

Factors Affecting Online Teaching: Teachers' Perspective

Aiyaz Ahmad Khan¹ & P. D. Subhash²

¹Assistant Professor, Department of Education, Aligarh Muslim University Centre Murshidabad (AMUCM), West Bengal

Email: aakhan_co@myamu.ac.in

²Associate Professor, Education in Planning & Monitoring, National Council of Educational Research and Training (NCERT), New Delhi

Abstract

Online teaching, a method where educators deliver content through virtual classes using digital resources, gained widespread usage during the global COVID-19 pandemic to sustain educational activities worldwide. This study focuses on the perspective of university teachers on factors affecting online teaching. A total of 111 respondents were selected as a sample through the technique of purposive sampling. A self-developed online questionnaire was used to collect data. Both inferential and descriptive statistics were used for analyzing the data that was collected. The study concludes that key variables internet issues and limited technical expertise significantly and negatively impacted the effectiveness of online teaching. However, other constructs, such as resource issues, limited class engagement, disciplinary problems, and uncooperative family were not deemed significant in this study, suggesting no substantial impact on online teaching. The study sheds light on the challenges faced in online teaching, highlighting the critical factors influencing its success or hindrance. The focus on specific variables provides valuable insights for educators and policymakers seeking to enhance the quality of online education.

Keywords: Factors, Affecting, Online Teaching, Teachers' Perspective

Introduction

The global COVID-19 pandemic prompted the widespread closure of educational institutions, affecting a substantial portion of countries and diverse societal groups. The repercussions on the field of education have been profound, as evidenced by the closure of schools and higher education institutions for over 90 per cent of the global student population (UNESCO, 2020). UNESCO's estimates for the impact of the pandemic on education are staggering, indicating that more than 1540 million students across 191 countries were affected by the closure of educational institutions. In India alone, approximately 320

million students felt the impact of these closures during the pandemic (UNESCO, 2020). This unprecedented disruption to traditional modes of education highlighted the need for innovative approaches and adaptive strategies to ensure the continuity of learning in the face of such global challenges.

Addressing the educational needs of students under these circumstances presented a considerable challenge. In response to the imperative and future requirements of students, the entire teaching process had to transition to an online mode. The National Education Policy (2020) recognized the significance of online teaching and envisioned it as a substitute for traditional or face-to-face education

during crises. However, online teaching poses distinct challenges compared to traditional methods, particularly in ensuring the delivery of quality education (Dhawan, 2020). Additionally, it was perceived as less productive than offline teaching (Pandey & Kiran, 2021). However, in traditional teaching approaches, students benefit from in-person interactions with teachers and peers. This enables the acquisition of various life skills, such as teamwork, leadership, communication, patience, time management, decision-making, problem-solving, and acceptance of diversity (Kandpal, 2021). Consequently, online education has been criticized for lacking the development of these essential life skills.

Online teaching is an instructional approach where educators utilize digital resources to deliver content through virtual classes. This method offers intriguing possibilities for enhancing the learning experience for diverse student populations. It provides a flexible and alternative option, allowing individuals to learn at their own pace and from any location, enabling education over time (Smith et al., 2005). Moreover, online teaching is recognized for its time and cost-saving benefits for both educators and students (Harini & Varghese, 2021). It offers students various means to access materials, facilitates communication with teachers, and fosters the development of self-directed learning skills (Limniou & Smith, 2010).

Commonly, video conferencing platforms like Microsoft Teams, Google Meet, Zoom App, Skype, and Cisco WebEx, among others, are encouraged for conducting online classes and providing comprehensive support for student learning (Hasan & Khan, 2020). Given students' familiarity with technology, there is a higher likelihood

of active engagement in digital learning (Dua et al., 2016). Consequently, online platforms have gained immense popularity in education in recent years. The progress in information and communication technologies has rendered web-based education a viable and widely embraced choice for both learners and educators (Cojocariu et al, 2014; Wu, 2016).

To facilitate high-quality online teaching, both teachers and students require essential digital resources such as smartphones, computers or laptops, internet connectivity, and networks. However, a significant digital divide exists between rural and urban populations in India, as highlighted by a National Statistics Office (NSO) survey. The survey indicated that only 4.4 per cent and 14.9 per cent of rural households possessed computers and internet facilities, respectively, whereas 23.4 per cent and 42 per cent of urban households had access to the same resources (TOI, November 25, 2019). This clear digital gap in India, as noted by Beniwal (2020), results in a substantial portion of the population lacking access to computers and the internet, leading to disparities in learning opportunities for online education.

To address this digital disparity and ensure quality online learning for all, the Indian government initiated the SWAYAM educational platform in 2017. Additionally, the University Grants Commission (UGC) has made various e-books & journals, and web-based TV channels accessible. Recognizing the importance of digital resources, the National Education Policy (2020) rightly emphasizes, "The benefits of online/digital education cannot be leveraged unless the digital divide is eliminated through concerted efforts, such as the Digital India campaign and availability of affordable computing devices". In the context of this study, the authors

aim to investigate the different factors influencing online teaching.

Review of Literature

A growing body of literature delves into the diverse challenges associated with online education, particularly in the context of India where a significant portion of the population faces economic challenges. Pokhrel and Chhetri (2021) underscored in their research that internet penetration in economically disadvantaged nations is relatively low, and data packages are costly compared to people's incomes, thus limiting learners' capacity for online education. Hasan and Khan's (2020) study identified unreliable networks and connectivity as the primary drawbacks of online teaching and learning. They also noted factors such as a lack of interaction, inadequate clarification of doubts and queries, difficulty in understanding concepts, and time constraints as additional challenges in online teaching.

In a case study focused on Oman, Slim (2020) highlighted network issues as a major obstacle to online teaching, given the generally poor internet connections in the country. Oyedotun (2020) pointed out that the abrupt shift from offline to online classes because of the global COVID-19 outbreak exacerbated disparities in the education systems of developing countries. This included issues like, scarcity of devices, limited internet access in rural locations, and insufficient teacher preparation for online teaching, leading to poor quality online education in these regions. Similar trends were observed by Sadikul et al (2018), who identified crucial factors affecting student participation in online education, such as limited access to personal computers or smartphones, lack of internet access, poor study habits, deficient technology skills, and unfamiliarity with technology. Mahyoob (2020) echoed these findings,

reporting that technical difficulties posed significant obstacles for English language learners.

Arora and Srinivasan (2020) identified major technical challenges during the pandemic's digital education phase, including the lack of reliable internet, connectivity issues, and a shortage of laptops and microphones. Further, they highlighted challenges faced by teachers in higher education institutions, such as network issues, insufficient training, a lack of interaction, awareness gaps, low interest, and doubts about the utility of virtual classes, low attendance, and a deficiency of personal touch in virtual classes. These multifaceted challenges underscore the complex landscape of online education and the need for comprehensive strategies to address the various obstacles faced by both learners and educators.

Assareh and Bidokht (2011) conducted an in-depth analysis of the barriers to online teaching and learning, categorizing them into four main groups: (a) challenges faced by learners, encompassing financial issues, motivation, progress evaluation, isolation from peers, insufficient knowledge and experiences, and social and emotional domains; (b) challenges faced by teachers, including limited expertise in e-teaching and difficulties in assessing progress across various domains; (c) curriculum-related challenges, taking into account variables such as ambiguity, quality, resources to support teaching, teaching methodology, and evaluation; and (d) challenges related to the school, encompassing organizational and structural variables.

Harini and Varghese (2021) highlighted challenges faced by educators during online teaching, including gadget access, network issues, electricity access, technophobia, distractions, psychological and physical issues, and

online abuse or misuse. Rana and Kumari (2021) identified challenges with online teaching faced by teachers, such as shortage of devices and slow internet, expense of internet access, non-responsiveness of students, lack of hands-on experience, distractions, absence of parental support and a feeling of isolation. Pandey and Kiran (2021) reported common issues in online teaching-learning, including technical problems, distractions, difficulty following a course, difficulty staying motivated, ineffective time management, lack of interaction, difficulty adjusting to change, and uncertainty about the future.

Gond and Gupta (2017) outlined key obstacles to online education, including lack of resources and internet connectivity, scarcity of qualified teachers, lack of funding, and inadequate maintenance of technological equipment. Verma and Verma (2022) investigated challenges during switching from traditional to online teaching-learning, identifying lack of interaction, adaptability, and self-motivation as significant challenges. However, they observed a decline trend in the proportion of challenges related to infrastructure, computer skills, and discipline.

Besides, Joshi et al (2020) explored the teacher's perspective on online teaching in higher education institutions, revealing various difficulties encountered by teachers, such as insufficient technological resources, lack of technical knowledge, family disruptions, inadequate training, and a lack of clarity and direction. However, in a study on teachers' satisfaction with web-based teaching experiences post-lockdown, Malhi et al (2022) identified difficulties such as inadequate training for utilizing online platforms, higher expenses, lower teacher-student engagement,

lack of basic online teaching resources, limited internet connection plans, unstable power supply, and uncertainty about how effectively students were using e-platforms to learn. The variations in findings across different studies underscored the intricate and multifaceted nature of challenges in online teaching, which helped authors in designing the present study.

Objectives

1. To examine the digital tools utilized by university teachers.
2. To study the perspective of university teachers on factors affecting online teaching.
3. To establish the relationship between key variables and online teaching.

Methodology

The descriptive survey method was used by the authors in the present study.

Sample

The sample for the present study was selected through the purposive sampling method from Aligarh Muslim University, Aligarh, and Uttar Pradesh. There were 111 responses from university teachers, 86 of them were from males and 25 were from females. Among these, 30 responses were from Professors, 15 from Associate Professors, and 66 from Assistant Professors. Regarding the level of instruction, 41 teachers taught exclusively at the undergraduate level, 18 at the postgraduate level, and the remaining 52 taught at both levels. In terms of teaching experience, 21 teachers had less than 5 years, 27 had 5 to 10 years, 23 had 11 to 15 years, and 40 had over 15 years of teaching experience.

Research Instrument

An online survey was employed for data collection. The authors constructed a structured questionnaire in Google Forms by reviewing relevant literature on online education. The questionnaire consisted of 31 items and was divided into four sections (A, B, C & D) i.e. demographic profile, digital tools utilized, the effectiveness of online teaching, and factors affecting online teaching. The tool was designed in such a manner that responses could only be submitted before moving on to the next section. The first section comprised four questions of demographic profile, including gender, designation, class taught, and teaching experiences. Based on digital tools used by teachers during online classes, Section B of the tool contained four items i.e. devices, internet connection, web conferencing apps, and digital platforms used for sharing messages. Five items, easily accessible, convenient mode, the flexibility of nature, enhanced ICT knowledge, and developed professional skills, were included in the third part (Section C) that addressed the effectiveness of online teaching. In Section D, eighteen items covered factors that affect digital pedagogy. These factors included lack of necessary devices, power cuts/load shedding, expensive digital tools, lack of internet access, poor network connectivity, costly internet data, technical difficulties, lack of technical skills, technophobia, feeling bored in a virtual classroom, poor participation, the limited scope of interaction, online abuses, indifferent attitude of students, students causing destruction, parental inattention, lack of parental support, and family-related disruption. The responses of two Sections (C & D) were recorded on a 5-point Likert Scale ranging from strongly disagree to

strongly agree (1 for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree, and 5 for strongly agree). The tool was validated by five academics who had been using online teaching for more than two years during the COVID-19 pandemic.

Statistical Techniques

The collected data were analyzed with the help of descriptive and inferential statistics to realize the objectives of the present study. Descriptive statistics such as frequency and percentage were carried out to summarise data and understand the perspective of university teachers. Inferential statistics such as linear regression was used to establish the relationship between key variables and online teaching. MS Excel was utilized to tabulate the data, and SPSS statistical version 20 was used for analysis of data.

Procedure of Data Collection

A Google form was created for the online survey. The authors distributed a link to the form among faculty members of Aligarh Muslim University through their official Email ID. One hundred and eleven academic professors responded to the online survey between August to October 2023.

Analysis and Interpretation

This section summarises the data collected from the above-mentioned tool. The analysis and interpretation of the data are presented in three parts viz. digital tools utilized by the study sample, the perspective of university teachers on factors affecting online teaching, and the relationship between key variables and online teaching.

Digital Tools Utilized by the Study Sample

Figure-1: Devices Used by University Teachers (N=111)

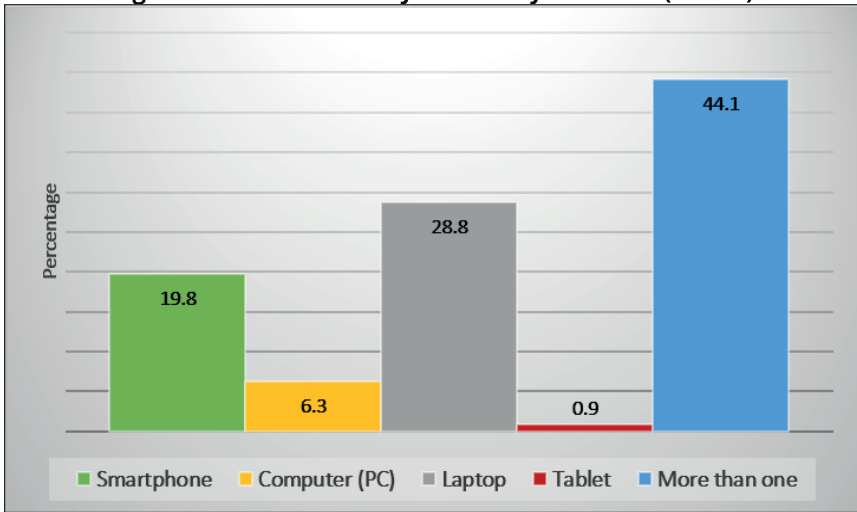
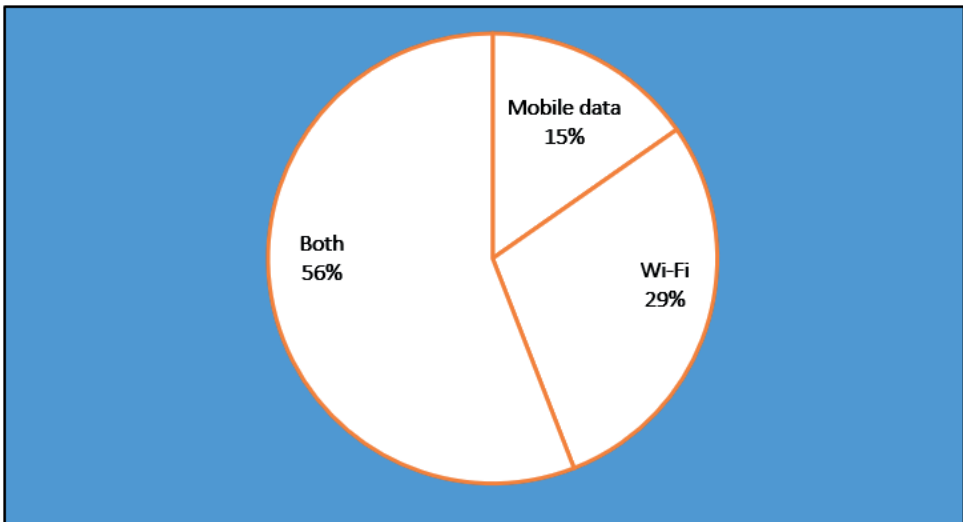


Figure 1 reveals a clear breakdown of the devices utilized by respondents for conducting online classes, 28.8 per cent of respondents exclusively used laptops, while 19.8 per cent relied solely on Smartphones. Additionally, 6.3 per cent of respondents utilized computers (PCs) as their primary devices. Remarkably,

a substantial proportion of teachers, constituting 44.1 per cent employed more than one device for online teaching. This highlights a prevalent trend where a majority of university teachers opt for a multi-device approach in facilitating online classes.

Figure-2: Internet Connection Used by University Teachers (N=111)



It is obvious from Figure 2 that, out of 111 respondents 15.3 per cent of respondents relied exclusively on mobile data, 28.8 per cent solely on Wi-Fi, and a significant majority

approximately 60 per cent utilized both types of internet connections for online teaching. This suggests that the vast majority of teachers have ample access to the Internet, as evidenced by the

widespread use of both mobile data and Wi-Fi. The conclusion drawn is that almost all university teachers, whether

at home or in their workplace, have sufficient internet access to support their online teaching activities.

Figure-3: Web Conferencing App Used by University Teachers (N=111)

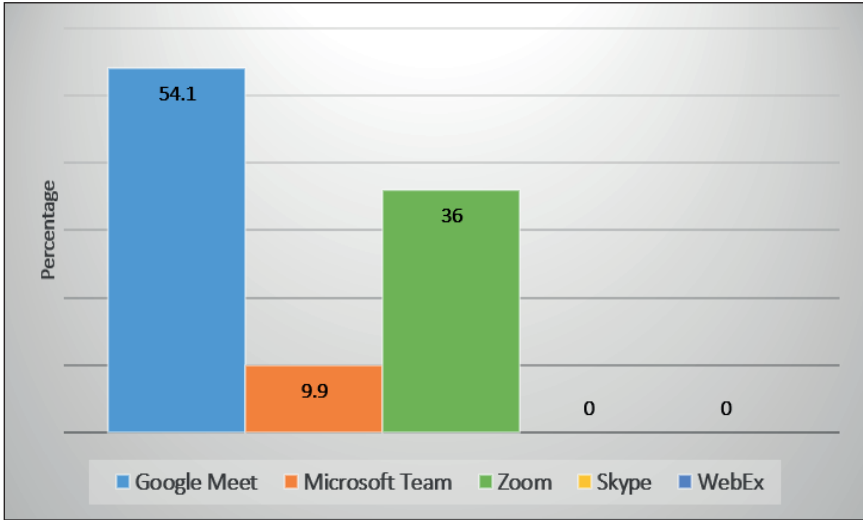
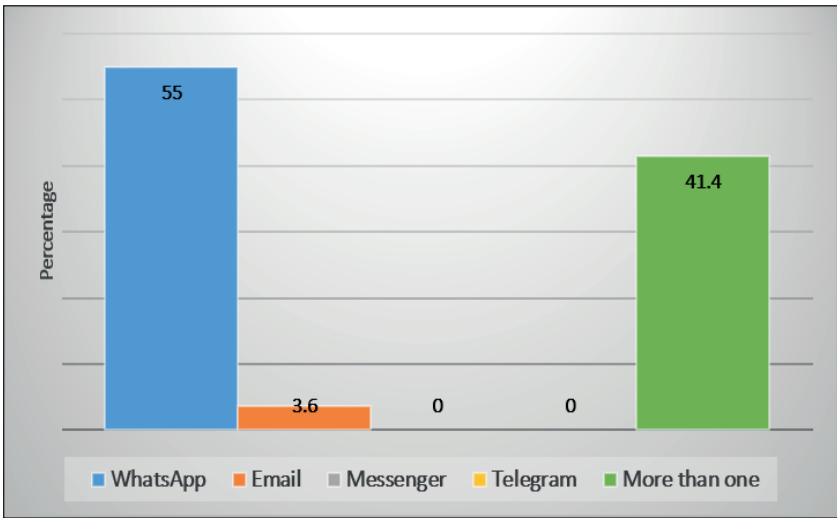


Figure 3 shows that 54.1 per cent of respondents opted for Google Meet, 9.9 per cent utilized Microsoft Teams, and 36 per cent chose Zoom as a web conferencing application for hosting online classes. Notably, none of the

respondents reported using Skype or WebEx digital platforms, indicating a clear preference for Google Meet in higher education for conducting virtual classes.

Figure-4: Digital Platform Used by University Teachers (N=111)



It is inferred from Figure 4 that, out of 111 respondents, 55 per cent used WhatsApp, 3.6 per cent utilized Email, and 41.4 per cent employed more than

one platform for conveying messages to students. Interestingly, none of the respondents reported using Messenger or Telegram. The findings

suggest that WhatsApp is the preferred platform for sharing information and educational content with students. The ease and convenience of Google Meet and WhatsApp, particularly in their

Smartphone-operable formats, likely contribute to their popularity among university teachers for online teaching in higher education.

Perspective of University Teachers on Factors Affecting Online Teaching

Table-1: Response of University Teachers on Factors that Affect Online Teaching (N=111)

| Sl. N. | Factors | Strongly Disagree | Disagree | Neutral | Agree to Some extent | Strongly Agree |
|--------|--------------------------------------|-------------------|----------|---------|----------------------|----------------|
| 1. | Lack of necessary devices | 9.01 % | 10.81 % | 16.22 % | 31.53 % | 32.43 % |
| 2. | Power cuts/load shedding | 4.50 % | 5.41 % | 08.11 % | 33.33 % | 48.65 % |
| 3. | Expensive digital tools | 14.42 % | 18.92 % | 22.52 % | 24.32 % | 19.82 % |
| 4. | Lack of internet access | 7.21 % | 7.21 % | 11.70 % | 36.94 % | 36.94 % |
| 5. | Poor network connectivity | 3.60 % | 4.50 % | 5.41 % | 29.73 % | 56.76 % |
| 6. | Costly internet data | 5.41 % | 10.81 % | 10.81 % | 32.43 % | 40.54 % |
| 7. | Technical difficulties | 4.50 % | 12.61 % | 13.52 % | 33.33 % | 36.04 % |
| 8. | Lack of technical skills | 8.11 % | 14.42 % | 11.70 % | 37.83 % | 27.94 % |
| 9. | Technophobia | 9.91 % | 18.92 % | 26.13 % | 23.42 % | 21.62 % |
| 10. | Feeling bored in a virtual classroom | 3.60 % | 9.01 % | 11.70 % | 36.94 % | 38.75 % |
| 11. | Poor participation of students | 5.41 % | 12.61 % | 18.92 % | 33.33 % | 29.73 % |
| 12. | Limited scope of interaction | 2.70 % | 4.50 % | 6.31 % | 29.73 % | 56.76 % |
| 13. | Online abuses | 4.50 % | 13.52 % | 30.63 % | 33.33 % | 18.02 % |
| 14. | Indifferent attitude of students | 2.70 % | 5.41 % | 21.62 % | 36.94 % | 33.33 % |
| 15. | Students causing destruction | 4.50 % | 9.91 % | 7.21 % | 29.73 % | 48.65 % |
| 16. | Parental inattention | 5.41 % | 9.91 % | 20.72 % | 31.53 % | 32.43 % |
| 17. | Lack of parental support | 2.70 % | 8.11 % | 20.72 % | 36.04 % | 32.43 % |
| 18. | Family-related disruption | 1.81 % | 10.81 % | 12.61 % | 37.83 % | 36.94 % |

Source: Research Survey

As already discussed, there were a variety of issues with teaching through digital platforms. Table 3 shows university teachers' perspectives regarding factors affecting online teaching. It was observed from the responses of 111 respondents, that 63.96 per cent agreed that lack of necessary devices and 81.98 per cent agreed that power cuts/load shedding were found as factors that affect online teaching. However, it is interesting to note that mixed responses were received regarding the expensive digital tools affect online teaching. The majority of the university teachers (73.88 per cent) agreed that lack of internet access impacts virtual classes. Approximately 87 per cent of respondents agreed that poor network connectivity influences teaching via online platforms. Most of the university teachers (72.97 per cent) expressed that costly internet data is influential and affects online teaching. 69.37 per cent of university teachers faced technical difficulties during online teaching. University teachers seem to agree that online teaching is affected by a lack of technical skills (65.77 per cent). While one-fourth of university teachers (26.13 per cent) responded that they aren't sure about technophobia's impact on online teaching. Further, the majority of university teachers (75.69 per cent) feel bored while taking classes through virtual platforms. Around 63 per cent of university teachers are upset due to the poor participation of students in virtual classrooms. Most of the respondents (86.49 per cent) accepted that online teaching affects the interaction between students and teachers, which showed that teachers and students kept their videos off during online lectures. A considerable section of university teachers (51.35 per cent) faced online abuse while teaching through virtual mode. Most of the respondents (70.27 per cent) felt indifferent attitude of students during online teaching. A large section of university teachers (78.38 per

cent) reported destruction during online teaching on the part of students. In addition, most of the university teachers reported that parental inattention (63.96 per cent), lack of parental support (68.47 per cent), and family-related disruption (74.77 per cent) posed as important factors to online teaching.

Relationship between Key Variables and Online Teaching

Initially, the authors identified the key variables that affect online teaching. The literature review revealed several common factors, like lack of necessary devices, power cuts/load shedding, expensive digital tools, lack of internet access, poor network connectivity, costly internet data, technical difficulties, lack of technical skills, technophobia, feeling bored in virtual classroom, poor participation, limited scope of interaction, online abuses, indifferent attitude of students, students causing destruction, parental inattention, lack of parental support, and family-related disruption, that have an impact on online teaching. However, it was found that many factors are interrelated. The authors have taken into account several factors within a major variable, such as lack of necessary devices, power cuts/load shedding, and expensive digital tools have been considered as variable resource issues. Lack of internet access, poor network connectivity, and costly internet data have all been categorized as one variable in internet issues. One variable of limited technical expertise has been identified as technical difficulties, lack of technical skills, and technophobia. Similarly, feeling bored in a virtual classroom, poor participation of students, and limited scope of interaction have been linked to limited class engagement, while online abuses, indifferent attitude of students, and students causing destruction have all been linked to disciplinary problems. Further, a variable uncooperative

family has been considered as one that includes parental inattention, lack of parental support, and family-related disruption. Thus, six key variables such as resource issues, internet issues, limited technical expertise, limited class engagement, disciplinary problems, and uncooperative family have been taken for analysis.

Hypothesis

The following six (06) hypotheses were developed to establish the relationship between key variables and online teaching:

- H₀₁:** There is a significant impact of variable resource issues on online teaching.
- H₀₂:** There is a significant

impact of internet issues on online teaching.

- H₀₃:** There is a significant impact of limited technical expertise on online teaching.
- H₀₄:** There is a significant impact of limited class engagement on online teaching.
- H₀₅:** There is a significant impact of disciplinary problems on online teaching.
- H₀₆:** There is a significant impact of uncooperative families on online teaching.

The stated hypotheses were tested by computing linear regression. The results of the analysis are given in Table 2.

Table-4: Results of Regression Analysis

| Dimension | Beta (β) | P value | Result |
|-----------------------------|----------|---------|----------------------------|
| Resource issues | 0.188 | .86 | H ₀₁ : Rejected |
| Internet issues | -0.292 | .021 | H ₀₂ : Accepted |
| Limited technical expertise | -0.508 | .000 | H ₀₃ : Accepted |
| Limited class engagement | -0.202 | .099 | H ₀₄ : Rejected |
| Disciplinary problems | -0.011 | .935 | H ₀₅ : Rejected |
| Uncooperative families | -0.033 | .791 | H ₀₅ : Rejected |

Source: Computed Data

Table 2 shows the results of linear regression that establishes the relationship between key variables and online teaching. The value of R Square is .321 which shows that the independent variable all together explains 32.1 per cent of the dependent variable. The proposed model demonstrates significant goodness of fit (df=6, F=8.190, sig=0.000). The second hypothesis, namely H₀₂, “there is a significant impact of internet issues on online teaching”. The results of the study revealed that internet issue has a negative impact on

online teaching (β=-0.292 & P<0.05) at a 5 per cent significance level. Similarly, the third hypothesis, namely H₀₃, “there is a significant impact of limited technical expertise on online teaching”. The results of the study revealed that limited technical expertise has a negative impact on online teaching (β=-0.508 & P<0.01) at a 1 per cent significance level. The authors conclude that internet issues and limited technical expertise have a negative impact on online teaching. The study’s findings align with the conclusions of several

prior research studies, including those conducted by Gond & Gupta (2017), Hasan & Khan (2020), Slim (2020), Oyedotun (2020), Arora & Srinivasan (2020), Harini & Varghese (2021), Pokhrel & Chhetri (2021), and Malhi et al (2022), all indicating that internet issues have a negative impact on online teaching. This consistency is also noted in earlier research by Mahyoob (2020), and Joshi et al (2020).

However, the study's results diverge in terms of other constructs, such as resource issues, limited class engagement, disciplinary problems, and uncooperative family, which did not significantly impact online teaching. Interestingly, this contradicts the findings of Gond & Gupta (2017), Sadikul et al (2018), Joshi et al (2020), Harini & Varghese (2021), and Rana & Kumari (2021), who reported that a lack of gadgets or resources was a key variable affecting online education. Moreover, Arora & Srinivasan (2020) and Pandey & Kiran (2021) emphasized the importance of the variable of lack of interaction, while Joshi et al (2020) and Verma & Verma (2022) highlighted the crucial role of discipline in online teaching. Additionally, Joshi et al (2020) found in their study that family disruption impacts virtual classes.

Conclusions

The effectiveness of online education is influenced by a myriad of factors, and these factors can vary based on the specific context, such as the educational institution, geographic location, technological infrastructure, and the socio-economic background of the students. The study findings indicate that most university teachers possess multiple devices and have access to both Wi-Fi and mobile data for online teaching. Google Meet and WhatsApp are the preferred platforms for conducting virtual classes and communicating with students.

The study identified six key variables as focal points, which include resource issues, internet problems, limited technical expertise, low-class engagement, disciplinary challenges, and uncooperative family. Empirical results reveal that internet issues and limited technical expertise significantly and negatively impact online teaching. However, resource issues, limited class engagement, disciplinary problems, and uncooperative family were not deemed significant in this study, suggesting no substantial impact on online teaching.

Recommendation

The dynamic nature of online teaching, coupled with the diverse backgrounds and circumstances of students and educators, contributes to the complexity of the challenges faced. As a result, there is no one-size-fits-all solution, and addressing the effectiveness of online education requires context-specific approaches. Educational institutions, policymakers, and practitioners need to consider the unique characteristics and challenges of their context when designing strategies and interventions for successful online teaching.

The study underscores the existence of influential factors affecting online teaching, prompting authors to propose recommendations for improvement. These include government financial aid to bridge the digital divide for students lacking devices and internet access, thereby ensuring equal opportunities for all. Additionally, teachers are encouraged to enhance online engagement by turning on cameras, using audio-visual aids, asking questions, and employing various technology tools for personalized learning experiences. Furthermore, the authors advocate for teacher training to create an engaging online learning environment, collaboration among government, NGOs, and academic institutions to educate parents about

online education, and the establishment of students participating in virtual classes. of a supportive home environment for

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