

Pandemic-Led Challenges for Rural Students in Bangladesh

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Abstract

The COVID-19 pandemic had a impact on education in Bangladesh, especially for rural areas students. This research was conducted in the South Bali Para village of Trishal Upazila in Mymensingh and focused to investigate the difficulties faced by rural students in terms of accessing and adjusting to online education during the pandemic. A sample of 300 students from primary to higher secondary levels was surveyed, and empirical research revealed that economic hardship and lack of access to online education were the primary concerns for rural students. This contrasts with urban students, who were primarily affected by mental health issues. According to the research findings, more than 60% of households in rural areas lacked internet access or smartphones, despite the fact that approximately 70% of primary, lower, and higher secondary students resided in these regions. Efforts to provide remote learning through methods such as television or multimedia classrooms in remote areas did not effectively support rural students in their online education during the pandemic. Therefore, the study highlights the socioeconomic challenges and costs of pandemic-led online education in rural Bangladesh, including the increased risk of dropouts and child marriages. The findings emphasize the urgent need for an inclusive and accessible strategy for remote learning that specifically addresses the needs of the poorest and most vulnerable students in Bangladesh.

Keywords: accessibility, Bangladesh, COVID-19, pandemic, rural education, online education

COVID-19 has posed innumerable challenges to the education sector all over the world. Educational institutions across the globe experienced an unprecedented transition from face-to-face to various forms of online education (Adedoyin & Soykan, 2020). Various challenges for the education sector include the concerns of quality, equality, accessibility, the learners' mental health, the capacity and skills of instructors, and consensus among the stakeholders. Nationwide closure of schools in more than 100 countries made it impossible for 1 in 5 learners to attend schools, adversely affecting over 800 million learners worldwide, as estimated by UNESCO (United Nations Educational, Scientific and Cultural Organization) (Education, 2020). Due to the sudden disruption, regular in-person educational activities turned virtual overnight with inadequate support, facilities, and planning. Neither the takers nor the education providers were prepared to accept the shift to online education but had to adopt it eventually. Research Data shows that around 38 million students were affected due to the COVID-19-related closure in Bangladesh (Bank, 2021).

The COVID-19 pandemic has resulted in online teaching and learning becoming the new norm for education globally (Xie et al., 2020). However, the challenges of distance, scale, and personalized teaching and learning in online mode have not been adequately addressed, leading to failures in compensating for traditional educational practices. Additionally, pre-existing social and digital divides have led to unequal access to digital technologies and resources, exacerbating existing inequalities and making marginalized groups more vulnerable. Girls, students with special needs, and those from low-income countries are at the highest risk of being affected (Mathrani et al., 2022). Implementing remote education has brought various logistical, technical, financial, and social issues to light. These issues include unequal availability of ICT infrastructure, inadequate Internet, and power resources, as well as skill deficiencies in using distance-learning platforms (Kozimor, 2020).

Moreover, the pandemic has placed an extra financial strain on households and resulted in a decrease of progress made in the educational sector. Projections even suggest that students from countries with less developed infrastructure may experience a regression, undoing the progress made over the past few decades (Amir et al., 2020). The psychological impact of social isolation, confinement, and lack of physical exercise, reduced access to nutrition and school meals is also a significant concern (Mathrani et al., 2022). The digital divide between rural and urban areas is still significant, with underprivileged communities lagging behind. The exclusionary nature of digital access and differences in the penetration of ICT assets are further hindering progress toward equal access to education (Aziz et al., 2020). A survey conducted among class nine students in 2020 who were eligible to receive the government's poverty-targeted stipends in Dhaka and Mymensingh divisions identified that more than 50 percent of the respondents do not have access to television to participate in distance learning. Less than 50 percent of students watch television for remote learning those who have access to television (Biswas et al., 2020). Additionally, Mymensingh division has the lowest access to electricity, as 23% of households experienced daily shortage of electricity, and it ranks third in terms of the highest illiteracy rate, standing at 43.83%. These factors are likely contributing to a relatively lower levels of digital access and skills in Mymensingh division (Shadat et al., 2020).

It's obvious that students in rural areas have had a hard time adjusting to online learning during the pandemic. Despite the shift to virtual education, there was no clear plan or support system in place to ensure a successful transition. Developing countries like Bangladesh, encounter challenges in establishing the necessary infrastructure and resources for online education, which sets them apart from higher education institutions across the globe (Shrestha et al., 2022). This has resulted in even greater challenges for students who are already disadvantaged by poverty and their remote location. To better understand the difficulties faced by impoverished and vulnerable students in rural parts of Bangladesh, this study investigates the obstacles they encountered when trying to access, learn and adapt to online education during the COVID-19 outbreak. Moreover, the study will contribute to the existing literature and provide a basis for future research. The research findings will help policymakers and education providers to design and implement effective online education strategies that address the challenges faced by rural students during the pandemic. In doing so, this study will contribute to the broader goal of enhancing education quality and accessibility in Bangladesh, particularly in rural areas and promoting the implementation of the Sustainable Development Goals (SDGs) related to education.

This paper provides a brief overview and analysis of online education during the pandemic in Bangladesh. The first section will provide a literature review of the challenges brought by the COVID-19 pandemic to the education sector, the challenges of online education, and the digital divide in Bangladesh and around the world. Then we present our findings and data analysis from the study site, Balipara, located at Trishal Thana of Mymensingh district. The third section presents the study's findings and discussion, highlighting the challenges faced by rural students during the pandemic. Finally, the paper is concluded with recommendations for policymakers and education providers.

Literature Review

The shutdown of schools due to the COVID-19 pandemic has brought significant disruptions to education worldwide, and Bangladesh is not an exception. The pandemic has posed a many-sided challenge for the education sector in the country that was already struggling to minimize the gap between urban and rural, elites and the poor. COVID-19 lockdown and closure of schools have caused a massive shock to the students and teachers who had to adapt to online teaching-learning. The closure of schools had very high social and economic costs for the people as well as the system. Instances of child-marriage, early motherhood, and child-labor increased following the long-term school closure (Makino et al., 2021). As the UNESCO (UNESCO-IEA, 2022) report shows, the disruption in education has caused many other difficulties, including interruption of learning, poor nutrition of the school students, stress and mental health hazard, anxiety of the parents, social isolation, compromised childcare, technological challenges, high economic costs, and increased dropout rates.

The Ministry of Education reports that Bangladesh has approximately 38.6 million students across all education levels. The country presently accommodates approximately 21.6 million elementary and primary school students, thirteen million secondary school students, and four

million university and college students. The majority of secondary schools, roughly seventy-six percent, are in rural areas, and a significant proportion of primary school children, about sixty percent, attend government-run schools, which are primarily situated in rural locations. (Ministry of Education, 2022).

Before the outbreak of COVID-19 in Bangladesh, the concept of online education or blended learning was not widely recognized or implemented in the country. The country's education system did not have any mainstream online-based teaching methods, as reported by (Islam & Selim, 2006). Access to technology and connectivity is one of the most significant challenges for rural students in Bangladesh. Multimedia-based education or online learning could not be established due to various challenges, including a lack of infrastructure, connectivity, and the necessary skills of educators (Islam & Inan, 2021).

The majority of students from marginalized and rural areas belong to weaker socioeconomic backgrounds. They are not able to access and continue remote learning opportunities through television, radio, the Internet, smartphones, etc. do not have access to these devices. Amidst these difficulties, it is also important to note that the schools are not only places to take formal education but also place to participate in extra curriculum activities, which got affected terribly (Chowdhury, 2020). A report conducted jointly by the Bangladesh Bureau of Statistics (BBS, 2021) and UNICEF has revealed the immense impact of school closures, particularly on the most vulnerable children who have no opportunity to access to the Internet, television and supportive devices like computers or smartphones at home. Rural children have been particularly affected, with only 15.9% participating in remote learning compared to 28.7% of urban children. Geographical disparities are also significant, with Khulna and Dhaka having the highest percentage of students participating in remote classes, while Mymensingh has the lowest. Primary school children have been affected, with only 13.1% participating in remote classes compared to 20.3% and 23.7% of lower and upper secondary students, respectively.

With the emergence of COVID-19, educational institutions were forced to adopt alternative modes of teaching and learning. Despite the challenges posed by inadequate infrastructure and limited skills among educators, there have been many efforts to overcome these obstacles and provide online education to a larger audience in Bangladesh. The government has made many attempts to improve the required infrastructure, such as expanding internet access and providing training for teachers to adapt to the digital environment (Islam et al., 2021). Since the middle of March 2021, the government has taken some initiatives, like providing distance learning through television. Various government ministries and departments, such as the Ministry of Education, the Ministry of Primary and Mass Education, the Ministry of Information Technology and Access to Information, the ICT division of the government, and so forth, decided to provide online-based education to reduce the educational crisis. The programs were named “Ghore Boshe Shikhi” meaning is “study at home” and “Amar Ghore Amar School” meaning is my “home is my school”, respectively, and aimed to broadcast pre-recorded lessons on various subjects. However, a mere 56% of households in Bangladesh possess a television, leaving nearly half of the learners without access. In order to reach the marginalized 44% of the population, UNESCO collaborated with the government to implement

a comprehensive distance learning initiative for primary education based on radio broadcasts. Additionally, recorded lessons were uploaded on YouTube, and a dedicated portal was created specifically for the “Ghore Boshe Shikhi” program (Mousumi, 2023). But there have been several questions raised like: maintaining or providing the qualities education, proper engagement of the students, accessibility of Internet and television, etc. The government takes initiatives to provide online-based and telecast education. But the fact that 50% of the nation’s households do not have a television set means that many people have been kept outside its ambit (Khan et al., 2021).

Developed countries prioritize high-speed internet access, but in the case of developing countries like Bangladesh, physical access is considered more important. Scholars emphasize focusing on social, psychological and cultural barriers to digital inclusion, which include digital literacy, digital skills, and reluctance to use digital tools. In addition, social inclusion concerns such as inequality, gender disparity, and citizen rights are not fully considered in National ICT Policy (Aziz, 2020).

Apart from access to technology and connectivity, rural students in Bangladesh also face challenges due to the lack of digital literacy and digital divinity. Access to technology alone cannot ensure digital literacy; having the knowledge and skills to use technology effectively is necessary. However, the lack of access and skills is prominent in rural areas of Bangladesh, which is contributing to a growing digital divide (Waughen, 2015). Many students are not familiar with online learning platforms, and they lack the necessary skills to navigate these platforms effectively. A cross-sectional survey was conducted (Badiuzzaman et al., 2021) to collect quantitative data and qualitative information on the digital divide experienced by Bangladeshi students during the pandemic. The study found that despite having physical access to information and communication technology (ICT), only 32.5% of students could attend online classes seamlessly. Data prices and poor network infrastructure were identified as significant barriers preventing students from participating in online learning activities. The study suggests that stakeholders, including the Bangladesh government and educational institutions, should take action to reduce internet costs and improve the mobile network infrastructure in rural areas. Additionally, parents and teachers should take care of students’ digital well-being. World Bank research report (Haven et al., 2021) on Bangladesh shows that the digital divide between rich and poor households has been a persistent phenomenon. Based on a survey among school students aged between 5 to 15, it highlights that less than 50 percent have access to the medium to join virtual learning or online education. Since Bangladesh had to go for a complete online education during the first two waves of COVID-19, it was totally dependent on ICT. Many rural students in Bangladesh come from low-income families, and their parents may not have the necessary knowledge and skills to support their education. Studies (M. A. Islam et al., 2020; S. M. D.-U. Islam et al., 2020; Mamun et al., 2020) suggest that many students face challenges due to the lack of support from their families. The study also reported that many parents were unable to provide their children with the necessary devices and internet connectivity due to financial constraints. Online education is not only challenging for students but also for teachers.

Technology-based teaching becomes more complicated when the instructors do not possess the required skills to make the teaching-learning process efficient, like interactors are unfamiliar with using an online platform such as Zoom and google meet etc. (Yeung et al., 2012). Online classes were found to be less effective than traditional classes since students and teachers alike lacked technological expertise. Communication gap and long length of classes posed a major challenge for the instructors (Mahmud et al., 2021). Hossain and colleagues (2022) suggested that improving technical infrastructure and pedagogical contents, as well as resolving financial issues, is crucial for making online education/distance learning more effective and reducing the impact of a pandemic on the education sector in Bangladesh.

Online learning can also have an impact on the mental health of students. A study conducted by Sayeed and colleagues (2020) aimed to investigate the impact of the COVID-19 pandemic on the mental health of Bangladeshi students and their perceptions towards the pandemic. A web-based survey was conducted among 589 students in Bangladesh between April 29 and May 07, 2020. The survey collected data on demographic status, perceptions towards COVID-19, and mental health symptoms using the Depression, Anxiety and Stress Scale. The results showed that a high prevalence of depression, anxiety, and stress symptoms was reported among the students. The study also found that student's age, gender, income, location of residence, and family size are associated with mental health difficulties. Negative perceptions towards the pandemic were significantly associated with poor mental outcomes.

Methodology

The research design for this study was a cross-sectional survey that aimed to investigate the difficulties that primary to higher secondary level students in the South Bali Para village, Trishal Upazila in Mymensingh, while trying to keep up with their virtual classes during the COVID-19 school lockdown. The sample size consisted of 300 students, including 170 boys and 130 girls, ranging in age from 7 to 20 years old. The study population mainly comprised students from economically weaker sections and lower-middle-class families, with many of their families relying on agriculture and agro-based incomes for their livelihood. Survey research is generally the best option for investigating a group of people who are too large to study in depth through direct observation (Babbie, 2007). The cross-sectional survey design allowed for data collection at a single point in time, providing a snapshot of the various obstacles faced by the students while doing online classes during the pandemic. The survey approach provided a standardized way of collecting data and allowed for comparisons across different subgroups of students. Additionally, the survey design enabled the researchers to efficiently collect data from a large sample of students, thereby increasing the generalizability of the findings to the larger population of students in the village.

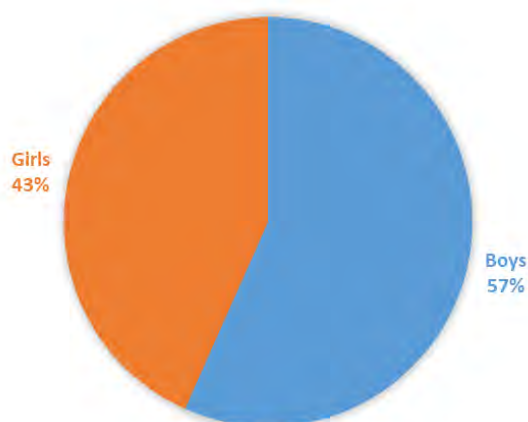
Data Collection

The data collection process utilized in this study was a mixed methods approach, including qualitative and quantitative data collection and analysis techniques. Social researchers often deal with complicated issues, and these issues cannot be adequately addressed by using only

quantitative or qualitative methods. To gain a comprehensive understanding of the diverse issues confronted by rural students, this study adopted a mixed-method approach that incorporates both these methods (Creswell, 2009). Triangulation, a methodological process that integrates both techniques, was used to achieve the research objectives. Babbie (2007) believed triangulation was an excellent technique as it can minimize certain weaknesses of each research method. Qualitative data was collected through interviews with the students to obtain in-depth and rich descriptions of their experiences and perspectives. On the other hand, quantitative data was collected through a survey to gather more structured and numerical data on the student's attitudes and behaviors. The use of both techniques and the triangulation process allowed for a more comprehensive understanding of the research question, providing a complete picture of the topic under investigation.

Sample Selection

For this study, a convenience sampling technique was employed to select a sample of 300 students from various schools in the South Bali Para village to serve as respondents. Convenience sampling method relies on the availability of samples, meaning whoever is willing to answer questions are selected for the study (Babbie, 2007; Bernard, 1988). Because the study was carried out during the pandemic, a more non-risky sampling method such as simple random sampling could not be utilized. The schools in the study area were closed, and as a result, getting a list of students from school authorities to run a random sampling was not feasible at the time of data collection. The study required a certain number of respondents who faced pandemic induced challenges, so the convenience sampling technique was adapted. As shown in Figure 1, the composition of boys and girls surveyed was 57% and 43%, respectively. The students were selected based on their availability and willingness to participate in the study. The sample was equally composed of boys and girls, representing the gender distribution of the student population in the village. Additionally, the sample was representative of the age range of the students in the village. This sampling method was chosen due to its practicality and convenience in terms of accessibility to the target population, allowing for data collection in a timely and cost-effective manner. However, it is essential to note that convenience sampling may introduce some degree of bias in the sample selection process, and therefore, the generalizability of the findings may be limited.

Figure 1.*Composition of Boys and Girls Surveyed*

Data Analysis

The data collected in this study were analyzed using both qualitative and quantitative techniques. Qualitative data collected through interviews were analyzed using thematic analysis, whereby the data was conceptualized, classified, and relationships were built between the concepts and numbers. The emerging themes were then used to describe and interpret the participants' experiences and perspectives. On the other hand, quantitative data collected through the survey were analyzed using descriptive statistics to summarise and present the data in tables and graphs. Triangulation was employed as a methodological process to integrate the qualitative and quantitative data and to build a complete picture of the challenges faced by students in rural areas during the COVID-19 pandemic. This allowed for a deeper understanding of the socioeconomic challenges and costs of pandemic-led online education in rural Bangladesh and helped to identify issues related to accessibility, approaches, and adaptability of online learning during the COVID-19 pandemic. The use of triangulation and qualitative and quantitative data analysis techniques contributed to the comprehensiveness of the study's findings and increased the validity and reliability of the results.

Findings and Discussion

The objectives of the study were to find out the challenges faced by students in terms of accessing, learning, and adapting to online education during the COVID-19 outbreak, contribute to the existing literature and serve as a basis for future investigations, and help policymakers and educators in developing and implementing effective online education initiatives to address the obstacles faced by rural students during the pandemic. The study achieved its objectives using sample data of Primary and Higher Secondary school students from South Bali Para village, Trishal Upazila in Mymensingh. A mixed method approach and a convenience sampling technique was applied to collect and analyze the data. The study shows that most of the students come from low-income families, with a majority of them being dependent on agriculture and agro-based labor activities. The monthly income of these families

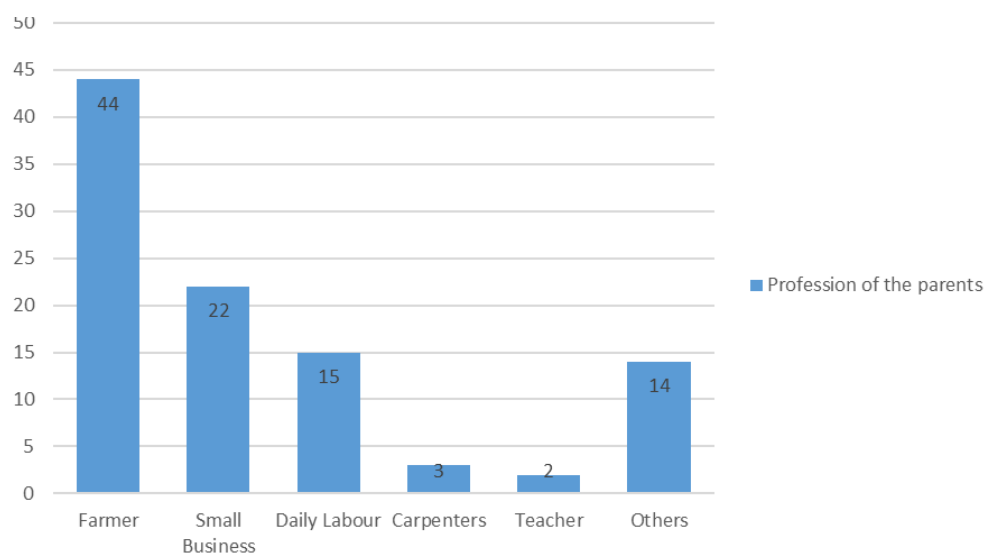
is also relatively low, which makes it difficult for them to afford the devices and internet connectivity needed for online learning. The study found that only a small percentage of students had access to the Internet and owned devices such as computers or laptops to attend online classes.

Family Background and Socioeconomic Status of the Students

Most of the students belong to lower-class families. There are 44.4% of respondents' fathers who do agricultural work, 20% of businessmen, 8.9% have businesses, 3% are fully unemployed, 2.2% are teachers, 2% are carpenters, 3% live abroad, and 16% engaged in other professions as shown in Figure 2. Many families depend on agriculture and agro-based labor activities. The maximum family depends on the income of their father. There are, 86.7% of respondents' fathers earn money for their family and the rest, 13.3% of respondents' sister-brothers earn for their family instead of their father. The profession of the respondent's mother is not very diverse. There are 97% of respondents' mothers are housewives, and the other 13% of respondents' mothers work outside.

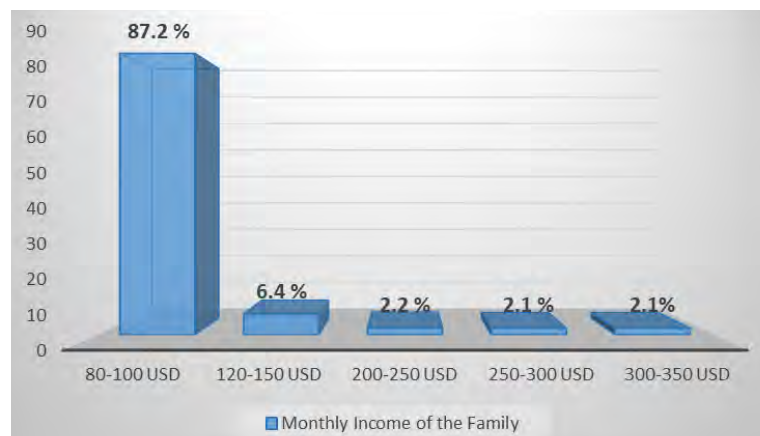
Figure 2

The Profession of the Parents in Percentage



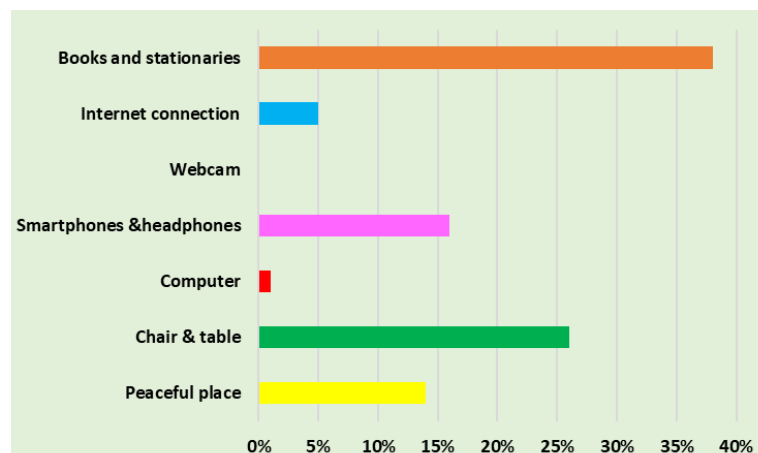
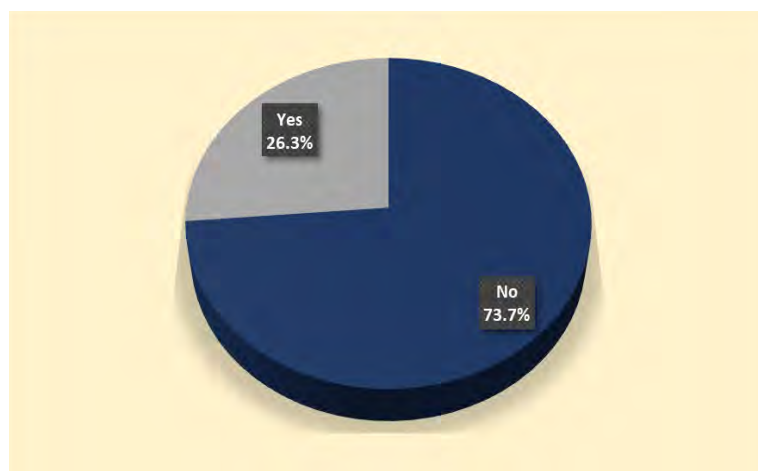
Monthly Income of the Respondent's Family

When we paid attention to the monthly income of the student's families, it was quite depressing. Figure 3 shows that 87.20% of the respondent's family's monthly income is only around 80 to 100 USD. Only 6.40% of respondents' families' income is 120 to 150 USD. Only 2.20% of respondents' families earn 200 to 250 USD per month. 2.10% of families have a monthly income of 250 to 300 USD and 300 to 350 USD, respectively. The maximum income of a family is 350 USD per month, with which they struggle to maintain a decent life.

Figure 3.*Monthly Income of the Family in USD*

Resources or Equipment Available in the Students' Households for Their Studies

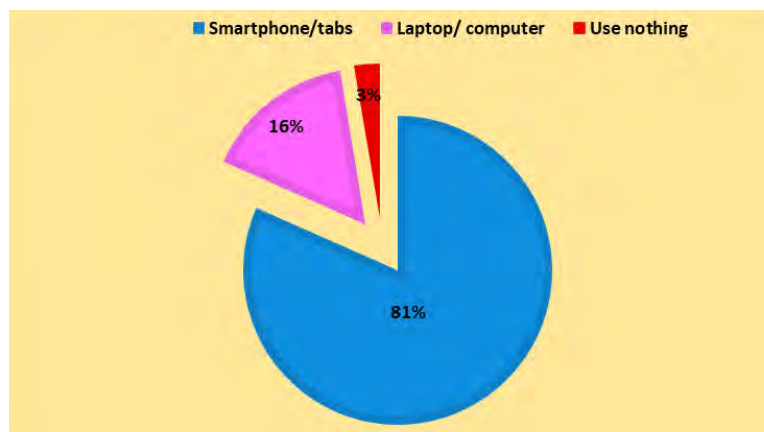
Our study reveals that the majority of students residing in rural areas lacked access to broadband Internet in their homes. Figure 4 illustrates scenario of resources or equipments available in the house of the students; only one percent of students having their own computer at home and none of them possessing a webcam, even among those who owned a computer. Additionally, a mere five percent of students had a broadband internet connection. During interviews with these students, we discovered that they relied on smartphone data packages to connect to the Internet, which presented challenges in terms of affordability and smartphone accessibility. It is worth noting that access to the Internet was only possible through mobile data packages, making these students heavily dependent on smartphones for online connectivity. However, it is important to note that only 16% of students had their own smartphones and headphones. When asked if they could afford to purchase a new smartphone during this period, 73.3 percent responded with “No” (as illustrated in Figure 5). On a positive note, 26% of students had chairs and tables in their homes that they could utilize for studying. We also inquired whether they had a quiet space at home for attending online classes; unfortunately, only 14 percent of students responded affirmatively.

Figure 4*The Study Tools/Devices that the Students Had in Their Home***Figure 5***Percentage of Students Who Could Afford to Buy Smartphones during the COVID-19 Period*

Most Used Device for Continuing Online-Based Classes and the Number of Devices Available in the Family

During the COVID-19 lockdown, students depended on various devices to continue their online education. When considering the distribution of device usage, a majority of students, comprising 81% of the total, relied on smartphones or tablets to attend online classes though their parents used those devices as they did not own the devices, shown in Figure 6. Only 16% of students had access to a laptop or computer. Surprisingly, 3% of students had no access to any type of device to join their classes. Among the respondents' families, the majority (85%) owned one smartphone, while 12% had two smartphones, and the remaining 3% had three smartphones. During our interviews, we discovered that among the 85% of students whose families owned at least one smartphone, it was predominantly the breadwinner, typically the father, who owned it.

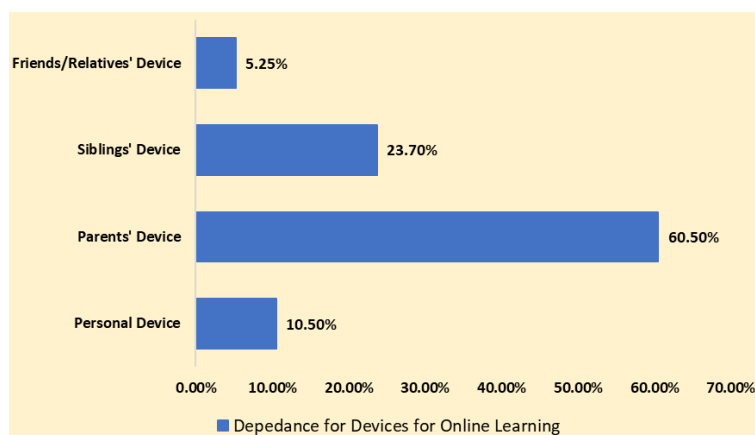
Figure 6
Different Devices Used in Percentage



Classification of Owners and Dependency Percentage for Various Devices Used for Online Classes

Regarding the classification of owners and the percentage of dependency on devices among these students, our findings indicate that 70.6% of students shared their phones with their siblings to attend online classes, while 29.4% did not share their phones with their siblings. In terms of device ownership, 60.5% of respondents used their parents' phones, 23.7% utilized their siblings' phones, 10.5% had their own personal phones, and an additional 5.25% relied on phones borrowed from friends and relatives for online classes, as illustrated in Figure 7. It's worth emphasizing that not all students may have personally possessed these devices; some could have been shared with neighbors or borrowed from various sources, as indicated in Figure 7. However, this shared device arrangement at times presented difficulties for students, leading to occasional class absences due to conflicting schedules with their siblings or friends. This underscores the restrictions and interruptions that can emerge when multiple individuals depend on a single device for their educational requirements.

Figure 7
Classification of Owners and the Percentage Dependency for Devices



Educational Costs during and after the COVID-19

The cost of education, including school and transportation fees, became an additional burden during these challenging times. A significant number of students confirmed that school fees increased following the COVID-19 lockdown. However, it is concerning that most students indicated that their respective school authorities did not reduce the fees during the pandemic, which was crucial for ensuring continued education during the lockdown. (Table 1) Only 38% of students agreed that the school authorities waived their fees, and a mere 32% confirmed that the authorities had taken the initiative to facilitate an easier process for fee payment (load or through instalments). These statistics underscore the financial challenges faced by students and their families and the limited support provided by educational institutions in addressing these difficulties.

Table 1

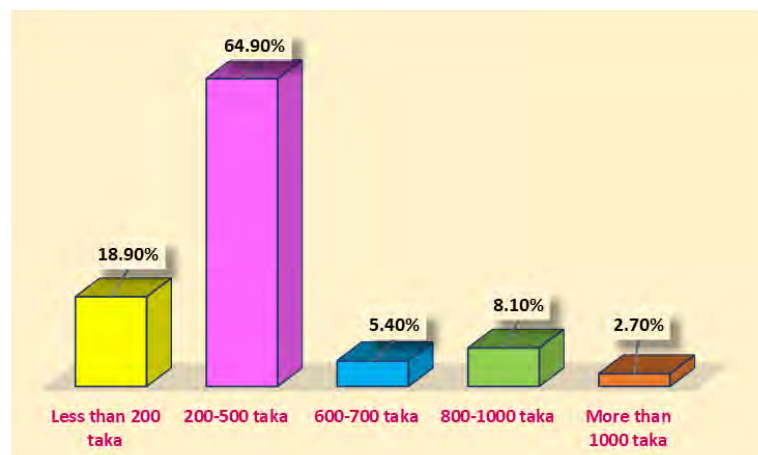
Educational Costs While and After COVID-19

Topic	Student's opinions & percentage	
	Agree/yes	Disagree/no
School fees increased after COVID 19	70%	30%
School authorities decreased school fees during COVID-19	17%	83%
The school authority waived school fees during COVID-19	38%	62%
School authorities make it easier to pay the school fees of the student through a loan system or other	32%	68%

Monthly Internet Cost of the Respondents

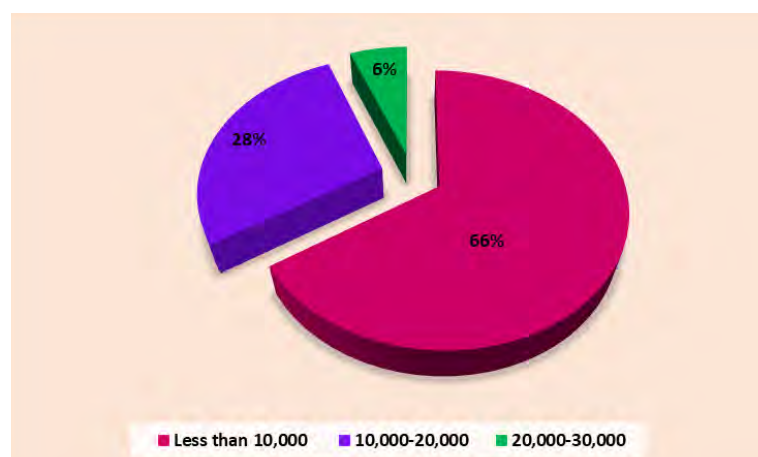
Figure 8 illustrates the monthly internet costs reported by the respondents. The first column reveals that 18.90% of students can afford to allocate around 2.5 USD (Tk. 200) for purchasing internet services. Furthermore, 64.90% of students could spend between 2.5 to 6 USD (Tk. 200-500) per month, while 5.40% of students spent 7-8 USD (Tk. 600-700). Additionally, 8.10% of students allocated 10-12 USD (Tk. 800-1000), and 2.70% spent more than more than 12 USD (Tk. 1000) on internet expenses each month.

To actively participate in online learning, a minimum expenditure of 12 to 15 USD per month was required for internet access. However, it was evident that most students could not meet this requirement due to their family's monthly income being only 80-100 USD. For rural families facing economic hardships, allocating 10% of their income solely to purchasing internet services presented a difficult decision. This data highlights students and their families financial constraints, which further hinder their access to quality online education.

Figure 8*Monthly Internet Cost of the Respondents***The Price of the Devices Used for Online Classes**

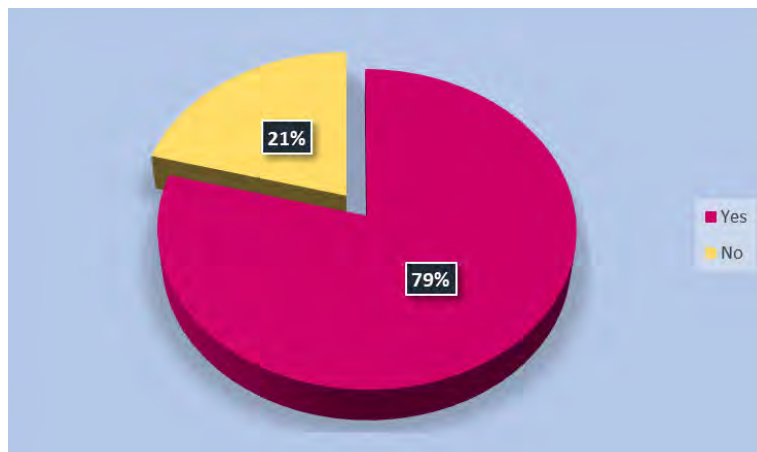
When it came to acquiring a new device for attending online classes, 66% of the students had spent approximately 115 USD (Tk. 10,000), while 28% of students had invested between 115 and 225 USD (Tk. 10,000-20,000). Only 6% of students had spent 250 to 350 USD (Tk.20,000-30,000) on their devices.

Additionally, it is worth noting that a significant percentage of students in rural Bangladesh, at least 30%, encountered difficulties in using various apps on their devices, such as Zoom, Messenger, WhatsApp, and Google Meet. This information, as depicted in Figure 9, highlights the challenges faced by students in effectively utilizing the required online communication and collaboration tools.

Figure 9*The Prices of the User Devices*

As a consequence of the high cost of maintaining online learning, there has been a drastic dropout in schools. The sample size of our study shows that 21 percent of the respondents are no more continuing their education (Figure 10).

Figure 10
School Going/Still Studying Student Percentages



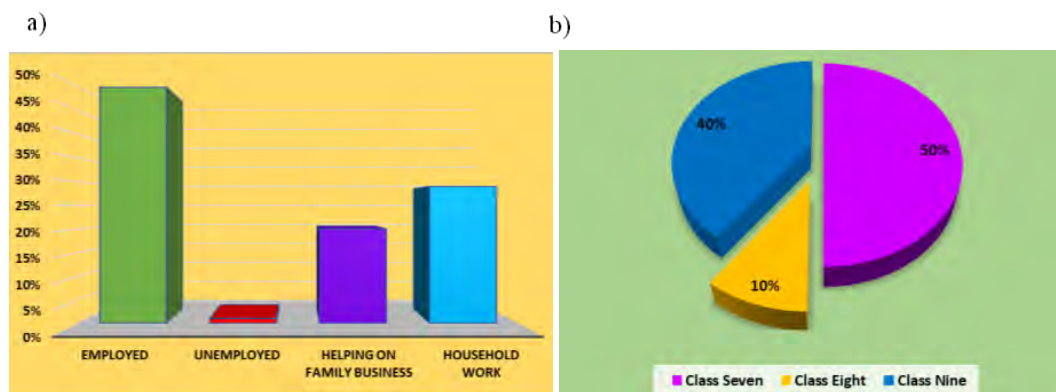
Present Conditions of the Dropout Students

A significant number of students have become engaged in various professions after dropping out of school or college. Among the respondents, 50% reported being employed and contributing their earnings to their families. Only 1% of the respondents were unemployed. Additionally, 20% of respondents assisted with their family’s business, while 29% were involved in household work and farming activities.

Following the outbreak of COVID-19, a concerning trend emerged where a large percentage of female students faced familial pressure to get married, reaching a staggering 90%. Among the 21% of students who dropped out of school, 50% dropped out during grade seven, 40% dropped out during grade eight, and the remaining 10% dropped out during class nine. These details can be seen in Figures 11a and 11b.

Figures 11a & 11b

a) The Present Condition of Dropout Students, b) The Last Academic Status of the Respondents

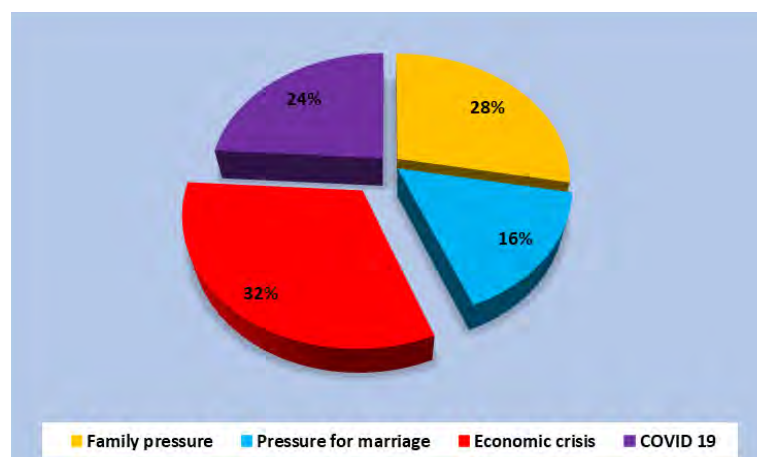


The Reason for the Discontinuation of the Study/Dropout of the Respondents

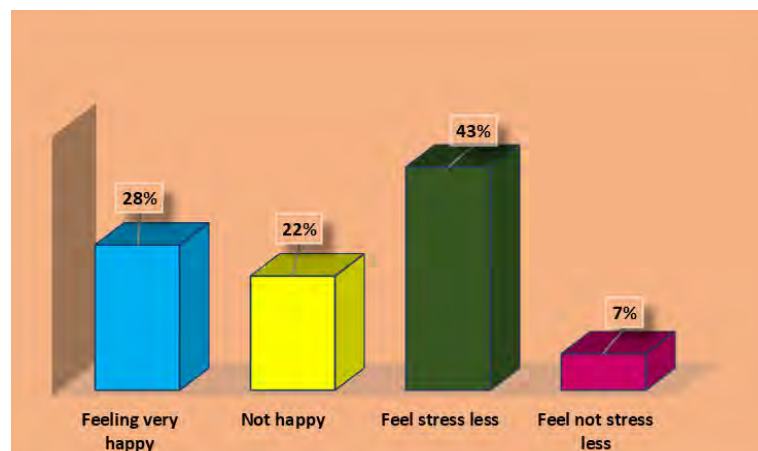
According to our findings, a significant number of students have halted their studies due to the economic crisis. Continuing their education online posed challenges as it necessitated new arrangements. Moreover, the various incentives, moral support, and motivation they used to receive during offline classes were no longer available. As shown in Figure 13, approximately 32% of students were unable to continue their studies due to the financial difficulties faced by their families. Additionally, 28% discontinued their education due to family pressure. Another 24% of students were unable to continue their studies online due to the impact of the pandemic. Furthermore, 16% of students discontinued their education due to the pressure from their families to get married. This data highlights the factors contributing to the discontinuation of studies among students during the pandemic of COVID-19 and aftermath.

Figure 13

Study Stop/Dropout Reasons of the Respondents



Rural families often faced financial constraints exacerbated by the pandemic, making it challenging to afford the tools and resources required for remote learning. In our final analysis, it was revealed that the students in rural areas have faced major challenges due to the economic hardship in opposition to the crisis of mental health and stress of the urban students in Bangladesh. This is not to say that the rural students were not facing stress and mental health issues. As illustrated in Figure 14, 43% of students responded that they felt stress and had gone through depression when their institutions are closed. The financial difficulties resulting from the pandemic heightened the likelihood of rural students discontinuing their education in order to support their families financially or getting married at an early age (Mahmud et al., 2021), as indicated 32% under economic crisis, 28% under gone family pressure and 16% married and discontinued the study which is portrayed by the data presented in Figure 13.

Figure 14*Mental Health Conditions of the Respondents after School Closed*

Most of the students depended on smartphones or tabs to continue their education. The cost of purchasing these devices and paying for internet connectivity was also found to be a major challenge for these low-income families (Mahmud et al., 2021). Additionally, the combination of network connectivity issues in rural areas and the high cost of data packages further exacerbated the situation, preventing numerous students from participating in online classes during the COVID-19 pandemic. A recent report from a UK-based cable company highlighted that, among the three South Asian countries – India, Bangladesh, and Sri Lanka, Bangladesh had the highest mobile data package rates. In specific terms, Bangladesh charged the most for one gigabyte of mobile data at \$0.99, while India's rate for the same amount was significantly lower at \$0.26 (Jasim and Sajid, 2020). As a result, a significant number of students had to drop out of school or discontinue their education. The study also found that education was discontinued mainly due to economic hardship, family pressure, and the difficulties of continuing online education. Family pressure, especially for female students, to get married was also found to be high. The results of the study call for policy interventions to address the economic, social, and technological barriers rural students face in accessing education. The government needs to take immediate measures to improve the internet connectivity infrastructure, provide students with low-cost devices, and ensure that schools and teachers are equipped to deliver online education effectively.

During the COVID-19 pandemic, after recognizing the need for a response to mitigate the pandemic's educational disruptions, policymakers quickly embraced the idea of transitioning to online platforms for educational activities (Wadud, 2020). However, the pandemic compelled a shift, making online platforms the primary means of conducting classes, accommodating a large number of students (Mishra et al., 2020). Bangladesh, too, initiated efforts to facilitate online classes to sustain education without in-person interactions (Shivakumara, 2020). Many academic institutions in the country have adopted the establishment of academic portals, enabling teachers to create their courses online (Chowdhury, 2020). But many of the rural area based educational institutes still poses the lacking of facilities and instromanization.

Amid the COVID-19 pandemic, the uncertainties and emotional distress have had a detrimental impact on the mental well-being of students, parents, and educators. This impact has given rise to psychosocial challenges during the outbreaks and their aftermath (Mopme, 2020). It was imperative to formulate strategies to address the mental health of rural students facing substantial stress and depression due to the pandemic and difficulties in accessing education. This research also underscores the significance of increasing investments in rural education to prevent students from being left behind and to enable them to realize their full potential. Education is a fundamental right, and it is the government's duty to ensure that all children, regardless of their socioeconomic status or geographic location, have access to high-quality education.

Finally, it is essential to recognize that the challenges faced by rural students are not unique to Bangladesh but are prevalent in many developing countries. Therefore, the findings of this study have important implications for policymakers and education stakeholders worldwide. By addressing the challenges rural students face in accessing education, we can work towards building a more equitable and just society that leaves no one behind. The research findings can help inform policies and strategies for providing students with the necessary resources and infrastructure to access online education.

Conclusion & Recommendations

In conclusion, our research provides insight into the difficulties and expenses involved in implementing online education during the pandemic in rural areas of Bangladesh. Despite the introduction of measures like remote learning through television and multimedia classrooms in remote regions, our results indicate that these efforts did not lead to a seamless transition to online education. On the contrary, dropout rates rose, and the likelihood of early marriage escalated, underscoring the necessity for an inclusive and accessible remote learning approach that caters to the poorest and most vulnerable students in Bangladesh.

Based on our study, we offer several recommendations for policymakers to consider when designing policies for online education intervention in Bangladesh and other developing nations across the world:

1. To begin with, it is crucial to produce more empirical evidence for rebuilding the remote-learning strategy to make it more inclusive for poor and vulnerable communities. This could involve conducting studies that assess the effectiveness of existing policies and identifying areas for improvement. Schools should conduct surveys to assess the availability of devices and accessibility of the Internet for students. This will help identify the students who lack access to these resources and need assistance.
2. Upon finding the unavailability of e-learning devices and inaccessibility to electricity and devices, the school authority should arrange the same with the support of competent authority. By doing so, schools can ensure that all students have equal access to online education.

3. Supporting the students to use ICT effectively and familiarising them with most new learning technologies can be instrumental in making online education accessible and effective for all students. This could involve providing students with training on how to use online tools and resources effectively and how to access the Internet.
4. Moreover, access, quality, and participation should be given supreme priority. This will include the assurance of accessibility to all students and maintaining the highest quality of teaching-learning, and it has to be participatory in nature. By prioritizing these aspects, policymakers can ensure that all students have access to high-quality education, regardless of their socioeconomic background.
5. Students and parents should not suffer from anxiety about the evaluation or exam, results, certificate, and the overall value of the degree or education earned via virtual learning during critical times. It is crucial to ensure that online education is valued and recognized like traditional forms of education. This could involve developing standardized certification processes that recognize the value of online education.
6. Finally, in order to develop a framework for blended education, policymakers need to pay attention to the infrastructure and feasibility of remote learning. A national-level policy should be framed to develop and provide low-cost educational learning packages for availing online education to rural students in Bangladesh. By doing so, policymakers can ensure that all students have equal access to high-quality education, regardless of their socioeconomic background.

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