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E-teaching readiness among university teachers during COVID-19

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Abstract
E-teaching readiness encompasses a range of skills, attitudes, and resources necessary to facilitate successful online teaching and create a meaningful learning experience for students in virtual or remote environments. To study E-teaching readiness among university teachers during COVID-19, an online survey was conducted with 35 teachers of Himachal Pradesh University, who were involved in online education during COVID-19. Here Modified version of the E-teaching Readiness Scale (Watkins, 2003) was designed in the Google form and sent via social media like WhatsApp, email, and Facebook for data collection. Percentage analysis *was* used to analyze the data. The findings of the study show that all teachers from the law, MBA and more than 70% of teachers from computer and social sciences were able to communicate online, whereas 50% of teachers from language use online tools to work on assignments and provide timely responses to students who are in different times zones. All MBA teachers,75% of language teachers, 66% of teachers from law and sciences, 50% of computer teachers and 38% of teachers from social science background were able to remain motivated even though the technical expert is not online at all the times and complete their work even when there are distractions at their houses (e.g., television, children etc.). Further, 77% of sciences, 75% of the law, 61% of social sciences, and 50% of university teachers from MBA, language and computers felt that regular contact, quick technical and administrative support is important for my success in online coursework.

Keywords: E-teaching readiness, university, teachers, COVID-19

Introduction

The Covid-19 pandemic has raised significant challenges for the higher education community worldwide. Shifting from face-to-face teaching to emergent online teaching within available resources under COVID-19 restrictions is the biggest challenge faced by university teachers. In the Covid-19 emergency, teachers have, almost overnight, been asked to become both designers and tutors, using tools that few have fluently mastered.

E-teaching readiness refers to the level of preparedness and competence that university teachers possess to effectively engage in online or electronic teaching. With the increasing integration of technology in education, especially accelerated by the COVID-19 pandemic, E-teaching readiness has become a critical aspect of a teacher's skill set. University teachers need to be proficient in using various digital tools, platforms, and software for delivering online lectures, conducting virtual discussions, and managing online assignments. This includes familiarity with video conferencing tools, learning management systems (LMS), content creation tools, and assessment platforms. Teachers should have a solid understanding of online pedagogical principles, such as designing effective online learning activities, fostering student engagement in virtual environments, and promoting active learning through digital means. Effective E-teaching requires the ability to adapt and redesign course materials for online delivery. Teachers should be capable of structuring content in a way that promotes self-paced learning, provides clear instructions, and maintains a logical flow within the virtual classroom. E-teaching demands strong communication skills, both written and verbal, to convey concepts clearly through online platforms.

In terms of education, Machado (2007) [6] defines e-readiness as educational institutions' ability and institutional stakeholders' capacity "to generate (e) learning opportunities by facilitating computer-based technologies" – in other words, how e-ready an academic setting is to advance with the educational technologies. E-teaching readiness involves the ability to adapt to changing circumstances, such as technology glitches, internet connectivity issues, and sudden shifts between online and in-person instruction. Teachers should be capable of creating digital learning resources, such as videos, presentations, interactive quizzes, and multimedia content, to enhance the online learning experience. E-teaching readiness includes expertise in creating and administering online assessments, as well as providing timely and constructive feedback to students on their performance. E-teaching readiness also involves ensuring that the online learning environment is accessible and inclusive for all students, including those with disabilities or limited access to technology. E-teaching readiness is an ongoing process. University teachers should be willing to engage in continuous professional development to stay updated on the latest trends, tools, and best practices in online education. Institutions can support E-teaching readiness among university teachers by providing relevant training, resources, and a supportive environment that encourages experimentation and innovation in online teaching methodologies.

Several pieces of research were performed to discover the teachers' conduct towards virtual classes. Meadows and Leask (2002) [7] claim that the extent of ICTs' influence depends on teachers' willingness to change their practice in classrooms. Some teachers might be resistant to change; however, so much of the change in education can be regarded as corruption in the broader context. singh and

Chan (2014) [8] evidenced that although the majority of the teachers in their study demonstrated positive manners towards using technology as a tool for instruction, "they need intensive training in using information technology to facilitate its integration into classroom activities to enhance thinking and creativity".

The literature points out that teaching in the online environment requires different competencies than in the face-to-face environment, particularly in the areas of technology, facilitation, and engagement (Ko & Rossen, 2017) [4]. However, only 67% of faculty members reported they had participated in professional development for the design of an online or blended course, and only 39% received assistance from an instructional de [1] signer to develop or revise an online course (Jaschik & Lederman, 2019) [3]. In their case study, Lie, Tamah, Gozali, Triwidayati, Utami, & Jemadi (2020) [5] explored language teachers' online engagement during the Covid-19 pandemic. Their findings revealed that regardless of previous experience in online learning and technological knowledge, language teachers in their study were still attempting to enrich the quality of online learning commitment, and they felt inadequate, especially in their online learning delivery. A study by Howard *et al*. (2021) [2] which explored teacher data from 20 countries also indicated that teachers have different levels of technology readiness, ranging from low to high readiness. Interestingly, results from their study also indicated that most teachers had a medium level of technology readiness.

Need and Significance of the study

As education increasingly incorporates digital tools and online platforms, university teachers need to be prepared to effectively navigate and utilize these technologies. Assessing E-teaching readiness helps identify gaps in their skills and knowledge, enabling targeted training and support. Effective E-teaching requires a different set of skills than traditional classroom teaching. Understanding a teacher's readiness helps ensure that they can create engaging, interactive, and well-organized online learning experiences, thereby maintaining and enhancing the quality of education. E-teaching readiness impacts student engagement and learning outcomes. Teachers who are well-prepared to teach online can design activities, assessments, and interactions that promote active learning and better knowledge retention in virtual settings. Assessing E-teaching readiness allows institutions to address issues of equity and accessibility. Teachers who are aware of and trained in inclusive online teaching practices can ensure that all students, including those with disabilities or limited access to technology, can participate effectively. Teaching online can require different time management and resource allocation strategies. Understanding a teacher's readiness helps them effectively allocate their time and resources to develop and deliver online courses while balancing other responsibilities.

E-teaching readiness involves familiarity with various technological tools, platforms, and software. Teachers who are proficient in these technologies can create a smoother learning experience, reducing technical barriers that might hinder student participation. Identifying gaps in e-teaching Readiness informs targeted professional development initiatives. Institutions can offer relevant training and support to help teachers enhance their online teaching skills, fostering a culture of continuous improvement. The COVID-19 pandemic highlighted the importance of being prepared for sudden shifts to online teaching. E-teaching readiness ensures that teachers can quickly transition to virtual instruction when faced with unforeseen circumstances. Online teaching offers opportunities for innovative pedagogical approaches that may not be feasible in traditional classrooms. Assessing E-teaching readiness helps teachers explore and implement new teaching methods that leverage digital technologies. A university's reputation can be influenced by the quality of its online courses and teaching. E-teaching readiness contributes to maintaining a positive institutional image by ensuring that online courses are well-designed, engaging, and effective in delivering learning outcomes. In conclusion, studying E-teaching readiness among university teachers is essential to ensure the successful integration of technology into education, enhance student learning experiences, and maintain the overall quality of teaching in the digital age.

Sample of the study

The population for the study consisted of the entire teaching faculty (i.e. Assistant Professors, Associate Professors and Professors) of Himachal Pradesh University for collecting primary information about their E-teaching readiness during COVID-19. Once potential participants were identified, the researcher Whatsapp the Google forms as per the objectives of the study to the selected sample. Online Google forms were used for data collection, with 35 university teachers. Participants for this study were selected using convenience sampling. All university teachers who at the time of the data collection were approachable participated in the study. Throughout the data collection, participants were informed of the purpose of the study, and that their participation was voluntary. To protect the participants' confidentiality, all information through which their identities could be revealed was removed. The data collection process lasted from August 20 to September 28, 2021. In addition to the areas explored, the general characteristics of the participants were collected during the initial part of the Google forms.

Research Tools Used

Modified version of the E-teaching Readiness Scale (Watkins, 2003) was used for the data collection. The instrument (Watkins, 2003) consisted of 27 statements related to readiness for e-learning success, which was grouped into 10 scales (e.g., technology access, technology skills, online readings, Internet chat). For each statement, participants completed a 5-point Likert-type scale response ranging from "completely disagree" to "completely agree" with the statement. A modified version of this scale consisting of 08 items was used in the study.

Analysis and Interpretation of Data

E-teaching readiness scale had 27 items with a five-point response pattern. But these items were clubbed into eight items with similar nature and their agreed responses were analyzed as under in Table 1:

Table 1: E-teaching Readiness among Himachal Pradesh University Teachers of Different Departments

Sr. No	Items	Sample (N=35)					
		Computer N=4	Social Sciences	Sciences	Languages	Law	MBA
		Agree(A)	A	A	A	A	A
1	I have an access to computer with adequate software and Internet connection.	100%	76%	100%	100%	100%	100%
2	I have the basic skills for finding my way through the Internet and comfortable using a computer several times a week to participate in a course.	100 %	92%	100%	100%	100%	100%
3	I think that I would be able to communicate online, use online tools to work on assignments and provide timely responses to students who are in different time's zones.	75%	70%	77%	50%	100 %	100%
4	I think that I would be able to remain motivated even though the technical expert is not online at all the times and complete my work even when there are distractions at my home (e.g., television, children etc.).	50 %	38%	66 %	75%	67%	100%
5	I think that I would be able to take notes and relate the content of short video clips (1-3 minutes) to the information I have read online and comfortable chat.	75%	70%	66%	100 %	100%	100%
6	Online problem solving, discussions is a good idea.	75%	53%	66%	100%	33%	100%
7	Regular contact, Quick technical and administrative support is important for my success in online coursework.	50%	61%	77%	50%	75%	50%
8	I feel that prior experiences with online technologies and frequent participation throughout the learning process are important for my success with online courses.	50%	61%	100%	75%	100%	100%

It is clear from Table 1 that all the university teachers of Himachal Pradesh University who responded to the Google forms had access to computers with adequate software and internet connection. Almost all have basic computer skills and feel comfortable using a computer several times a week except language teachers. Further 100% of teachers from the law, MBA and more than 70% of teachers from the computer and social sciences were able to communicate online, whereas 50% of teachers from language use online tools to work on assignments and provide timely responses to students who are in different times zones. Further, all MBA teachers,75% of language teachers, 66% of teachers from law and sciences, 50% of computer teachers and 38% of teachers from social science background were able to remain motivated even though the technical expert is not online at all the times and complete their work even when there are distractions at their houses (e.g., television, children etc.).

All the teachers from law, language and MBA departments, 75% computer teachers, 70% social science teachers and 66% science teachers thought that they would be able to take notes and relate the content of short video clips (1-3 minutes) to the information they read online and felt comfortable with online chat. Further, university teachers with law and social sciences backgrounds least preferred online problem solving, online discussions as a good idea as compared to other teachers. 77% of sciences, 75% of the law, 61% of social sciences, and 50% of university teachers from MBA, language and computers felt that regular contact and quick technical and administrative support is important for my success in online coursework.

Of all the teachers from MBA, law, and sciences, 75% language, 61% social science teachers and 50% computer teachers felt that prior experiences with online technologies and frequent participation throughout the learning process are important for their success with online courses except half of the teachers from computers science department. We can conclude from the above analysis that university teachers are capable and ready for emergent online teaching despite their educational background and distraction of any kind at home during COVID-19.

Discussion

The results of this study are important because they provide a baseline for university teachers' perceived readiness, preparedness, and confidence. The results reinforce the need for professional development and institutional support for university teachers regardless of whether is a voluntary or forced shift. The present study has aimed to illustrate the e-readiness of university teachers in terms of technology integration and urge policymakers and curriculum developers to generate more effective strategies to overcome the barriers that avert teachers from using technology effectively in their classrooms. It is believed that the possible solution, which will influence the accomplishment of technology integration contributing to the worth of education, lies in the investments made in human resource and their readiness to use such technologies in education rather than merely ventures on technology. For this purpose, it is recommended that policymakers, curriculum developers, school administrators, and teachers design various projects to practice at the micro-level, elevating teachers' e-readine

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