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Research Paper

Enhancing Competency: Assessing the Needs of Higher Education Teachers for Online Teaching Tools

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Abstract

Background: As the technology-driven education paradigm matures, so does the number of faculty teaching online. Faculty members' roles have shifted from traditional classroom instructors to online learning communities, especially in the Covid era. However, there has been little research on a need analysis for university teachers who use online tools. The purpose of this research is to appraise higher education teachers' competency and need for online teaching tools and the support they require to execute and integrate online and software tools in their online teaching.

Methods: An online faculty survey was used in this study to examine multidisciplinary higher education teachers in India and their awareness of online teaching technologies, as well as the need for training and help. The Needs Assessment for competencies of Faculty in Online Education, a 20-item questionnaire, was developed by the researcher, which was divided into two parts. Respondents were asked for demographic information in Part I. Part II assessed faculty perceived expertise in online teaching tools as well as areas of emphasis for faculty development in software tools.

Results: The findings of this study revealed that faculty members have a significant need for training and development in Learning Management Systems, Assessment tools, and Video editing tools used for conducting online courses. While the majority of the

participants in this study have a fair knowledge of the use of common software tools required for online classes, they opined for assistance with cloud storage.

Conclusions: *According to the findings of this study, it is essential to develop training courses for higher education professors to assist them in effectively delivering online classes or converting in-person classes to blended sessions.*

Introduction

Online teaching has increased due to the fast-expanding paradigm of technology-based education and the sudden outbreak of the Corona Virus. Faculty members' roles have evolved from traditional classroom instructors to online instructors. This recent change due to Covid Pandemic left with no other option for faculty members but to adopt online teaching. Faculty members' roles have been shifted from traditional classroom instructors to online learning communities.

Because of technological improvements, for online education, educators must examine innovative ways to develop, organise, deliver, and assess courses and learning resources. (Pagliari, Batts, & McFadden, 2009; Sorcinelli & Austin, 2006).

Higher education stands to gain the most from the growing use of technology in the delivery of educational information, notably the Internet. As information and communication technology (ICT) advance at a rapid speed, higher education is facing tremendous upheavals. Technology is continuing to shape and change how higher education is delivered, resulting in the development of entirely online courses, degrees, and certificate programmes, as well as technology-enabled on-campus courses. (Adnan, 2017)

However, the effectiveness of ICT use in higher education is not readily apparent. Even though most instructors have significant ICT skills, they are unable to effectively integrate ICT into ordinary teaching. (Qiao & Wang, n.d.) Teaching in an online learning environment necessitates a unique set of skills, roles, and abilities. (Adnan, 2017).

More and more supervisors and research fellows are concerned about teachers' ICT skills, particularly their ability to use ICT in instruction. (Qiao & Wang, n.d.) There hasn't been much research done on a needs analysis for university professors who use online technologies. The goal of this study is to assess higher education teachers' online teaching skills and needs and the level of support they require to install and use online and software resources in their classes. It's vital to keep in mind that faculty development for online teaching is likely to be a dynamic field that will need to change its offerings regularly (especially as new tools become available.)(Meyer & Murrell, n.d.)

The objective of this research is to assess educators' needs and abilities for conducting online teaching, as well as the level of support required to adopt and to use online and software tools.

Need Assessment

A need assessment is a method for determining a target audience's or group's level of knowledge, competence, interest, or attitude. A requirements elicitation focuses on the issue or need before moving on to establish the goals, content, execution, target population, and the result of an intervention (Cohen, Manion, & Morrison, 2007). In the literature outlining the assessment of student needs connected to web-based instruction, the focus of research for needs assessment for online education is more prominent than the needs & views of educators.(Ali et al., 2005).

Faculty development is the cornerstone for improving educational quality. However, programs are not always tailored to the needs of participants, and there is a scarcity of knowledge on how to determine the needs of faculties.

The findings of this study will be noteworthy for various reasons. Teachers have a great effect on the lives of their students. Teachers, to a considerable part, shape the direction of a student's life. Therefore, it is vital for the teacher to be fully supplied with materials that will allow him or her to serve as an excellent role model for the learners. (Azimi, 2013).

Studies Related to Need Assessment

A survey of students in the University of Mysore's Colleges of Education was conducted in order to identify and understand major gaps and needs of e-learning components. To assess students' demands on learning e-learning components, data was collected from 346 students using a stratified random sample approach. The findings show that Internet tools and video streaming are the most important e-learning components to learn, whereas instructional theories and mobile technologies are the least important.(Azimi, 2013)

The study conducted by (Elsamanoudy et al., 2018) used an online faculty survey to assess training and support needs for instructional technology. Almost all the software tools required for conducting online healthcare courses are used by most participants. They did, however, show a desire for assistance in coming up with fresh ideas for how to best use the software.

According to a survey of faculty at a midwestern university, the top priority problem to be addressed in continuing education sessions is redesigning and reimagining academic responsibilities.(Ali et al., 2005)

The purpose of this study according to (Qiao & Wang, n.d.)was to look at the necessity for ICT in the classroom at Capital Normal University (CNU). The majority of participants were forced to study web design tools, Learning Management Systems (LMS), and electronic resources, according to the

survey. Only a small number of people are required to learn basic computer skills like e-mail and the Internet.

Seven key findings emerged from a thorough analysis of the published literature on faculty development for online teaching. The need of taking individual faculty variances into account, as well as the requirement for thorough evaluations, were also emphasised. (AN ANALYSIS OF THE RESEARCH ON FACULTY DEVELOPMENT FOR ONLINE TEACHING AND IDENTIFICATION OF NEW DIRECTIONS, n.d.)

This study conducted by (Meyer & Murrell, n.d.) summarises the findings of national research of 39 higher education institutions that gathered data on their faculty development strategies for online teaching in 2011-2012, specifically the content and training activities used. Assessment of student learning was the most common type of content (97 percent of institutions), followed by the provision of online resources.

Methodology

In the study, a descriptive comparative survey design was used. Faculty levels of knowledge for dimensions within each area were identified using the categories that arose from the findings.

The researchers created a 20-item questionnaire called The Needs Assessment for Faculty Development in Online Education, which was divided into two parts for this study. Part I of the survey asked respondents for demographic information, while Part II evaluated faculty perceptions of proficiency in online teaching tools and areas of emphasis for faculty development in software tools. The survey was carried out using a Google Form, and the link was delivered to interdisciplinary higher education teachers in India via e-mail, WhatsApp, and other social media platforms. The survey received responses from 100 multidisciplinary higher education teachers in India. The acquired data were analyzed using descriptive statistics. The values were expressed using percentages and preference rankings for each statement.

The name of the institution, the type of institution, whether faculty had previously taught online, how many semesters they had previously taught online, and the average number of students attending online classes were all sought as demographic information. The level of expertise in online meeting tools (Zoom, Google Meet, etc.), survey tools (Google form, Survey monkey), assessment tools (Mentimeter, Kahoot), Learning Management System (Moodle, Canvas), and video editing tools were sought in the second part under Online teaching tools, and under software tools, PowerPoint Presentation, Microsoft Word, Spreadsheet (Excel), Google Doc, and Cloud Storage were asked.

Result

Total Number of Participants-100

According to the current study's findings, there are more female participants (54 percent) than male participants (46 percent). Assistant professors (80) are more eager to participate than seniors (Associate Professors (5), Professors (3), and Principal (3)). Government employees made up 52% of the participants, while private institute employees made up 48%. About half of the participants taught online for 2-4 semesters, and the average class size was 15-30 students.

Designation	Total	Male		Female		Govt		Private		Aided	
		No.	N%	No.	N%	No.	N%	No.	N%	No.	N%
Assistant Professor	80	36	45.0%	44	55.0%	39	48.8%	37	46.3%	4	5.0%
Lecturer	6	2	33.3%	4	66.7%	5	83.3%	1	16.7%	0	0.0%
Visiting Faculty	3	1	33.3%	2	66.7%	3	100.0%	0	0.0%	0	0.0%
Professor	3	3	100.0%	0	0.0%	2	66.7%	1	33.3%	0	0.0%
Associate Professor	5	2	40.0%	3	60.0%	3	60.0%	2	40.0%	0	0.0%
Principal	3	2	66.7%	1	33.3%	0	0.0%	3	100.0%	0	0.0%
Grand Total	100										

Table 1: Data on the demographics of staff members who took part in the needs assessment survey.

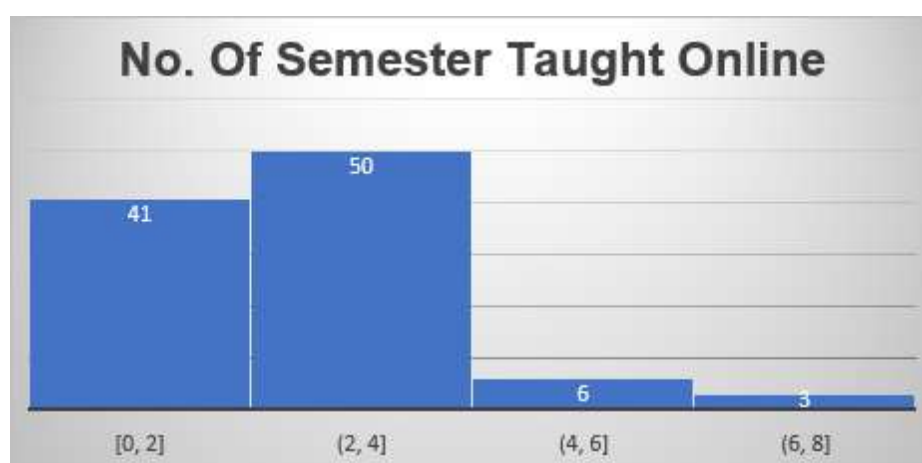


Table 2: Average No. of Semester taught online

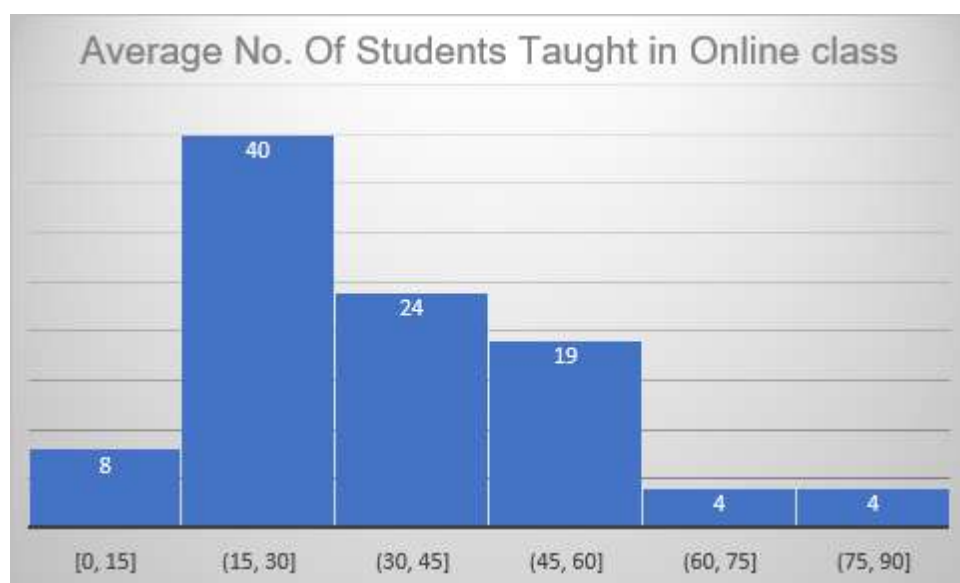


Table 3: Average class size

Respondents were given the option of selecting a need based on their own ICT skills and training needs. Most responders have a basic understanding of hardware like computers and scanners, as well as applications like word processing and spreadsheet operations. The vast majority of respondents anticipated learning about Learning Management System video editing, assessment tools, and cloud storage. This situation is depicted in tables 4 and 5. Open-ended questions regarding the use of online teaching tools and software tools show the same result. We can see the result of these questions through the medium of word cloud in Tables 6 and 7.

Online tools

Table 4. Descriptive Statistics Needs on Learning online tools Ranking

Sr. No.	Online Tools	I want to use it but need help	Rank	I use and I am comfortable/I do not need help	Rank
1	Online Meeting Tools (Zoom, Microsoft Teams, Google Meet)	11	7	89	1
2	Survey (Google form, Survey Monkey)	20	6	71	2
3	Learning Management Systems (Moodle,	41	2	41	6

	Canvas)				
4	Assessment Tools (Mentimeter, Kahoot)	45	1	28	7
5	Screen recording and Broadcasting (OBS Studio)	33	5	53	3
6	Blogs	38	4	46	5
7	Video Editing	41	2	47	4

Software Tools

Table 5: Descriptive Statistics Needs on Learning Software tools Ranking

Sr. No.	Response	I want to use it but Need help	Rank	I do not need help	Rank
1	PowerPoint Presentation	15	4	84	2
2	Microsoft Word	11	5	87	1
3	Spreadsheet (Excel)	29	2	68	4
4	Google Doc	16	3	80	3
5	Cloud storage (OneDrive, Dropbox)	31	1	63	5

Online Tools participants want to learn



Table 6: Word cloud of online tools participants wants to learn

Software tools participants want to learn



Table 7: Software tools participants want to learn

Discussion & Conclusion

The findings of this study demonstrated that faculty staff members have a significant need for training and development in almost all tools used for online teaching.

These tools include learning management systems, video editing software, assessment software, and cloud storage.

Participants require the most assistance in using the assessment tools 45%, video editing 41%, learning management system 41%, blogs, and cloud storage in their course. The purpose of this study was to determine the need for online teaching tools among Multidisciplinary Higher Education teachers in India, as well as to investigate how certain demographic variables (male and female, type of institution, and designation) influence online teaching tool needs assessment.

When the needs for learning online teaching tools were ranked, it was discovered that the need for assessment tools ranked first, followed by Learning management systems Moodle and Canvas, and video editing tools ranked second.

Online meeting tools and survey tools were ranked 7 and 6, respectively, as having the lowest ranking needs on online teaching tools.

There was no significant difference in needs for learning online teaching tools between male and female participants. Different types of colleges (government, private, and aided) also make no difference.

According to the findings of this study, it is essential to create training courses for higher education professors to assist them in properly delivering online classes or converting face-to-face classrooms to blended classes. Workshops and courses can be planned and designed by decision-makers and instructional designers for the benefit of higher education teachers.

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