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A descriptive analysis of the paradigm shift from real to reel classroom during covid-19 pandemic

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Abstract

Medical educational institutes have begun offering online classes in preparation for the COVID-19 pandemic. The course work of MBBS phase-I was completed by an online mode of teaching, but the students' satisfaction feedback is still needed to improve online teaching. After receiving approval from the institutional ethical committee, the feedback from 250 Phase-I MBBS students was collected. The student participation was voluntary and 212 students respond about online-classes feedback on the google form. The data were collected and analyzed in Excel and SPSS software. p-value <.05 was considered significant. The majority of students (90 percent of males and 94 percent of females) use their smartphones to attend online classes, and the majority of students experience network problems often or sometimes; only 6% of students were rarely affected by network issues. Only a quarter of students were satisfied with the online mode of teaching, half were neutral and the remaining quarter were unsatisfied. The internet access issue (p-value=0.101) as well as satisfaction level (p-value =0.985) were not affected by the student residence (urban/rural). The majority of students (62%) prefer face-to-face learning in the classroom, whereas 1/4th prefer watching a live playback video of online lectures and only 1/10th choose live-online sessions. Only one-fourth of students were satisfied with online classes and the majority of students suffer from the quality of internet services. Students prefer face-to-face interactive classroom learning. Students acknowledge the benefits of online teaching with the need for further improvement.

Keywords: Covid-19, internet, online-teaching, satisfaction, student

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Introduction

The COVID-19 pandemic has engulfed more than 215 countries around the world, with many of them experiencing lockdowns. (World Health Organization, 2020). Academics were among the first few sectors that faced rapid shut down of all its operations (Nicola M. et al., 2020). The COVID-19 pandemic has put thousands of schools and higher education institutions under lockdown, affecting millions of students (Crawford J. et al., 2020). All schools and colleges have been closed and internal and semester examinations postponed. The closure of schools, colleges, and universities has brought many challenges to the education system (Cox J., 2019).

In this situation, all educational institutions have adopted the use of online technology as a solution for teaching students (Kumar S., 2019). The online instructional design strategy was planned and implemented in a crisis and risk management mode to mitigate the negative effects of the COVID-19 pandemic (Qandil A.M. & Abdel-Halim H., 2015). There are various tools and platforms used in the

education sector to respond closure of schools and colleges like Zoom, Google hangout, Microsoft meet, Google classroom, WebEx, etc (Izenstark A. & Leahy K.L.,2015; Mukhtar K., et al., 2020).

In these circumstances, the proposed research was hypothesized to analyze the satisfaction level of students towards the quality of the online mode of teaching to improve online teaching in the future. The present research also aimed to find the association of place of residence (urban/rural) with online teaching satisfaction and with network connectivity issues.

Method

A cross-sectional observational study was carried out on phase-I MBBS students from October to December 2020, after the approval of the institutional ethics committee. Every student of phase I MBBS was eligible for the study purpose considered as a source of population. Students who gave consent for this online survey were included in this study, whereas students not attending the online teaching or not respond to the google form were excluded from the study.

The Webex online platform was chosen for virtual teaching by the institute. A predesigned proforma on Google form was sent online via WhatsApp and Email to all medical students for taking their feedback regarding online teaching. The Linkert scale-based structures questionnaire was used to assess student's satisfaction, the attitude of students, and internet connectivity barriers with online teaching. The participant briefed about the study's aims, the confidentiality of their responses, and the freedom to decline to answer any question or to withdraw from the study altogether. The data was collected in google form excel sheet and further analyzed by using excel and SPSS software (version 20). The data was presented in percentage and proportions and analyzed with the chi-square test. The statistical significance was fixed at a p-value less than .

Results and Discussions

The present study analyzed the satisfaction level of medical students towards online teaching and other problems faced during the online study in the pandemic period. The present study response rate was 85%. Medical students equally belong to both urban and rural areas. The majority of students were male (2/3rd) and the remaining 1/3rd were female participants. The predominant age group was 19 to 20 after that 20-21, 18-19, > 21 years (Table 1).

Table 1 <Demographic Profile of Medical Students (number of students= 212)>

Study Groups		Number (%)
Gender	Male	135 (63)
	Female	77 (27)
Residence	Urban	101 (48)
	Rural	111 (52
Age Group (Years)	18-19	51 (24)
	19-20	69 (33)
	20-21	58 (27)
	>21	34 (16)

Most of the students including both males (90%) and females (94%) used a smartphone to attend online classes while only a lesser number (5-10%), mainly male and urban students used laptops or desktops to attend online classes (Table 2).

Table 2 <Types of Gadgets Used for Accessing Online Teaching>

Users Category		Smartphone Number (%)	Laptop/ Desktop Number (%)	Both Number (%)	Total Number
Gender	Male	121 (90)	1 (.7)	13 (9.3)	135
	Female	72 (94)	1 (1)	4 (5)	77
Residence	Urban	88 (87)	2 (2)	11(11)	101
	Rural	105 (95)	0 (0)	6 (5)	111

Almost half of the students often face network problems and the other half sometimes face network problems during online classes, and only 6% of students rarely suffer from network issues (Figure 1).

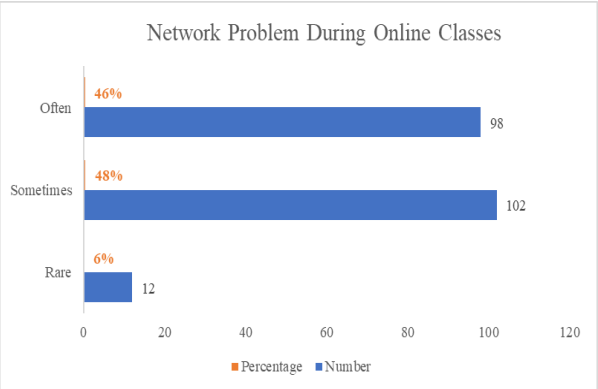

Figure 1 <Medical Students Experience Network Problems During Online Classes>

When we compare network problems in urban and rural areas students, a non-significant relationship observed between the area of residence (urban/rural) and network problems during the online study, χ 2(2, N=212) = 4.58, P =0.101 (Table 3).

Table 3 <Comparison of Network Problem Among Urban and Rural Areas During Online Classes>

Network problem	Area of Residence		Total	χ^2	*df*	p-value
	Urban Number (%)	Rural Number (%)				
Rare	7(7%)	5(5%)	12 (6%)	4.58	2	.101
Sometimes	55 (55%)	47 (42%)	102 (48%)			
Often	39 (39%)	59 (53%)	98 (46%)			
Total	101 (100%)	111 (100%)	212 (100%)			

χ^2= Chi-Square, *df*= degree of freedom, p-value= level of significance

Almost half of the students were neutral about the satisfaction level of online classes, 1/4th was unsatisfied and the remaining 1/4th was satisfied, while only 5% strongly unsatisfied and only 2% were strongly satisfied (Figure 2).

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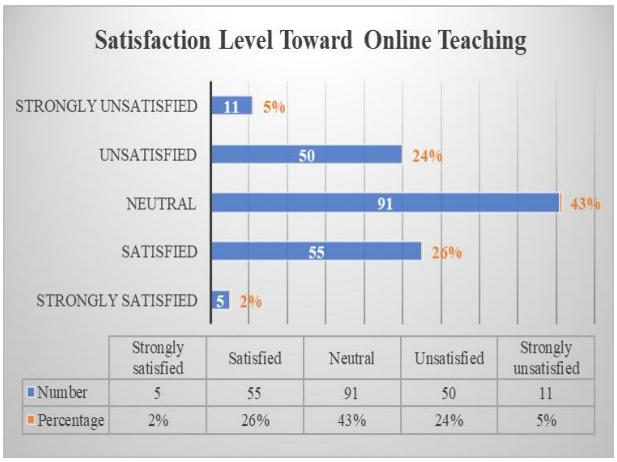

Figure 2 <The Satisfaction Level of Online Classes>

More than half of students (56%) consider the quality of online learning as average and only 21% and 5% consider it good and very good, respectively while 12% and 6% consider it poor and very poor, respectively (Figure 3).

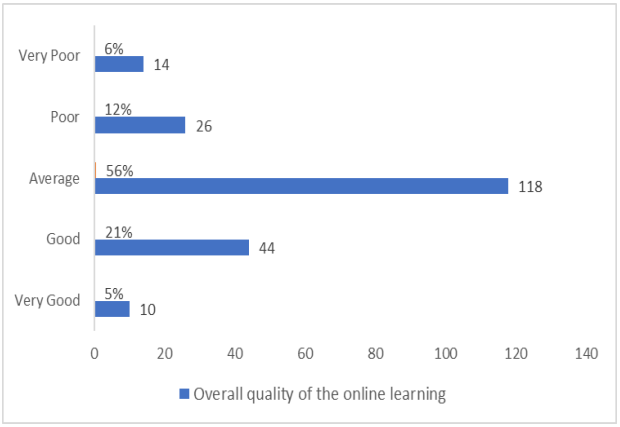

Figure 3 <Evaluation of Overall Quality of Online Learning>

The majority of students (62%) prefer face-to-face learning in class, whereas 1/4th of the students prefer watching live playback videos of online lectures. Only 1/10th of students preferred the live online classes (Figure 4).

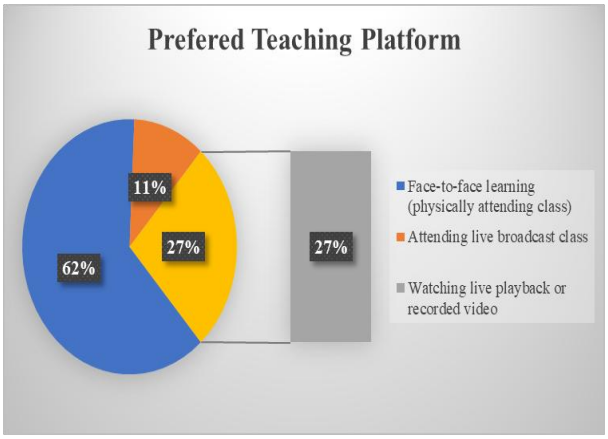

Figure 4 <Preferable Mode of Learning among Students>

Table 4 <Comparison of Satisfaction Towards Online Classes Among Urban and Rural Areas Students>

Level of satisfaction of online teaching	Area of Residence		Total	χ^2	*df*	p-value
	Urban Number (%)	Rural Number (%)				
Strongly Satisfied	2 (2%)	3 (2.7%)	5 (2.4%)	.37	4	.985
Satisfied	25 (24.8%)	30 (27%)	55 (25.9%)			
Neutral	44 (43.6%)	47 (42.3%)	91 (42.9%)			
Unsatisfied	25 (24.8%)	25 (22.5%)	50 (23.6%)			
Strongly Unsatisfied	5 (5%)	6 (5.4%)	11 (5.2%)			
Total	101 (100%)	111 (100%)	212 (100%)			

χ^2=Chi- square, *df*= degree of freedom, p-value= level of significance

The majority of students (> 50%) were not in favor of online classes and 1/4th was neutral, students acknowledge that they were not actively involved in online classes. At the same time, students admit the benefits of online classes like time-saving and less exertion, and in favor of the technology used by the institution and show the interest that the online class learning should be combined with classroom learning in the future (Table 5).

Table 5 <Attitude of medical students towards online teaching (Questionnaire)>

Students Experience	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly Disagree n (%)
Online teaching is better in learning than conventional classroom learning	9(4%)	26(13%)	43(20%)	73(34%)	61(29%)
Attending online classes provides a more comfortable environment	27(13%)	70(32%)	42(20%)	52(25%)	21(10%)
Online classes are less expensive as no need to go anywhere	31(15%)	96(45%)	56(27%)	21(10%)	8(3%)
Online classes reduce physical exertion due to no traveling	35(17%)	106(50%)	30(14%)	30(14%)	11(5%)
Online classes help in saving time for self-learning due to no traveling	35(17%)	90(42%)	43(20%)	35(17%)	9(4%)
In online classes, students are not actively involved in their learning.	53(25%)	87(41%)	36(17%)	24(11%)	12(6%)
The quality of online teaching is dependent on the computer skills of the teacher	14(7%)	71(33%)	64(30%)	54(26%)	9(4%)
Technology that is used for online teaching is reliable	9(4%)	74(35%)	87(41%)	34(16%)	8(4%)
Online learning should be combined with classroom learning in the future	36(17%)	100(47%)	34(16%)	26(12%)	16(8%)

n= Number of students

During the COVID-19 pandemic, almost all teaching institutions worldwide adopted online learning (Al-Shehri A.M., 2010). The quality and speed of the internet, the ease of access to online resources, the availability of appropriate academic institution infrastructures, and the readiness of both instructors and students to adapt to this technology all play a role in the success of distance online learning (Childs S., et al., 2005; Cantrell S.W., et al., 2008; Kohan N., et al., 2017).

The present study participants were both male (2/3rd) and females (1/3rd) and belong to both urban and rural localities in nearly equal strength. The majority of students were from the 18-21 years of age group. Most of the students attend their classes online by smartphone while only a tenth part of students uses both laptop/desktop and smartphone, and this 1/10th part reduced to half (5%) regarding female and rural students.

The present study found that one-fourth of students were dissatisfied with online classes, while nearly half were neutral, and the remaining one-fourth were satisfied with the online style of teaching. Similarly, nearly half of students' rates average for the overall quality of the online teaching programs. In contrast to the present study, Rathee N. & Sarkar C. (2020) found that 97 percent of school and college-going students in West Bengal of India were satisfied with online teaching.

In the present study, most of the students (94%) face internet connectivity problems (often-46%, sometimes 48%), while only 6% of students rarely faced any network issue during online classes. The place of stay of students during lockdown did not significantly influence their satisfaction level and internet access. Internet connectivity issues adversely impacted learning via online modalities, Bao W. (2020) also finds the same results, but merely improving internet package/speed would help to overcome the aforesaid problem.

The larger portion of medical students (6/10th) prefer face-to-face learning after that 3/10th section of students prefer watching live playback or recorded video, and only 1/10th of students were in favor of live broadcast. The majority of students believe that online learning allowed them to continue their education in the same way the traditional approach does in the phase of pandemic, but they favored face-to-face instruction over online learning. Similarly, a study from Australia (Kemp N. & Grieve R., 2014) reported that undergraduate students preferred traditional classrooms and face-to-face interactions over online learning for the completion of their written competencies, despite the fact that there was no significant difference in academic performance between the two learning methods. In contrast, a study from Jordan (Sowan A.K. & Idhail J.A., 2014) indicated that virtual class participants had a higher mean success score for nursing laboratory students than regular class attendees. While a third study from the USA (Brockman R.M., et al., 2020) illustrated that the majority of medical students favored blinded learning methods for their microbiology laboratory course, which included both online and in-person laboratory practice.

Most of the students agreed that online learning is flexible, less expensive with no exertion, easy to administer and access, and requires fewer resources and time. Still attending classes traditionally in-person allows the academic and social interaction between the students and instructors and among students; nevertheless, the lack of such interaction undermines student learning and reduces their motivation levels. Students' attitude towards the reliability of institutional technology during the pandemic was positive simultaneously also believed that the quality of online teaching was not dependent on the computer skill of the teacher but dependent on the teaching quality of an educator. Medical students support that virtual learning should be combined in the future with the face-to-face traditional teaching-learning method.

Conclusions

A quarter of medical students were not satisfied with online classes, while other half were neutral and the remaining quarter of students were satisfied. Most of the students face internet network connectivity problems, which may be the prominent cause of their dissatisfaction with online classes. Medical students acknowledge the various benefits of virtual classes, but at the same time, more than half of students prefer face-to-face interactive classroom learning and a quarter of students favor of watching the recorded video. Attending classes in person helps students and instructors to connect academically and socially, while lack of such interaction among students hinders student learning and diminishes motivation levels. Most students suggested that online teaching should be combined with traditional classroom teaching in the future The findings provide insight into the benefits, drawbacks, and suggestions for improving online learning, which is a pressing need in today's world.

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