



Effect of COVID 19 on E-learning of Tertiary Level Education in Bangladesh: A Review

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ABSTRACT

Objective: This study aims to explore the opportunities and challenges of online tertiary education during the COVID-19 pandemic, which disrupted education for 1.6 billion students worldwide. The Bangladesh government also closed educational institutions on March 17, 2020, but some have considered online platforms for continuation.

Methodology: We employed a qualitative research approach, including a thematic analysis based on research questions. Data was collected using a questionnaire survey, focus group discussions, and semi-structured interviews from 40 students from four universities in Dhaka and Chittagong. The sample comprised of 18 men and 22 women aged 18 to 26, from various academic fields.

Findings: Major challenges of online learning include inadequate electronic devices, affordability of internet packages, curriculum and pedagogy concerns, and psychological issues. Additionally, teachers' lack of prior experience and inadequate training were identified as significant obstacles. Conversely, the potential of e-learning and e-libraries was recognized.

Practical Implication: These findings may aid policymakers and educators in developing alternative communication methods in future pandemics.

Originality/Value: The research was conducted with the authenticity of sound research in mind.

Limitations: Although our study was qualitative, future research could explore the impact of the pandemic quantitatively.

1. Introduction

COVID-19, which emerged from Wuhan, China, in December 2019, spread rapidly over the next several months to numerous countries of the world, resulting in an outbreak of acute infections and mortality. This highly contagious respiratory disease was declared a public health emergency and a global pandemic in March 2020, necessitating coordinated collaborative efforts among countries worldwide (Ilevbare, Adelowo and Adegbite, 2020; El Masri and Sabzalieva, 2020; Pokhrel and Chhetri, 2021). On 31 December 2019, World Health Organization (WHO) was informed of cases of pneumonia of unknown cause in Wuhan City and a novel coronavirus was identified as the cause by Chinese authorities on 7 January 2020 and was temporarily named ``2019-nCoV`` (WHO, 2020). As with all past pandemics, the specific mechanism of its emergence in humans remains unknown. The countries around the world cautioned the public to take responsive care. The public care strategies have included hand washing, wearing face masks, physical distancing and avoiding mass gathering and assemblies. Lockdown and staying home strategies have been put in place as the needed action to flatten the curve and control the transmission of the disease (Sintema 2020). The United Nations

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Education, Scientific, and Cultural Organization (UNESCO) has recognized that the coronavirus pandemic outbreak has impacted the education system in the world (UNESCO, 2020).

The COVID-19 pandemic poses more than a medical emergency. It demonstrates how globally intertwined the world is – there is no distinction between discrete problems and behaviors. Currently, pandemic reactions seem chaotic and muddled (Yang, 2020). COVID-19 challenges reassessing social connections, including education. The COVID-19 outbreak has disrupted education systems across the globe. Approximately 1.6 billion students in over 200 nations have been affected by this deadly virus. Around 94% of the students have been affected globally by school closures (Pokhrel and Chhetri, 2021). Policies of social distancing and restriction have harmed traditional educational processes. The reopening of schools after the lifting of restrictions could create challenges for further outbreaks. Similar school closures occurred during the 2009 Swine flu outbreak in the United States and Mexico, the 1968 flu pandemic that originated in Hong Kong, the 1958 Asian flu, the 1918–1919 Spanish flu, and the 2014 Ebola outbreak (Pokhrel and Chhetri, 2021; Oloyede, Faruk and Raji, 2021). Earlier pandemics showed that preventing disease spread during the catastrophic pandemic requires people's adherence to the implementation of preventive strategies, which mostly depend on their understanding of disease, indications, and caution (Ilevbare, Adelowo and Adegbite, 2020).

Following the identification of the first COVID-19 case on March 8, 2020, Bangladesh, like many other countries, imposed a country-wide lockdown disguised as 'general holidays' beginning March 26, 2020, to limit the highly infectious virus's spread. However, educational institutions were initially shuttered from March 18, 2020, to March 31, 2020, and then prolonged as COVID-19 instances increased across the country. Although the government has halted the 'general holidays' until May 31, 2020, to restart normal operations, classroom-based instruction in academic institutions remains on hold, with only organizational functions continuing in the country (Ahammed *et al.*, 2021).

Developing countries, including Bangladesh, tend to experience a major disruption to their educational institutions due to the COVID-19 outbreak. Numerous institutions in industrialized nations have used online teaching to supplement face-to-face instruction before COVID-19, establishing a visible presence on the internet. In comparison, just a handful of higher education institutions in developing countries had never previously used online instruction for the COVID-19 outbreak. Numerous teachers in developing nations lack access to the internet or do not have it at all and hence are not exposed to online teaching tools. Students' educational performance is likely to suffer due to limited interaction and lack of consultation with teachers when having difficulty learning. The challenge mentioned above is owing to a lack of supporting infrastructure and the necessary skills for using online teaching resources (Adedoyin and Soykan, 2020; Oloyede, Faruk and Raji, 2021; Attarabeen, Gresham-Dolby and Broedel-Zaugg, 2021; Osman, 2020; Keptner and McCarthy, 2020).

The experience of quarantine and lockdown under pressure from the uncertainty of educational careers has several effects on students' mental health. The outbreak of COVID 19 creates a chaotic psycho-emotional environment. Countries report a significant spike in suicidal behavior and various forms of psychological issues comprising depression, anxiety, stress, insomnia, and panic among the people (Islam *et al.*, 2020). Researchers (Islam *et al.*, 2020) have shown that higher exposure to social media deception is more likely to lead to anxiety, despair, and other problems in mental health among the diverse socio-economic background populations (Hossain *et al.*, 2021; Khan *et al.*, 2020; Yeasmin *et al.*, 2020). Also, the concern of lagging academically is another concern that leads them towards anxiety.

Thus, shedding light on the current pandemic scenario, this article has attempted to review the impact on tertiary education, highlighting the effect of COVID-19 on online education and the students' psychological state.

1.1 Problem Statement

The global pandemic COVID-19 has spread across the globe, infecting nearly every country. The situation urged citizens to exercise vigilant attention including physical distancing, using face masks, hand washing, and avoiding mass gatherings. Lockdown and stay-at-home techniques have been implemented to bend the curve and control disease spread. However, the impacts of such measures include financial distress, segregation, psychological issues, and social challenges (Ilevbare, Adelowo and Adebite, 2020; Attarabeen, Gresham-Dolby and Broedel-Zaugg, 2021; Emon, Alif and Islam, 2020; Hossain et al., 2021). A wide range of psychiatric problems such as panic attacks, depression, and anxiety have also been provoked.

To avert large gatherings, the Bangladeshi government forced a two-week closure of all educational institutes starting March 16, 2020. Academic institutions were closed to avoid the spread of the coronavirus, resulting in a void. As a result, many policymakers set out to fill the gap. Because the opening of educational facilities was uncertain, the government created an online class system to reach students. UNICEF collaborates with the Bangladeshi government to implement successful remote learning initiatives via TV, radio, mobile phones, and online platforms. Besides UNICEF, the Ministry of Education (MoE) has helped develop guides to empower teachers and reduce student losses (Rashid, 2020; Mahmud et al., 2021; Hossain et al., 2021). Education policy and pedagogy were some of the issues that remote/e-learning faces. Many countries, including Bangladesh used to struggle with stable Internet access and digital device access. While many low-income families in developing nations could not afford online learning equipment, online education revealed students to greater screen time (Pokhrel and Chhetri, 2021; Palazón-Herrera and Soria-Vílchez, 2021). So, individuals engaged in offline activities and self-empirical learning. Due to both parents working, there was a lack of parental supervision as well for young learners (Adedoyin and Soykan, 2020; Pokhrel and Chhetri, 2021; Attarabeen, Gresham-Dolby and Broedel-Zaugg, 2021).

The Bangladeshi government-designated 66 days of public holidays to combat Covid-19. Unpredictable school closures have generated a stalemate. Students graduating in 2020 missed several job postings. Recent experiences suggest that academic failures or interruptions disproportionately affect low-income students resulting in youth antisocial behavior and societal instability (Mondal et al., 2021). In this COVID-19 pandemic, students who have no internet access signify that the level of poverty in the community upsurges and the rate of access to the internet have fallen swiftly and those students who do not have a low socio-economic capacity to afford broadband are at greatest risk for falling behind or facing other hurdles for online learning.

Students were agitated primarily by strong educational expectations, academic success, and persuasion regarding future academic and professional careers. According to studies, the most prevalent psychological problems amongst higher education students were anxiety and depressive disorders, which became more complex due to increased academic pressure and emotional distress. However, psychological distress was prevalent among students as a result of issues such as abrupt school closure as a result of isolation, living away from families during a critical time, postponing events such as study exchanges, and graduation ceremonies, losing some students' part-time jobs as a result of local businesses closing and encountering difficulties with internet access (Ilevbare, Adelowo and Adebite, 2020; Palazón-Herrera and Soria-Vílchez, 2021).

1.2 Research Objectives

The research objective of this study is:

- To explore the effect of COVID-19 on tertiary education in Bangladesh, especially on the verge of online teaching.

2. Literature Review

Global higher education has lived the dream of prosperous global exchange and sustainable development until very recently. It is an old argument that globalization creates a demand for higher education internationalization, which in turn benefits global society (Peters et al., 2020). Even after, the decision to close educational institutions on a global scale was sensible to prevent the spread of the disease. Online learning was used immediately in some of the nations because they had the online practices before.

Following the COVID-19 outbreak, the Chinese government announced an alternative policy plan to keep schools open until the virus was contained (Yang, 2020; El Masri and Sabzalieva, 2020; Emon, Alif and Islam, 2020). As a result, the universities closed campuses and moved online. Even universities with little prior e-learning experience have begun teaching online. The pandemic has resulted in more online engagement between instructors and students using modern technology in China (Yang, 2020).

The objective of Tsekea and Chigwada (2021) was to assess the creative e-learning support techniques of academic libraries in the universities of Zimbabwe. The influence of COVID-19 on university education and the provision of services have led to this. The digital library services' role in facilitating e-learning was uncovered through a quantitative analysis. During the lockdown period of COVID-19, employers benefitted from access to and use of digital library services.

The state of Assam in India experienced accumulated impacts due to COVID-19 and has formed an unexpected adjustment in the teaching and learning process. With the distant teaching-learning model, the authors (Das, Bhuyan and Shahnaz, 2020) wanted to understand the participants' obstacles, methods, and choices in online education. Thus, a cross-sectional study was done among students, instructors, and families across the state on the verge of the outbreak. The findings depict that despite inadequate internet access, overburdening, and unpleasant situations, most participants recommended the use of blended learning of post-COVID19.

The global outbreak caused Bangladesh to close down educational institutions and suspend board examinations (such as the Higher Secondary Certificate and university admission tests). Approximately 70% of learners participated in e-learning during the lockdown period. Most of the students used the android mobile to participate in e-learning. Students have been confronted with various problems related to inadequate economic solvency, depression, poor internet connectivity isolation and an unfavorable home study environment (Kapasias *et al.*, 2020). According to SANEM (South Asian Network on Economic Modeling) forecasts based on the most recent Household Income Expenditure Survey, 24 percent (or 8.4 million) of students' households were destitute prior to the COVID-19 crisis (HIES). According to SANEM, up to 43.90 percent of students' families might become impoverished as the crisis worsens (Uddin, 2020). An undergraduate student from Jahangirnagar University said that it was very costly to attend online classes. Two days' online classes consumed three gigabytes of data that costs 114tk (Alamgir, 2020). Bangladesh University of Professionals (BUP) provided internet package to the students for their online class activities (Rahman Megha, 2020). University Grant Commission (UGC) also introduces to provide free internet package among students for online class (Alamgir, 2020).

During COVID -19, Public and private universities had to close their universities due to ensuring of social distancing. But at the same time, they mentioned that they were not adequately equipped to continue their online classes. Many of the leading universities were already facing session jam to complete their study. In higher education, total 3,150,539 (Males 1,873,654 Females 1,276,885) students were disrupted from their learning (UNESCO, 2020). Female students were already under pressure to get married before completing their study. Students normally aspire to get a government job. After pandemic, age limit will be a barrier for them (Rahman, 2020).

A study was carried out on students of Bangladeshi universities during the COVID-19 pandemic to assess the incidence of sadness and anxiety. The purpose was also to uncover depression and

anxiety determinants. The findings imply that at the onset of COVID 19, a large number of students suffered from a severe form of anxiety and depression due to the unprecedented and emerged situation. The ratio of suffering from psychological illness was mostly prevalent in male students rather than female students (Islam et al. 2020).

Online learning is becoming increasingly important as a long-term strategy, if not survival on the verge of the pandemic. To avoid being wiped out by the COVID-19 pandemic, several have declared a mixed method sort of shift to online and offline teaching (Naidu, 2021). However, long-term survival and resilience against current and future catastrophes necessitate a systemic rethinking and synchronization.

2.1 Conceptual Framework

Upon understanding the issue and gaining knowledge from literature review, it is found that COVID-19 may have serious impact on students' learning practices, mental health and economic condition etc. For conducting this study, the conceptual framework has been used to draw the preferred ideas that attempt to connect all aspects of inquiry for this study. The important factors which have impacted students learning in manifolds. University management was not also ready to support their students and teaching staff. The major theme of the study is "impact of COVID-19 on learning practices of tertiary education" that lies at the center of this framework. All the components within this framework emerged from the study objective and have been set around the key theme of the research.

3. Research Methodology

A phenomenological qualitative research design was employed for this study as it can provide an in-depth understanding of the nature of a particular phenomenon (Creswell, 2013).

3.1 Participants

To obtain the data for the survey, 40 students from 4 universities were selected for the research employing convenience sampling. Four universities are—one public university and one private university from each city of Dhaka and Chittagong in Bangladesh. Among 40 students, 18 were male students, and 22 were female. Their age ranged from 18 to 26 years, with a mean of 21 years. As for the year of study for each university, 2 students were in their 1st year of study, 3 in their 2nd year, 3 in their 3rd year, and 2 in their 4th year. The students belonged to different disciplines.

3.2 Data Collection Instrument

A semi-structured interview protocol was developed for this research. The semi-structured interview instrument was chosen for data collection as a suitable interviewing format for qualitative research because in-depth data can be elicited through it in which the participants have to answer preset open-ended questions about the study matters (DiCicco-Bloom & Crabtree, 2006). The instrument had questions on the effects of COVID-19 on tertiary education. Several probing questions related to the objective of the study were asked to the participants and each interview lasted for 15 to 20 minutes..

3.3 Data Analysis Method

The six steps of thematic analysis method were followed for data analysis considering the qualitative nature of the study as it is widely used qualitative research data analysis method. The interview transcription process was followed in documenting each conversation. Inductive and deductive approaches were used to identify and characterize themes that emerged from the data. Then it finalized the major themes and included the minor themes into them. The study concentrated on flipped classroom settings at the onset of the unprecedented pandemic and its opportunities and challenges. Along with it, the focus was also on the psychological stress of the students dealing with the deadly pandemic situation.

4. Findings

Seven number of themes emerged from the analysis of the qualitative data of this study. The themes are: Dependency on online education, Inclusion of online library, Demerits of online learning, online education in rural areas of Bangladesh, Effects on adolescent students, Effect on mental health, physical health problem.

4.1 Dependency on Online Education

During the outbreak, e-learning platforms have allowed students learning from home, while universities were closed. Staff and student preparedness must be assessed and supported as needed during the transition (Pokhrel and Chhetri, 2021). The use of face-to-face communication is declining. There were fears of losing the 2020 academic year or more. The COVID-19 pandemic has opened the door for digital learning. Virtual learning is not a one-size-fits-all approach. Subjects and age groups demand varying online learning methods. Online learning also allows students with disabilities to participate in less physical learning situations (Pokhrel and Chhetri, 2021). Online platforms like Google Classroom and Zoom, virtual learning environments, social media, and group chats like WhatsApp and WeChat were employed for the first time. Even after face-to-face training, these platforms can give extra resources and coaches (Pokhrel and Chhetri, 2021; Tsekea and Chigwada, 2021).

4.2 Inclusion of Online Library

Using higher education technology has changed the dynamics of learning. Electronic learning was used to assist in enhanced educational environment, and more students use e-learning to supplement their education. While libraries have typically focused on in-campus services, lockdown services have increased support for off-campus students (Tsekea and Chigwada, 2021; Adedoyin and Soykan, 2020; Donitsa-Schmidt and Ramot, 2020; Aziz, Uzzal and Saqiba, 2021). As a result, digital libraries have stepped in.

4.3 Demerits of Online Learning

Although the COVID-19 outbreak has created multiple opportunities for unprepared and distant plans of introducing e-learning systems; educators, schools, institutions, and the government have faced numerous problems (Donitsa-Schmidt and Ramot, 2020; Pokhrel and Chhetri, 2021). While governments, frontline workers, and health experts used to fight the outbreak, education institutions used to struggle to educate all. (Tokhrel and Chhetri, 2021; Naidu, 2021; Chan, 2020; Palazón-Herrera and Soria-Velchez, 2021). Away from school, students' life was impacted economically, socially, and psychologically. Many of these students attended online programs putting them at risk. Students were more exposed to violent content and cyber bullying (Pokhrel and Chhetri, 2021).

The use of a proper and relevant online education technique may be based on the instructor and student's skills in the online system (Pokhrel and Chhetri, 2021; Naidu, 2021; Mahmud et al., 2021; Ramij and Sultana, 2020). Students with impairments required more supervision and instruction than naturally motivated students. Unable to afford online education, academically talented students suffered a lot. Universities were heavily reliant on ICT divisions to build e-platforms and integrate existing multi-sector systems (Pokhrel and Chhetri, 2021; Chan, 2020; Dejene, 2019).

4.4 Online Education in Rural Areas of Bangladesh

Many Bangladeshi students used to live in rural settings with poor network access, whereas online learning systems sometimes demand a fast internet connection. Distances and slow internet connections make online classes challenging to attend and disrupt the lesson and prevent students from learning. Important study material is frequently ignored, putting future studies or jobs in jeopardy (Mahmud et al., 2021; Adedoyin and Soykan, 2020; Al-Amin et al., 2021; Dutta and Smita, 2020).

Rural students need to buy data packs to enroll in online classes, but the challenges were network problems and data pack costs. Bangladeshi data packages are the priciest in South Asia. The price difference between Bangladesh and India is \$0.99 per GB. These free internet packets were available at some institutions. But rural internet services were so poor that even those with enough data could not use it properly. During this pandemic, the rapid surge in data costs has left students unable to pay for basic needs (Mahmud et al., 2021; Al-Amin et al., 2021).

Unequipped rural students struggled to attend online classes. Therefore, The University Grants Commission (UGC) provided financial aid to students taking online education. Online programs with 60-70 per cent student participation are now available at 63 universities in Bangladesh. During tests, students sat in front of the zoom to be observed. Despite the difficulties of online classes, students were able to catch up. (Mahmud et al, 2021; Al-Amin et al,2021). However, most students did not have access to updated devices. Rural inhabitants might not in possession of TVs or smartphones. To help students who could not afford digital devices, the UGC offered reimbursed soft loans (Mahmud et al.,2021). Affording digital equipment was challenging for most of the families in this critical period. Students missed classes due to a lack of digital devices (Das, Bhuyan and Shahnaz, 2020; Chan, 2020; Dutta and Smita, 2020).

4.5 Effects on Adolescent Students

COVID-19 had numerous effects on the daily lives, but the effects on education, namely on adolescents, were one of the most significant hurdles to overcome (Mahmud *et al.*, 2021; Faisal et al., 2021). The UGC approved universities' use of online media to continue semester classes. Bangladesh Research and Education Network supported 147 of Bangladesh's 153 public and private universities in their efforts to teach online. Within four months, with the support of BdREN, online education was legitimized. Each day, around 3,800 classes are offered online, with over 220,000 students enrolled. Most of the universities of Bangladesh have created academic websites to provide online courses (Mahmud *et al.*, 2021). While these online education procedures contribute to the sector's digitalization, the results were not universally beneficial. Educational institutions in this country have made limited use of digital platforms for educational purposes. As a result, it was challenging to continue schooling and educating via this medium (Mahmud *et al.*, 2021; Das, Bhuyan and Shahnaz, 2020; El Masri and Sabzalieva, 2020).

4.6 Effects on Mental Health

The experience of quarantine and lockdown under pressure from the uncertainty of educational careers has several effects on students' mental health. The outbreak of COVID 19 creates a chaotic psycho-emotional environment (Ahammed et al., 2021; Mehareen et al., 2021). With countries reported a significant spike in suicidal behavior and also various forms of psychological illnesses among the people. The concern of lagging academically was another concern that leads students towards anxiety.

In Bangladesh, many students used to work part-time to finance their educational expenditures and sometimes support their family. Private tuition and their dependence on private tuition as part-time work is progressively increasing. Long-term unemployment along with financial insecurity is the major stressor contributing to levels of depression and stress among Bangladeshi university students. A study reveals that unemployment is strongly linked to mental and bodily illnesses that can decrease the possibilities of persons' satisfaction, and ultimately lead to psychological impairment (Faisal et al., 2021; Hosen et al., 2021). The abrupt unemployment and financial insecurity appear to place students at university in an unpleasant condition that affects their socio-economic and emotional well-being. It is commonly acknowledged that living with relatives strongly reassures people, reducing depression and anxiety. However, the economic strain on families was extremely high. The majority of households suffered from excessive debt and income declines, leaving family members distraught. In this moment of hardship, students at a university who earned and contributed before lockout to their families could hardly help their parents (Hosen et al., 2021).

In affluent countries, universities implement rigorous health protocols, facilitating further study in higher schools and eventually transferring into online campus learning. In Bangladesh, protective interventions such as the use of masks or personal protective equipment have not yet been implemented primarily because of inadequate resources. Some students believe that during the protracted shutdown of universities, they could slip academically behind their peers in other world areas; although, online classes cannot meet their needs. Additionally, their investigation assignments and internship had to be stopped. The COVID-19 dilemma has presented a major challenge for graduates to achieve their academic and employment aspirations in the future. While university closures are designed to keep students safe, these concepts have been developed for those with various sets of cognitive impairments.

4.7 Physical Health Problems

It has been found that many changes took place in the participants' daily routines due to COVID-19. They said that their sleeping, eating, and working habits has changed so much, such as an increase in sleep during the day, lack of sleep at night- changed the sleeping cycle, loss of appetite, physical inactivity, which resulted in weight gain or obesity. They felt weakness, fatigue, and so on. The majority of the participants identified these physical problems as reasons for ignoring and not being enthusiastic about continuing their studies at home. One male participant told that I used to be very busy. Now, I am getting fat by eating food and staying at home all the day. The body senses very weighty, the head tingles, feel giddy; there is a sluggish sensation.

5. Discussion and Recommendation

During the COVID-19 period, almost for two years, the education system of Bangladesh was entirely dependent upon virtual system. The students of science and technology had to suffer the most due to unavailability of lab activity. Most of the students have to accept at least one year loss. However, it has some positive impact as well. Online library and distant education was vastly introduced. So, time and cost loss due to transportation did reduce.

The present study findings also revealed that this pandemic caused a massive loss of social interactions. Group studies are essential for making concepts easier and academic development (Owusu-Fordjour et al., 2020). But students' regular group studies with peers in libraries or university campuses, face-to-face communications, and social interactions with friends and teachers faltered due to the pandemic, which can disrupt their motivations to learn at a high level. Students were found spending more time on social sites like Facebook, Instagram, and watching TV, movies, videos on Youtube, playing computer, or mobile games. Along with that, the university closure gave few students a break from academic learning. They utilized the time at home doing some online courses on Coursera, edX, FutureLearn websites or doing some of their favorite works like cooking, painting, and so on.

However, physical health is often associated with students' cognitive acts and academic performance (Dewa & Lin, 2000). This study disclosed some physical health issues originated due to staying at home: an increase of sleep during the day, lack of sleep at night, loss of appetite, physical inactivity, weight gain or obesity, feeling of weakness, giddiness, fatigue, sluggish sensation. All of these hampered students' flow of study and decreased their enthusiasm for education. (Shaw et al. 2015).

Students of rural areas of Bangladesh did suffer the most, as they did not have access to fast internet service. Also, some of them did not have enough support to pay for the internet cost. Moreover, the adolescent students did suffer a lot as they have undergone some traumatic situation, it may be educational, financial, job insecurity or because of family condition. Adolescent age is not very capable to handle tremendous pressure. As a result, we had witnessed several cases of suicidal tendency as well from them.

Furthermore, in this pandemic crisis, online education has emerged as an immediate alternative to the traditional tertiary education system around the world, even in Bangladesh. Though online

learning has its share of issues, it is a popular innovative method for providing education (Wallace, 2003). The present study identified several common problems concerning online education in Bangladesh. The comprised problems were: the absence of electronic devices like laptops, smartphones, computers, and tablets which are compulsory for online courses, limited or no access to the internet, high cost of mobile internet packages or broadband connections, interruption in online classes because of low speed or no speed of the internet and frequent power cut problem in rural or town areas.

Further, economic status plays an immense role in higher education as financial aids can help students to attain a better quality of education (Shaw et al., 2015). The findings of the current study also elicited that students' mental health and study were severely affected by financial factors: losing tuitions or part-time jobs, being incapable of bearing the expenditure of new online classes, reduction in parents' income due to the COVID-19 pandemic, being drop-out of the academic year or semester due to lack of money. These findings were corresponding to the conclusion made by (Chandasiri, 2020), which was pay-cuts or losing jobs, and parents' lower-income would impact the mental health and study of students.

6. Conclusion

The article attempted to give an overview of the effect of COVID-19 on tertiary level education and tried to find out challenges and opportunities of online learning in Bangladesh. Before starting online learning, the system should make sure the students were safe and their fundamental needs were addressed. Domestic violence and child abuse were on the rise; with perpetrators often at home or in the neighborhood, were distracting and endangering students. The home-schooling environment was not uniform for students of all standards and socio-economic levels. Studies should be conducted to aid the most economically disadvantaged communities.

Due to the rapid spread of the current outbreak, many higher education institutions have been forced to adapt fast to continue providing instruction and learning. Many institutions have had to increase their technological and human resources to deliver courses previously explained in person. The situation implies that educators, lecturers, and trainers have had minimal opportunity to adapt to the changing style of delivery and develop new skills, abilities, and capacities (Rashid, 2020; Sayeed et al., 2020; Sultana et al., 2021). Considering the positives, higher education institutions have recognized the significance of new modes of delivery and the potential of emerging technologies in creating and disseminating knowledge. The ability of the teacher to motivate students is critical in off-campus education. Teachers ought to encourage their students during the pandemic. They seek mental support from their teacher via the off-campus session, as many learners had COVID-19 victims in their families and were coping with the implications of such a tragedy.

Bangladesh's government should consider merging classroom and e-learning modes to establish a unified learning system in the long run, given the growing need for technology-based education. The primary difficulty will be integrating e-learning into Bangladesh's education system. The state and academic institutions must strategize immediate consequences and maybe innovative remedies to ensure that learners continue to learn (Kabir, Islam and Deena, 2020; Sultana et al., 2021 Tseka and Chigwada, 2021).

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