

Experience of Online Classes among Medical Students of a Non-Government Medical College

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Abstract

Introduction: Online learning has emerged as a new method of teaching to maintain the continuity of medical education during the COVID-19 pandemic related closure of educational institutions in Bangladesh.

Methods: This cross sectional study was carried out in Green Life Medical College (GMC) aims to evaluate the experiences of online classes among the students of GMC (Phase I, Phase II & Phase IV). Data were collected using self administered semi-structured questionnaire through online Google Form (URL link: <https://forms.gle/84uZzEhqtrD8LFG8>).

Results: A total of 228 students of GMC participated in this study, including 65.4% female & 34.6% male, belonging 51.8% from Phase I, 32.5% from Phase II and 15.8% from Phase IV. Maximum students were able to do online class for more than 4 months and the duration of class was more than 15 hours per week. About two third (71.9%) of the students said that online classes were effective in helping them reach the learning objectives and near half of them had reached their expectation. Images and text in the classes were clearly visible and sounds were clearly audible, said 73.7% and 69.7% students respectively. Maximum of the students (80%) were satisfied with the strictly maintained schedules. One third that is 33.3% and 27.6% of the students got interruption in online classes for technical problems every day and twice a week accordingly. Seventy two percent students' expenditure due to internet setup had increased and among them more than half (62.5%) student's expenditure increased by 50%-70%. Two third (65.8%) of the students from study phases refused to agree that there was enough interactivity in comparison to regular classes and 93.9% shared negative experience that online class was lacking of practice based learning. Half of the total students (51.8%) rated online class as not good not bad, 20.6% rated bad, 14.9% rated good, 9.2% rated worst and only 3.5% rated best.

Conclusion: Online classes were effective to some extent but it was lacking of practice based learning. Understanding technological, financial, institutional, and student barriers are essential for the successful implementation of online learning in medical education.

Key words: Online class, COVID 19, Practice based learning

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Introduction:

Since the end of 2019, a new type of respiratory tract infection first reported in China, with the ability to cause severe pneumonia, respiratory failure and death has begun to impact the way of life throughout the world.¹ The disease was designated as coronavirus disease 2019 (COVID-19) by the World Health Organization (WHO) in February 2020 and declared as a pandemic disease on March 11th, 2020.^{2,3}

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The numbers of infected patients worldwide increase rapidly. Globally, on upto 15th April, 2021, there have been 139,026,076 confirmed cases of COVID-19, including 2,989,137 deaths, reported to WHO.⁴ Similarly, in Bangladesh 1st COVID case was found on 8th march, 2020 and 1st death on 18th March 2020. Since then there have been 707,362 confirmed cases of COVID-19 with 10,081 deaths.⁵

As with many countries and regions worldwide, the COVID-19 pandemic has altered the daily life of students in Bangladesh. All of the country's educational institutions have closed since the outbreak of the virus here on March 8.⁶ Meanwhile, on April 27, 2020 Honorable Prime Minister Sheikh Hasina hinted that school, college and other institutions might remain closed till September 2020, upon the COVID-19 situation.⁷

At a virtual meeting, the Ministry of Education and University Grand Commission (UGC) together reached six decisions to ensure universities to run their academic activities online properly, including exams and admissions.⁷ Students, as a result, had been attending online classes from their homes and socializing remotely as their daily lives had to adjust due to the effects of the pandemic.⁶

Medical education has many long established pedagogical approaches to learn including face to face lectures in classrooms - via a teacher-centered model.⁸ Online learning has emerged as a new method of teaching to maintain the continuity of medical education during the COVID- 19 pandemic related closure of educational institutions.⁹

As described by Howlett et al “Electronic (e) or online learning can be defined as the use of electronic technology and media to deliver, support and enhance both learning and teaching and involves communication between learners and teachers utilizing online content”.¹⁰

The availability of essential infrastructures and efficient institutional strategies represent a major challenge for integrating distance learning in medical education.¹¹ Some elements that cause hurdles to online learning efficacy include administrative concerns, social interaction, academic skills, technical skills, learner motivation, time and support for studies, technical problems, cost and access to the internet. Other factors could result in low-quality online learning, for example an ineffective design and arrangement of multimedia materials.¹²

The evaluation of online and face to face teaching in medical education, therefore, should depend on a comprehensive consideration of how they are used across groups. It should all be assessed including types of students, the learning goals, design properties of the learning materials, evaluation of learning outcomes, etc.^{13,14,15}

The information about the effective online learning is for undergraduate medical education remains unknown in Bangladesh. Knowing about the effectiveness of Internet-based, interactive online learning approaches and this information is also important for policymakers and practitioners to design appropriate conditions or improvements in educational practices under which online learning is effective.

Methods:

The study was carried out in Green Life Medical College from October 2020 to February 2021 among the students of GMC (Phase I, Phase II & Phase IV). Data were collected using semi structured questionnaire by online Google Form

and the method was self administration through online link to estionnairethat qu (URL link: <https://forms.gle/84uZzEhqitrD8LFG8>). Ethical consideration was followed strictly. Objectives and goals were explained at the beginning of the questionnaire to all participating students and they enrolled after they gave consent to participate in the study. After completion of data collection, those were checked, verified, edited for consistency and rechecked. Data were analyzed using the statistical package for the social sciences (SPSS) version 23.

Results:

A total of 228 students participated in this study, including 65.4% female & 34.6% male, belonging 118 (51.8%) from Phase I, 74(32.5%) from Phase II and 36 (15.8%) from Phase IV. Majority that is 82.9% were doing online class more than 4 months and the highest duration of the classes were more than 15 hours per week attended by 44.7% of the students.

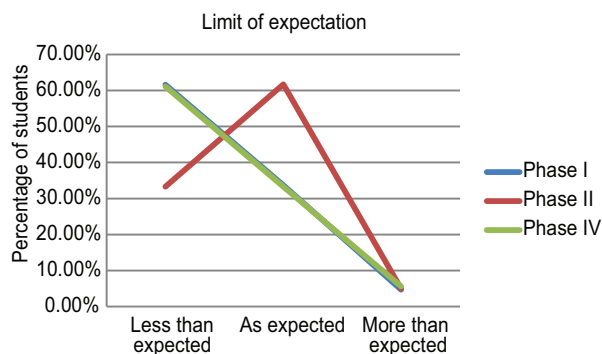


Fig.-1: Expectation limits for effectiveness of Online Class in helping to reach the learning objectives (n=164)

Most of the students (71.9%) from study phases said that online classes were effective in helping them to reach their learning objectives. Among them, expectation limits for Phases I and IV were reported as almost equal percentages (33.7% & 33.3%), as expected but most of the students from Phase II (61.7%) said as expected.

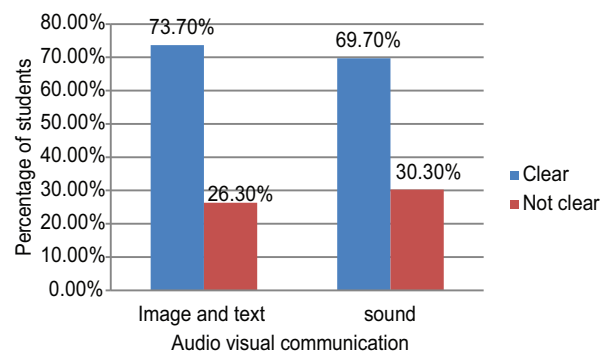


Fig.-2: Information about audio-visual communication

Among 228 students most of them that is 73.7% and 69.7% stated that images and text in the classes clearly visible and sounds in the classes clearly audible accordingly.

Visual attraction for online classes

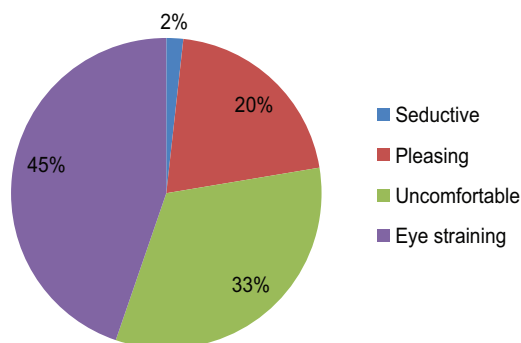


Fig.-3: Feelings of visual attraction for online classes

Near about half that is 102 (44.7%) had eye straining, 75 (32.9%) felt uncomfortable, 47 (20.6%) felt pleasing and only 4 (1.8%) felt seductive during attending online classes.

About 80% students of study phases state that class schedule were strictly maintained, teachers appeared enthusiastic and interested while taking classes and effectively present the tools as for example materials, skills, and techniques which needed to extend the content. Only 60.5% said that the contents of the class easily understandable through online class. Most of the students (77.6%) said that further guidance offered from teacher where content was complex. Two third (75.4%) of the students were also satisfied and said that teachers taking sufficient feedback from them. More than half 58.8% (134) of the students said that they had been informed about the learning objectives / contents of the class beforehand.

Half of them (52.2%) felt more engaged with learning materials from safe, comforting spaces like home environment and 73.7% made their learning environment as per their convenience (e.g. home/outdoor setup, sitting arrangement, with taking tea/meal).

Information related to technical issues:

One third that is 33.3% students got interruption in online classes for technical problems every day, 27.6% twice a week and very few students (3.5%) never faced any problem.

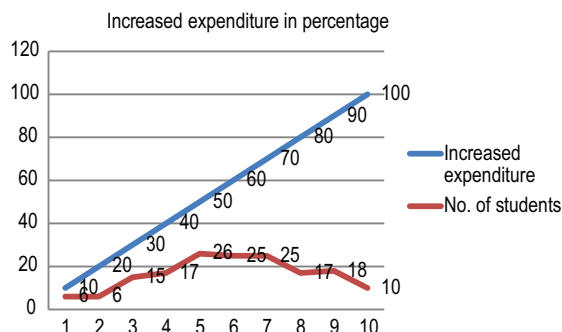


Fig.-4: Amount of expenditure for internet setup in percentage (n=165)

More than half of the students (64.9%) had appropriate internet setup before online classes started. About two third (72.4%) of the student’s expenditure increased due to new internet setup and maximum (62.5%) remained within the range of 50%-70%. About 80%-90% expenditure had increased in case of 21.1% students and up to 100% for 6.1% students.

Experiences regarding online classes:

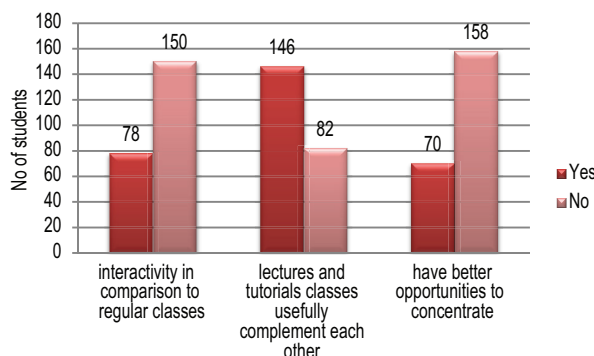


Fig.-5: Information about interactivity and opportunity to concentrate in online class

Table I
Information related to learning procedure

	Yes		No		Total
	f	%	f	%	
Strictly maintained class schedule	185	81.1	43	18.9	228(100%)
Teachers appear enthusiastic and interested	193	84.6	35	15.4	
Teachers effectively present the tools	180	78.9	48	21.1	
Content easily understandable	138	60.5	90	39.5	
Further guidance offered	177	77.6	51	22.4	
Taking sufficient feedback	172	75.4	56	24.6	

Maximum (65.8%) students from all study phases refused to agree that there was enough interactivity in comparison to regular classes but on the other hand 64% students stated that lectures and tutorials classes usefully complement each other. Maximum students felt that they did not get better opportunities to concentrate in online classes. Majority (93.9%) thought that online class is lacking of practice based learning.

Improvement of self practice

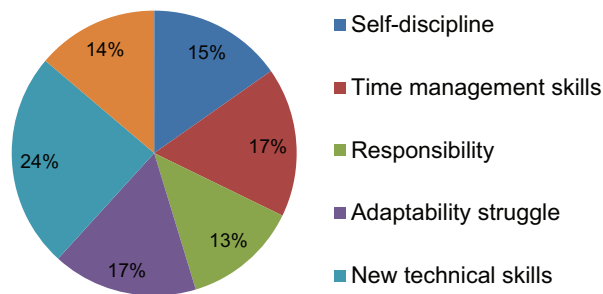


Fig.-6: Improvement of self practice due to online class

Attending the online class, led them to improve self practice in terms of time management skills (17%), self-discipline (15%), adaptability struggle (17%), responsibility (13%), new technical skills (24%) and only 14% had no improvement.

Effect of Online Class

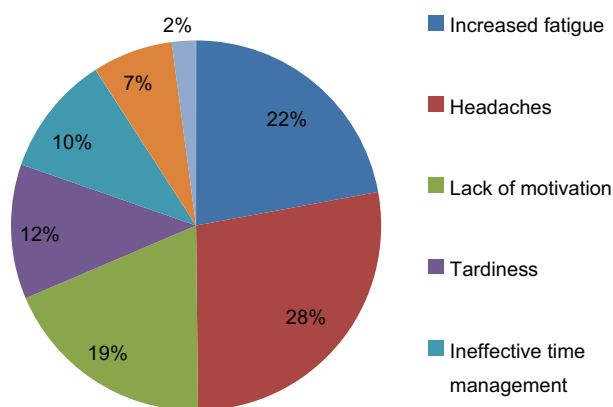


Fig.-7: Effect after attending online classes

Among 228 students of all study phases 22% had increased fatigue, 28% had headaches, 19% felt lack of motivation, 12% felt tardiness, 10% had ineffective time management and 7% had feelings of isolation quite often, after attending online classes

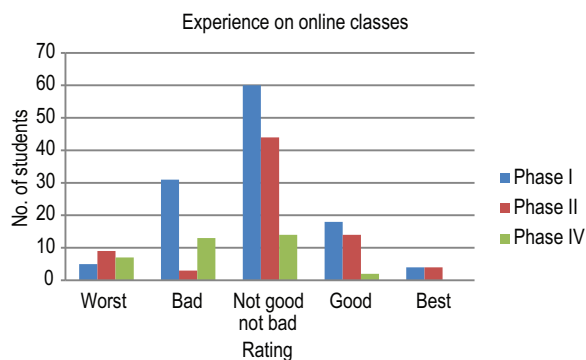


Fig.-8: Experience on online classes by rating

Students rated online class as not good not bad (51.8%), 20.6% rated bad, 14.9% rated good, 9.2% rated worst and only 3.5% rated best.

Opinion of the students regarding online classes:

Strength:

More comfortable and safer during this pandemic situation and getting opportunities to attend in classes from homely environment & helped them get more time to review study materials, free up time for other activities which they did not have before. It is mostly helping them to stay connected with teachers, friends and also with their studies.

Weakness:

Internet issues, electricity issues, attendance issues, exam pressures, sometimes longer duration of class made them tired and at some point they felt annoyed because of headache & eye straining, sometimes ear pain due to wearing headphones. Mainly students from first and final phase faced problem due to lack of practice. Another drawback was teachers could not monitor at a time all students' attentiveness, so there was a chance of being inattentive in the class.

Suggestion:

Most of the students suggested to reduce class time that is 3 or 4 days in a week. Classes should be more interactive and teachers should give assignment strictly. They thought that expenditure for internet classes can be provided to all students from a centralized body (either DU or BMDC) as they need high speed internet.

Discussion:

After taking decision by academic council, Green life Medical College decided to take online classes for all phases of MBBS students from 12th July, 2020 following a structured schedule. The results of this survey evaluate the experiences of online classes of 228 medical students,

118 from Phase I, 74 from Phase II and 36 from Phase IV including 65.4% (149) female & 34.6% (79) male which is acceptable response for any survey. Maximum students were able to do online class more than 4 months and the duration of class was more than 15 hours per week.

While looking at the result closely, it revealed that maximum students (71.9%) stated that online classes effective more in helping them to reach in learning objectives and near half of them have reached their expectation level. In Romania, they noticed that among 459 medical students maximum accepted remote lectures and other learning activities due to the higher risk of contamination.¹⁷ But another study in Bangladesh showed mixed responses for the effectiveness of the online classes. 51% perceived online class effective while their counterparts marked it as ineffective.¹⁸

In this study regarding audio visual communication, 73.7% and 69.7% stated that images and text in the classes clearly visible and sounds clearly audible accordingly. But very few felt visual attraction like pleasing and seductive but most of them had eye straining and uncomfortable. In Chattagram International Medical College, near about half students, both pre-clinical and clinical stated that sound and visibility of class was clear sometimes.^{19, 23}

Notably, according to phase II and phase IV above 94% students were satisfy with their strictly maintained schedule and in phase I 66.1% were satisfy with this. But another study in Bangladesh stated that only $37\% \pm 23.5\%$ pre-clinical students' felt timing was well maintained in most of the classes and $46.8\% \pm 7.6\%$ clinical students felt timing was well maintained sometimes.^{19, 23}

About 80% students of all study phases stated that teachers appeared enthusiastic and interested and effectively present the tools. But half of them had been informed about the learning objectives / contents of the class beforehand. Most of the students satisfied with the matter of contents of the class easily understandable, further guidance offered from teacher where content is complex and teachers taking sufficient feedback from the students. Almost same findings came from a study conducted in chattagram that is $40\% \pm 10.5\%$ pre-clinical and $54.4\% \pm 9.4\%$ clinical students sometimes interacted with the teacher in the online class.¹² In Nepal 67% of the respondents rated the online classes were interactive.²⁰

Almost same percentage of students that is 33.3% and 27.6% got interrupted of online classes for technical problems every day and twice a week accordingly. Similar findings was found a study conducted in Nepal.¹⁹ A study

conducted in different universities of Bangladesh demonstrated that 49% of the students faced electricity problems while 75% of students don't have stable internet connection during class time.²⁰ In Poland 54% felt technical problem with IT equipments as the main disadvantages of e-learning.^{21, 23} In Jordan, Internet streaming quality and coverage was one of the main challenge that was reported by 69.1% of students.²⁴

In this study 64.9% had appropriate internet setup prior online classes had started and two third of the student's expenditure had increased due to internet setup and maximum remain within the range of 50%-70%. The cause behind these issues might be the location of the students (maximum stay at their home outside Dhaka) as well as their financial support.

The most striking finding came out with the question that is there was enough interactivity in comparison to regular classes. Maximum students from all phases refused to agree with that statement. Almost all (93.9%) of the students from three phases shared negative experience that online class is lacking practice based learning. This findings coincide with a study finding where pre-clinical students ($73.5\% \pm 7.2\%$) and clinical phase ($71\% \pm 13.1\%$) never felt online class could be as a good substitute of 'front-to-front' class.^{17, 19} Similar study in Poland showed that learning was considered less effective than face-to-face learning in terms of increasing skills ($p < .001$).¹⁵ The reason might be there had been gaps in replacing practical classes and clinical placements.

Attending the online class, led them to improve self practice in terms of time management skills, self-discipline, adaptability struggle, responsibility, new technical skills. On the other hand there were some adverse effect during or after attending online classes like increased fatigue, headaches, lack of motivation, tardiness, ineffective time management, feelings of isolation.

The interesting finding is half of total students (51.8%) rated online class as not good not bad, 20.6% rated bad, 14.9% rated good, 9.2% rated worst and 3.5% rated best. In Jordan, the overall satisfaction rate in medical distance learning was 26.8%.¹⁷ Online classes were found sometimes effective by pre-clinical ($40.9 \pm 10.7\%$) and clinical ($38.6\% \pm 9.8\%$) students respectively. The response was 'never' effective $38\% \pm 18.4\%$ and $35.8\% \pm 18.5\%$ for pre clinical and clinical students respectively.¹³ But in Nepal 77.51% of respondents rated that the online classes were not effective.^{10, 22, 23}

Conclusion:

By attending the online classes, students were able to improve self-care practice and it was effective in helping students to reach their learning objectives. Online classes were lacking of practice based learning and students faced some technical problems. To take challenge of creating real-life picture in online classes, it needs to be more interactive, simulation-based classes, specially for clinical students to bring out an effective outcome. High speed and reliable internet connection as well as quality devices and accessories need to be ensured for clear sound and visibility during the online classes. The results of this study done on students' perspective might be useful in planning whether adoption to online classes in COVID time might continue to persist post pandemic.

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