

# PERCEPTION OF PATHOLOGY ONLINE CLASSES FOR MBBS (PRE-CLINICAL STUDENTS): A COVID GENERATED EVOLUTION

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## ABSTRACT

The unexpected COVID-19 crisis has disrupted medical education and patient care in unprecedented ways. As the pandemic occurred unexpectedly, University and its affiliated colleges, their faculty members had to hurriedly switch to online courses without reflecting on how to transform the curriculum to align well with the online learning platform. As Nepal Medical College, Teaching Hospital (NMCTH) had also embraced e-learning as teaching learning tools in undergraduate students, this study tried to focus on the participation and satisfaction rate of students regarding the same. This is a cross-sectional descriptive study conducted at NMCTH. MBBS second year students (Pre-clinical years) were given a validated, anonymous, self-administered questionnaire to fill in. The following categories were looked for: 1) participation in the online classes and 2) level of satisfaction of online class in Pathology subject. The questionnaire consist a total of 14 questions and answers were given in the form of yes/no or option wise. Out of total of 98 students, 95 students responded. Most of MBBS second year students (69%) felt that online classes were not as effective as physical classes and were also not satisfied with this method of teaching. Most of the students (88%) felt that they paid more attention in physical classes than online classes. However, they didn't find any differences between the physical or online examinations. Mobile phones were the most used device and Microsoft teams was the preferred platform. Despite the interference of learning due to network problem, the audio and video quality was satisfactory. The participation in online classes was good. The advantages were that there was no disturbance from fellow class mates during online class as stated by 68% of participants. There was room for open discussions and interaction with teacher (60%) just as in case of physical lectures. The major disadvantage was that most of the students were not satisfied with this method of learning and they find it ineffective compared to physical classes. Thus from this study, we can conclude that students prefer physical classes and online classes cannot replace the physical classes. However, with the implementation of online classes, we can ensure that it has overcome the vent created by Covid-19 pandemic.

## KEYWORDS

Covid-19, online class, satisfaction, students

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## INTRODUCTION

The Covid-19 pandemic is one of the most disruptive life-changing events that had brought the world to a perpetual standstill for a couple of months in the year 2020.<sup>1</sup> The unexpected COVID-19 crisis has disrupted medical education and patient care in unprecedented ways.<sup>2</sup> The COVID-19 pandemic will have lasting effects on the delivery of health care.<sup>3</sup>

During the COVID-19 pandemic, academic institutions were promptly shifting all educational activities to the e-learning format.<sup>4</sup> There was a slowdown in learning in the initial stages of the pandemic lockdown, as many students and faculty were not well versed with the various new tech tools they needed to use in the virtual classroom, with not much time to practice, leaving a sour taste in the mouths of students and faculty.<sup>5</sup>

As the pandemic occurred unexpectedly, university and its affiliated colleges, their faculty members had to hurriedly switch to online courses without reflecting on how best to transform the curriculum to align well with the online learning platform. Many students and faculty members were caught unaware of what they needed to do as they were not used to online teaching process. The medical colleges including Nepal medical college, teaching hospital (NMCTH), introduced online teaching methods for MBBS as well as BDS as the only resource to finish the curriculum. A short training to the students as well as teachers was given so as to handle the theory lectures whereas practical classes were at halt.

E-learning, an abbreviation of electronic learning, indicates the provision of education and training on the internet or the world wide web.<sup>6</sup> E-learning is the use of internet technologies to enhance knowledge and performance.<sup>7</sup> E-learning, also known as web-based learning, online learning, computer-assisted instruction, or internet-based learning, has been used frequently to train healthcare practitioners.<sup>8</sup> E-learning has been an important modality to continue academic pursuits during the disruption in usual education and training schedules during the COVID-19 pandemic.<sup>9</sup>

E-learning is a dynamic process that should be underpinned by didactic research and be constantly developed further through evaluation and feedback from both teachers and students.<sup>10</sup> This pandemic necessitated rapid changes in medical practice. Many of these changes may add value to care, creating opportunities going forward.<sup>3</sup> Other significant

challenges of this pandemic included quarantines, redeployment of residents and faculty, and suspension of regularly scheduled conferences.<sup>11</sup> This pandemic has soared the use of e-learning among health professionals worldwide.<sup>12</sup>

As NMCTH had also embraced E-learning as teaching learning tools in undergraduate students, this study tried to focus on the Participation rate and satisfaction rate of students regarding the same.

## MATERIALS AND METHODS

This was a cross sectional descriptive study conducted at NMCTH, Jorpati, Kathmandu. With the objective of finding out the perception of Pathology online classes for MBBS (Pre-clinical) students, a set of validated questionnaire was prepared. MBBS second year students (Pre-clinical years) were asked to fill a validated, anonymous, self-administered questionnaire/proforma which was distributed in the lecture and practical halls. The identification details of the students were kept confidential. The following categories were looked for: 1) participation in the online classes (8 questions) and 2) level of satisfaction of online class (6 questions) in Pathology subject. The questionnaire consisted of total of 14 questions; answers were given in the form of yes/no or three tiered system. Table 1 and table 2 shows the questionnaire. Out of total 98 students, 95 students participated and three of them did not give consent to participate in this survey. The obtained data were entered in Microsoft excel and results were obtained.

Ethical clearance was taken from the Institutional Review Committee (IRC) of NMCTH.

## RESULTS

Total students in second year MBBS is 98. Out of 98 students, 3 did not give consent and did not fill up the proforma. Hence, data from 95 students is presented. Out of 95 students, 52 (55%) were male and rest 43 (45%) were female.

*Participation in the online classes of Pathology:* There were total of 8 questions regarding participation in online classes. The participation rate among the students was quite good. 60 out of 95 (63%) students attended most of the Pathology online classes whereas 30 (32%) students attended all classes. However, 5 students (5%) took only few classes (Table 3).

**Table 1: Questionnaire related to participation**

SN	Questions				
1)	Did you participate in all online classes of Pathology?	All Classes	Most of the classes	Few Classes	
2)	Do you want to continue this process of online classes	Yes	No		
3)	Is there a room for open discussions and interaction with teacher?	Yes	No		
4)	Which was the device used most frequently?	Mobile Phones	Laptop	Tablet/I-pad	Desktop computers
5)	How was the video and audio quality?	Excellent	Good	Poor	
6)	Was there interference of E-learning due to network problems	Yes	No		
7)	Did you feel confident enough to take exit exams after E-learning sessions?	Yes	No		
8)	Which platform of e-learning is better?	Zoom	Microsoft teams		

**Table 2: Questionnaire related to satisfaction**

SN	Questions				
1)	Online classes were as effective as physical classes.	Yes	No		
2)	Are you satisfied with online classes?	Yes	No		
3)	In comparison with face to face learning, the effort during e-learning for you was:	Lower	Same	Higher	
4)	There were no disturbances from the fellow class mates.	Yes	No		
5)	There was no change in physical exam as well as online exams.	Yes	No		
6)	Do you feel more likely to pay attention with in-person learning?	Yes	No		

**Table 3: Participation in online classes**

Questions	Yes		No	
	n	%	n	%
Do you want to continue this process of online classes?	30	32	65	68
Is there a room for open discussions and interaction with teacher?	57	60	38	40
Was there interference of e-learning due to network problems?	80	84	15	16
Did you feel confident enough to take exit exams after E-learning sessions?	31	33	64	67

*Device used most frequently:* Most frequent device used for e-learning was mobile phones (49, 52%) followed by laptops (38; 40%) and tablets or I-pads (8; 8%). None of the students used desktop computers.

The video and audio quality during online class. The audio and video quality for online classes was labeled as good by most of the students (79; 83%) and as excellent by 10 (11%) students.

However, 6 (6%) students found poor video as well as audio quality during the online classes (Fig. 1).

*Better platform of e-learning:* Microsoft teams was the preferred platform than Zoom. 80 out of 95 (84%) students chose Microsoft teams as better platform for e-learning over Zoom (16%) (Fig. 2).

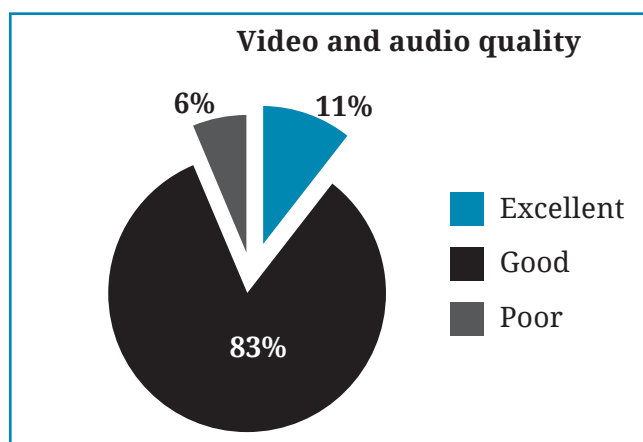


Fig. 1: Audio and video quality during online classes.

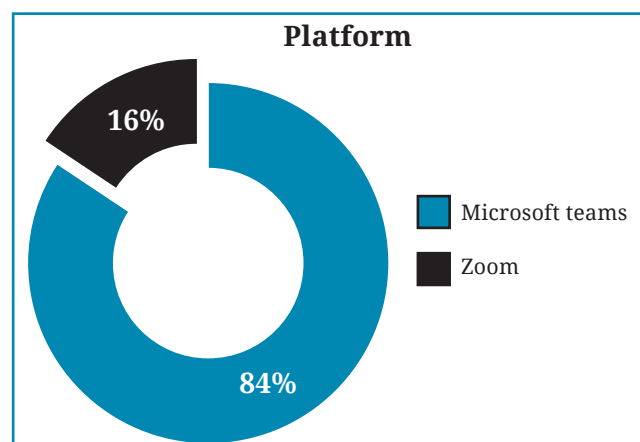


Fig. 2: Platform for online classes.

Table 4: Effectiveness of online class

Questions	Yes		No	
	n	%	n	%
Online classes were as effective as physical classes	29	31	66	69
Are you satisfied with online classes?	34	36	61	64
There were no disturbances from the fellow class mates.	68	72	27	28
There was no change in physical exam as well as online exams.	16	17	79	83
Do you feel more likely to pay attention with in-person learning?	84	88	11	12

*Level of Satisfaction:* To identify the level of satisfaction, 6 questions were given. 69% of MBBS second year students felt that online classes were not as effective as physical classes and similarly 64% of students were not satisfied with this method of teaching. 68 students (72%) said that online classes were good because there was no disturbances from fellow class mates as they were participating in online classes from their respective houses. Most of the students (88%) felt that they could pay more attention in physical classes than online classes. Even with the high level of dissatisfaction towards e-learning, 83% of the students didn't find any differences between physical and online examinations.

*The effort during e-learning, in comparison with face to face learning:* In comparison to the physical lectures, most of the students (51%) agreed that the effort during the online classes were lower. Rest (25%) students agreed to higher effort whereas some of them (24%) felt that there were no changes (Table 4).

## DISCUSSION

Covid-19 pandemic is not over yet and we are still facing different waves of this pandemic.

However, all of us have adopted a way of living with this organism. All the physical activities that were at halt in the beginning are at run today. Even the medical schools have opted for physical classes as of now. With the start of physical classes, all the pre-clinical students (MBBS second year) were asked to fill up a proforma so as to know the experiences as well as student's perception of online classes.

Out of total 98 students, 95 students responded with response rate of 97%, which is much higher than other studies done by Abbasi *et al*<sup>13</sup> with response rate of 66.4%. Of all the respondents, male (55%) students predominated in this survey.

Most of the students (69%) felt that online classes were not as effective as physical classes and 64% showed their dissatisfaction towards this method of teaching. Venkatesh *et al*<sup>14</sup> concluded that gender (student characteristics), performance expectations (cognitive factors), and learning climate (social environment) were predictors of the perceived satisfaction of learners and could vary significantly among the students. Hence, effective implementation would depend largely on student characteristics, as well as environmental and cognitive components of the delivery method.

Even though students displayed dissatisfaction towards online classes, we believe that online learning can be beneficial for the students, as they can learn from anywhere and anytime and at their own pace, especially during Covid-19 crisis. This method helped us to finish the university curriculum during this crisis. This view was highlighted by Alqurashi *et al*<sup>15</sup> as well.

The disadvantage was that most of the students (84%) felt that they could pay more attention during in person learning. A study done by Essilfie *et al*<sup>9</sup> also showed that participants were more likely to pay attention with in-person learning. In Greece, Manou *et al*<sup>16</sup> did a study regarding participation and interactivity in synchronous e-learning pathology course. They figured out that there was a dropout rate of students from 196 to 91 to 28% in three consecutive sessions.

Most of the students (68%) did not want to continue this process of online class despite their participation in almost all online classes. These students felt that online classes were not as effective as physical classes and was not satisfied with this teaching method. Ruiz *et al*<sup>7</sup> also concluded that students did not see e-learning as replacing traditional instructor led training but as a complement to it forming a blended learning strategy.

The advantages were that there was no disturbance from fellow class mates during online class as stated by 68% of participants. In addition to this, there was room for open discussions and interaction with teacher (60%) just as in case of physical lectures. The same finding was seen in other studies done by Elzainy *et al*<sup>4</sup> and McCoy *et al*<sup>17</sup>.

There was no change in physical exam as well as online exams as stated by 79% of the students. However, most of the students (67%) did not feel confident enough to take exit exams after e-learning sessions. This may be due to lower effort during e-learning. Similar to this survey, Stevens *et al*<sup>18</sup> did a survey in clinical microbiology for undergraduate students. They concluded that the online activities help students perform better in assessments.

Most frequent device used for e-learning was mobile phones (52%), followed by laptops (40%) and tablets/I-pad (8%). None of them used desktop computers. The same finding related to use of mobile phones during online classes was seen in a study done by Pal *et al*<sup>19</sup>. The smart phones are heavily used by the students as they are more familiar and comfortable with it, rather than the laptops which are less

portable than the smart phones. Therefore, the smart phones despite having a smaller screen when compared to laptops had the same level of perceived usability.<sup>19</sup>

Most of the students (80%) faced interference during online class due to network problem. A study by Abbasi *et al*<sup>13</sup> showed that few students (41%) faced network problem. This is influenced by one's network system within the country and place as well. The audio and video quality was good in case of 83% of the students. This correlates well with the study done in Italy by Carriero *et al*<sup>20</sup>. Moreover, Carriero *et al*<sup>20</sup> also emphasized on the fact that audio and video qualities were greatly affected by hardware/software configuration as well as by the band speed and technology of the internet connection.

Students chose Microsoft teams as better learning platform in our study. Henderson *et al*<sup>21</sup> also stated that 95% of the presenters felt Microsoft Teams was an effective platform for teaching and 84% felt they would likely use the platform again for teaching purposes (n=19). However, in contrast to these, a study by Abbasi *et al*<sup>13</sup> showed that students preferred Zoom.

This study shows that students did not perceive online classes as the best method of teaching and most of them believed that online classes were not as effective as physical classes. Most of them showed their dissatisfaction towards this method of teaching as well. Zhang *et al*<sup>22</sup> compared e-learning with classroom learning for finding out if e-learning can replace the more traditional form of teaching. They concluded that although e-learning is promising and beneficial in case of lifelong learning and training, it can only complement classroom teaching and not replace it. Similar observation was made by Condie *et al*<sup>23</sup> where they advocate the use of blended learning tools such that online learning complements traditional classroom learning rather than replacing it.

Even though students displayed dissatisfaction towards online classes, participation rate was high and the participants did not find any significant changes in the exit exams. Mobile phones were the most used device and Microsoft teams was the preferred platform. Despite the interference of learning due to network problem, the audio and video quality was satisfactory. Thus, we can say that online learning has been an important modality to continue academic pursuits during the disruption in usual education during the COVID-19 pandemic.

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