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THE VIEWPOINT OF FACILITATORS AND STUDENTS ON E-LEARNING: A CROSS-SECTIONAL DESCRIPTIVE STUDY IN A PRIVATE MEDICAL COLLEGE.

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ABSTRACT

OBJECTIVE: The objective of this study is to assess how well received E - learning is among students and faculty at a medical college in terms of its challenges, successes and acceptance. **METHODS:** In the month of June 2022, learners and educators at the University College of Medicine and Dentistry UCMD, Lahore, Pakistan, participated in this quantitative study using an online questionnaire. Teachers and undergraduate students of MBBS who were involved in E-learning were approached, out of which data was collected from 30 educators and 256 students through convenient sampling. Students and teachers were emailed links to the Google form containing the survey, and SPSS software was used to analyze the results. **RESULTS:** 30 faculty members and 256 MBBS students took part in the study. In our survey, 84.5% of students and 62.5% of teachers supported supplementing E-learning with traditional pedagogy in the future. The ease of use and efficiency of online learning were significantly correlated. E-learning was rated as being only somewhat effective by both students and teachers. Network troubles, the difficulty of completing practical's, the lack of a controlled atmosphere, and the student's lack of attention were the main issues that instructors encountered when commencing sessions online. The institute's online program received positive feedback from more than half of the students. E-learning was rated as being only moderately convenient by educators, compared to very convenient traditional classroom teaching. **PRACTICAL IMPLICATION:** There are many possibilities for students to learn, explore, and develop. Numerous advances that increase our productivity are brought about by new technologies. For medical students, E-learning is essential for growth in a world filled with technological innovations. **CONCLUSION:** Both educators and students adapted quickly to the online learning environment, however, there were some difficulties at first. Building capacity in terms of talent acquisition and digitization is required to provide smooth and efficient e-learning.

KEYWORDS: E-Learning, medical education, traditional teaching, environment

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INTRODUCTION

People from all areas of life have been impacted by the COVID-19 pandemic, which has paralyzed the working of all institutes. Lockdown and social segregation measures were put into place in Pakistan as part of a comprehensive plan to flatten the curve and regulate the coronavirus transmission cycle[1]. As a result, schools and higher education institutions were forced to close, and an online one substituted the conventional face-to-face form of instruction. The common approach of healthcare education in the country entails giving lectures using PowerPoint slides in class rooms, conducting hands-on training in the departments' laboratories, and displaying clinical abilities by gathering records and conducting physical examinations at patients' bedsides. Teachers at our college used online meeting technologies like Zoom application, Microsoft Teams and YouTube, etc. to deliver lectures during the lockdown using the internet platform.

Online teaching is the process of delivering education using electronic technology in one way or another, including the internet, to improve teaching and learning[2]. It is a method of education that has been expanding steadily over the past ten years, a huge increase in cell phone users, and growing electronic footprints in

Pakistan. Its accessibility, availability around-the-clock, flexible hours, and individualized learning environment have increased its popularity[3]. However, the practitioners of traditional classroom pedagogy who lack digital education, lack human touch, have insufficient network connections and are resistant to change, which has limited its potential exponential expansion. Despite slight pedagogical variations and progress over the years, E-learning has barely affected medical education in Pakistan[3,4]. Online learning systems are components of web-based software that are used to disseminate, administer, and organize courses online. It entails making use of technical advancements to direct, design, and communicate the course material as well as to encourage two-way communication between students and teachers.

They offer features like whiteboards, chat rooms, polls, quizzes, discussion forums, and surveys that allow teachers and students to communicate online and share course materials side by side. which can provide effective and practical means of achieving educational objectives. The educational institutions in Pakistan use Microsoft Teams, Google Meet, Edmodo, and Moodle as learning management systems in addition to their video conferencing software[4]. Other frequently used video conferencing programs include Zoom, Adobe Connect, WebEx, and Skype for Business.

It is crucial to comprehend the complexities, benefits, and challenges that online teaching and learning presents to both teachers and students in the field of education during a pandemic to make sure that formal education is delivered successfully and continuously. Only then, will we be able to guarantee a paradigm of medical education that is solid and resilient enough to resist widespread crises like a pandemic or another such emergency[5]. The findings of this study will assist us in addressing the issues, formulating, and developing a successful E-learning strategy to provide top-notch medical education[6].

This study intends to evaluate learners' and educators' perceptions of the challenges, usefulness, degree of reception, and acceptability of E-learning in a medical college during the COVID-19 pandemic lockdown. With the increased usage of online learning platforms during COVID-19, it is important to evaluate how well they facilitate teaching and learning from a variety of perspectives. The current study investigates how instructors and students in Pakistan perceive the benefits, constraints, and suggestions associated with online learning. The results will aid in prioritizing the necessary adjustments to make e-learning more useful and rewarding.

MATERIALS AND METHODS

UCMD conducted this cross-sectional online questionnaire-based study in the month of June 2022. Undergraduate MBBS students and departmental faculty members who took part in the MBBS teaching curriculum made up the study population. Teachers and undergraduate students of MBBS who were involved in E-learning were approached, out of which data was collected from 30 educators and 256 students through convenient sampling.

Questionnaire Design and Distribution

Two questionnaires students and Facilitators were created in the Google form, amended, and edited by the authors. To check the validity of the questionnaire, 35 students and a small number of faculty members participated in a pilot study. Following a review of the response, the questionnaire was completed. The research population meeting the inclusion criteria received the link to the google form comprising the Information Sheet, informed consent, and the questionnaire through WhatsApp and email. The participants were taken to the website after clicking the aforementioned link. After agreeing to participate in the study would the participants be directed to the questionnaire portion. There were both single-response and multiple-response items in the survey. Automatic recording and storage of each response in Google Drive was followed by analysis. Participants received reminders, and after ten days, the survey links were deactivated. Each participant was only allowed to submit his or her response once through email. Once the participant's responses were submitted, they were unable to alter them. By just gathering the participants' responses and excluding any other personal information, the participants' confidentiality and anonymity were ensured.

Ethical Considerations: The study was carried out after obtaining approval from the Institutional Ethics Committee of the University of Lahore. Participation in the survey was on a voluntary basis.

DATA ANALYSIS:

To conduct the analysis, the data gathered in Google Drive was converted to SPSS program. The chi-square test was used to compare proportions. According to the Likert scale, the responses were either strongly disagree, disagree, neutral, agree, or agree and strongly agree, with scores of 1, 2, 3, 4, and 5, respectively. For comparing results with those from other studies, the mean score has been separated into three levels low: 1-2.33, medium: 2.34-3.67, and high: 3.68-5.00. Positive replies were defined as those scoring between three and four on a Likert scale.

RESULTS:

The online study had 256 learners and 30 teachers in total. Out of which 22 faculty members 73.3% and 146 students 57.7% had prior experience with online learning.

Responses provided by the students

Table 1 shows the learners' responses to the questions about E-learning.

Table - 1: Responses by the Students on E-learning

Table - 1: E-Learning related responses by the students		
Question	**Yes**	**No**
Previous exposure of E-learning N = 256	146 57.7%	94 43.3%
Satisfied with the E-learning provided by the institution N = 256	173 67.6%	83 32.4%
Handouts to be provided prior to class N = 256	225 88%	31 12%
Evaluation required of the topics covered N = 256	173 67.6%	83 32.4%
Practical classes content to be covered in E-learning N = 256	175 68.4%	81 31.6%
Feedback mechanism post E-learning sessions N = 256	203 79.3%	53 20.7%

Smartphones were the most popular device for attending online classes, while Zoom was the application that people chose to use for video conferencing. The ideal length of a single lesson was between 35 and 45 minutes, and they felt most at ease with 1-3 hours of online sessions per day. Table 2 shows the data received by the students on online learning.

Table 2: Descriptive data regarding E- learning by the students

Descriptive Data Regarding E-Learning by the Students				
Question N = 256				
Most preferred app for accessing E-learning	**Google Meet**	**Zoom**	**LMS Slate**	**Others**
	20.7%	19475.7%	6023.4%	0
Device used to access E-learning	**Smart phone**	**Laptop**	**Tablet**	**Desktop**
	20881.25%	3513.67%	103.9%	31.17%
Appropriate duration of a single lecture	**40–60 min**	**35–45 min**	**20–30 min**	**20 min**
	5621.87%	19776.9%	31.17%	31.17%
Total duration of E-learning in a day	**2–3 hr**	**1–2 hr**	**3–4 hr**	**Others**
	23089.8%	207.8%	62.34%	0
Convenient timing	**10 am -12 pm**	**8 am –10 am**	**2 pm – 4 pm**	**Others**
	19576.17%	4015.6%	207.81%	10.39%
Number of sessions for online classes if total duration more than 2 hrs	**2 sessions**	**3 sessions**	**1 session**	**Others**
	18672.6%	3915.23%	2810.9%	31.17%

The majority of learners 57.1% acknowledged the question concerning evaluation. The majority of participants learners preferred activities/assignments to conventional exams. Objective, organized questions were preferred to subjective ones for evaluations based on traditional examinations. The method of assessment that received the most responses, over mark-based, was grade-based 55.7%. Loss of direct face-to-face engagement with teachers, a lack of peer interaction, and the classroom environment were cited by participants as the main reasons they missed the old teaching system. The causes for the dissatisfaction of 87 people 42.9% are shown in Table 3.

Table 3-Reasons for dissatisfaction with E-learning Multiple response-based answer.	
Lack of adequate interaction	26%
Difficulty in doubt clearance	10%
Absence of classroom environment	53%
Network Issues	47%
Health Issues	2%

Due to the ease of accessibility, convenient schedules, and ability to access online lessons from home, 116 learners, or 56.1%, were satisfied with the E-learning. As shown in Table 4, students who felt that the institute's E-learning program met their needs were more likely to be open to the concept of using it to supplement traditional classroom instruction. They also believed that E-learning was efficient.

Table 4: Cross-Tabulation of Satisfied and Dissatisfied Students with Effectiveness of E-Learning and Using It as Supplement			
Satisfied with E-Learning			
	Yes	**No**	**p-value**
	Use E-learning as supplement		
Yes	48	22	0.01
No	68	65	
	Perception regarding effectiveness of E-learning		
Effective	47	18	0.003
Not effective	69	69	

p-value was calculated using chi-square test; Agree and strongly agree – taken as yes for use of E-learning as supplement; Score 4 and 5 – regarded as effective.

Responses Given by the Educators

For teaching effectively, 22 people 91.7% said that communication skills were most important, followed by technology skills they learned the skill set they now possess from their co-workers and through participating in educational webinars. They recommended conducting practical sessions and clinical instruction using videos that includes a demonstration live or pre-recorded. The majority of the teachers were aware of cyberbullying, and one of them had experience with it. Table 5 presents the facilitators' response as it was given.

Table- 5 - E-Learning Related Response by the Facilitators		
Question N= 30	**Yes**	**No**
Previous exposure of E-learning	21 70.8%	09 29.2%
Evaluation methods used in E-learning to be used for Formative Assessment Summative Assessment	25 83.3% 20 66.6%	05 16.7% 10 33.3%
Practical classes content to be included in E-learning module	25 83.3%	05 16.7%
Feedback mechanism post E-learning sessions	29 96.6%	01 3.3%
Awareness about the concept of cyberbullying	21 70.0%	09 30%

Teachers favored using video conferencing capabilities to provide lectures during the lockout over the alternative ways. The two streaming services they utilized the most frequently were Moodle slate and zoom. Following the E-learning sessions, 62.5% of the educators did assessments. They preferred traditional classroom instruction to internet learning. The facilitators scored the elements relating to the success of E-learning, which is shown in Table 6.

Table -6- Grading of Various Responses by the Facilitators		
Score Range	**Responses**	**Mean Score**
Experience and convenience of the Educators in E-learning		
0 – No experience 1 – Highly satisfactory	Experience of teaching in E-learning	3.81
1 – Very weak 5 – Very strong	Overall Proficiency in E-learning	3.64
1 – Least convenient 5 – Most convenient	Teaching in conventional classroom	4.47
	Teaching in online mode	3.38
Skills required to make E-learning effective		
	Communication skill	4.26

0 – Not required 5 – Must required	Technological skill	3.92
	Assessment & Evaluation skill	3.59
	Time Management skill	3.43
Preferred method of teaching in E-learning		
1 – Least preferred 5 – Most preferred	Live AV streaming with PPT	4.16
	Recorded AV with PPT	3.45
Factors affecting the effectiveness of E-learning		
0 – No effect 5 – Maximum effect	Difficulty in conducting practical's	4.08
	Internet connectivity issues	4.04
	Face-to-face interaction with students	3.75
	Attentiveness of students	3.66
	Lack of supervision	3.25
Perception of Educators regarding effectiveness of E-learning		
1 – Ineffective 5 – Highly effective	E-learning is effective mode of pedagogy	3.33

Table 7 - Correlation Between Various Factors Related to the Facilitators

Correlation Between	Spearman's Coefficient	p-value
Experience and Technological skill	ρ = 0.275	0.17
Experience and Proficiency	ρ = 0.205	0.36
Experience and Effectiveness	ρ = 0.595**	0.002
Convenience and Effectiveness	ρ = 0.651**	0.002

**Correlation is significant at the 0.01 level 2-tailed; *ρ*, Spearman's coefficient

Network challenges and the difficulty of delivering practical training were the main issues they encountered while conducting online sessions. However, 62.5% n=15 of them supported the idea of using online education to enhance traditional classroom instruction. The perception of the efficiency of E-learning was strongly correlated with experience. Those who found online learning convenient were also more inclined to find online learning to be more useful. The table provides an overview of these findings. The recommendations for enhancing e-learning are made by both students and facilitators. When it came to organize the participants, navigating online platforms, and choosing methods of assessment and content delivery, educators with little experience and skill in e-learning encountered developmental challenges.Students' concerns included the need for many sessions with shorter durations rather than a single session with a longer time to cover the topics, Network concerns can be resolved by providing recorded lectures after the online meetings, and presentations ought to be distributed in advance of class like in flipped classroom manner. Reduce the number of online sessions because students' attention spans are quite short in online classes, and proper training should be scheduled for teachers to prevent many technical problems. The planned curriculum can be difficult to cover through online learning in terms of both material and time management, according to the teachers. If E-learning replaces traditional teaching and learning methods, the curriculum needs to be updated. These tools can be used to augment practical sessions but never to replace them. E-learning and teaching only rely on how well you understand the material and how well you can engage and control the audience.

DISCUSSION

Due to continued reliance on traditional pedagogy in the medical institution, E-learning is evolving in the field of medical education. Since this was an experiment in unexplored territory, there were some teething issues when classes were conducted online. The current study focuses on how learners and educators view online learning and makes an effort to characterize the challenges faculty and undergraduate students at UCMD encountered while using the online learning A study conducted by Goodman also focused on the active teaching and learning through E- learning platform[6].

In this 57.1% students expressed satisfaction with the institute's online learning system. Similar results were found in China[7], where students gave the learning services a mean score of 3.74, and in Indonesia[8], where students gave the services a mean score of 3.71. A different study found that adopting online courses and virtual classrooms often resulted in a mean satisfaction rating of 5.10 out of a possible 6. In this study, students who were pleased with the online learning thought it was an efficient method of instruction. According to the suggestion box, network problems, technological difficulties, lengthy lectures, and an inappropriate schedule were to blame for the students' disinterest in the teaching and learning activities[9].The author also addressed that these

issues can be handled with proper learning management systems.

With a mean score of 3.37, educators rated online learning as being only moderately handy, compared to a mean score of 4.45 for traditional classroom instruction. For the teachers, there was a strong correlation between the effectiveness of E-learning and its convenience p-value 0.001. E-learning received mean scores of 3.10 and 3.33 from learners and educators, respectively, and both groups found it to be somewhat effective. These results were in line with another study[10] in which students' perceptions of their own effectiveness were highly rated—the mean score was 3.77.

In a study by Pierce and by Javed in 2022, both focused on active learning like flipped classroom or gamification[10,19]. Some teachers favored traditional classroom instruction over internet learning, This result is in line with other studies[11] conducted in Pakistan as well as research conducted in other nations. But in our study, 70 34.5% learners and 15 62.5% teachers approved of the use of online learning to enhance traditional classroom instruction. Numerous studies that compared the effectiveness of face-to-face instruction with online learning found that pupils preferred the latter[12].The majority of participants claimed that network problems were the main obstacle to the efficient delivery of E-learning[13]. These results were in line with findings from prior research. This issue can be resolved if recorded sessions from live online meetings are then uploaded to a single web platform. Therefore, even if a student is unable to attend due to a technical issue or other unforeseen circumstance, they can still watch the lecture at a later date and time. Even without overburdening the teachers, this will help the students[9,14].

Both synchronous and asynchronous learning were used in our college, with faculty members delivering the lectures using zoom or flipped classroom[15,16]. Since many were utilizing these E-learning resources for the first time in their lives, they took their time getting used to the new technology[17]. In the beginning, educators who had little knowledge of or experience with online learning encountered a variety of issues. Educators overcome these challenges with help from the organization and by learning on their own[18].

Providing education via online channels, i.e., E-learning should not be done merely to finish the curriculum; instead, it should put an emphasis on providing high-quality instruction. It ought to be based on the requirements of the pupils and be practical. The duration of one lecture should not exceed more than an hour because it is challenging to retain attention in an online presentation small sessions of short duration are appreciated[1,18].studies conducted by Javed and UB Nasir both focus on the mental health of students as well, they mentioned that because staring at a screen for long periods of time is unpleasant and draining, there should be sufficient time in between lectures, and each day's lectures shouldn't be longer than three hours[19-20]. We believe that following these suggestions will make online learning more effective.

LIMITATIONS

Only MBBS students and a small number of teachers participated in the study, which was done at a single institute. The learners were not divided up according to their academic sessions.

CONCLUSION

The current study emphasizes the challenges that educators and learners encounter when delivering online courses. Students expressed satisfaction with E-learning and a favorable opinion of its application as an addition to traditional classroom instruction. Regarding the efficacy of E-learning, both learners and educators perceived a considerable degree of agreement. Though the communication of theory content has become more efficient over time, delivering the practical components of medical education is still a significant difficulty. To close this gap in providing practical content, we suggest universities and application creators work together to create an online database of animations, 3D apps, and real-time simulations.

ETHICS APPROVAL: The ERC gave ethical review approval.

CONSENT TO PARTICIPATE: written and verbal consent was taken from subjects and next of kin.

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