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Navigating the Virtual Classroom for Higher Education amidst Corona Crisis in India: Faculty Readiness and Experiences

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ABSTRACT

The global impact of COVID-19 prompted a widespread shift in the education sector, transitioning from traditional to synchronous teaching methods. This change posed challenges for educators, leading to efforts in adapting to available technological resources. This study focused on assessing the Preparedness levels and Experiences of online teaching among Faculty members at the Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India. The sample included 65 teachers with diverse appointments. Data on teacher profiles, preparedness for online teaching, and previous experiences were collected through a Google form. Analysis involved frequency, percentage, mean, SD, SED, and ANOVA. Results indicated moderate preparedness but limited online teaching experience. ANOVA highlighted significant differences based on teachers' specialization and teaching Higher Payment Programme students, suggesting better online teaching experiences than those in regular programs.

Keywords: Higher Education amidst COVID-19 crisis, Synchronous teaching, Preparedness for online teaching, Experiences of Online teaching, Virtual Classroom of Higher Education in India

INTRODUCTION

The Covid-19 pandemic transformed various aspects of life, including education. Traditional classroom settings gave way to virtual interactions, challenging both educators and students. With the nation under lockdown, the government's focus was on making education accessible, leading to the widespread adoption of synchronous online teaching. Synchronous teaching involves real-time interaction between instructors and students, facilitated through platforms like Google Meet, Zoom, and Google Classroom.

Online education had existed before the pandemic, with initiatives like India's SWAYAM and SWAYAM Prabha aimed at making education accessible and affordable. Despite the availability of online courses that allowed learners to study at their own pace, the pandemic underscored a significant issue: the "digital divide" in India. Many students, particularly in rural areas, lacked internet access, and both teachers and students struggled with the abrupt shift to online learning. This scenario highlighted the need to assess how prepared educators were for online teaching and their experiences with this new mode of instruction.

Review of Literature:

Research on online teaching during the pandemic has provided insights into the challenges and adaptations faced by educators. Scherer *et al.* (2021) studied teacher readiness for online teaching in Indian higher education institutions. Their research, involving 298 teachers, revealed that technical competency significantly impacted

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teachers' readiness for online teaching, while course design, communication, and time management competencies did not. The study used Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) to analyze data, showing that technical skills were crucial for effective online teaching. Naik *et al.* (2020) assessed the efficacy of online teaching compared to traditional methods during the lockdown. A survey of 874 participants found that 86.3 percentage preferred in-person classes over online lectures, and 70 percentage were dissatisfied with online methods. Many respondents felt that online topics needed face-to-face revision once institutions reopened. Joshi *et al.* (2020) conducted a qualitative study on the barriers faced by Indian teachers in online teaching and assessment. Through interviews with 19 teachers, they identified key issues: inadequate home environments, lack of institutional and technical support, and personal challenges. These barriers impacted the effectiveness of online teaching. Omid *et al.* (2020) compared Dutch teachers' expectations and experiences of online teaching during the pandemic. Their study revealed differences in experiences based on gender, with male teachers generally having more positive experiences. The research also showed an increased willingness among teachers to use technology in teaching post-pandemic. Ross-Hain *et al*. (2020) explored the experiences of teachers in North Dakota with the shift to distance teaching. Their study found that teachers adjusted their course content and delivery methods due to time constraints and a desire to avoid overwhelming students. This shift affected academic rigor and assessment practices, with a greater focus on student well-being.

In summary, the pandemic accelerated the integration of technology into education, exposing both its potential and limitations. While online education became a necessity, it also highlighted issues such as the digital divide and varying levels of preparedness among educators. Understanding these challenges is crucial for improving online teaching practices and addressing the gaps revealed by the crisis.

Objectives and Null Hypotheses:

The objective of the present study was to understand the Preparedness levels and Experiences of Online Teaching of the selected University teachers.

Null Hypotheses were framed for the study, which are as follows:

HO 1: There will be no significant difference in the mean scores of online teaching experiences of the teachers during the COVID-19 pandemic (2020-2021) with reference to the selected variables**:**

HO 2: There will be no significant difference in the mean scores of experiences of teachers who have attended training and not attended training for online teaching.

HO 3: There will be no significant difference in the mean scores of experiences of teachers who teach in the regular programme and Higher payment programme.

METHODOLOGY

The Maharaja Sayajirao University of Baroda was selected purposively from the western region of India. The sample of the present study consisted of 65 teachers (permanent, temporary, contractual etc.) employed during 2020-2021 in the Faculty of Family and Community Sciences regular program, Higher Payment Programmes (HPP) program and Institute of Fashion Technology (IFT) program.

Independent variables:

Gender, Age, Teaching Experience, Area of specialization, Level of teaching, Type of Programme, Type of employment,

Dependent Variables:

Preparedness levels of teachers for online teaching, Experiences of Online Teaching.

The researcher designed a questionnaire which comprised of five sections. A three-point Likert scale was validated by the experts which was then pre-tested on the desired sample. The data was analysed through SPSS (Version 20) and MS Excel. For the analysis and interpretation of the obtained data, frequency, percentage, mean, SD, SED, intensity indices, t ratio and ANOVA were computed.

RESULTS AND DISCUSSION

In this section, the outputs of various statistical methods have been reported. The findings are reported keeping in mind the objectives as well as the hypotheses of the study.

Descriptive Analysis:

Table 1 depicts the background information of all

Table 1 : Frequency and Percentage Distribution of the Teachers according to their Background Information (n=65)

Variable	Frequency	Percentage (%)
Age		
Young Teachers (27-39)	39	60
Middles Aged Teachers (40-51)	14	21.54
Senior Teachers (Above 51)	12	18.46
Gender		
Female	63	96.92
Male	2	3.08
Years of Teaching Experience		
2-7 years	31	47.69
8-15 years	15	23.08
More than 15 years	19	29.23
Type of Employment		
Permanent	16	24.62
Temporary	37	56.92
CES	12	18.46
Level of Teaching		
Graduation	55	84.62
PG Diploma	24	36.92
Post-Graduation	36	55.38
Ph.D.	11	16.92
Area of Specialization		
Foods and Nutrition	21	32.31
Extension and Communication	11	16.92
HDFS	8	12.31
FCRM	12	18.46
Clothing and Textiles	13	20.00
Type of Programme		
Regular	31	47.69
Higher Payment Programme	34	52.31

the faculty members of Family and Community Sciences, Maharaja Sayajirao University of Baroda. The data clearly indicates that the majority (60%) of the faculty members are in the age range of 27-39. The female ratio is higher than the male ratio in the department. 19 members have been teaching for more than 15 years, whereas 31 members which accounts for 47.69 percentage of the sample have an experience of 2-7 years. The data highlights that more percentage of faculty members have temporary employment status. Out of the total sample, 55 members have been teaching at the graduation level. Most of the respondents belong to the food and nutrition department. And more than half of the sample teaches at the Higher payment programme as compared to the regular programme that is offered at the department.

The scores and the respective categorization stated in Table 3 were used for the interpretation of Preparedness levels for online teaching. The results (Table 2) indicate that the highest intensity indices were found for the use of the right equipment (mobile/ laptop/tools) and making sure it's properly functioning before using it for the class (2.95), followed by the Use of various teaching resources

Table 2 : Item-wise Intensity Indices Showing the Preparedness of Teachers regarding Online Teaching.

Preparedness of Teachers for Online Teaching	I.I.
Use of the right equipment (mobile/ laptop) and made sure about proper functionality.	2.95
Use of various teaching resources other than textbooks.	2.92
Provided an ease to students to clear their doubts/ concepts.	2.91
Avoided external noise and provided calm environment during online classes.	2.89
Motivated the students to join the online class.	2.86
Stimulated discussion to involve students actively during online classes.	2.83
Prepared activities for easy understanding of the topics among students.	2.82
Prepared Powerpoint presentations for students.	2.80
Learnt new online teaching strategies or tools through webinars.	2.68
Used Wi-Fi facilities for better connectivity.	2.63
Took online classes from university when it was open to provide a more realistic classroom environment for students.	2.62
Designed and created online quizzes, tests, grading and homework assignments.	2.60
Took guidance from other colleagues to improve the concentration level of the students during online classes.	2.34
Managed the issues at home that occurred due to work from home environment.	2.23
Shared inspirational stories with students to motivate them for online classes.	2.18
Prepared videos to support their lecture to make the content easy.	2.14
Used available teaching videos for online class.	2.09
Used readily available presentations for online class.	1.83

Table 3 : Scoring and Categorization of Intensity Indices related to the Teachers' Preparedness Regarding Online Teaching during COVID-19 Pandemic

Categories of Preparedness	Range of Score
More Prepared	2.60 – 3.00
Moderately Prepared	1.60 – 2.59
Less Prepared	1.00 – 1.59

other than textbooks (2.92) and provided an ease to students to clear their doubts/ concepts (2.91). It can be inferred from the above findings that the teachers were more prepared in terms of the physical facilities available to them for online teaching. The findings also suggest that teachers were moderately prepared for online teaching by using various methods and materials for teaching. Paliwal and Singh (2021) explored that teachers of higher education institutes in India lack course designing skills, communication skills and time management skills. Therefore, they need to focus on these areas to be prepared to conduct online classes professionally.

Scherer S. *et.al* conducted a study titled "Profiling Teacher's Readiness for Online Teaching and Learning in Higher Education: Who's Ready?." The study aimed to assess teachers readiness for online teaching around the world at the time of the COVID-19 pandemic in primary, secondary, tertiary, adult, and vocational Teaching. The data was collected from educators of different ethnicities who belonged to 58 countries. An international heterogeneous sample was drawn that comprised of 739 respondents. Three profiles were generated from the data, namely: Profile 1(Low Readiness), Profile 2 (Inconsistent Readiness) and Profile 3(High Readiness). Profile 2 had the maximum number of participants (n=385), followed by Profile 1 (n=291) and Profile 3 had the least number of members (n=63). Teachers in Profile 2 had little to no confidence in their personal abilities to teach online, but they reported sufficiently high support from the institution in teaching online. Profile 3 educators reported strong confidence in their online teaching abilities.

Thus, it can be said that the present study is in line with other studies, and it can be concluded that the faculty members of the Family and Community Sciences, The Maharaja Sayajirao University of Baroda were moderately prepared for conducting online sessions during the unprecedented times of Covid 19.

Inferential Analysis :

Table 4 highlights the ANOVA test results of the experiences of online teaching with regard to selected variables. There is a significant difference in the online teaching experiences of teachers with reference to the area of specialization. One of the plausible reasons for this significant difference could be the different facilities that are provided to teachers belonging to different specialization subjects. The diverse sample consists of teachers who belong to different areas of specialization. The subject matter and skill set required for every subject are unique, thus adding on to the differences in online teaching experiences. Certain subjects require a lot of practical work to gain a thorough understanding of the subject. But due to the lockdown having a hands-on experience was not feasible. In a feedback survey conducted by IQAC Loreto College on COVID-19 and response to education, similar feedback was received from teachers.

Kaur (2020) reported that teachers faced numerous challenges while conducting online classes. The challenges that were faced by them are: fear of using technology, speaking in front of the camera, lack of technical knowledge, problems with student engagement, family disturbance while conducting online classes, communication and coordination issues, difficulty in teaching practical subjects, challenges in developing e-content for students. While gathering the data for the present research, similar experiences were shared by MSU faculties. Thus, it can be said that the present study results are in line with the past studies.

Table 4 : Analysis of Variance (ANOVA) results of Online Teaching Experiences of Teachers during the COVID-19 Pandemic in relation to Selected Variables. (n=65)

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Age	Between Groups	0.1167	02	0.0584	0.564	.571
	Within Groups	6.4054	62	0.1033		
Years of Experience	Between Groups	0.0038	02	0.0019	0.018	.981
	Within Groups	6.5183	62	0.1051		
Area of Specialization	Between Groups	0.9517	04	0.2379	2.562*	.047
	Within Groups	5.5705	60	0.0928		
Level of Teaching	Between Groups	0.4624	03	0.1541	1.561	.207
	Within Groups	6.0225	61	0.0987		
Type of Employment	Between Groups	0.5013	02	0.2507	2.581	.083
	Within Groups	6.0208	62	0.0971		

*significant at 0.05 level

Thus, for the present study, the first null hypothesis stating that there will be no significant difference in the mean scores of online teaching positive experiences of the teachers during the COVID-19 pandemic is rejected with respect to their age, years of experience, level of teaching and type of employment.

From the Table 5, it can be inferred that no significant difference was found between the two groups who were trained in taking online classes and who did not have any prior exposure to virtual teaching. Only 11 faculty members had participated in online teaching training programmes prior to March 2020. Therefore, the above finding indicates the unpreparedness of teachers for online teaching. Online teaching demands technical knowledge of online teaching tools and methods. However, the Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda majorly uses the traditional method of teaching *i.e.* formal classroom teaching method. Thus, it can be concluded that the null hypothesis that there will be no significant difference in the mean scores of experiences of teachers who have attended training and not attended training for online teaching is accepted.

From the result presented in Table 6, it is evident there exists a significant difference between the two groups. The mean score of the higher payment programme (HPP) was higher than the regular programme. It indicates that those teachers who were teaching HPP students had more positive experiences than those who were teaching the regular programme students. The HPP department provides good technical support to their staff *viz.,* laptops, hard disks, interactive teaching-learning materials and so on whereas, the department of regular programmes did not have sufficient funds to provide high-end technical support to the staff. Thus, the teachers had to use the available resources and make the best use of them. *Therefore, the null hypothesis there will be no significant difference in the mean scores of experiences of teachers who teach in the regular programme and Higher payment programme is rejected.*

Suggestions By the Faculty members Regarding Online Teaching:

Table 7 indicates the item-wise intensity indices of teachers' suggestions for Government and Educational Institutes regarding online teaching that ranged between 2.65 to 2.25. The item that showed the highest intensity index was "Government and Educational Institutions should create online teaching platforms with enhanced safety and safeguarding measures (2.65) whereas item related to online learning applications showed the least intensity index (2.25). The above finding highlights the need of infrastructural facilities in the Universities and Colleges in India. The suggestions from teachers were related to classroom management and for better delivery of lectures in future. The Table 6 also highlights the item-wise intensity indices of suggestions for teachers regarding online teaching that ranged between 2.72 – 2.28. The item that showed the highest and lowest intensity index was "Study material should always be in a coherent and well-organized manner" and "Teachers should transform a large-class lecture course to smaller modules in online classes" 2.72 and 2.28, respectively.

Naik *et al.* (2021) suggested that the authorities should include a learning management system, enrollment and academic programs, and evaluation of teachers. The research also highlighted that teachers, students and parents should change their mindset and accept this new method of imparting education. Capacio *et al.* (2021) mentioned that teachers should continue exploring the computer and various software through self-efforts or with the help of others *viz.,* friends, family, colleagues, training etc. They should remain open-minded to other people's comments and recommendations regarding this new teaching pedagogy for their improvement and

Table 5 : t-ratio of experiences of teachers with regard to training attended on online teaching (n=65)

Variables	Categories	N	Mean	SD	Df	t	Sig. (2-tailed)
Training Attended on Online Teaching	Attended	11	2.36	0.06	63	0.12893	.448914
	Did not Attended	54	2.35	0.11			

Table 6 : t-ratio of experiences of teachers with regard to the type of programme (n=65)

Variables	Categories	N	Mean	SD	Df	t	Sig. (2-tailed)
Type of Programme	Regular	31	2.27	0.12	63	-1.971*	.02656
	Higher Payment Programme	34	2.42	0.08			

*Significant at 0.05 level

Table 7 : Item-wise Intensity Indices Showing Suggestions of Faculty members regarding online teaching

Suggestions	I.I.
Government and educational Institutes	
Create online teaching platforms with enhanced safety and safeguarding measures.	2.65
Provide high speed internet connectivity in all areas.	2.60
Provide necessary gadgets and equipment for online teaching.	2.60
Create awareness about online classes in rural areas.	2.55
Upload all the recordings of the online class for further references.	2.45
Update the online learning applications for better understanding.	2.25
Teachers	
Study material should always be in coherent and well-organized manner.	2.72
Record online lectures	2.69
Provide self-learning materials to students.	2.68
Regular breaks from the computer screen for their better health.	2.68
Check all documents before sharing it, whether the font size, colours etc. are of the same ratio or not.	2.63
Take feedback from the students whether they were satisfied from the methods used by the teachers.	2.63
Solve the doubts of the students after the online classes.	2.62
Remain future-focused.	2.62
Professional development to help them address the challenges of online learning, especially teachers who were working with the most vulnerable students.	2.58
Common chat section should be there for students and teachers.	2.57
Creative thinking among teachers for better delivering of lectures and concepts.	2.55
Keep learners engaged and do not lose their motivation.	2.54
Strive to be creators of engagement, not just know-it-all or content- dispensers.	2.52
Transform a large-class lecture course to smaller modules in online classes.	2.28

resourcefulness. Mishra *et al.* (2020) recommended developing multimodal approaches for implementing the course curriculum at higher education institutes to gain the desirable outcomes. It could be helpful in dealing with the complexity of online education. It was also suggested that the government should provide efficient communication tools, and high-standard digital academic experiences in the institutes. The institutes should promote technology-based learning for their students to cope with technical learning disparities that emerged post-pandemic. The present study also highlights that the government should focus on providing better digital platforms for imparting education and better infrastructure facilities for the institutes to deliver online teaching. It was also suggested that the teachers should work towards their own improvement and upgrade their skills in order to be technologically sound and more creative.

Conclusion:

The findings of the study showed that although the teachers were moderately prepared for online teaching yet they did not have very good experience of the same and faced challenges to a certain extent. This indicates insufficient online teaching competencies among teachers and also highlights the loopholes in the infrastructural facilities available at the University. Thus, in order to provide a better online teaching or e-learning environment to students and teachers, it is necessary to improve the resources available at the university for the same. This can be achieved by conducting training programmes for teachers and establishing advanced computer or information communication technology labs in all the departments.

The pandemic has paved the way for a tech-savvy education model across the globe. A widespread shift in the teaching-learning approach has been observed worldwide. Though there is no substitute for traditional in-person classes, we cannot down-look upon the importance of technology-driven resources in imparting education.To smoothly integrate online teaching with traditional classrooms, dedicated technology support departments are imperative to assist teachers. This paradigm and the pedagogical shift in the education system have demonstrated the resilience of the education system in continuing the teaching and learning process. The results of the present study indicate that teachers were prepared to conduct online classes irrespective of the difficulties that they faced while doing so. Dayal S.

(2023) in the study "Online education and its effect on teachers during COVID-19-A case study from India" reported that only 16% of the sample (n=1812) had past experience of teaching online. These results were typically different from the results of a similar study conducted in Jordon where most of the faculty (60%) had previous experience with online teaching and 68% of faculty had also received formal training. Although teachers adjusted quickly to this new routine, they also cited that they were dissatisfied with the online teaching scenario in the country and wanted things to go back to normal.

The future of the education system is technology driven and thus India must be adept at building a strong digital infrastructure.Today, different government and non-government organizations are striving to enhance the use of digital tools in the education sector. One of the major initiatives by the Ministry of Education is the National Mission on Education through ICT (NMEICT). This initiative will help implement the use of ICT to create quality content and make the content accessible to learners across the country. This initiative seeks to bridge the digital divide in our country and empower those learners and teachers who have been untouched by the digital revolution. This study is a step forward in understanding the preparedness levels and experiences of teachers for using ICT tools in their daily academic lives during the pandemic. Although this study focuses on MSU Baroda teachers, future research could consider various variables that can impact online teaching and learning.

The present study discerns the preparedness levels and experiences of online teaching at Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara. This study provides insights to the institute and other colleges to understand the various challenges teachers faced while adapting to the new normal. Also, with the advent of AI tools in the academic arena, future researchers can use this present data to understand the technological preparedness of educators and further develop strategies for teachers to integrate AI tools in creating lessons and use them in daily academic life.

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