



FACULTY EXPERIENCES OF ONLINE TEACHING IN MEDICAL AND DENTAL UNDERGRADUATE INSTITUTE DURING COVID-19 PANDEMIC

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ABSTRACT

Background and Aim: The objective of this study is to highlight the experiences of faculty members of Ziauddin Medical & Dental college towards the introduction of online education during the COVID-19 pandemic.

Methodology: In September 2020, an online questionnaire was sent to all the teaching faculty members of Ziauddin medical and dental college through Google form to gather their views on introduction of online education during Covid-19 pandemic. The study design is cross-sectional, descriptive. Non-probability, purposive sampling was done. Out of all, 45 faculty members submitted the questionnaire. Descriptive statistics, that is, pie-charts showing frequency, percentages and mean were used to describe the collected data.

Results: Three teaching strategies were introduced in Ziauddin College as part of online educational program. There were 12 faculty members who were involved in

all the three teaching strategies, that were online and recorded lectures and e-PBLs. Majority of the faculty (49%) agreed that online teaching provides rich learning resources and is an efficient teaching method but 55% also stated that it cause fragmentation of learning and reduced teamwork amongst students. 38% stated that online education standardizes the course content and helps in establishing evaluation mechanisms but more than 90% of them agreed that it is a tedious process which requires training programs for teachers and a well-developed technological infrastructure for its smooth delivery.

Conclusion: The faculty of Higher Education Institutions is struggling in implementing online education program. They require time and support from institutes as they try to acclimatize into the new normal of online education.

Keywords: *Online education, online learning, educational activities, training programs, covid-19 pandemic, institutes.*

Introduction

The coronavirus (COVID-19) emerged from the Wuhan city, China in November 2019 and was soon declared a pandemic for more than 200 countries. These countries faced frequent lockdowns as they were juggling between episodes of partial and sometimes complete lockdown. This greatly affected the economy and social lives.¹The advent of this virus affected industries all over the world, especially educational institutions with patient-care involvement.²In an attempt to safeguard the education system involving the students, faculty and patients; medical universities were forced to take measures to ensure the

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continuity of education, amid the occasional closures as directed by the National Command Operation Centre (NCOC). Undoubtedly, COVID-19 was considered a potential hazard to humanity, but on the other hand it urged educational institutes to initiate online teaching programs in order to keep pace with the changing trends during this pandemic and to enhance students' learning experience^{2,3}. Online teaching programs tend to provide a perfect alternative to physical classroom setups and depended entirely on Internet availability which could be accessed from anywhere around the country^{4,5}.

Howlett et al. defined electronic (e) or online learning 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 content⁶.

Medical institutes were given a directive by the Higher Education Commission of Pakistan (HEC) to start online teaching programs in order to continue smooth facilitation of students during this pandemic⁷. These online teaching programs provided ample opportunities not only for the students but also provided a new platform for the faculty members to discover various online modalities and apply them for an uninterrupted delivery of educational material^{8,9}. This step was essential to prevent timely educational loss for students⁷.

While the idea of online education proved to be an ideal alternative to decongest classrooms amid this pandemic, the hesitance from faculty members initially, along with the established issue of poor internet connectivity in the country created various challenges to implement this new system in educational institutes^{10,11}. Although the developed countries of the world already have well-established and structured online and distant- learning programmes even before the pandemic, unfortunately this was not the case with most of the institutes in the developing countries including Pakistan, where lack of resources, organization, faculty training programs and acceptability had stalled the adoption of this form of education¹². Though online teaching programs had already been introduced in Pakistan since 2002 by the Virtual University, but with limited number of students availing this opportunity, the system still remained anew for most students of the country.⁵

The challenges of implementing online teaching programs in the developing countries are different from the developed ones¹³. In addition to the stated restrictions, senior teachers tend to be more comfortable in using face-to-face, traditional modes of teaching which are usually teacher-centered methods⁸. Although the teachers reluctantly adapted to the newly instructed system of online teaching and started to deliver educational material via electronic learning platforms, like Google Classrooms and ZOOM, they still considered this as just a temporary method of teaching for short interval and were not very much interested in mastering the skills related to this technology. They had no idea that this could be the future of teaching and learning^{14,15}. Not only were the teachers reluctant towards the introduction and use of this system of teaching, even the students had little or no interest in attending online lectures. Most of them reported of being less motivated to attend these and took this as an opportunity to escape from learning⁵. Although the students of this generation are known as digital natives, that is, they have grown up using all sorts of gadgets and are quite familiar with their use and the advancements of internet but merely for entertainment purpose. Using the internet for educational purpose, as an alternative to face-to face education still astounded them thus the reluctance was evident initially¹⁵.

Transitioning the learning from traditional to online had its own challenges, keeping in view the cultural resistances amongst others¹⁶. As per the directive of HEC, the universities were also instructed to develop Learning Management Systems (LMS) in their institutes so that an organized system of online teaching could be introduced in the institutes.⁵ Thus,

the higher educational institutes in Pakistan needed different strategies to incorporate online teaching into their curriculum so that a smooth transition could be ensured⁴.

Studies have shown many contributing factors that encourage or discourage faculty to teach online, and conditions which are favorable at one situation may not be at other places thus gauging faculty's views towards online teaching programs is significant so that their issues can be highlighted and solved accordingly¹⁰. This could successfully lead to the practical introduction of new learning systems, that is, online teaching, in educational institutions^{2,3}. Globally, many articles are being published and researchers are penning down their views to highlight the issues faced by the faculty members as well as the students after implementation of online teaching programs/ distant learning as a mandatory part of the curriculum. But unfortunately, there is still insufficient data and lack of published articles on how online teaching programs are viewed by faculty members specially in Pakistan¹⁰.

Thus, the objective of this study is to bring the perceptions of faculty members towards online teaching programs to limelight. This could highlight the issues faced by them and the short comings of universities in implementing this system. Possible solutions could be provided accordingly so that Pakistan could also practice and implement this new system like the other modern countries of world have done so. Such a study will prove to be useful for the institutes of Pakistan to develop appropriate solutions at a time when the Pakistan Medical Council (PMC) is also in the process of revamping policies for undergraduate online teaching^{11,17}.

Methodology

In 2019, according to the instructions of NCOC, online teaching program was implemented in Ziauddin Medical & Dental College. Three teaching strategies were introduced: online lectures, recorded lectures and e-PBLs were conducted as part of online teaching program. To gather the experiences of faculty members about this new educational program implementation, a questionnaire was selected from an international study⁸. Permission was granted from the author to use the questionnaire for our study and it was sent to all the teaching faculty of Ziauddin Medical and Dental College.

A quantitative, cross-sectional, descriptive study was conducted. Non-probability, purposive sampling was done as the questionnaire was sent to only the teaching faculty of the institute. Data from all the faculty members were gathered at the same time.

Data Collection Tool

The questionnaire had 20 items, including some positive as well as negatively phrased proclamations to prevent any biases in the responses.

There were some statements which were positively framed and were in support of implementing online education programs in institutes. For instance, online teaching provides rich learning resources, is an efficient teaching method and it standardizes the content for students. Rest of the statements were framed as disadvantages of implementing this program. For example, online education requires extra time and effort from the faculty and students, needs multiple training programs and support services from the institute.

A five-point Likert scale was used consisting of the following anchors: 1) strongly agree; 2) agree; 3) not sure; 4) disagree; and 5) strongly disagree.

Demographic questions were added to the questionnaire and the results were kept anonymous.

Data Collection Procedure

In September 2020, questionnaires were sent online through Google Forms to all the teaching faculty. Out of all the members, only 45 submitted their responses voluntarily. Informed Consent was taken from the participants and they were briefed about the purpose and process of the study being conducted.

All the data was entered into SPSS.v.20

Descriptive analysis was done and pie-charts, percentages and mean were used for the explanation of the collected data.

Results

A total of 45 faculty members responded to the questionnaire.

Demographics and other information	Frequency	Percentage (%)
Gender		
Male	16	35.6
Female	29	64.4
College		
ZMC	26	57.8
ZCD	19	42.2
Designation		
Lecturer	15	33.3
Senior Lecturer	3	6.7
Assistant Professor	14	31.1
Associate Professor	8	17.8
Professor	5	11.1

Table 01: shows the demographic data obtained.

Shows the demographic data obtained. 10 faculty members were involved in online lectures only, 8 were involved in recorded lectures only and 1 in e-PBLs only. However, there were 12 faculty members who were involved in all the three teaching strategies and 14 members who were involved in both online and recorded lectures.

S. No.	Items	Percentage Of Responses:			
		Mean	Agree (%)	Neutral (%)	Disagree (%)
	Provides rich learning resources	3.40	48.9	44.4	6.6
	Provides efficiency in teaching	3.18	42.2	33.3	24.4
	Saves time and efforts of both teachers and students	3.09	42.2	22.2	35.5
	Reduces teamwork and collaboration between students	3.44	55.6	22.2	22.2
	Causes fragmentation of work and loss of consistency in learning	3.51	55.5	28.9	15.6
	Provides massive education for learners	3.00	33.3	35.6	31.1
	Easy to monitor teaching and learning processes	2.89	35.5	20	44.5
	Difficulty in monitoring evaluation process	3.69	75.6	11.1	13.3
	Results in decline in learners' achievement	3.60	57.8	35.6	6.7
	Minimized costs of teaching and learning	3.20	46.6	26.7	26.6
	Standardizes the content of course materials	3.13	37.8	35.6	26.7
	Needs sufficient training courses for implementation	3.76	68.9	22.2	8.9
	Needs well prepared online materials	4.18	93.3	6.7	-
	Sufficient ground work is required	4.09	91	6.7	2.2
	Technological infrastructure is crucial	4.40	93.4	6.7	-
	Variant teaching strategies are required	3.93	82.2	17.8	-
	Institutional recognition of e-learning	3.96	75.6	24.4	-
	Essential to establish support services such as multimedia	3.84	73.3	17.8	8.8
	Establishes evaluation mechanism	3.36	40	28.9	22.2
	Implementation should be gradual	3.96	84.5	11.1	4.4

Table 02: percentage of responses.

Shows the responses of the participants for each statement. The statistics for the statements that were in favor of implementation of online education program; 49% of them agreed that it provides rich learning resources and is an efficient teaching method. 42% agreed that it saves time and efforts of both the teachers and students. 46% agreed that it minimized the cost of teaching. And 38% agreed that it standardizes the content for all.

The statement which were negatively phrased had the following results: 55% agreed to the fact that it reduces team work and collaboration amongst students and also cause fragmentation of learning. 75% highlighted that it is difficult to monitor/evaluate the course and content of online teaching courses and it requires well prepared online materials, preparation and multiple teaching strategies to conduct these sessions and engage students as shown by the pie charts below. Faculty members were unsure/neutral (36%) about the provision of massive education by this method. Around 90% of them agreed that sufficient training programs for faculty members, institutional recognition of e-learning,

technological infrastructure and support services are critical for smooth conduction of online education.

Discussion

This study highlights the views of teaching faculty about the online learning program introduced at Ziauddin University, during the Covid-19 pandemic. Initially the faculty members started taking online/recorded lectures as it was considered mandatory to implement online teaching programs in institutes immediately¹³. The faculty did not get a chance to participate in any prior training programs. Due to this, majority of them had their reservations in adapting to this mode of teaching as they were facing many problems. Eventually, the IT Department of Ziauddin University took notice of this. They assisted and trained all the teaching faculty at basic levels on how to use Google classrooms and Google Meet, how to conduct live and recorded lectures which ensured smooth facilitation of online teaching and learning process.

While live lectures engaged students synchronously and interactions with them were at similar and real times, also known as online interaction¹⁴; asynchronous or recorded lectures provided an opportunity for students to view lectures more than once, videos and other digital content later on to emphasize on difficult or missed concepts which improved their understanding^{18,19}.

Majority of the faculty members agreed to the fact that online teaching is favorable as it provided rich learning resources for students^{11,16} as compared to limited resources used when teaching in traditional classroom setups⁸. This was found to be contrary to the study by Khadija Mukhtar et al which reported that students labelled online learning to be a resource-intensive in nature². However, according to our study, majority of the faculty agreed that online teaching is amongst an efficient teaching method. According to literature findings, one of the reason might be that previously the faculty were using predefined content material to teach but with the advent of online teaching, they got encouraged to continuously improvise their content according to the recent additions to their topics. Also, since the students had access to the internet, a giant hub of different modalities of study, which enabled the learners to comprehend knowledge efficiently resulting in better understanding of concepts²⁰. This facilitated the shift from teacher-centered to student-centered approach^{2,9,21}. Also faculty members found themselves to be more perceptive when using this strategy as they had to engage students at all times, keep the sessions interactive and as well as easy to comprehend¹⁷. Faculty members opined that online teaching programs could bring improvisations in the quality of teaching and learning, even in remote areas^{16,21}. In addition to this, some higher educational institutions posed financial challenges for the students belonging from lower socio-economic sectors. This could be solved by implementing online teaching programs which have proven to be cost-effective as well²². The content material could also be standardized as everything was being recorded and the teachers were more conscious of what to include and remove from their sessions¹⁰. There were also some disadvantages recognized by the faculty members while teaching online. Most of them had this perception that online teaching reduced teamwork and collaboration amongst students since interaction in between them was limited. Also, the faculty found it difficult to incorporate educational activities that could improve collaboration and reflective exercises²². Also the faculty members reported that there was an inconsistency noted when lectures were delivered online as compared to the times when face-to face lectures were delivered if sufficient interactive educational activities were not included^{17,23}. Students were found to be distracted very easily and lost attention rapidly which resulted in fragmentation of work². However, the learners' interaction was improved

by incorporating various strategies which included discussions and question and answer sessions conducted in between the lectures²². Also, the faculty found it difficult to monitor the evaluation process in case of online teaching due to the lack of an official LMS as they are not yet made an integral necessity for medical institutes^{9,24}. In relation to this, assessment of education was difficult using online modalities only²². These technological restrictions hindered the implementation and effectiveness of e-learning at the institute¹⁶.

85% of the faculty stated that online teaching program should be introduced gradually so that the teachers can acclimatize with the new method. Our findings were consistent with the study conducted in University of Bahrain by Jamlan⁸. Almost all the faculty members agreed to the point that to implement online education system in institutes, there should be multiple training courses for the faculty and a well-organized technological infrastructure at institutes²⁰. Since this is a new mode of teaching, most of the teachers were not aware of its technicalities, thus there was a hesitance noted amongst faculty⁹. This was similar to the results with the study conducted in Pakistan by Mahmood⁷ and a study conducted in Philippines by Moralista and Oducado. Another one conducted in a dental college in Karachi, Pakistan by Qaisar Ali Baig⁹ also indicated the need to have more training programs for the faculty.

Only around 38% of the faculty agreed that it saves time and efforts of teachers, which emphasized their opinion that online teaching requires a lot of preparation and effort from the faculty members. Two basic reasons could be present for this problem. First, since online teaching is a new system being introduced in medical institutes of Pakistan, most of the senior faculty were unfamiliar with its usage. They had to work very hard and attend multiple trainings to become accustomed with the new technologies. Secondly the faculty members also found it time-consuming to incorporate various software, strategies and modalities to engage students at a satisfied level⁵.

With the passage of time, Ziauddin University has improved its provision of online education by introducing various mandatory training programs for the faculty and inclusion of new LMS. All these steps led to better and strong technological infrastructure and understanding by the faculty members generally.

Conclusion

This study will highlight the faculty opinions towards the implementation of online teaching programs in Pakistan. According to the results of the questionnaire, faculty members holistically viewed online teaching as a new and improved system but certain improvements, for example, faculty and students' trainings and a well-established technical infrastructure is still required which could assist in bringing more practicality and acceptability for online teaching in medical institutes^{8,22}.

Before the pandemic, majority of the faculty members in medical institutes of Pakistan neither had any expertise for online education nor were aware of the dynamics of live or recorded online interaction with the students¹³. However, this research provides sufficient evidence that online teaching not only provides a platform to promote student-centered learning, but is also more applicable during these occasional lockdown situations²⁵. It is worth noting here that although online teaching was initiated as an 'emergency remote teaching' (ERT) during this pandemic; but with more improvements, it can be made a part of the curriculum even after the end of this pandemic²⁶.

Limitations of The Study

There are certain limitations of the study which needs to be acknowledged. The sampling size was small and views of faculty members from all colleges of Ziauddin University were not covered. Since the questionnaire only had closed-ended questions, perceptions of faculty members apart from the included questions were not included.

There was no limit set on the number of times an employee can fill the questionnaire so some employees had filled the questionnaire twice. The second response was recorded and other duplicates were removed.

AUTHORS' CONTRIBUTION:

The following authors have made substantial contributions to the manuscript as under:

Conception or Design: Dr. Narmeen Ahmed, Dr. Iram Khursheed

Acquisition, Analysis or Interpretation of Data: Dr. Narmeen Ahmed, Dr. Iram Khursheed

Manuscript Writing & Approval: Dr. Narmeen Ahmed, Dr. Iram Khursheed

All authors acknowledge their accountability for all facets of the research, ensuring that any concerns regarding the accuracy or integrity of the work are duly investigated and resolved.

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