledge	59
Unable to utilize university resource	25
Technology-related barriers	164
Lack of internet connectivity, electricity & device	105
Lack of technological knowledge	59
Health-related barriers	79
Physical health	30
Mental health	62

Concentration barriers	67
Loss of Concentration	54
Disturbing environment	18
Communication barriers	26
Teaching consultation	10
Peer communication	16

Academic-Related Barriers. Students' difficulties with 'examinations, results, and additional workload' have been connected to changes in the mode of teaching. Academic barriers were highlighted by 64.2% of respondents. As a result of the changes in the teaching mode, respondents were troubled by "examinations, results, added workload, being unable to use university resources and the lack of practical knowledge". Students' examination dissatisfaction was attributed to either technological obstacles or changes in the question pattern, or both.

Shifting the mode of instruction also necessitated changes to the assessment method. For instance, numerous faculties implemented the flipped classroom strategy at various stages. Many faculties preferred assessments like open-book examinations to uphold academic integrity. These kinds of assessments, however, might be problematic because students require a high level of understanding, which may not be readily searchable (Hollister et al., 2022). The results reflected the impact of the inability to comprehend the conceptually based question pattern. Classrooms in Bangladesh have predominantly employed teacher-centered methods, note memorization and an emphasis on examination-oriented learning. Therefore, students typically prefer the structured pattern of lecture-based classes, reliance on designated textbooks, and examination-ready learning.

Moreover, some respondents believed their grades were less desirable. The low scores were attributed to a variety of factors, including poor examination performance, physical or mental illness, a lack of motivation to study, and being unable to complete answering the questions due to technological barriers. Priyo and Hazra's (2020) study revealed similar findings, with students expressing dissatisfaction with online examinations and grading policies.

In addition, respondents reported having an increased workload, such as more assignments or home tasks than earlier. One of the factors mentioned here was the course teachers' belief that because the students were at home, they could complete more reading assignments. The evaluation pattern had changed, giving the assignments a higher priority than before. As a result, there was an increased load (Lemay et al., 2021). Respondents claimed that under the present arrangement, they needed more time to grasp the same amount of information as before (Baticulon et al., 2021). One female respondent shared her experiences with academic pressure:

"*It is very problematic to attend online examinations as we have to either write the answers on our notebook, take pictures of the pages, convert those snapshots to pdf file and then submit it on time or we have to type the answers on Microsoft word, convert the word file to pdf and then submit it on time. It is really a hassle. We do not have much time to complete all these tasks. Besides, teachers are giving us more assignments than before. From my personal experience, I am not getting desirable marks even after working so hard. I am afraid I might lose good grades. I had good results in offline semesters.*" (Female, Junior year, Liberal Arts and Social Sciences)

Some respondents, on the other hand, felt they lacked hands-on practical expertise, which could harm their prospects. This was especially true for science and engineering students. They were concerned about the overall effectiveness of online programs, their long-term prospects, and the potential impact on their careers, especially their ability to secure a good job. As these subjects are associated with technical skills, eye-hand coordination involving their senses could not be accomplished through online classes. Our study findings are consistent with Lemay et al. (2021), which reported students felt that, despite completing all of their course content and activities, they were not learning as a whole. A general sense of insecurity prevailed among the respondents. One frustrated female respondent commented:

"Although, all the classes are going on, it does not feel like we are having real education. Online classes are very much different from real life classes. The motivation is not there anymore. No matter how good this education method is, we just cannot take examinations as seriously as real-life examinations. It feels like we are studying but it is just for the sake of a certificate not for learning". (Female, Sophomore year, Liberal Arts and Social Sciences)

Another barrier mentioned was the inability to utilize university resources. Respondents also expressed their concerns about not being able to use laboratory equipment and that they would not be able to learn if they were unable to do so. Science and engineering students particularly expressed concerns about the effectiveness of their online practical lessons. These findings are consistent with those of Yeung and Yau (2022), who reported that visuals or videos were not perceived as helpful in practical classes. Furthermore, because most course materials were soft copies, students were hesitant and uncomfortable reading them in PDF format due to their unfamiliarity. They were dissatisfied that they could not tangibly access the library's books despite being able to do so online.

Technology-Related Barriers. Limited access to acceptable and suitable hardware, software, and internet connectivity is a technological barrier to achieving course-related goals. The hurdles related to technology and its associated factors impeded a considerable proportion of respondents (61.6%). The main issues were a "lack of internet connectivity, electricity, and not having a device to use the internet" and a "lack of technological knowledge". The lack of training connected with the online class platforms also affects the process.

Shortly after Bangladesh declared a nationwide lockdown in response to COVID-19, students returned home. The disparity in internet access between those living in cities and those in villages created a digital divide. Due to the sudden commencement of online classes, students complained that they lacked devices, such as a laptop or a proper smartphone, to support the software for these classes. Since most of the students in this university come from middle and lower-middle-class backgrounds, affordability has caused a challenge.

Additionally, respondents reported a lack of technological knowledge, such as difficulties opening or submitting Google forms, submitting assignments and examination scripts, performing video-recorded presentations, and encountering other technical challenges due to a lack of fundamental understanding of the technology. Complications from power disruptions disrupted students' concentration, while inconsistent network and internet connectivity further aggravated their situation. Frequent connectivity issues often disrupt sessions and lead to missed chances for learning (Hossain et al., 2024).

One respondent who was facing a lack of internet connectivity, electricity, and a suitable device for attending online classes noted:

"In online classes, we give our examinations, presentations, and assignments online. Since I am doing this for the first time, I faced some difficulties related to submission, but I was able to solve this problem. Then I joined classes on my mobile phone. For this reason, sometimes my phone does not work perfectly. Sometimes I was unable to join class on time due to electricity issues and that hampers my study. Now, I do all my study related work through mobile phones and computers. So, I always sit down in front of my computer." (Female, Sophomore year, Science and Engineering)

For an ideal learning experience, minimum technical prerequisites such as internet connectivity, devices, and software should be met (Muthuprasad et al., 2021). The findings suggested that respondents confronted technological issues during online classes, and these findings were consistent with previous studies (Muthuprasad et al., 2021; Priyo & Hazra, 2020). However, medical students in the Philippines perceive technological issues as less significant than the other mentioned barriers (Baticulon et al., 2021).

Health-Related Barriers. Respondents reported experiencing health difficulties related to online classes. This included both "physical" and "mental" well-being. Multiple factors, such as prolonged sitting

in one position, excessive screen gazing, and inappropriate use of devices like laptops or mobile phones, primarily cause physical health difficulties associated with online classes. Concentration problems could be caused by hazardous radiation emitted by the equipment used for online classes (Muthuprasad et al., 2021). The combination of these factors resulted in headaches, back pain, dizziness, and other symptoms among the respondents. One respondent illustrated how his physical health has been impacted by online classes:

"Online classes have become monotonous. The whole day is spent looking at the mobile or computer screen, which causes headaches and eye strains most of the time. Assignments are overloaded because of the online education system, which also makes me feel more under extra pressure than before. Moreover, my family is not cooperative regarding the online classes because they do not believe that I am studying; rather, they think I am just wasting my time using my mobile phone unnecessarily." (Male, Junior year, Business and Economics)

The mental health problem was the result of the current state of uncertainty. Other problems, such as technological hurdles, academic pressure, family expectations, financial incapability, and being physically ill, contributed a lot to students' anxiety and frustration. This, in turn, impacted their state of satisfaction, focus, and motivation. Furthermore, they did not participate in extracurricular activities, and there were no other socialization factors, such as hanging out or eating out. This finding was consistent with another study in which, despite having more time for self-reflection, students reported experiencing increased stress in terms of their mental health (Idris et al., 2021; Kabir et al., 2023). One of the respondents talked about her mental health:

"As everything is now online based, it creates mental pressure on me. Sometimes, I feel so helpless because of this pressure. I am not sure where my concentration should be. As a result, my family has become concerned when they observe my condition or understand that the online semester does not provide me with sufficient knowledge in any practical area." (Female, Junior year, Science and Engineering)

Concentration Barriers. The concentration factor consists of two categories: the first being "loss of concentration" and the second being "disturbing environment". During online classes, the respondents acknowledged doing numerous chores simultaneously. They were easily distracted as they opted to engage with the lecture concurrently while participating in other activities such as browsing social media, chatting in Messenger or WhatsApp, or even playing games. The findings of our study are consistent with other studies (Muthuprasad et al., 2021; Yeung & Yau, 2022). Moreover, teachers in Bangladesh extensively employ traditional lecture-based teaching methods. Consequently, the lack of meaningful engagement in class activities and inadequate strategies significantly contributed to diminished concentration during classes. The following statement is an example that demonstrates a loss of concentration, as well as other difficulties faced by the respondents:

"In my point of view, online learning is not suitable for our country at least. A few things that I have been dealing with in online classes are lack of focus, enormous study pressure and pressure from outside factors. In online classes, my level of focus is lower than in physical class. As I have got the maximum comfort during online class, I have become lazy. Nowadays, I am trying to get out of my comfort zone as much as possible and focus on my studies. (Male, Senior year, Business & Economics)

Besides, because of the noise in students' homes or outdoors, the respondents could not concentrate in class. Internet connectivity issues sometimes force individuals to leave their rooms and, occasionally, their homes. Moreover, sharing rooms with siblings is very common in Bangladeshi culture. Additionally, daily housework or family obligations could limit one's ability to modify environmental factors at home. Also, the student's family might have disapproved of the privacy required for effective online learning. Bangladeshi culture does not hold a favorable view of the privacy afforded by closed doors.

Furthermore, using mobile phones or laptops for a certain period by closing their doors often raises concerns among parents regarding the possibility of their children engaging in unethical behavior.

Because of these issues, some respondents refused to engage or participate in class (Idris et al., 2021). One of the respondents noted how her home environment influenced her concentration on study:

"Most of the time I cannot concentrate because of my home environment. It's noisy, and my family shouts. I spend long hours in the room for classes. After the class, I spend time with my family. My parents put pressure on me to do household work all day, even during my class time and when I leave the virtual classroom. My father works at his office from morning to night, and he sends a messenger to take his lunch. When my mother is not feeling well, I have to prepare meals for my family, even during class time. For this reason, I am unable to concentrate properly. After finishing household work, I feel anxious and tired, and there is no time and energy left for my studies. So, I feel like quitting online classes. It's not that I do not want to concentrate, but sometimes during class time I feel distracted." (Female, Junior year, Liberal Arts and Social Sciences)

Communication Barriers. Education technology has several benefits, including improved communication and teamwork. However, some respondents expressed dissatisfaction with online classes because they couldn't communicate with their teachers or classmates in person. Because there were no one-on-one physical consultation hours with their teachers, they were required to communicate primarily via email. Consequently, apprehension among some students arose from their unfamiliarity with interacting with teachers formally. In this context, the number of students enrolled in each class is usually forty, and the class time is ninety minutes. Therefore, classroom participation for every student may not be feasible. Sometimes, students struggled to voice their questions in class because of technological limitations and the distractions caused by engaging in other activities.

Furthermore, few respondents reported a lag in their friendships or connections because of a communication gap with peers. Additionally, some of them perceived communication as a challenge in group work for the courses. Overall, the sense of belonging was largely unfulfilled. A previous study also found that it is challenging to foster a sense of community or a welcoming learning atmosphere in an online environment (Muthuprasad et al., 2021). One respondent informed us about the communication gap between teachers and other students:

"Because education system has changed a lot, online classes are very different from what we used to do. Some of us are scared to ask questions during classes but now there is no other way to do so like office hours. Sending an email is a good option but sometimes it is not suitable. Also, not seeing the course mates is another big problem as interacting with them sometimes is impossible." (Female, Senior year, Business and Economics)

Perceived Benefits of Online Learning. Around one-fifth of the respondents believed they could adapt to online learning and found the experience positive due to several factors, such as not having to travel and providing more flexibility. For this, the adjustment component was evident, as students acknowledged coping with or becoming accustomed to the situation. The students expressed gratitude for the online format, allowing them to continue their education even during the pandemic. Table 3 lists and discusses the characteristics defined as benefits of online learning and their frequencies.

Table 3. *Perceived Benefits of Online Learning*

Subthemes	Frequency
Flexibility	43
Acquiring new knowledge and skills	40

Flexibility. One of the benefits of online learning, as reported, is flexibility and convenience, which allow respondents to study at their own pace and foster critical thinking. The respondents found it advantageous as they could access information whenever they wanted once the lecture recordings were available. The learning management system in our sample university was not introduced before COVID-19; therefore, adapting to the current circumstances for teachers and students was initially challenging. However, some students felt their course instructors were more empathetic.

Additionally, students from outside of Dhaka could also attend classes from their own homes. Online learning also provided them the benefit of not travelling to and from the university. In the traditional classroom setting, those who live far away from the institution usually spend most time traveling, which is an exhausting experience. In a city like Dhaka, commuting typically consumes about 2 hours of daily productive time. Being at home helped avoid the infection of COVID-19 and allowed students to spend more time with their family members. They also reduced expenses on travel, meals, and hostel accommodations, among other things. In this circumstance, they could utilize the time they would have spent traveling. One male respondent illustrated the advantages of having flexibility as well as teacher assistance during online learning:

"Online classes weren't the worst thing in the world. I enjoyed attending classes from my home. My CGPA is almost the same compared to offline semesters. Most of the teachers have provided class recordings, so even if I missed something in the class, I could recheck later. I am lucky that my academic institution has taken full advantage of technology." (Male, Sophomore year, Business and Economics)

Acquiring New Knowledge and Skills. The online learning system is a completely new experience for students, particularly in Bangladesh. Enhanced writing and communication abilities are considered two benefits of educational technology. Because of the flexibility that online learning provides, respondents mentioned learning something new. A study has demonstrated online learning increases creativity by motivating students to learn new things and improve on what they already know (Pei & Wu, 2019). Moreover, they gained a better understanding of the technology related to online learning, emphasizing its growing significance for self-study, which they anticipate will prove beneficial in the future (Yeung & Yau, 2022). One respondent depicted a positive experience of online learning:

"During all this time at home, I am busy with my studies, helping my siblings in her studies, making sure that I am getting good grades to maintain my CGPA and checking my sister's studies. But also, I like it because I am learning new software and developing new skills. During this pandemic, I have learned photo editing software named Photoshop, Illustrator, Lightroom and video editing software named Premier Pro, Camtasia, and Filmora. Additionally, I am also doing professional courses on MS Excel, MS PowerPoint, digital marketing, content marketing, strategic marketing on Coursera and getting the certificates and being a professional." (Male, Senior year, Business and Economics)

LIMITATIONS

This study has some limitations. Although this study collected data from a large sample size, it did not conduct in-depth interviews with the respondents, which could yield multiple factors regarding the perceived barriers and benefits of online learning. We used Google Forms for data collection, limiting our ability to ask the respondents probing questions. For this reason, we missed out on the expressions and emotions of respondents, as it is possible to collect data through face-to-face interviews. The self-reporting nature of the questionnaire may also have affected the responses. Due to the selection bias to recruit respondents, the perception of students from other universities, especially from public universities, has not been reflected in our study. Therefore, we cannot generalize the findings of this study to all university students in Bangladesh. Nevertheless, the findings of this study provided valuable insights into the perceived barriers and benefits of online learning from students' perspectives. Future research could be done on how students' perceptions and experiences evolve as they become more familiar with digital platforms, providing insights into online learning's long-term impact on educational quality and well-being.

CONCLUSION

Bangladesh's higher educational institutions made a notable transition to online learning, enabling private universities to sustain their programs during the COVID-19 pandemic and setting a precedent for addressing future emergencies. This study explored students' perception of online learning. Poor internet connections, power cuts, and a lack of satisfactory digital equipment are issues for students. A

variety of factors, including uncertainty, the demands of academics, and a lack of practical knowledge, have negatively impacted students' health, particularly their mental health.

On the bright side, students could continue with education, work in their comfort zone, deal with problems, and gain access to available knowledge because of technology usage. Some criteria demonstrate positive and negative aspects owing to perception and personality differences. Some concentrated on technological hurdles, but others noted that technology allows them to gain new skills and continue their education. Some respondents cited being in a safe and peaceful atmosphere, whereas others mentioned distractions at home and in their surroundings. In terms of performance, some of them stated that they performed worse in exams than previously, while others stated that they performed better. This indicates that personal ideas and attitudes influence how a student perceives and adapts to the changes. Overall, the perceived barriers are greater than the benefits.

The present study's findings led to the following recommendations to enhance the online learning process:

- Use a hybrid teaching style that combines traditional and online learning so that both students and teachers become familiar with online learning.
- Provide computer ergonomic training to students to help them maintain a more upright posture while using these devices.
- The university's administration and faculty should actively support student well-being. It will be beneficial to plan and implement mental health programs that focus on educating individuals on healthy ways to cope with demands.

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