

Impact of Prolong Online Classes on Student's Health and Quality of Education During Covid-19

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Abstract: During covid-19, a number of difficulties had been faced by this world. Among the most affected factors, education and health issues were one of the most major significant fields among them. Though with the help of technology, different online educational platforms were seen to be used, the quality of education was not improved. In fact, from a survey, it has been defined that due to prolong online classes, students were becoming stressed, and their eyesight was hampered. A simple qualitative analysis has been performed here to get insights. The students who passed their classes and semesters during that period were unable to have standard knowledge. The results of the survey are shown here depending on the level of school quality, mental stress, and the viewpoint of the student. The questionnaire was created in a way that allows for the collection of the students' genuine insights. The specific features of this essay focused on the interaction between educational quality and students' health problems as a result of COVID 19. The paper is based on the viewpoint of Bangladesh, and its main goal is to determine the cause of the students' current performance in the job market.

Keywords: Education Quality, neural fatigue, attention, eyesight, grow, covid-19.

Introduction: The COVID-19 pandemic has forced educational institutions worldwide to shift their traditional in-person teaching methods to online platforms. As a result, online classes have become the primary mode of education delivery. While online classes have made education accessible during these unprecedented times, there are growing concerns about their quality and impact on students' physical and mental health. One of the main concerns with prolonged online classes is the lack of quality of education delivery as well as health issues of students. Online classes can be challenging for both students and teachers, and many students have reported difficulty understanding course materials and concepts without the benefits of in-person instruction [3]. The lack of face-to-face interaction can also make it challenging for students to receive immediate feedback and support from teachers, leading to frustration and confusion. Furthermore, students' physical, mental, and social health is also affected by the lack of quality education delivery [1]. When students struggle to understand course materials, they may spend more time in front of their screens, leading to eye strain, headaches, and other physical health issues [21,23]. Frustration and confusion can also take a place on students' mental health, leading to anxiety, depression, and stress. The lack of social interaction with peers and teachers can also lead to feelings of isolation, loneliness, and disconnection, which can further exacerbate mental health issues.

This paper particularly focuses on the decreased quality of education as well as the health issues of the students for Covid 19. After collecting the responses, the data has been analyzed which has covered both of these particular objectives. This paper also has identified the reasons of imperfect performance of students who has just graduated during covid 19. An overall area has been covered throughout the study.

In this paper, a number of relevant papers have been defined and a proper gap has been drawn here. The all-written papers have focused on performance of employees during this period of time. Again, perceptions of the learners were illustrated also [1,2]. The all explained paper's main focus is the impact of online class on a particular perspective. Whereas this paper combines the both terms, the decreased quality of education as well as the impact on health issues which in turn has an adverse impact on the skill development part of students.

Therefore, the purpose of this research is to examine the impact of prolonged online classes on students' physical and mental health and their learning outcomes. This study aims to investigate the effects of the lack of quality education delivery on students' understanding of course materials and concepts, their engagement and motivation levels, and their academic performance. By understanding the effects of the lack of quality education delivery in online classes, educational institutions can take steps to improve the quality of education delivery and promote healthy habits for students in the future [2,24]. This research will provide insights into the challenges posed by online classes and help develop strategies to improve the quality of education delivery and mitigate the negative impacts on students' health and well-being.

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Literature Review: Students can learn from anywhere in the world. This is one of the most important inventions of science. But if the user cannot use it in a proper way, the result will be negative. Blue light emits from the devices like smartphones, laptops, and other screens, directly affects the eyesight of the students. As a result, it also creates an adverse impact on the sleeping cycle of students. Because of the improper sleeping hour, students face a number of health problems [1,25].

During the covid period, students and faculty members have to shift from offline to online classes. Though this mode of study is very common in the world, in Bangladesh, this concept is quite new, and because of the absence of some regulations, students are unable to take the advantage of it. In fact, they are having an adverse impact from this online class. Their health issue as well as their educational quality and knowledge are unable to meet the basic criteria and qualifications [2].

As the classes during the covid-19 period were taken online, the students were given every assessment, homework, and assignment online. Some students used to do it by themselves, and most of them had help from others and also took help online without thinking about the problems or using their intelligence. In this way, the quality of education used to decrease day by day [3].

In this paper, the investigation of the result of students both online and on-campus have been done. Surveys and results show that the students who did well in an online exam did not do well in their offline classes. This outcome defines that, the quality of education and the knowledge level is not that much good compared to the actual exam of students. [4].

During covid-19 and the online class period, the mental health of the students was affected in a worse way. Not every student was able to go with the new rules and regulations all of a sudden. As a result, students were mentally disturbed which indirectly affected their study and knowledge acquisition [5,13].

Not every educational institution does have good-quality devices that will be used for online classes. Especially the primary and high schools are among them. Because of the absence of the proper equipment, not all faculty member was able to serve the students with their highest effort. Which directly affects the quality of education of the students [6,19]. In different countries, the assessment of the quality of online classes has been done. In some countries, the online class does have a very poor outcome due to a number of reasons. A better outcome will never come until the problems are solved in a perfect way [7]. In one paper the relationship between the teacher and the student has been drawn during the online class period. As the students do not concentrate on a class during the covid-19 days, the relationship was going down and it directly affects the morality of a student [8,20].

In another paper, the learning and the knowledge status have been presented to make a better comparison between these two learning ways of students. Though online classes are one of the greatest inventions of science, all people cannot take or use them in a meaningful way. As a result, the students are unable to have the desired knowledge that they should have [9,14]. This paper has represented the positive relationship between online classes and student engagement. Before the pandemic, those who were unable to go to class physically were about to get a better opportunity to do the online class and to have more knowledge and insights from the class. So, it defines the positive relationship between online technology and the intention of the students to learn more and more.[10].

The online classes are presenting an imbalanced learning system for the students. This absence of balance and the quality of education has been presented in this paper. This paper will be a way to have a general overview of all concepts in a proper way [18]. A summarized table mentioning the number of relevant papers and a comparison of the current outcome and the additional insights that this paper will add is given below:

Table 1: Comparison among the current research papers based on the main focus area.

Reference no.	Present Insights	Main Focus
This Paper	Defines the impact of online learning on health issues as well as the quality of education	Health issues and education quality
[1]	Defines the impact of blue lights emits from devices while using the technology. It has illustrated that it has adverse impact on the sleeping cycle as well as the eyesight.	Health issues, mainly focused on adverse impact on physical part of human being
[2],[21]	Due to lack of knowledge on online platform, both students as well as teachers face challenges while using being in this form of education	Lack of knowledge of online class and its impact on both teachers and students
[3]	Students take help or assistance from the online technology as well as artificial tools which in turn decrease the intellectual ability of students.	The decreased educational quality
[4]	The paper defines the particular difference between the acquired knowledge of online class and the practical knowledge	The implementation of knowledge in workplace
[5],[13]	The impact of online class on mental health of students and the struggle they have to go through due to this situation.	Mental health issue
[6],[19],[7]	Lack of proper equipment as well as the arrangement makes it difficult to implement the online class in a proper way	Lack of arrangement
[8],[20]	The improper relationship between teacher and students creates problem in learning session.	Imbalanced relationship between teacher and students in online learning
[9],[14]	Even after knowing the significance of online learning, students do not take in a meaningful way	The absence of acknowledging the importance of online learning

Materials and Methods: During covid 19, the only mode of education is online. Students and teachers exchange the knowledge via online platform. As, not every student of Bangladesh is familiar to this way of education, students had to go through a number of problems. Due to the excess use of electronic devices, students were facing a number of health issues which in turn creates physical and mental health issues. Beside this, students were unable to realize the content of education compared to the offline platform. From collecting the responses of the questionnaires from the online class affected students, this paper has analyzed the data and defined a combined findings of the state of mental, physical health issue as well as the decreased education quality.

A qualitative research approach and a detailed questionnaire are used for analyzing the impact of prolonged online classes on students' health and the quality of education. This survey was completed by a number of students who had done the online class during covid 19 period. The participants were elective in this case as the actual outcome was supposed to be taken from those who actually had gone through the situation.

A total of 112 students participated in the survey and answered the all questions. Both the university going students as well as the students from the rural area are involved here. The responses were collected via online method as well as face to face method. The students of rural area like, Dinajpur, Rangpur, Noakhali, Chittagong, Gaibandha were included beside Dhaka. The questionnaire was simple and understandable to everyone. The options of asked questions were on a Likert scale and with also simple options. As a result, no one faced any problems while answering the survey. The questionnaire was designed in such a precise way that, the participants did not feel any problem and tiredness while giving their valuable responses. In fact, the confidential part was not used here in order to avoid the hesitation of the students. In order to analyze the survey result, SPSS tools, and R programming are used and frequency analysis, crosstabs, correlations, and also reliability tests are done to have insights into the data. In the description part, while analyzing the data, insights from the literature review have been used. In this paper, at first, the frequency and the correlations between different variables have been defined and then a comparison between the different paper's insights and outcomes of this paper has been presented.

Results and Discussions: A simple questionnaire was handed over to 112 students who had done the online class during the covid 19 period. The data and the feedback were collected from them as they have directly gone through this situation.

Table 2: Total Number of participants in the survey.

Gender.1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	38	33.9	33.9	33.9
	Male	74	66.1	66.1	100.0
	Total	112	100.0	100.0	

We conducted research on different university students from Bangladesh to figure out the impact of prolonged online classes among students during the COVID-19 pandemic. The aim of this research was to distinguish whether the learning system through numerous online platforms was prominent for them or not. Here we can see in the abovementioned table that we had collected responses from 112 respondents, where 33.9% of responses were generated by females and 66.1% were generated by male respondents, which means males were the maximum number of participants who had contributed to the survey.

Table 3: The response rate about the inconvenience of online class

Online_class_is_Inconvenient					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	32	28.6	28.6	28.6
	Disagree	21	18.8	18.8	47.3
	Neutral	31	27.7	27.7	75.0
	Strongly Agree	23	20.5	20.5	95.5
	Strongly Disagree	5	4.5	4.5	100.0
	Total	112	100.0	100.0	

During the frequency analysis, we got to notice that a multitude of opinions was generated from the respondents regarding the inconvenience of online classes. Here we can observe that 28.6% of respondents agreed to the term because they think online classes are inconvenient, and 18.8% disagreed because they don't think so. Nevertheless, only 4.5% of respondents strongly disagreed with the statement, and 20.5% strongly agreed, as they really think online classes are inconvenient. There were some participants also who could not make their decision to choose whichever option they should pick with regard to the statement of the inconvenience of an online class, and it was 27.7%.

Despite the fact that it is quite flexible for students to continue their classes remotely through online classroom platforms, it still makes no sense that it is better than regular classes. Students face many health issues, like severe back pain from sitting for hours, eyesight complications from severe headaches, anxieties, etc. Consequently, most of the respondents to our survey found online classes inconvenient.

Table 4: The response rate on, "Physical class is better".

Physical_class_better					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	40	35.7	35.7	35.7
	Disagree	8	7.1	7.1	42.9
	Neutral	12	10.7	10.7	53.6
	Strongly Agree	49	43.8	43.8	97.3
	Strongly Disagree	3	2.7	2.7	100.0
	Total	112	100.0	100.0	

Here in this next statement, from our frequency analysis, we got to see that among 112 participants, 35.7% of respondents agreed to the statement because they think physical classes are better, and only 7.1% disagreed because they don't think the same. Conversely, 43.8% of respondents strongly agreed with the statement, and only 2.7% strongly disagreed. Lastly, there were only 3 respondents among the 112 responses who were completely neutral to the statement that physical education is better.

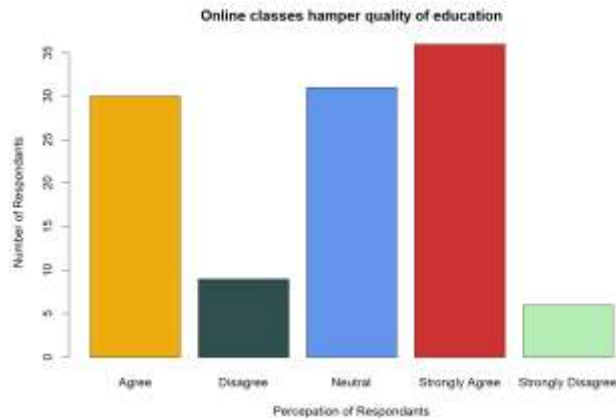


Fig:1. The response rate on decreased quality of education

In accordance with the abovementioned table, we can notice here that 26.8% of respondents among 112 responses agreed to the term that online classes decreased education quality. Only 8% of those polled disagreed. In contrast, 32.1% of participants strongly agreed with the statement, and just 5.4% strongly disagreed, as they don't think online classes decrease the quality of education. The rest of the respondents were neutral toward the statement, which was 27.7%.

Table 5: A response rate of the absence of attention in an online class.

Online_class_absence_of_attention					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	41	36.6	36.6	36.6
	Disagree	6	5.4	5.4	42.0
	Neutral	16	14.3	14.3	56.3
	Strongly Agree	44	39.3	39.3	95.5
	Strongly Disagree	5	4.5	4.5	100.0
	Total	112	100.0	100.0	

As per the table shown above, it has been spotted that 39.9% of participants from our conducted survey strongly agreed with the statement that they believe attention is absent from online classes. Merely 4.5% of respondents strongly disagreed with this statement, as they think online classes can be attentive. Just 14.3% of total respondents were neutral about the statement, as they could not choose the best option for them as attention was absent in the online class or not.

Table 6: Response rate on the stress of students in an online class

Online_class_Stressfull.1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	33	29.5	29.5	29.5
	Disagree	13	11.6	11.6	41.1
	Neutral	27	24.1	24.1	65.2
	Strongly Agree	32	28.6	28.6	93.8
	Strongly Disagree	7	6.3	6.3	100.0
	Total	112	100.0	100.0	

Based on the following table, it can be said that 29.5% of the respondents among 112 responses agreed and 28.6% strongly agreed with the assertion that they found online classes stressful. Barely 11.6% of participants disagreed, and only 6.3% of the total responses strongly disagreed that they did not feel the same. About 24.1% of respondents were neutral about the statement because they were confused about which option to pick

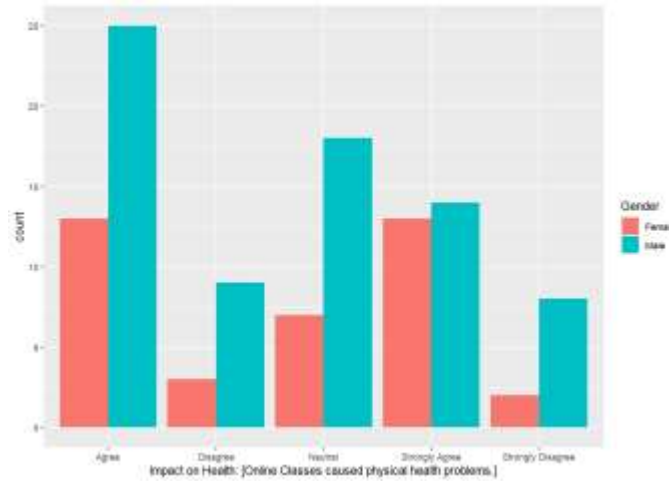


Fig 2. The response rate of the impact of online classes on health.

By aligning with the shown table, it can be observed that 33.9% of the total respondents agreed and 24.1% strongly agreed with the statement as they realized that prolonged online classes cause physical health issues. In opposition, not more than 10.7% of respondents disagreed with it, and 8.9% strongly disagreed with it. The rest of the respondents in total were neutral about the statement, which was 22.3%.

Table 7: The response rate on the impact of online class on eyesight.

Hampered_eyesight					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	40	35.7	35.7	35.7
	Disagree	7	6.3	6.3	42.0
	Neutral	12	10.7	10.7	52.7
	Strongly Agree	50	44.6	44.6	97.3
	Strongly Disagree	3	2.7	2.7	100.0
Total		112	100.0	100.0	

Based on the table below, it is clear that 44.6% of the 112 people who responded strongly agreed because they had had trouble with their eyesight because of long online classes. Merely 2.7% of respondents strongly disagreed with the statement, as they did not find any eyesight issues during online classes on a prolonged basis.

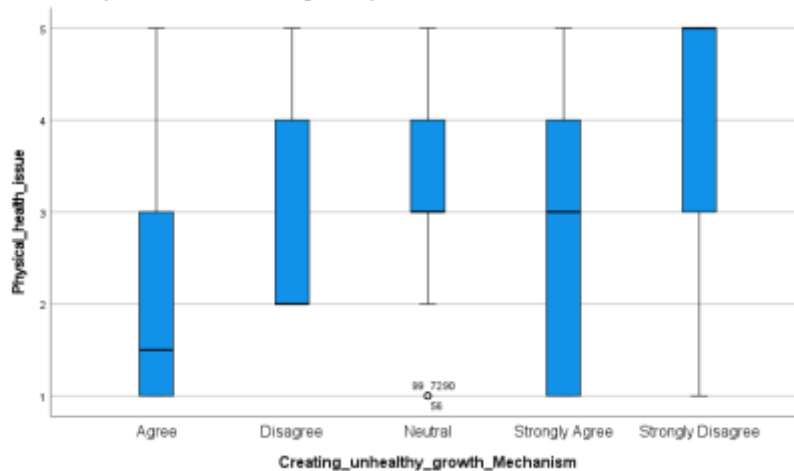


Fig 3: Impact of Online class on the health mechanism of students.

From this abovementioned table, it can be said that among 112 responses, 37.5% of respondents agreed and 32.1% strongly agreed that they had experienced unhealthy growth mechanisms since they had engaged in prolonged online classes. Nonetheless, only 7.1% of respondents disagreed and just 2.7% strongly disagreed with the statement as they did not experience unhealthy growth mechanism issues because of online classes.

Table 8: The response rate on the impact of online class on eyesight

Neural fatigue					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	41	36.6	36.6	36.6
	Disagree	10	8.9	8.9	45.5
	Neutral	23	20.5	20.5	66.1
	Strongly Agree	35	31.3	31.3	97.3
	Strongly Disagree	3	2.7	2.7	100.0
	Total	112	100.0	100.0	

Table 8: The relationship between the absence of attention and decreased quality of education of online class.

Online_class_absence_of_attention * Decreased_Education_Quality Crosstabulation							
Count							
		Decreased_Education_Quality					Total
		Agree	Disagree	Neutral	Strongly Agree	Strongly Disagree	
Online_class_absence_of_attention	Agree	21	6	9	5	0	41
	Disagree	1	1	4	0	0	6
	Neutral	1	0	11	2	2	16
	Strongly Agree	7	2	6	29	0	44
	Strongly Disagree	0	0	1	0	4	5
Total		30	9	31	36	6	112

Based on the following crosstabulation analysis, we can compare the relationship between the opinions of respondents regarding the statements. It is noticeable here that the highest number of respondents among 112 respondents strongly agreed which is indicating the strongest relation between the X and Y axis. Then we can see 21 respondents agreed to the same statements that they think online classes occur absence of attention that consequently decreases the quality of education.

Table 9: The correlations among the variables of the impact of online classes.

Inter-Item Correlation Matrix							
	Semesters_in_Online	Online_class_is_Inconvenient	Physical_classes_better	Decreased_Education_Quality	Online_class_absence_of_attention	Online_class_Stressfull.1	Physical_health_issue
Semesters_in_Online	1.000	-.005	-.108	.051	.071	.134	-.134
Online_class_is_Inconvenient	-.005	1.000	.019	.308	.213	.208	.205
Physical_class_better	-.108	.019	1.000	.267	.302	.035	.027
Decreased_Education_Quality	.051	.308	.267	1.000	.549	.299	.147
Online_class_absence_of_attention	.071	.213	.302	.549	1.000	.249	.134
Online_class_Stressfull.1	.134	.208	.035	.299	.249	1.000	.496
Physical_health_issue	-.134	.205	.027	.147	.134	.496	1.000

The above table defines the existing correlations among the variables of online class. The semesters spent on online and the different adverse impact of online class has been defined. The inconvenience level, the response on offline class is better and the decreased quality of education are the negative impact of online class. And these all are maintaining a correlation among them.

Table 10: The correlations among the variables of the impact of online classes.

Case Processing Summary				Reliability Statistics		
		N	%	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Cases	Valid	112	100.0			
	Excluded ^a	0	.0			
	Total	112	100.0			
a. Listwise deletion based on all variables in the procedure.				.711	712	15

From the reliability test of this survey and the questionnaire, it has been defined that the designed questions are reliable and are able to produce better insights. The internal consistency level is satisfactory and meaningful. It can be said that the questionnaires are able to define that online classes are not productive and meaningful for everyone. A number of worse impacts are taking place within the students. At the same time, the quality of education is not maintained.

Conclusion: With the help of technology, people from any part of the world can acquire knowledge. During the covid-19 period, students used to do online classes and from home, they were able to learn. The online class has both positive and negative impacts [11]. This paper has developed a survey and a number of participants especially the students who participated gave their opinion. The online class was unable to maintain the consistency and the attention level of the students. As a result, the quality of education has decreased a lot. Besides this due to the online screening, students are having a number of health issues [13]. Their eyesight has been attacked and damaged. Mental stress was very common among the students and as a result, the students [16]. From the insights of this paper, it can be drawn that, covid 19 though has brought improvement in many sectors, even in education sector of other developed countries, in Bangladesh, the outcome was not that much satisfactory. In fact, the impact of this, has a very adverse effect on job sector. Due to the decreased quality of education, students become unable to achieve the desired level of score which was expected from him based on the grades he had achieved during covid-19. So, the outcome of this paper will help to reduce the gap by presenting the actual problem as well as the adverse impact. As a result, in the job sector, people in fact the students are not getting what they actually deserve. Due to the lack of knowledge on technology, equal opportunity, improper training this negative outcome has been got. So, the outcome of this paper will help to reduce the gap by presenting the actual problem as well as the adverse impact.

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