Consequences of the Covid-19 Pandemic on Zero Access to Technology Users in Bangladesh

Article *in* International Journal of Early Childhood Special Education · May 2021

DOI: 10.9756/INT-JECSE/V13I1.211008

6 authors, including:

Md. Shahinur Rahman
Barisal Information Technology College (BITC)
13 PUBLICATIONS **16** CITATIONS
SEE PROFILE

Md. Mahiuddin Sabbir
University of Barisal
19 PUBLICATIONS **13** CITATIONS
SEE PROFILE

Md. Abdul Kaium
University of Barishal
14 PUBLICATIONS **72** CITATIONS
SEE PROFILE

Marzia Nomi
University of Barisal
8 PUBLICATIONS **4** CITATIONS
SEE PROFILE

Md. Shahinur Rahman, Md. Mahiuddin Sabbir, Dr. Md. Abdul Kaium, Marzia Nomi, Israt Zahan, Mazharul Islam. (2021). Consequences of the Covid-19 Pandemic on Zero Access to Technology Users in Bangladesh. *International Journal of Early Childhood Special Education (INT-JECSE),* 13(1): 62-70. DOI: 10.9756/INT-JECSE/V13I1.211008

Received: 16.10.2020 Accepted: 12.12.2020

Md. Shahinur Rahman[1*]
Md. Mahiuddin Sabbir[2]
Dr. Md. Abdul Kaium[3]
Marzia Nomi[4]
Israt Zahan[5]
Mazharul Islam[6]

Consequences of the Covid-19 Pandemic on Zero Access to Technology Users in Bangladesh

Abstract

Coronavirus disease 2019 (COVID-19) has been holding back the developments of the world and forcing humanity to a burdened edge. Within this unprecedented health emergency, the education sector has been facing one of the most unpredicted challenges. This paper aims to analyze the consequences of the COVID-19 pandemic on zero access to technology users in the primary education level of Bangladesh. This study employs an in-depth interview with 48 students, 12 teachers, and 15 parents at Tala Upazila under Satkhira district. The study's findings reveal that in primary education level, students who have zero access to technologies have been suffering significantly during the COVID-19 pandemic. As they have limited scope to study at home, many are about to leave school permanently to support their parents' earnings while facing financial insolvency. In this regard, this research can help the education authorities and policymakers facilitate this segment's learning process in such a disruption and minimize school dropouts at their very early stage of education.

Keywords: Education, Zero Access to Technology Users, COVID-19 Pandemic, Bangladesh.

Introduction

Due to COVID-19, like other sectors, the education sector has been facing several new challenges (UNESCO, 2020b). This pandemic has forced to shut down educational institutions, change in the school curriculum, and alter learning platforms. As of 28th March 2020, approximately 1.7 billion learners all over the world were out of school due to school closure (Saavedra, 2020). Over 130 countries ensured nationwide school closure that affects around 90% of the world's students (UNESCO, 2020a). Developing countries like Bangladesh were not prepared enough to combat this educational suspense. On March 17, when all of the educational institutions of Bangladesh were announced to be closed, millions of students' classroom learning were disrupted (Anwar et al., 2020). In response to the pandemic, countries like the US, Canada, China, and the United Kingdom have been able to shift their classroom learning to

Md. Shahinur Rahman[1*], Lecturer, Department of Business Administration, Barishal Information Technology College (BITC), Barishal, Bangladesh. Email: srahman.bu367@gmail.com
Md. Mahiuddin Sabbir[2], Assistant Professor, Department of Marketing, Faculty of Business Studies, University of Barishal, Barishal, Bangladesh.
Dr. Md. Abdul Kaium[3], Assistant Professor, Department of Marketing, Faculty of Business Studies, University of Barishal, Barishal, Bangladesh.
Marzia Nomi[4], Assistant Professor, Department of Economics, Faculty of Social Sciences, University of Barishal, Barishal, Bangladesh.
Israt Zahan[5], Assistant Professor, Department of Public Administration, Faculty of Social Sciences, University of Barishal, Barishal, Bangladesh.
Mazharul Islam[6], Independent Researcher, Department of Marketing, Faculty of Business Studies, University of Barishal, Barishal, Bangladesh.

online-platforms. However, it is obvious that this ongoing disruption affects students, teachers, and families and yields far-reaching consequences on society and the economy (Islam, Talukder, Siddiqui, & Islam, 2020).

As Bangladesh is one of the most densely populated countries in the world, it has a vast number of people who live below the poverty line. In 2011, people who live below the international poverty line of $1.25 per day was 43.3% (United Nations Development Programme, 2013). Additionally, in the per 100 population, almost 36.2% of people do not have mobile phones, and only 6.3% of people have internet access (Hossain, 2014). Besides, only 22.9% of households in Bangladesh possess a television in 2004 (Trending Economics, 2020). Thus, many people in Bangladesh are still out of technological advancements.

According to the Education Ministry, at the primary education level, Bangladesh has about 10.75 million students, and most of the students in the rural areas are impoverished (Uttom & Rozario, 2020). Despite having a large number of learners, the primary education system in Bangladesh has yet been operated in traditional ways, limiting to chalk and blackboards. Therefore, most of the students at the primary level are not familiar with the modern education system (Sultana, 2016), and this has become a severe problem due to the COVID-19 pandemic. Notably, the students from ultra-poor families who live from hand to mouth and do not have any access to technologies have been suffering significantly as their learning is entirely stopped. This group of learners can be regarded as zero access to technology users because they do not have any access to technological devices such as smartphones, televisions, and radios (Hossain, Rahman, & Karim, 2020). As previous studies and literature show that distance learning or e-learning is one of the most convenient ways of delivering classroom lessons in such a crisis (UNESCO, 2020a), the zero technology users are still out of that facilities. Besides, the street children, estimated around 1.5 million in 2015 and predicted to reach 1.56 million in 2024 (Wares, 2019), are also the sufferers of the pandemic because many of them used to learn from mobile schools or other institutions that are completely closed now. Consequently, the gap between modern education and poverty is prolonging for this segment in the underdeveloped and developing countries during this pandemic.

The study aims to investigate the impact of the COVID-19 pandemic on the learning of zero access to technology users in the primary education level of Bangladesh. Several studies have been undertaken in Bangladesh to investigate university students' mobile learning perception during COVID-1. Nevertheless, a preliminary assessment of relevant past studies (Hossain et al., 2020; Islam et al., 2020) shows a significant research gap in identifying this group of learners and the ways through which an effective education can be provided in such a crisis. This study is unique from other studies since no former studies in this field have been conducted primarily on the zero access to technology users in Bangladesh. As a result, this paper has significant theoretical and practical implications for extant literature. Our study will facilitate understanding the condition of zero technology users during this pandemic and undertaking a sustainable plan to reduce school dropouts. Accordingly, the research questions of this study have been postulated as follows:

1. What are the consequences of the COVID-19 pandemic on the primary students?
2. What are the challenges of providing distance learning to zero access to technology users?
3. What could be the effective strategies to provide education to the zero access to technology users during the pandemic?

This study has a significant contribution to both research and practice. By investigating the consequences of COVID-19 on the elementary-level students in Bangladesh, this study explores four key areas: students' school dropouts, study-hour at home, child labor, and mental health pandemic. Thus, the current study intends to examine the relationships among the COVID-19 pandemic and students' school dropouts, study-hour at home, child labor, and mental health in the context of a developing country like Bangladesh.

On the other hand, for practice, our study is expected that the understanding the COVID-19 consequences in terms of students' school dropouts, study-hour at home, child labor, and mental health will provide insights to the policymakers to undertake proactive measures to combat this kind of disruption in the future. Furthermore, this research will help the government to conceive the necessity of distance-learning and allow more budget in the education sector in order to walk with the modern education system.

Pandemics of the Last Decades and their Impact on Education

In the past two decades, several deadly diseases have broken out and spread around the world, which has had a significant impact on the world's education system. In the United States (US), the influenza crisis during the period of 1918-19 was severe to close schools and ban public gatherings (Strochlic & Champine, 2020). Though the mortality rate was reduced after

taking early initiatives by the authorities of the affected cities, influenza caused a significant loss to the whole education system of the US. Similarly, in response to the Spanish Flu, the government of the US announced school closing for four weeks in 43 cities (Li et al., 2020). The European countries who were the victims of this deadly flu also declared shut down of schools, colleges, and universities to get rid of the pandemic and minimize the loss of many lives. In 1957-58, another life-threatening Asian flu broke out, and school closure reduced 90% of morbidity and controlled influenza up to 50% in the US (Wheeler, Erhart, & Jehn, 2010). When H1N1 Flu broke out, several countries successfully reduced the spread of infection by school closure. For example, Japan was one of the most pioneer countries that successfully decreased the number of infected students. Research shows that in 2009 29% to 37% of the influenza transmission rate of the H1N1 pandemic was decreased due to social distancing and school closure (Kawano & Kakehashi, 2015). On 26th January 2020, China introduced measures to fight against the COVID-19 outbreak by extending the Spring Festival holiday and closing the universities and schools around the country. Following the step of China, Iran's Ministry of Health proclaimed the closing of universities, higher education institutions, and schools in the crisis cities and provinces on the 23rd February 2020 to reduce the spread of the virus and its mortality (Radio Farda, 2020).

Methods Followed

The primary aim of the paper is to analyze the consequences of the COVID-19 pandemic on the zero access to technology users at the primary education level in Bangladesh. An exploratory research method was used to analyze the in-depth content of the COVID-19 pandemic. This study employed in-depth interviews with 75 respondents; 48 students (27 boys and 21 girls), 12 teachers, and 15 parents from different villages at Tala Upazila under Satkhira district. The survey was conducted from May to June 2020 with the support of Helping Hand Belgium, who provided approval for the experiments employed in this research. Additionally, this study complies with all regulations and confirmation that informed consent was obtained from the Zila Shikkha Office, Satkhira. Also, the authors' observation and the experts' opinions were used in the study. The respondents were asked semi-structured questions designed based on some key topics, including the challenges of distance learning and consequences of the pandemic in terms of students' school dropouts, study-hour at home, child labor, and mental health. All the questions were modified based on the respondents' classes and occupations. Each respondent was interviewed for around 30 minutes. Additionally, the secondary data that have been published in newspapers, magazines, websites, and journals in the context of pandemic and its impact on educational disruptions were also used to discuss the phenomenon.

Consequences of the Covid-19 Pandemic on Students

An Increase in School Dropouts

Rasheda K Chowdhury, executive director of Campaign for Popular Education, noted, “We observed that dropout had increased after the cyclones Sidr and Aila in the coastal areas. The dropout rate might increase after COVID-19 also”(The Independent, 2020). According to the recent report of the Bangladesh Bureau of Statistics, the poverty rate is predicted to rise from 20 % to 40% due to the impact of Covid-19 (Ahmed, 2020), which will directly or indirectly influence school dropouts. A respondent named Md. Alamgir Hossain, an assistant teacher of a government primary school, said, *“People in the ultra-poor regions like Satkhira, Khulna, Patuakhali and other coastal areas will face an acute financial crisis which will force them to move in Dhaka or other cities for finding jobs during or after COVID -19. It may increase the rate of school dropout in those regions.”* Another respondent named Iqbal Sheikh, a father of a school going student, said, “*As an impoverished farmer I must go to the fields, and have to take my boy with me. I do not know when he will go back to school again.”*

However, the Government of Bangladesh has undertaken initiatives to support ultra-poor students in 130,000 government schools, with over 20 million students (Jasim, 2020). Figure 1 illustrates the initiatives taken by the government of Bangladesh for the students of the primary education level during the COVID-19 pandemic. However, the drop-out rate is likely to rise, especially among the girls and students from disadvantaged families, with an estimation of 18% in the primary education level (Alamgir, 2020).

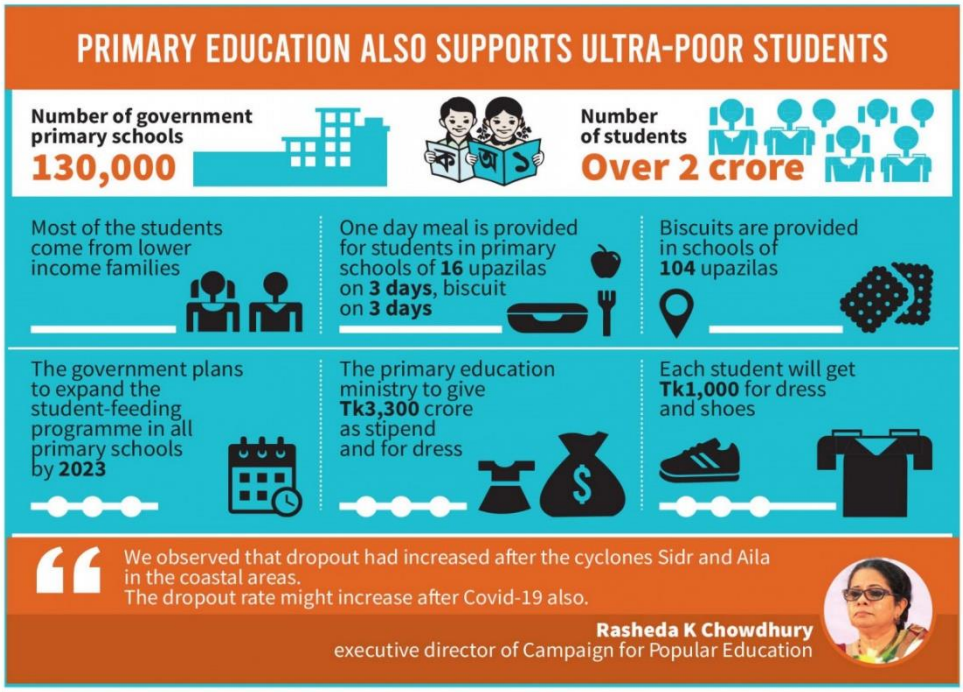

Figure 1.

The Government of Bangladesh's initiatives to support ultra-poor students in primary education level (Source: Jasim, 2020).

Reduction of Study-Hour at Home

As schools are closed, students are missing out on essential life-learnings, which include a set of discipline, routine, and daily structure that can help to grow the mental health of a child (Khan & Hossain, 2020). Their routine life has been clasped that has a significant impact on students' study–hour at home. Al-Amin, a student of class V (five), stated, "I *completely depend on classroom learning as my parents are not educated, or I do not have anyone who can support my learning at home."* Like Al-Amin, most of the other students in the primary education level rely on classroom learning. Due to school closure, their education is significantly disrupted. Figure 2 shows that the students' per week study-hour at home has been declining day by day due to the pandemic. A wide range of problems like staying at home for an extended period with no e-learning facilities, lack of outdoor sports and entertainment, missed school gatherings, being forced to engage in works to support family earnings are diverting the soft-minded students from the study (Hossain et al., 2020). Consequently, a large number of ultra-poor students are about to drop out of their schools.

In the urban areas of Bangladesh, compared to the rural areas, the majority of the students are familiar with smart electronic devices like smartphones, tabs, and laptops. Thus, due to economic solvency, internet connectivity, and other facilities, urban students are more responsive to adopting distance-learning programs than rural students. As a result, study-hour at home has been sharply reduced among zero access technology users in rural areas. Furthermore, the COVID-19 crisis has yielded a similar output for the vulnerable students in the city areas (Zafari, 2020).

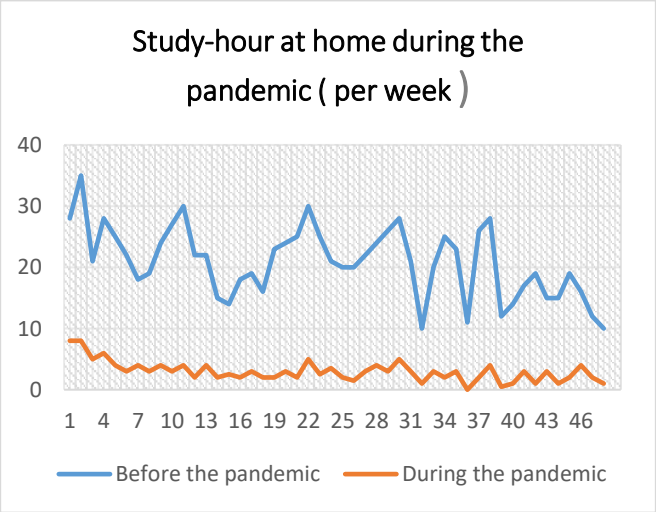

Figure 2.

The difference between students' study-hour before and during the pandemic (Source: in-depth interview).

Mounting Child Labor

Globally child labor has been decreased by 94 million since 2000, now that achievement is at risk. In particular, in the South Asian countries, child labor has already the highest prevalence, with an estimation of 16.7 million (5-17 year-old). However, in comparison to the developed countries, child labor is common in undeveloped or developing countries like Bangladesh, where right now it is increasing at an alarming rate due to extended school closure. However, the primary concern is that if the parents will be able to send their children to school again when this pandemic is resolved. Right now, many parents are jobless, and they can hardly earn their livelihood due to the pandemic, which forces their children to engage in different hazardous and exploitative jobs (ILO & UNICEF, 2020). Figure 3 shows that after the school closure, out of 48 interviewed students, 18 have entirely, and 21 have partly engaged in works to support their family earnings; in contrast, 9 students have not diverted yet. According to ILO and UNICEF (2020), the COVID-19 crisis could lead to a rise in child labor. Consequently, it will have a prolonged impact on society and the economy. Additionally, in this crisis, gender inequalities might be intensified; therefore, the girls could be the worst sufferer as they are more vulnerable to exploitation in domestic and agricultural works.

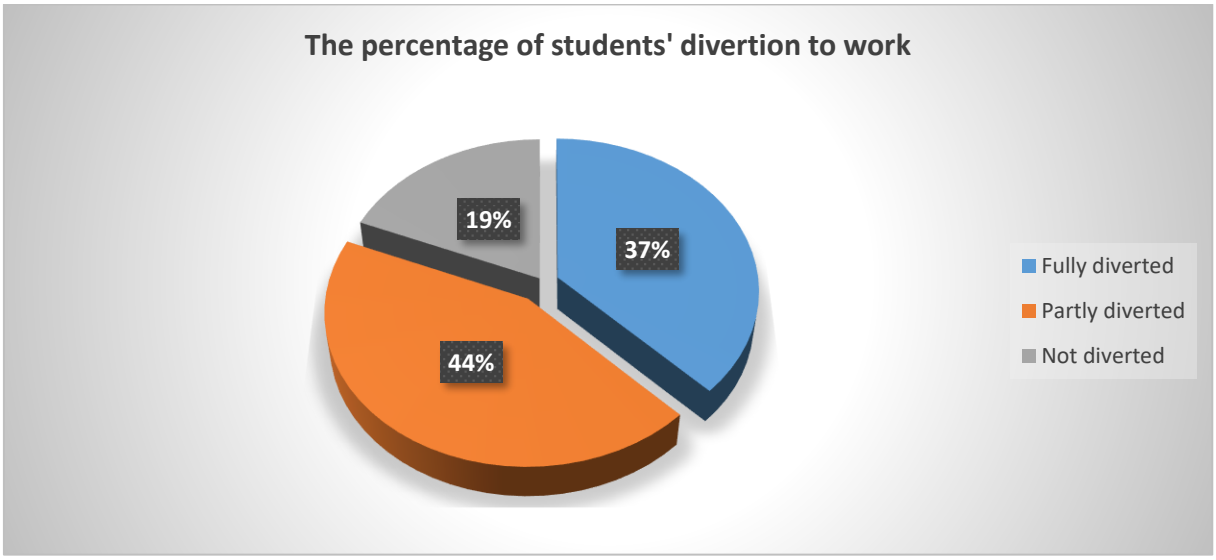

Figure 3.

The percentage of students' diversion to work (Source: in-depth interview).

Escalation of Mental-Health Issues

Millions of students who love going to school and mingling with friends will be the primary victims of mental health issues. As they are confined to their homes at this crucial age of learning social skills of their lives (Islam et al., 2020), they are suffering tremendous mental stress. This pandemic has been causing widespread mental-health issues, including depression and loneliness (Hossain et al., 2020). For many of them, staying at home is not pleasing at all as they consider their school as a safe-haven where they can be happy and be with friends. Additionally, children get stressed or fearful when they have to stay at home, do not get permission to go outside, and maintain social distance even with parents or other family members (Belsky et al., 2003).

Furthermore, if a parent or a child becomes COVID-19 positive and is hospitalized, it mounts anxiety among children. In such a situation, children need counseling or short-term psychotherapy. In this context, the guidelines that have been provided by government agencies and expert organizations can also demonstrate the way of treating anxiety (CDC, 2020).

Challenges of Distance Learning for the Zero Access to Technology Users

The introduction of technologies for enhancing the teaching and learning of zero-technology users is always challenging and sophisticated. In this regard, a wide range of interconnected issues, including economic, socio-political, pedagogical, and attitudinal, need to be addressed profoundly. In the present time, governments and donor agencies are looking forward to technological solutions to reach vulnerable people. Like India, the countries included in the Global South have focused on information and communication technologies (ICTs) to exploit potential educational benefits (Guston & Harsh, 2012).

In most cases, the rural communities of Bangladesh are deprived of modern educational facilities, and the education system at the primary level still follows the traditional ways of classroom teaching. When any crisis like the COVID-19 outbreak emerges, the education system faces numerous challenges to provide an effective learning framework. Several issues, such as poor infrastructure, insufficient training for teachers and students, inadequate technical support, make it more difficult. As a result, the gap between rich and poor, rural, and urban is still furthering (Gulati, 2008).

Discussion and Recommendations

During this pandemic, distance-learning or e-learning needs to be as fast as possible to resort to the loss of suspension and to bring the vulnerable students back to the pavilion of learning (Truong, 2020). The school system of the US provides education to over 50,000 students, and it collects information from the education leaders about the students who do not have access to computers or the internet. Based on that, the government has offered a $14 million plan to offer devices to the students, along with free wifi access near the school campus (Turner, 2020). On the other hand, in the primary education level of Bangladesh, the government undertakes several programs like providing a daily meal on three days along with biscuits per student in 16 Upazilas. The government has also declared to offer BDT 1000 for each student to buy new clothes and shoes during the COVID-19 pandemic (Jasim, 2020). Additionally, the government has started to provide distant learning through national TV channels. However, the initiatives are not working well enough for ultra-poor students with no access to technologies (The World Bank, 2020). One of the respondents, Mafizul Islam, a headmaster of government primary school, said, "*If the government only provides meals and stipends for the ultra-poor students, it will not be sufficient enough to lower the number of school dropouts after the pandemic."* Mr. Islam and other teachers suggest that the government should have special allocations and a sustainable plan to minimize the dropout rates in the primary education level in Bangladesh.

According to checklist number-"7" of OECD for education response to the pandemic, educational institutions should focus on identifying several means of education delivery (Reimers & Schleicher, 2020). If an initiative is taken to provide distance learning, let it be done in a way as it yields a great versatility and opportunity for interaction. As all students do not have devices and internet connectivity, concerned authorities should design strategies to provide facilities relating to distance learning for the students. Strong partnerships with the private sector and the community should be built to secure the resources to provide technical facilities. If an online education strategy is not feasible, concerned authorities should develop alternative means of delivery. For example, they may include television programs, podcasts, radio broadcasts, and learning packets either in digital form or on paper. In this context, the contents should be designed in such a way that students will be able to respond and interact easily.

As Bangladesh is a developing country, it is not feasible to develop infrastructural platforms and provide devices to every student within a short time. Thus, the government may depend on low-cost technologies (The Financial Express, 2020) like TV and radio. In that case, the government should collect information about the number of zero technology users in the primary education level and measure the feedback whether these learners get access to the TV and radio programs or remain leg-behind. However, the government and other private organizations should have a long-term plan for accelerating infrastructural developments and technical supports in the primary education level as no one knows whether any new crisis or disruption might or might not happen in the upcoming future. Therefore, the current pandemic crisis should be taken as learning for the future in undeveloped and developing countries like Bangladesh.

To provide quality education, teachers' training on modern technologies and their professional collaboration with students and parents are important, while facilitating training and collaboration is critical. Besides, it is challenging to provide required technologies and online platforms to the teachers in the primary education level within a short time (Distance learning solutions, 1999). For this reason, a partnership between schools and higher education institutions should be established to provide technical supports for teachers and students (Rafi & Khurshid, 2020). If all of these are feasible, teachers will be able to provide effective learning to their students whenever any critical situation appears.

Conclusions

The COVID-19 pandemic has shaken most of the world's institutions ranging from education, economy, religion, industries, and humanity, among others. This study explores the consequences of the pandemic and the challenges of providing education to the zero access to technology users during this crisis at the primary education level. The study's findings reveal that the pandemic has been widening the educational disruptions that harm the learning of

millions of students at the primary education level. As a result, a large proportion of students' dream of restarting their school is about to die. Therefore, this study can help to find effective ways of providing effective education in such a crisis to retrieve millions of students' dreams. Additionally, the findings of the study will help policymakers to undertake a sustainable policy to address and combat the challenges faced by the learners in this kind of disruption. Furthermore, the findings of this research can be a pathway for undeveloped and developing countries to undertake early measures for this segment if such a kind of disruption happens in the future.

Although our research has significant contributions to the existing education and education management literature, it has some limitations which can be taken into consideration in further studies. First, this study is limited in terms of sample size and demography (all respondents living at Shatkhira district in Bangladesh). Future research would benefit if a larger sample is invested across the country. Second, this research narrowly focuses on the four key areas; school dropouts, study-hour at home, child labor, and mental health. Future studies can be directed broadly in any specific area among these four areas, like investigating students' mental health. Finally, the inclusion of other relevant consequences of COVID-19 on students, such as hygiene risks, gender discrimination, and safety issues, which can be explored in a similar context, could provide additional insights into the existing studies on such a crisis.

Acknowledgement

The authors of this study would like to thank Mr. Thierry Van Cauwenberg, President of Helping Hand Belgium, and the officers of Zila Shikkha Office, Satkhira, for their suggestions and support. We would also like to thank the academic experts of the University of Barishal for their constructive feedback and comments.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of Interest: The authors' declare that they have no conflict of interest.

References

Ahmed, H.U. (2020). Economic ramifications of Covid-19 in Bangladesh. *The Financial Express*. https://thefinancialexpress.com.bd/views/columns/economic-ramifications-of-covid-19-in-bangladesh-1588779315

Alamgir, M. (2020). School Closure Amid Pandemic: Dropout rise a major concern | The Daily Star. *The Daily Star*. https://www.thedailystar.net/frontpage/news/school-closure-amid-pandemic-dropout-rise-major-concern-1932045

Anwar, S., Nasrullah, M., & Hosen, M.J. (2020). COVID-19 and Bangladesh: Challenges and How to Address Them. *Frontiers in Public Health*, *8*, 154. https://doi.org/10.3389/fpubh.2020.00154

Belsky, J., Booth, C., Spieker, S., Bradley, R.H., Burchinal, M., Cox, M., & Vandell, D.L. (2003). Child care and common communicable illnesses in children aged 37 to 54 months. *Archives of Pediatrics and Adolescent Medicine*, *157*(2), 196–200. https://doi.org/10.1001/archpedi.157.2.196

CDC. (2020). Coronavirus Disease 2019 (COVID-19) | CDC Online Newsroom | CDC. Centers for Disease Control and Prevention: https://www.cdc.gov/media/dpk/diseases-and-conditions/coronavirus/coronavirus-2020.html

Distance learning solutions. (1999). *Journal of European Industrial Training*, *23*(6), 62–69. https://doi.org/10.1108/jeit.1999.00323fad.004

Gulati, S. (2008). Technology-enhanced learning in developing nations: A review. *International Review of Research in Open and Distance Learning*, *9*. https://doi.org/10.19173/irrodl.v9i1.477

Guston, D., & Harsh, M. (2012). United Nations Millennium Development Goals. In *Encyclopedia of Nanoscience and Society*. https://doi.org/10.4135/9781412972093.n455

Hossain, B. (2014). Poverty reduction during 1971-2013 periods: Success and its recent trends in Bangladesh. *Global Journal of Human-Social Science Research*, *14*, 38. https://www.researchgate.net/publication/333918204

Hossain, M.A., Rahman, S., & Karim, M.R. (2020). *The Mental Health of School-Going Children During Existing Lockdown Situation Due to COVID-19 Pandemic in Bangladesh*, 1–9. https://doi.org/10.20944/PREPRINTS202005.0346.V1

ILO and UNICEF. (2020). COVID-19 may push millions more children into child labour. https://www.unicef.org/press-releases/covid-19-may-push-millions-more-children-child-labour-ilo-and-unicef

Islam, M.T., Talukder, A.K., Siddiqui, M.N., & Islam, T. (2020). *Tackling the Pandemic COVID-19: the Bangladesh Perspective*, 1–18.

https://doi.org/10.20944/preprints202004.0384.v1

Jasim, M.M. (2020). Covid-19 may accelerate primary school dropout rate, impact enrolment, The Business Standard. *The Business Standard*. https://tbsnews.net/bangladesh/education/covid-19-may-accelerate-primary-school-dropout-rate-impact-enrolment-80428

Kawano, S., & Kakehashi, M. (2015). Substantial impact of school closure on the transmission dynamics during the pandemic Flu H1N1-2009 in Oita, Japan. *PLoS ONE*, *10*(12). https://doi.org/10.1371/journal.pone.0144839

Khan, M.H.R., & Hossain, A. (2020). COVID-19 Outbreak Situations in Bangladesh: An Empirical Analysis. In *medRxiv*. https://doi.org/10.1101/2020.04.16.20068312

Li, Q., Guan, X., Wu, P., Wang, X., Zhou, L., Tong, Y., Feng, Z. (2020). Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *New England Journal of Medicine*, *382*, 1199–1207. https://doi.org/10.1056/NEJMoa2001316

Radio, F. (2020). Iran Announces Closure of Universities, Schools As Coronavirus Death Toll Rises. https://en.radiofarda.com/a/iran-announces-closure-of-universities-schools-to-fight-coronavirus/30449711.html

Rafi, K.M., & Khurshid, M. (2020). Expanding the Education Sector beyond Traditional Classrooms - LightCastle Partners. LIGHTCASTLE ANALYTICS WING website: https://www.lightcastlebd.com/insights/2020/05/22/expanding-the-education-sector-beyond-traditional-classrooms

Reimers, F., & Schleicher, A. (2020). A framework to guide an education response to the COVID-19 Pandemic of 2020. *Teachertaskforce.Org*.

Saavedra, J. (2020). Educational challenges and opportunities of the Coronavirus (COVID-19) pandemic. World Bank Blogs website: https://blogs.worldbank.org/education/educational-challenges-and-opportunities-covid-19-pandemic

Strochlic, N., & Champine, R. (2020). How they flattened the curve during the 1918 Spanish Flu. National Geographic History website: https://www.nationalgeographic.com/history/2020/03/how-cities-flattened-curve-1918-spanish-flu-pandemic-coronavirus/

Sultana, S. (2016). *Preference towards modern day teaching and traditional teaching aids among the Bangladeshi tertiary level students*. http://dspace.bracu.ac.bd/xmlui/handle/10361/7639

The Financial Express. (2020). Govt opts for distance learning at all levels. https://thefinancialexpress.com.bd/national/govt-opts-for-distance-learning-at-all-levels-1588068918

The Independent. (2020). Increase allocation for education in budget: Experts. *Theindependentbd.Com*. http://www.theindependentbd.com/post/246550

The World Bank. (2020). Remote Learning, EdTech & COVID-19. World Bank website: https://www.worldbank.org/en/topic/edutech/brief/edtech-covid-19

Trending Economics. (2020). Bangladesh - Households With Television - 2000-2004 Data. https://tradingeconomics.com/bangladesh/households-with-television-percent-wb-data.html

Truong, D. (2020). As Classes Move Online, What Happens To Students Without Internet Or Computers? WAMU 88.5 website: https://www.npr.org/local/305/2020/03/18/817691597/as-classes-move-online-what-happens-to-students-without-internet-or-computers

Turner, T. (2020). Distance Learning: Keeping Education Alive During A Pandemic. WAMU 88.5 website: https://wamu.org/story/20/03/18/distance-learning-keeping-education-alive-during-a-pandemic/

UNESCO. (2020a). COVID-19 Educational Disruption and Response. *Unesco.Org*, 2019. https://en.unesco.org/news/covid-19-educational-disruption-and-response

UNESCO. (2020b). School closures caused by Coronavirus (Covid-19). *Unesco*. https://en.unesco.org/covid19/educationresponse

United Nations Development Programme. (2013). Population living below $1.25 PPP per day (%) | Human Development Reports. United Nations Development Programme website: http://hdr.undp.org/en/content/population-living-below-125-ppp-day

Uttom, S., & Rozario, R.R. (2020). Covid-19 disrupts education in rural Bangladesh - UCA News. UCANEWS website: https://www.ucanews.com/news/covid-19-disrupts-education-in-rural-bangladesh/87976

Wares, S. Bin. (2019). A tale of street children. *Dhaka Tribune*. https://www.dhakatribune.com/opinion/op-ed/2019/06/18/a-tale-of-street-children

Wheeler, C.C., Erhart, L.M., & Jehn, M.L. (2010). Effect of school closure on the incidence of

influenza among school-age children in Arizona. *Public Health Reports*, *125*(6), 851–859. https://doi.org/10.1177/003335491012500612

Zafari, N.M.K. (2020). Distance Education for Rohingya Children during COVID 19 Emergency: Bangladesh Rohingya Response Perspectives; Challenges, Recommendations and Proximities. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3594676