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IMPACT OF FACULTY TRAINING ON ONLINE TEACHING READINESS DURING COVID-19

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Abstract

Background: *The COVID-19 pandemic raised a challenging issue across the globe in educational institutions, specifically during the lockdown. All teaching and learning communities started adopting strategies to prevent the aftershocks if not addressed promptly and effectively. This study aimed to examine the extent of online readiness in teaching practices.*

Methods: *The data was generated using Google Forms, applying a simple random sampling technique for this case study at ZU. By using multiple techniques of data collection, triangulation was executed to authenticate the information. Statistical and thematic analyses were performed to obtain the in-depth findings.*

Results: *A total of 98 faculty members responded to the survey, containing 72 (73.5%) female and 26 (26.5%) male, with a composition of 15 (15.3%) senior faculty, 25 (25%) mid-career faculty, and 58 (59.2%) junior faculty members, whereas only 54 (55.1%) participated in the open-ended part of the questionnaire. Thematic analysis of the rich data (open-ended part) was conducted by identifying patterns or themes found grounded in the descriptive data.*

The six themes were Online Teaching Skills, Learning Management System (LMS), Connectivity Issues, Students' Engagement in Classroom, Students' Engagement in Clinical/Practical Issues, and Students' Online Assessment.

The obtained findings depict the tangible evidence of online teaching readiness as a result of the training courses offered.

Conclusion: *The data triangulation determined the degree of online teaching readiness as a result of faculty training. The amateur, being digital natives, found themselves more motivated and inclined towards online readiness as compared to the veteran, the digital immigrants.*

INTRODUCTION

The year 2019 ended with the outbreak of COVID-19 (Coronavirus Disease-2019), a virus originating from Wuhan, China. The novel coronavirus was spreading relentlessly throughout the world with increasing isolation and suffering as its unwelcome companions. The impact was being felt at all levels equally, whether individual or institutional, private or public sector, medical or non-medical professions, nationwide, across the globe. It has led to the global disruption of education, which necessitated working online (1). Urgent response to the current situation required an increase in medical educators' awareness of online teaching (2).

In the context of medical education, e-Learning has become quite popular worldwide because of its advantages, such as encouraging students to self-directed learning and digitalization of the curricula (3–5). Social distancing procedures hinder students from gathering in lecture halls, learning labs, or in small groups and interacting in person. Recent technologies have allowed the progressive innovation of e-learning (6,7). Several studies have investigated the benefits of these technologies in medical education, especially the PBL system (8,9).

Immediately after the declaration of COVID-19 as a pandemic, there was a paradigm shift, where traditional education was permeated with online education. All clinical and medical activities shifted from face-to-face to an online format in the form of a webinar, virtual classes, etc. (8).

E-learning was not very common and widespread in developing countries; however, the current crisis of the COVID-19 pandemic dragged the world to transform to digitalized education (10).

The students and younger faculty members, being digital natives, adapted to this transformation, but it was challenging for senior faculty members to maintain competence in their technological pedagogical knowledge about digital teaching and learning (11). This study aimed to examine the extent of online readiness of the teachers receiving online courses from international platforms and their experiences in continuing the use of online modalities for teaching and assessments of students.

Methodology:

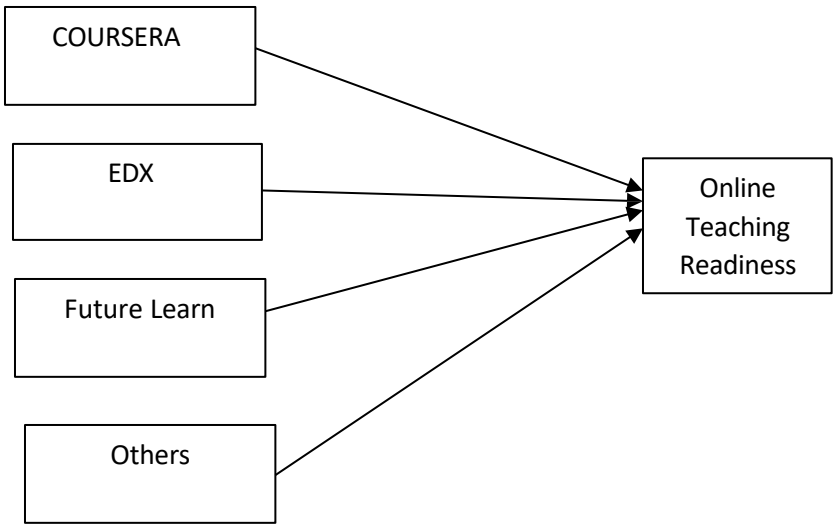
The mixed-method approach, both quantitative and qualitative, was adopted for this study for enhanced theoretical insights and enhanced validity (12).

For quantitative analysis, the Google form was used as a survey tool to gather data from the academic designation holders working as full-time teaching faculty (FTF) at Ziauddin University (ZU). The internal consistency or reliability of the questionnaire was determined through Cronbach's alpha, and its value was found to be 0.74.

By using multiple techniques of data collection, triangulation was done to authenticate the information (13). The respondents belong to a diverse population, depicting a difference in opinion, satisfying the needs of the study from all aspects, and showing the contribution of all demographic categories.

The independent and dependent variables were faculty training and online readiness, respectively.

(Figure:1): **ndependent Variable (Faculty Training)**



Dependent variable

Thematic analysis was done to obtain the in-depth findings of the study (9).

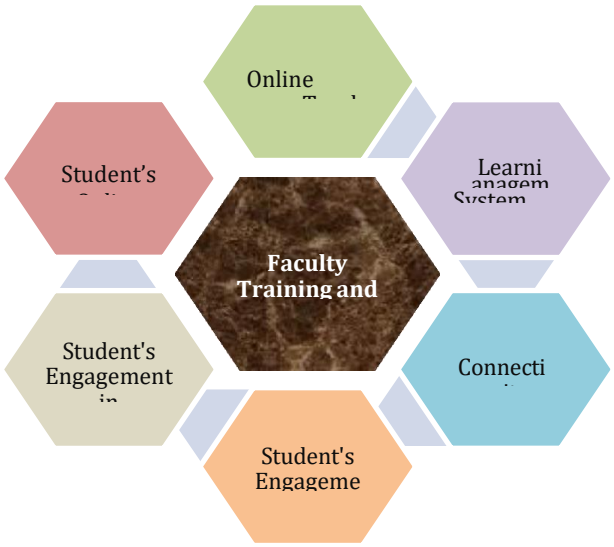


Figure 2 shows the diagrammatic representation of six themes that appear as a result of the thematic analysis of the open-ended part of the survey responses.

For the quantitative approach, the data were recorded in the form of participants' demography, the satisfaction level of their newly acquired online teaching skills, and the application of these newly learned online digital skills for conducting their live and recorded teaching sessions through a five-point Likert scale.

The first section includes participants' demographic information such as gender, college name, academic designation, etc.

The second section enables the participants to report on a five-point rating scale (poor to excellent) about the number of online courses attended by them (from various international platforms) during June & July 2020 to equip them with digital online teaching skills.

For the qualitative approach, the third section includes participants' open-ended comments regarding their experiences of attending online courses, and then the adaptability and the challenges faced by them while applying these skills to their teaching practices.

Results:

A sample of 98 participants filled out the online surveys (Table 1), whereas only 54 participated in the open-ended part of the questionnaire. Among the respondents, 72 (73.5%) were female and 26 (26.5%) were male, with a composition of 15 (15.3%) senior faculty, 25 (25%) mid-career faculty, and 58 (59.2%) junior faculty members. Thematic analysis of the rich data was conducted by identifying patterns or themes found grounded in the descriptive data (14).

The following 6 themes were drawn from their responses, out of which many sub-themes were generated.

Online Teaching Skills, Learning Management System (LMS), Connectivity Issues, Student's Engagement in Classroom, Student's Engagement in Clinical/Practical Issues, and Student's Online Assessment.

Table 1: Number of courses attended by faculty, gender-wise and designation-wise, recorded via responses to the survey

Table-1				
	Number of Respondents		Number of Courses Attended	
	(n=98)	%age	(n=303)	%age
Gender				

Male	26	26.5	67	22.1
Female	72	73.5	236	77.9
Total	98	100	303	100.0
Designation				
Professor	4	4.1	2	0.7
Associate Professor	11	11.2	11	3.6
Assistant Professor	25	25.5	71	23.4
Senior Lecturer	19	19.4	87	28.7
Lecturer	39	39.8	132	43.6
Total	98	100.0	303	100.0

Discussion:

For qualitative data, **thematic analysis** was performed. For this purpose, a six-step process was followed, as proposed by Braun & Clarke, which is the most common, comprising familiarization, coding, generating themes, reviewing themes, defining and naming themes, and writing up. Codes were allocated to the corresponding themes. For coding purposes, the constructs were initially identified as themes, and then, using a reflective process of integrating insights, the open-ended comments were analyzed concerning the identified themes and then streamlined accordingly. For instance, "Feel extremely confident and excited to continue teaching online" was coded under the heading theme "Online teaching skills". (1,2)

Online Teaching Skills

"Virtual learning is exciting, and every day I learn something new. Though I struggled in the beginning, I am now getting the hang of it with continuous practice and use".

Virtual or online learning provides flexibility and a source of greater motivation to the learners with enhanced facilitation to develop important competencies (15).

"I didn't take any recorded lectures (Asynchronous) because I prefer to take live online sessions (Synchronous) for an interactive class, and no practical was demonstrated through an online class."

The education system across the globe collapsed during the lockdown. For the continuation of the teaching and learning process, online classes were introduced amid the COVID-19 pandemic (16).

"This online training has changed that perception, and I feel extremely self-confident and enthusiastic to continue teaching online. I would like to thank ZU for helping us grow as professionals."

Training is needed for all faculty in the instructional design of online learning.

Due to remote sessions, learning is continuous, where students are missing the tutorials and other learning opportunities.

Learning Management System (LMS)

"Overall, online teaching was a good experience. As a teacher, we have learned new ways of technology along with interacting with students, taking lectures, giving assignments, class presentations, etc."

Google Classroom and Google Meet have basic functions. It is important to utilize advanced and user-friendly software/forums such as TechSmith and Camtasia that allow users to integrate recorded videos and organize live stream lectures anywhere using a tablet and a Windows PC.

Connectivity Issues

There are major hiccups for students, including connectivity issues that need to be addressed. A very fast and good-quality internet connection with high bandwidth is required for online sessions. Studies revealed the unavailability of quality internet connections in underdeveloped countries like Pakistan (17). Research findings unveiled the technological and financial factors responsible for disruption in online classes (18).

Student Engagement in the Classroom

"My main issue with online classes is not being able to see my students and judge their understanding level from their expressions."

Instructors familiar with face-to-face sessions came across new challenges of remote learning, including not turning on cameras during synchronous classes. As a result of a survey report, there are multiple reasons for turning the camera off, including self-consciousness about personal appearance, concern about others, and physical background (19).

The majority of the faculty prefer live sessions as they can be made more interactive and livelier via discussion boards, quizzes, and queries for the topics. In the absence of face-to-face classes, for the establishment of effective communication between teachers, learners, and peers, video conferencing via Zoom, Google Meet, Teams, etc., is an effective learning tool (20).

Researchers suggest making it mandatory for students attending synchronous online classes to keep their webcams on. Having technology and modern facilities is one step, but providing access to the faculty, staff, and students with proper training to avail themselves of the recent technology is the actual step towards success (19).

Student Engagement in Clinical/Practical Skills

"I have taken more live sessions because oral biology cannot be explained properly in recorded sessions. I need to use a whiteboard, which is not possible in Google Meet, so I had to switch on the camera and use the whiteboard and paper manually."

Synchronized online classes were well adapted by medical students, showing potential for future education (21).

For practical purposes, only students should be physically present once a week in a group of 12 students. The solution to such problems is improved skills and institutional strategies (22).

Technical Practical sessions cannot meet their goals through live sessions or recorded sessions; they need hands-on practice, without which students can't retain the information provided. However, studies showed a positive impact of the COVID-19 pandemic on online medical education (23).

Students Online Assessment

"Assessing the skills and knowledge of students is quite challenging".

The unprecedented COVID-19 incident posed extraordinary challenges due to a lack of readiness and clear policy or guidelines, particularly in conducting assessments remotely. Academic dishonesty also needs attention concerning online assessment (24).

"There should be a ZU LMS integrating all the online technologies in a single place, such as live video/webinars, lecture uploading, assessment management, including rubric development, and an integrated grading system."

More emphasis should be placed on learning new technologies used to assess students online.

"All my lectures were conducted live, online, recorded, and provided to the students. The online clinical practicum was conducted through tele-practice in speech-language therapy, along with 3rd and 4th-year students."

Students' main issues were internet troubleshooting, anxiety, depression, poor connectivity, and an unfavorable learning environment at home throughout this lockdown. But as the lecture and practicals progressed, it got better with live online sessions through proper interaction (25).

"So far, it was a wonderful experience as a teacher, but I would like to suggest taking feedback from students as well because it would be a great help for us to improve our online teaching strategy."

Conclusion:

The quantitative data presented in the table reveal that the training courses have a major influence on the online teaching readiness of faculty with a positive inclination towards online teaching adaptation for future use.

The curriculum needs adaptation to an online format, and its consequences are not yet recognized. The modified format will likely have an impact on pedagogy, which needs the attention of curriculum developers and policymakers in the evaluation of online teaching and learning.

It is evident from the findings that the faculty training resulted in a responsive, positive, and confident attitude towards online teaching readiness (3).

Universities, now more than ever, should invest in teachers' capacity building, keeping them updated on effective pedagogical methods and online technologies (26). Moreover, teachers are also encouraged to learn and apply new digital technologies in their pedagogical practices in a conducive learning environment.

Limitations of the Study: The findings have implications for teacher training programs in online modalities limited to one institution. Further research is needed to generalize the results across the country.

Conflict of Interest: The Authors declared no conflict of interest.

Ethical Considerations:
All the respondents were informed about the purpose of the research, data usage, and assured that the information collected would be used only for academic purposes and that their identity would not be disclosed.

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