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Exploring Distance Learning Experience among University Students

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Abstract

The COVID-19 pandemic significantly impacted educational systems worldwide, leading to the closure of schools and universities. As a result, schools and universities have been forced to modify the way teaching and learning occurs. Specifically, universities had to adopt alternate learning platforms to provide instructions to learners remotely. This study explores the effects of COVID-19 on learning experience among university students in Bangladesh. Exploring students' perceptions and behavioral responses to learning identifies pedagogical obstacles and novel approaches to address the challenges. Following IRB approval, study data was drawn from 60 students by conducting ten focus groups at six public and private universities in Bangladesh. The findings of our study include five major themes: (1) "they were behind for almost two years;" (2) "the internet issue was a big problem;" (3) "financially, it impacted a lot;" (4) "I felt anxious, depressed, and hopeless;" and (5) "problems like headaches and back pain." Findings of the study address the need to prioritize need-based support and increase capacities and related skills to provide education remotely in Bangladesh. Findings can also guide educators and university administrators in responding effectively to support students.

Introduction

Education is a key predictor of the overall socioeconomic status of a country with the average literacy rate indicating a population's level of wealth and social capital (Schuller et al., 2004). Over the past 50 years, access to education at all levels has risen dramatically (Daniel, 2020), as has insight into factors that facilitate student success (Bouchev et al., 2021). In 2020, the International Association of Student Affairs and Services (IASAS) reported that equitable student services designed to address students' basic personal needs are pivotal for academic achievement as well as cognitive and emotional development (Bouchev et al., 2021). Additionally, guidelines for higher education institutions providing virtual courses included the objective of ensuring that remote services were equivalent to their face-to-face counterparts (Bouchev et al., 2021). However, prior to the COVID-19 pandemic, significant gaps between virtual and in-person student supports, particularly for counseling and advising, were demonstrated in research (Bouchev et al., 2021). These pre-existing inequities were amplified by the Coronavirus (Bouchev et al., 2021).

COVID-19 was one of the greatest challenges that systems of education have been forced to navigate (Daniel, 2020). Globally, the COVID-19 pandemic changed daily life for individuals, and a substantial reduction in activity

was displayed in areas such as economics and interpersonal interactions (Deb & Nafi, 2020). The first case of COVID-19 in Bangladesh was confirmed on March 8, 2022 (Deb & Nafi, 2020). Between March 8, 2020 and November 13, 2022, confirmed cases had reached 2.04 million, and the estimated death toll was 29,427 (Mathieu et al., 2022). Bangladesh is the eighth most populous country in the world (Hasan et al., 2021). Given the dense population of Bangladesh, officials imposed lockdowns and restricted travel, both internationally and domestically, in an effort to minimize the spread of the virus (Islam & Selim, 2006; Deb & Nafi, 2020).

As a result of the pandemic, activity in the educational sphere was significantly altered (Nassr et al., 2020). COVID-19 safety measures interrupted face-to-face schooling that had been the global standard (Mahmud et al., 2021; Schleicher, 2020). National school closures in Bangladesh took place from March 17, 2020 to February 6, 2022 (Rahman & Sharma, 2021). This upset in educational practices took place with little forewarning; changes were fast and frequent, which created a sense of uncertainty for individuals (Cheng et al., 2020). Instruction alternatives were sought to fill the lapse in education for students (Mahmud et al., 2021; Nassr et al., 2020). Electronic learning offered flexibility and adaptability in the presentation of learning content (Al-Arimi, 2014), and the Bangladesh University Grants Commission (BUGC) with assistance from the Bangladesh Research and Education Network (BdREN) helped to fund the startup of online education (Ela et al., 2021).

Subsequently, many students were forced to transition to distance learning to continue their education (Nassr et al., 2020). This shift came about unexpectedly for school administrative staff, teachers, and students (Bouchev et al., 2021; Nassr et al., 2020). Not all individuals immediately accepted the quick change to remote learning. Globally, many students believed that their educational experiences would not be equivalent to in-person learning (Unger & Meiran, 2020). Unger and Meiran (2020) found that more than three quarters of the undergraduate students (84.2%) of Wingate University, North Carolina, expressed concerns about disease transmission and a number of factors which influence attitudes about virtual courses. The majority of undergraduate students noted misinformation about COVID-19 (98.8%), feelings of anxiety (75.6%), and a sense of being unprepared for emergencies (64.6%; Unger & Meiran, 2020).

The sudden change to fully electronic learning created challenges in addition to the stress and fear that accompanied the COVID-19 pandemic (Al-Amin et al., 2021; Bouchev et al., 2021; Islam et al., 2020; Nassr et al., 2020; Ramij & Sultana, 2020). Many students struggled to locate environments that had limited distractions and were conducive to studying remotely (Noor et al., 2020). Cost is also a major barrier to e-learning for many individuals (Islam & Selim, 2006; Ramij & Sultana, 2020). Access to equipment and internet services can become expensive, which can prevent students from engaging effectively with electronic learning (Al-Arimi, 2014; Noor et al., 2020). Bangladesh is considered to be a less developed country, and the cost barrier of virtual learning is amplified in a population with socio-economic limitations (Islam & Selim, 2006). With two-thirds of Bangladesh's population living in rural areas, the weak infrastructure in the country also contributes to this barrier, as reliable internet can be difficult to obtain (Hasan et al., 2021; Islam & Selim, 2006).

During COVID-19, many staff and students were not fluent with virtual learning, and they were unaware of available technology or resources for online students (Bouchev et al., 2021). Additionally, staff are often required

to undergo training for e-learning on their own time, and monitoring whether or not educators have received adequate training in conducting virtual learning can become problematic (Al-Arimi, 2014). A recent study found that while 88.5% of university instructors in Bangladesh were teaching e-learning courses, only ten percent had participated in training for virtual instruction (Tabassum et al., 2021). The lack of training and insight about obstacles for distance learning led to substantial struggles for individuals in education (Al-Amin et al., 2021; Ramij & Sultana, 2020). Both staff and students may require technical support, and communication barriers may also be present (Al-Amin et al., 2021; Al-Arimi, 2014). The pandemic highlighted various inadequacies and inequalities that are present within educational systems, such as access to electronic devices and supportive environments for students to learn (Bouchey et al., 2021; Schleicher, 2020).

Health is also linked to students' cognitive abilities and academic performance across the lifespan (Agnafors et al., 2021; Dewa & Lin, 2000; Inácio et al., 2020; Shantakumar et al., 2022). In a recent study of university students in Germany, 38.5% of participants endorsed that COVID-19 and the shift to virtual learning negatively impacted their physical health and 53.1% noted that their mental health also deteriorated (Gewalt et al., 2022). Female students were found to have a higher risk of developing mental health problems compared to their male counterparts.

While a significant number of male university students (46.8%) endorsed mental health problems during remote learning, more than half of the female participants (58.7%) reported mental health struggles (Gewalt et al., 2022). The largest sources of stress that were reported by the university students in the Gewalt et al., (2022) study stemmed from remote learning, social distancing, and extended time at home. These unprecedented levels of stress and fear that were displayed, which were related to the combination of physical and psychological causes, impacted student learning experiences during COVID-19 (Horesh & Brown, 2020).

Physically, acute infections can raise cortisol levels in humans, and psychologically, the uncertainty of the pandemic and related COVID-19 safety measures permeated all domains of daily life including education (Horesh & Brown, 2020). When coupled with stressors such as loss of loved ones, changes in daily living, and job loss from COVID-19, the traumatic stress from the pandemic exacerbated health disorders and played a role in developing new stress-related disorders (Horesh & Brown, 2020). Specific to virtual learning during the pandemic, the physical health of students was negatively affected (Noor et al., 2020). The increased screen time required to attend remote classes was associated with vision difficulties, sleep deprivation, and changes in weight (Noor et al., 2020). While the shift to remote learning during COVID-19 took place to allow students the opportunity to continue their education, many problems were present (Noor et al., 2020).

The current study aimed to investigate the impact of distance learning processes in Bangladeshi university students during the COVID-19 pandemic. The major barriers to education and academic achievement that were encountered and potential solutions were explored. Aspects from participants' personal lives were also assessed to determine if protective factors or additional barriers from this domain contributed to their educational experiences.

Methods

Design and Data Collection

This study is an exploratory, cross-sectional qualitative study. The unit of analysis of this study is universities located at Dhaka in Bangladesh. We selected six universities, three public and three private universities, purposely due to the convenience of the data. The unit of observation is students. Upon securing university Institutional Review Board approval, we recruited 60 undergraduate (48.33%) and graduate students (51.67%) who were enrolled during the COVID-19 in the selected universities. The average age of the participant was 26, ranging from 18 to 35 years old (see Table 1). Most of the participants (71.67%) were male. These participants are the students of arts (28.33%), science (16.67%), engineering (16.67%), and business disciplines (38.33%) and are from the upper middle (21.67%), middle (61.67%), and lower middle (16.67%) class families. Six focus groups were conducted using a semi-structured questionnaire to know the participants' experience. Probing questions were also included to elicit richer data on students' learning experiences during COVID-19. Each focus group had ten participants, and the length of each focus group was approximately sixty minutes long. We conducted secured virtual focus groups through Zoom using the participant's pseudonym and the audio record option only. In our study, the number of focus groups, sample size, and interview length align with qualitative methodological standards (Dworkin, 2012; Guest, et al., 2006). We used a homogeneous sample and continued data collection until achieving data saturation (Creswell, 1998; Creswell & Poth, 2018; Draucker, et al., 2007; Kuzel, 1992). A survey questionnaire was also used to collect the participants' demographic. Data was collected between November and December 2021.

Table 1. Demographic Description of the Study Sample (N = 60)

Variables	M(SD) Min-Max	% (#)
Age in years (range = 18 - 35)	26	
Gender	Male	71.67 (43)
	Female	28.33 (17)
Degree	Bachelor	48.33 (29)
	Masters	51.67 (31)
Disciplines	Arts	28.33 (17)
	Science	16.67 (10)
	Engineering	16.67 (10)
	Business	38.33 (23)
Socioeconomic status	Upper middle	21.67 (13)
	Middle	61.67 (37)
	Lower middle	16.67 (10)

Data Analysis

In the data analysis steps, first we transcribed the audio-recorded interviews into word documents, then transcribed

data was coded in a widely used qualitative software, Nvivo (Edwards-Jones, 2020). Each transcript was considered a written presentation of students' oral story during COVID-19. We used a phenomenological hermeneutical method to capture the lived sense of the students' experiences and explore the textual interpretation of their stories. Analytic rigor was ensured during the data analysis process using systematic steps with low-inference descriptors (Edwards-Jones, 2020). As low-inference descriptors, participants' words verbatim were used to avoid biased interpretation and increase internal reliability (Seale, 1999). We paid close attention to the specific words or phrases used by the participants during the interview, for example, *anxious, internet problem, struggle, unable to sleep, and headache*. Our iterative and reflective coding process established cohesive patterns and themes in the study (Creswell & Poth, 2018).

Results

Across participants, five key themes were found that described the effects of COVID-19 on the learning experience for university students in Bangladesh: (1) "they were behind for almost two years;" (2) "the internet issue was a big problem;" (3) "financially, it impacted a lot;" (4) "I felt anxious, depressed, and hopeless;" and (5) "problems like headaches and back pain." Some participants reported concerns about the educational setbacks and fears for their future careers. Others expressed struggles with internet connections and digital applications. An additional pattern amongst participants was the financial strain that they experienced during this time. Both physical and mental health impacts were also reported by participants. Despite these difficulties, the university students that were interviewed overcame the barriers and offered suggestions for future directions and growth to support Bangladeshi students.

"They were Behind for Almost Two Years"

Many participants reported that it was challenging to communicate with their professors, and they noted that their level of understanding was impacted as a result. One participant described the following:

The problem I faced most was the lack of communication with our faculties...Study materials were provided by the faculties, but there was a gap in communication between the students and the faculties, and, therefore, many materials were difficult to understand. We were never really satisfied with it as we never fully understood the materials.

Another participant attributed the communication barrier to a lack of guidance from the university or individual professors - "We also did not have options of proper communications as there was no set of rules at the beginning that led to the waste of time and confusion." Applied concepts and practices were particularly hard for participants to grasp during distance learning. Another participant mentioned, "In our classroom, we learn practical things online. That was difficult to understand the whole subject through the online semester."

Many participants were distressed because the timeline in which they expected to complete their studies suddenly became extended due to the pandemic.

If there was no COVID-19, we would have been in third year, but due to this unfortunate situation we

are still in our first year. We would have finished our fourth semester, but now we are just starting our second semester. A one-year gap has a great effect on our studies and hampered our mental state...we gained a lot of skill, but as we had to stay away from our education, we lost most of those skills.

Of particular concern was the ramifications that this educational gap would have on their future employment opportunities.

When we are admitted in university, we have a goal or a minimum time for graduation. In the perspective of Bangladesh, there is a minimum age range for the job sector. If we did not complete our graduation in time, then there is a problem.

Another student noted that because many university students experienced these setbacks during COVID-19, they would encounter an influx of graduates when they were able to complete their education, which would limit career openings. "Our education system was off for a long time...when we complete our masters, then so many people also complete their masters. So, for job searching there will be more competition. So, for students, it will be harmful."

"The Internet Issue was a Big Problem"

Across participants, a theme of network issues was described. Many times, students were unable to connect to reliable internet, particularly those living in remote areas.

I faced serious network issue while being in the village, especially regarding availability of study tools and materials. Everything was on PDF, and to do anything there was need of access to speedy internet. And often on presentation day, due to poor internet, I was unable to give the presentation. Regarding Google Meet, I often could not join on time.

Another student said the following: "I faced a networking issue...people living outside face this problem more than anyone. I suffered a lot. Sometimes I missed the lecture as well. Submitting assignments was another issue, so, ultimately, I suffered a lot." Others did not have Wi-Fi in their homes, which forced some students to use their cell phones to access a stable network. One participant lost their phone on a bus, and they were unable to attend their virtual classes.

At the beginning, I did not have any internet connections, so I had to make do with mobile data...I used to do my classes on the side of the road on a chair. I constantly lost focus due to this situation.

Many participants feared losing connection, particularly while completing assignments or exams because their work could be lost. One student reported that if they lost internet connection while testing, their exam became invalid. Another said, "My experience with the particular topic of the internet is extremely bad as I had to face a lot of difficulties during exams due to internet connection loss."

When participants were able to access a stable internet connection, many reported struggling to navigate the virtual platforms that were used by their university and professors. "The online education of Bangladesh is a quite new

form of education for this country, so many of us were confused and had difficulties handling the new applications and technologies.” Another participant shared that they “struggle with the Zoom application because Zoom has complicated functions.”

Students reported being unfamiliar with the applications, which required them to complete additional steps in order to access their education. “When we used this application, it was totally new for us. We needed to email to continue this application properly.” Lack of fluidity with specific actions on the virtual applications such as screen sharing prevented some participants from being able to deliver effective presentations or complete assignments. One student reported this to be their greatest barrier at the time, as they had had no prior experience with these resources before switching to a distance learning due to COVID-19. “If I talk about most significant challenges, then technological oriented tools practice. We don’t practice this at all. There are so many online tools.”

“Financially, It Impacted a Lot”

The COVID-19 pandemic led to job loss for many of the participants, and financial repercussions were reported by many of the participants. One student said, “This became the norm, as most of the people suffered the same way losing many sources of income.” This pattern created financial constraints for students. In addition to struggles meeting their basic needs, participants expressed that their lack of income led to mental health problems for them, which impacted their educational pursuits.

The first problem I had was that I lost my job, which impacted me financially. As everyone present understands that as a male without money, made me feel devastated and impacted me mentally.

Financial difficulties also prevented some students from being able to afford technology devices and/or Wi-Fi to participate in virtual learning.

I face internet issues like lag issues, cannot listen to the incredible voice of my course teacher, and cannot submit my assignment correctly. It was a harrowing experience. I was giving my exam. When I was going to submit the exam, PDF internet connection was cut off. Unfortunately, I have no money on my mobile phone SIM on that day.

“I Felt Anxious, Depressed, and Hopeless”

Most of the participants reported ramifications to their mental health when they transitioned to virtual learning. Some individuals noted that they experienced multiple symptoms. These mental health experiences made academic success more strenuous to obtain for Bangladeshi university students during COVID-19.

“My Anxiety was Too Much”

Participants reported that the uncertainty that accompanied COVID-19 led to feelings of anxiety. Some students struggled to maintain their internet connection, which created fears that their exams or assignments would be lost. One respondent noted, “I always felt afraid that my connection would be lost at any given moment which caused

me anxiety.” Others were concerned about the long-term impacts and questioned whether they would be prepared to join the labor force. While some participants obtained medication to manage their anxiety, others did not receive medical or counseling intervention for their anxiety. One student said that distance learning during the pandemic “did impact our mental health as our future is looking bleak. Our education was hampered. Our family situation is not good, but we did not take any counseling, as this service is not given in our university.”

“I Felt Depressed”

Many individuals reported experiencing depression while completing virtual classes. One student described “COVID-19 did hamper my mental health...I just newly entered the university, and seeing how classes were suspended mad me question whether I should continue my education and many times caused me depression.” This sense of hopelessness hindered motivation for some participants. “I felt that studying was useless, as I could not confirm when we would return, and the lack of studying...contributed to my depression.” Social support was also weakened, which intensified feelings of sadness and loneliness. “I felt depressed, as the pandemic made an impact in my personal life. At that time, I was disconnected from my many close friends, and it made an impact in my life.” Interpersonal interactions offered by the university were also limited during the pandemic, which further isolated students. “I used to do tutoring, but even those were lost due to the situation, which led to further loss of mental stability leading to depression.”

“My Sleep Cycle was Totally Affected”

A theme of sleep issues was reported by participants. They noted that the increased screen time, altered schedules, and lifestyle changes associated with virtual classes made getting restful sleep more difficult. One student shared the following:

I became sick after this online class started, which cause me to be unable to sleep at night, which eventually led me to seek medical help from a doctor who diagnosed that my insomnia was related to my screen time.

Increased cell phone use also was reported to contribute to insomnia. While some individuals experienced sleep loss, others reported sleeping too much. One student said, “I suffered from excessive sleep.” Another participant noted that distance learning during COVID-19 transformed their sleep-wake cycles. “The change in lifestyle causes a change in habit. Like, we would not stay awake for long periods of the night and sleep all day.”

“Problems Like Headaches and Back Pain”

In addition to the mental health stressors that resulted from the shift to virtual learning during COVID-19, participants also acknowledged that their physical health suffered. Participants attributed the decline in their physical health to increased screen time and lack of physical activity associated with online classes. One individual described the following: “I faced some problems like headaches and back pain due to sitting and staring into a screen for long periods of time.” Another said, “A new problem, such as headaches, appeared due to sitting in

front of my laptop all day long.”

Others spoke of the weight changes that they experienced. “It did physically affect me, as I had gained 10 kilograms of weight during that time.” The stay-at-home orders that took place during the pandemic were reported to play a role. “Due to the lockdowns, I gained weight and became lazy, and sometimes I would be lethargic.” Another student shared that they lost a substantial amount of weight during lockdowns. “I, on the other hand, lost weight due to staying at home all the time.”

Discussion

Overall, the unanticipated shift to emergency virtual learning highlighted discrepancies between face-to-face courses and fully online learning. COVID-19 changed the educational trajectory for university students in Bangladesh. Participants experienced a gap in education due to lockdowns, which put students behind up to two years. Some students were concerned that they would have issues obtaining future employment due to this setback. To address this learning lapse, remote education was implemented.

Distance learning offers flexibility, which was crucial for continuing education during the COVID-19 pandemic. Yet, barriers to e-learning such as cost, unreliable internet access, and communication difficulties prevented many students from engaging effectively with their coursework and understanding the material. Others noted that they struggled to navigate the virtual platforms (e.g., Zoom, GoogleMeet, etc.). Additionally, many students expressed that they suffered health impacts such as anxiety, depression, headaches, and back pain from the challenges of distance learning. While virtual learning may be beneficial for some, it appears that online education is not the best fit for all of the university students in Bangladesh. Across participants, reports that face-to-face education was preferential to e-learning were expressed. In order for remote courses to be a viable option for Bangladeshi university students, the country and educational institutions will need to implement wide reaching changes to support the needs of students and instructors.

At a unitary level, Bangladesh requires infrastructure to support a reliable internet connection. Rural areas of the country in particular were reported to have limited and inconsistent internet. In order to allow students to feasibly attend virtual learning, they must have access to a stable network connection. Having internet in the home during lockdowns was crucial for students to be able to attend virtual courses; however, many reported that they did not have internet at their house. While some were able to connect to the network from their mobile devices, others were unable to overcome this barrier. If Bangladesh hopes to have students attend distance learning, many students will require financial support or internet and electronic devices provided for them.

Additionally, addressing the health needs of Bangladeshi students requires attention. Across the country, there are only four hospital beds for every 10,000 people (Hasan et al., 2021). During times of communicable illnesses, such as the COVID-19 pandemic, this creates significant strain for students. Mental healthcare in the country is also full of shortcomings which have been attributed to societal stigma, lack of financial support, and a limited number of mental health facilities (Hasan et al., 2021). Few providers practice mental healthcare in Bangladesh

with only 260 psychiatrists available in the country of 162 million (Hasan et al., 2021). These practitioners are generally located at medical college hospitals within large cities, which further limits access for the majority of the population that resides in rural areas (Hasan et al., 2021). The only national-level institute is in the capital city, Dhaka, and the small number of mental health facilities creates an extensive strain on financial and staff resources (Hasan et al., 2021). When mental health services are delivered, there is little, if any, multidisciplinary care (Hasan et al., 2021). Given the connection between health and academic achievement (Agnafors et al., 2021; Dewa & Lin, 2000; Inácio et al., 2020; Shantakumar et al., 2022), it is paramount that physical and mental health resources be supported for online students and the country as a whole.

At the university level, training is needed. Instructors need to undergo training for teaching virtual classes, navigating platforms, and communicating with students electronically. Students also need direction on using educational platforms that are required by the courses. Support should be available from universities if students or teachers experience technical difficulties that prevent them from learning. Psychological services offered by the university may also help students who are experiencing stress, fear, or confusion due to virtual learning. Given the societal stigma related to mental health services, it is crucial that these supports incorporate culturally informed practices and interventions. These changes would assist Bangladeshi students with virtual learning in the future.

Conclusion

Virtual learning can be a beneficial resource for many students. In Bangladesh, changes at the unitary and university levels are required before the majority of students can have access to remote learning that is comparable to face-to-face education. We are living in a digital era. We need to use technological advancement as a power tool to create a better learning environment for our students. Both students and faculty can be benefited from the technological efficacy (Nurgaliyeva et al., 2023). Artificial Intelligence (AI) program can play an important role in learning and development during crisis and non-crisis both periods. We can use AI for personalized learning and intelligent tutoring systems to serve our students effectively (Fahimirad, & Kotamjani, 2018). Especially in higher education institutions where skilled manpower are limited, AI can play a significant role. The use of AI in healthcare is also groundbreaking (Davenport & Kalakota, 2019). The higher education institutions should also focus on using AI to provide the best mental and physical healthcare to our students. This study provided insight for future growth that would enable university students to effectively attend online education.

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