

Towards Understanding the Efficacy and Acceptance of Virtual Classrooms During COVID-19 in Bangladeshi Students

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The sudden appearance of COVID-19 bound people to stay at home due its highly infectious nature as a pandemic. Governments shut down countries, and economies and businesses collapsed. The education system was no exception, rising COVID-19 cases forced schools to shut. According to UNESCO, COVID-19 afflicted around 37,694,522 learners as of January 2022 [1]. Since educational facilities halted in March 2020, Bangladeshi students have been deprived of adequate instruction and connecting with their classmates, significantly harming their educational experience as the schools were closed and could not go back to normal. So, Bangladesh had to move towards an online education system [2]. While the online program had overcome inevitable difficulties, many people questioned its efficacy and acceptability. Taking this factor into account, this research discovers the views and opinions of students regarding the efficacy of virtual classrooms over the Internet and how virtual classrooms could be an alternative to a regular in-person classroom setting.

Google Forms were used for creating an online survey questionnaire to discover students' perspectives on online education [3]. To develop the questionnaire, a literature review on related works was carried out initially and informal interviews with people who attended the online classes were conducted [4]. The survey consisted of both the quantitative and qualitative inquiries. The questionnaire was a set of four types of questions: participants' characteristics, how they attended online classes, online learning platform experience, and overall experience. The survey involved 210 students, and their educational background ranged from high school to post-graduate degree. Table 1 shows that 88.6% of the participants were from an undergraduate level and 92.9% were aged between 18 to 25 years. Most of the participants were from urban areas (63.3%). We performed a percentage analysis on the data from the survey using Google Form's built-in features and Microsoft Excel.

Table 1: Demographic information of survey participants

Demographic Information	Characteristics	Number of Participants
Educational Level	High School	2
	College	7
	Postgraduate	15
	Undergraduate	186
Gender	Female	68
	Male	142
Age	33 to 40	1
	10 to 17	3
	26 to 32	11

	18 to 25	195
Residence Area	Suburban	34
	Rural	43
	Urban	133

Poor internet connection was one of the most significant challenges for online classes [5]. Our study reports that nearly half (45.2%) of the participants faced poor access to the internet. According to Table 2, most students used android smartphones and mobile data for online classes. However, most students had no previous experience with online classes. Our survey found that about 84% of students had never participated in online classes before. Most of them preferred in-person rather than the recorded classes. If the students did not understand a topic in an online class, most participants asked questions to the course instructor to clarify the topic, according to our findings. Many students tended to watch recorded videos without asking questions in class about any issues. Regarding the relationships between classmates, about 80% of the respondents felt that online classes created distance between their classmates. However, there was a mixed reaction to teacher-student interaction.

Table 2: Information about how participants join online classes and interact with other students

Technical Information	Characteristics	Number of Responses
Used Devices	Tablet Computer	2
	iPhone/iOS Smartphone	14
	Desktop Computer	27
	Laptop Computer	108
	Android Smartphone	161
Internet Accessibility	Public Wi-Fi	36
	Broadband Connection	103
	Mobile Internet Packages	127
Used Platform	University's Black Board	1
	Skype	2
	Microsoft Team	6
	Facebook Live	11
	Zoom	71
	Google Meet	163
Communication with New Classmates	Never Communicate with them	60
	Personal Message	91
	Messenger and Social Media Groups	150

Most respondents stated that they could not physically meet with teachers, negatively affecting their education. Many of them felt less motivated to discuss any topic in the online class. As a result, students were less eager to discuss any issues with the teacher after class. In terms of changes in instructions in the online class, 50.95% participants expressed “instructors spend less time as far as changes in directions in the online class”, and “instructors spend less time to explain topics”, 77 stated that “instructors take fewer feedbacks”, and 936.67% participants agreed on the following statement- “To demonstrate a topic, instructorss use fewer visuals”. Just over 41% of students were neutral about changes in lecture material (Figure 1).

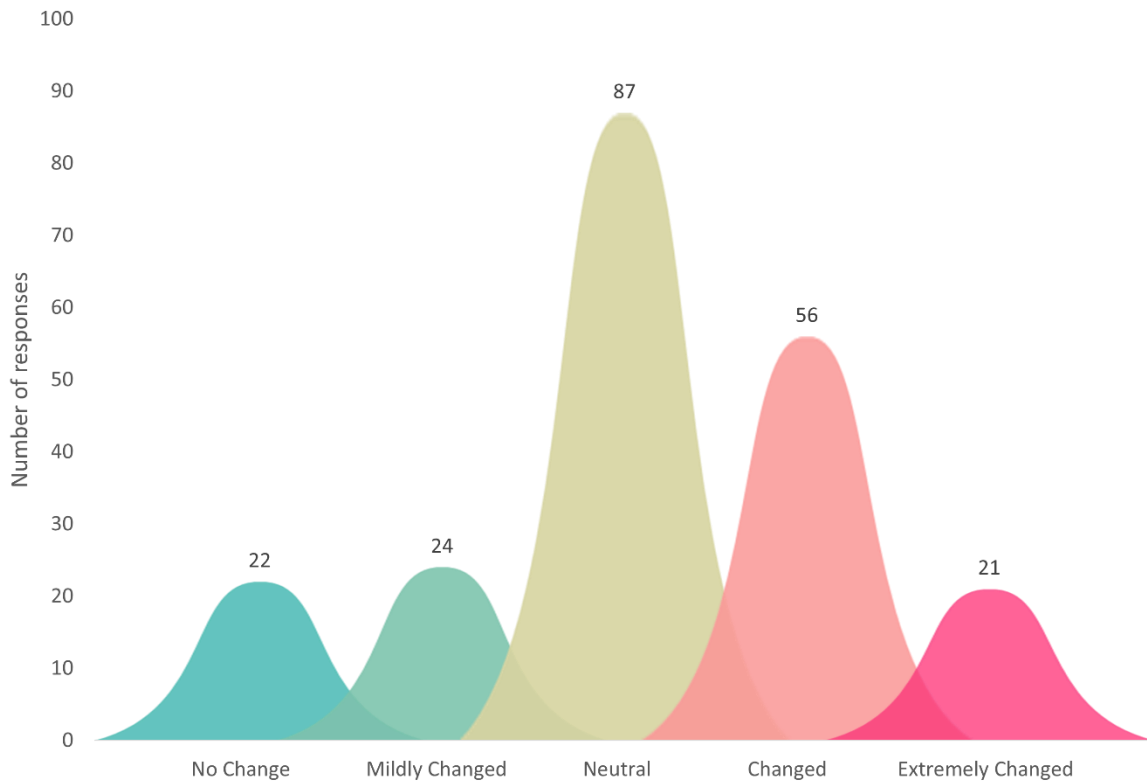


Figure 1: Participants' votes on how lecture materials and directions are changed

Students did not have a clear preference about where they took tests, but they had some complaints. They first stated that open-book exams caused teachers to generate complex tasks that might take longer to solve than the time given for exams and that teachers could not evaluate their efforts properly. Also, poor internet connectivity and inadequacy of devices were significant barriers to students participating in online class tests. The main complaint about online classes and tests was that students could not concentrate for a long time. There were also allegations of falling asleep and noisy environments in the classroom while sitting at home. In terms of class participation and performance evaluations, most students preferred assessment at the end of the week. Still, many students appreciated checking in for each class, and some also mentioned that they enjoyed assessments at the end of the course or semester. Some of the main complaints from students learning in through online teaching systems were that teachers used fewer images to demonstrate any concept, spent less time explaining a subject than before, and took less feedback from students. Around 33.3% students were neutral about learning from online classes, with totally confident students around 11.9% and unconfident students around 17.1%, as illustrated in Figure 2.

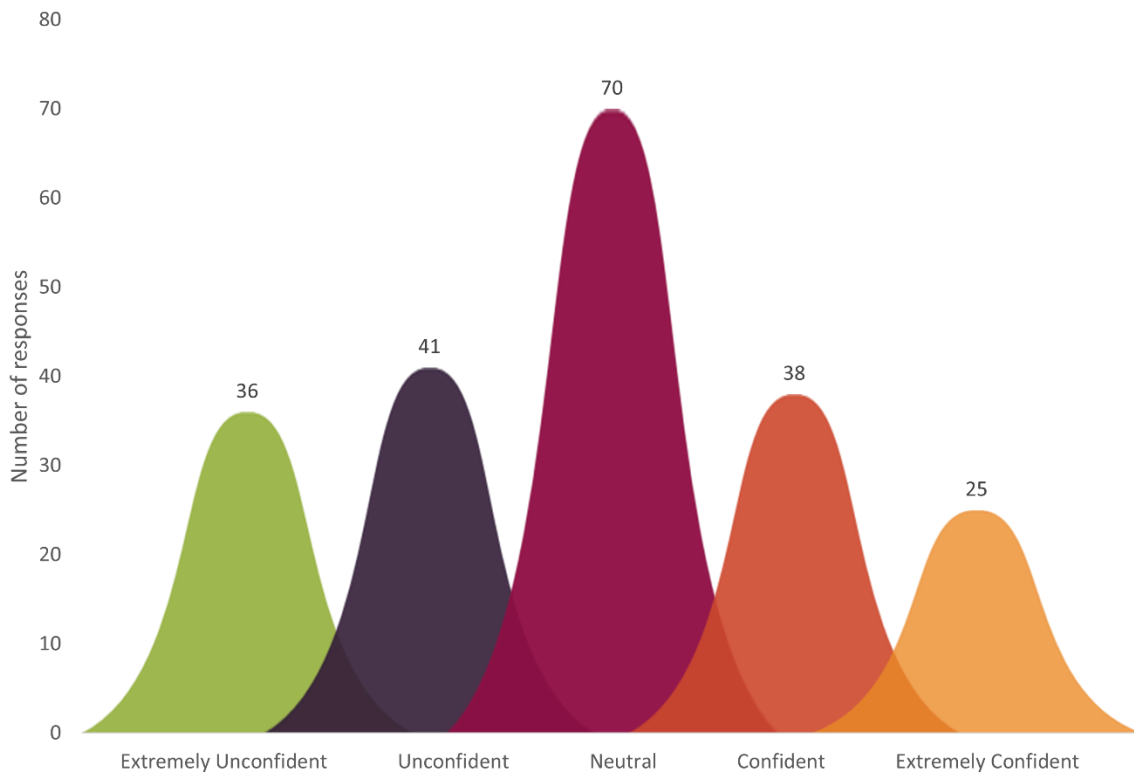


Figure 2: Participants' votes on how confident they were about learning from online classes

On whether online lessons were advantageous, 31.4% students were neutral and 17.1% considered online classes as very damaging. In comparison, online classes were considered advantageous by 13.8% of students (Figure 3).

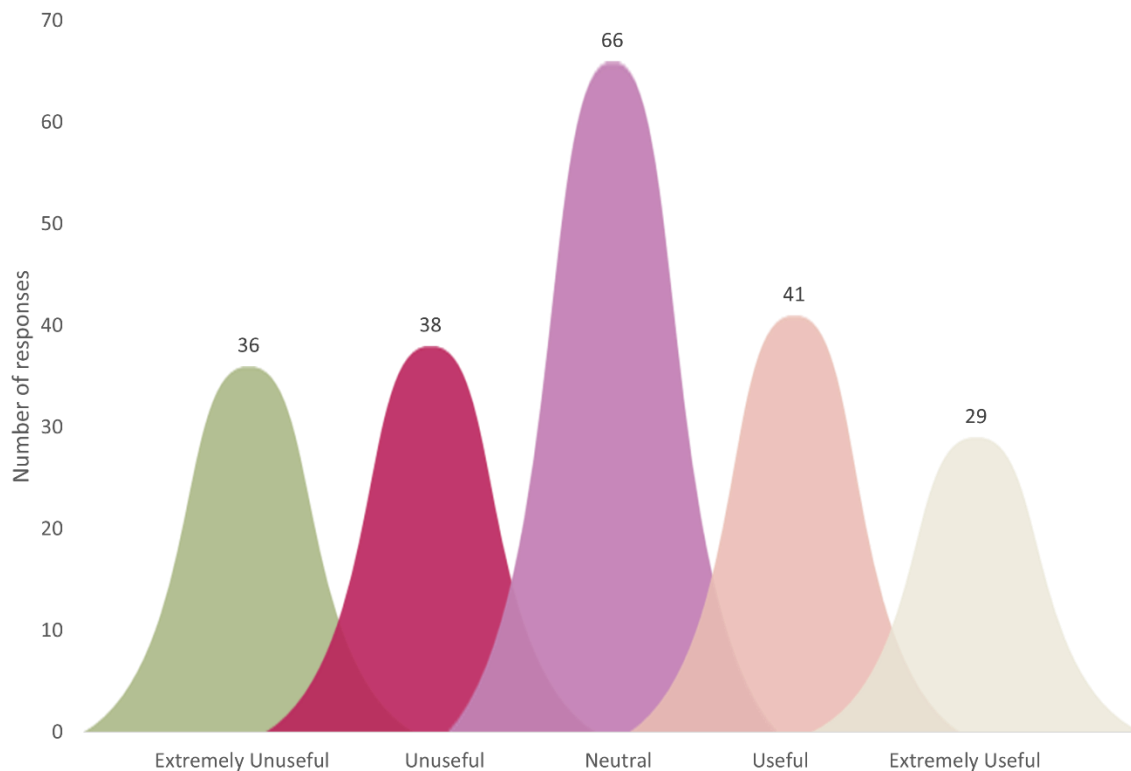


Figure 3: Participants' votes on how useful online classes were.

Students understood that COVID-19 and the pandemic had been prevented them from physically participating in the classroom and forced them to participate in online classes. However, participants had recommended some factors to be considered e.g., not attending virtual classes for a longer period, ensuring uninterrupted Internet connection at lower cost, utilizing additional visuals or examples to demonstrate a topic, taking immediate feedback after discussing a topic, and guiding for the necessary steps for the next session of that course/class. Some complications in students' use of online platforms were observed, e.g., excessive amounts of data transmission due to video lecture distribution, the inability to transmit bigger files at the lower Internet speed either from the course instructor or to the course instructor within a shorter and fixed time frame, the time and number of students remaining constant, and so on. The findings from the survey indicate that the students will be interested in online education if the aforementioned recommendations are taken care of and the issues are resolved. Despite the limitations indicated by survey participants, it is obvious that the online education system may serve as a viable alternative to traditional classroom education in an emergency, e.g., a pandemic like COVID-19, and that virtual classrooms can minimize disruptions in continuous learning.

References

- [1] UNESCO, “Education: From disruption to recovery,”. [Online]. Available: <https://en.unesco.org/covid19/educationresponse>
- [2] M. Abdullah, “2020: The rise of online education,” Dhaka Tribune, 2020. [Online]. Available: <https://www.dhakatribune.com/bangladesh/2020/12/31/2020-rise-of-online-education>
- [3] N. Halder, S. R. Islam, M. S. Hosain, E. Ahmed, A. Islam, and S. R. H. Noori, “Efficacy and acceptance of virtual classrooms during covid-19: Bangladesh perspective,” in 2021 3rd International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA). IEEE, 2021, pp. 1–6.
- [4] T. Muthuprasad, S. Aiswarya, K. Aditya, and G. K. Jha, “Students’ perception and preference for online education in india during covid-19 pandemic,” *Social Sciences & Humanities Open*, vol. 3, no. 1, p. 100101, 2021.
- [5] M. Adnan and K. Anwar, “Online learning amid the covid-19 pandemic: Students’ perspectives.” *Online Submission*, vol. 2, no. 1, pp. 45–51, 2020.