CHALLENGES IN PEDAGOGY DURING COVID -19

Dr. Madhu Gupta[*]
Dr. Manisha Sinha[**]

ABSTRACT

The sudden shift to online teaching as a result of the covid-19 pandemic has placed an enormous burden on teachers to quickly adapt to new pedagogical methods. They have been forced to learn and master various tools in order to deliver online classes, evaluate assignments, and track students' progress. The current study investigates the perceptions and challenges of teachers of classes XI and XII in school and those in university, who are expected to be familiar with ICT tools and platforms. The study employs both primary and secondary sources of information, and a total of 276 respondents took part in the survey by filling the questionnaire and providing us with the data needed. The percentage method, chi-square test, bar graphs and pie charts have been used to analyse and present the data.It is concluded that, following the pandemic, most teachers support blended teaching and have performed admirably, but have also faced significant stress and technological challenges in meeting the expectations of remote teaching. Software and tools used to deliver online education must be standardised.

KEYWORDS: *Covid-19, G Suite, ICT Tools and Platforms, Pandemic, Pedagogy, Remote Teaching.*

Introduction

During the Covid-19 crisis, remote teaching and learning went mainstream and, in many cases, the only way to impart education. The Covid-19 pandemic has created an unprecedented challenge in delivery of education. It resulted in large scale closure of schools, colleges and universities. While the switch to Remote Teaching-Learning during Covid-19 has been abrupt and nearly all stakeholders were not prepared to handle the changes, remote teaching learning is expected to increase in the future. The abrupt switch over to online teaching has placed an enormous responsibility on teachers to quickly adapt to the new methods of pedagogy. They have been forced to learn and master different tools to deliver online classes, evaluate assignments and review the progress of students. In some cases, these tools were structured and in many cases the tools have been improvised by the teaching community itself. Additionally, the teaching community has faced challenges in taking classes from home due to lack of reliable network and power infrastructure, assigned space at home and interruptions from the home environment.

One of the barriers to increased use of ICT is the lack of proper training for both schools and university teachers. This is often overlooked since it has a significantly higher cost. Lack of training, limitations of available technology at home, technical challenges and lack of proper equipment and tools make instructors feel uncomfortable to teach remotely. Many teachers consider teaching as their main role and view the ICT tools used for remote teaching as an addition to their daily tasks. Internal barriers that include fear of technology, computer anxiety, and badly defined roles are also faced by the Teachers.

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[*]   Associate Professors, Janki Devi Memorial College, University of Delhi, Delhi, India.
[**]   Associate Professors, Janki Devi Memorial College, University of Delhi, Delhi, India.

There have been studies to evaluate the teachers' challenges and perception of remote teaching during Covid-19 relating mainly to university students but there is a lack of sufficient research covering senior level school students as well. The present study explores the perceptions of, and challenges faced by, the teachers of classes XI and XII in school and those in the University, as they are expected to be familiar with the ICT tools and platforms

Objectives of Study

- To find out the most preferred tools/platforms used in online teaching by schools and colleges in private and public sector during COVID-19 pandemic.

- Challenges teachers are facing by unexpectedly switching to online classes due to the coronavirus outbreak specially with respect to technology, motivation and stress, communication & feedback and evaluation & assessment

- To find out the impact of gender, type of institution, level of numerical/lab work in subjects taught, and class taught on teachers' preference for online teaching and learning.

- To suggest what initiatives are needed on the part of Government, educational institutions, and society to overcome the different challenges faced by teachers in online teaching.

Data Collection and Research Methodology

The study uses both primary as well as secondary sources of information. The period of data collection is October 2020 to January 2021.Various secondary sources of information like Books, Reports, Journals, Magazines, Newspapers, Websites, and other published sources have also been used, for the purpose of the study.

Primary data is collectedwith the help of a structured questionnaire in google form.A total of 276 respondents(teachers) residing in Delhi-NCR have contributed to completing this research study by filling up the questionnaire and giving us the required data. Respondent teachers selected are those who are engaged in teaching higher level students (11th standard and above). The collected data has been fed into spreadsheets to arrive at the impact of covid-19 on the teaching process based on the views of the respondents. The percentage method, chi-square test, bar graphs and pie charts have been used to analyse and present the data.

Data Analysis and Interpretation

The present section tries to find out the most preferred platforms used in online teaching by schools and colleges, challenges teachers are facing by unexpectedly switching to online classes due to the coronavirus outbreak and the impact of gender, type of institution, level of numerical/lab work in subjects taught, and class taught on teachers' preference for online teaching. The chi-square test and bar graphs have been used to analyse and present the data.

- **To find out the most preferred platforms used in online teaching by schools and colleges in during COVID-19 pandemic**.
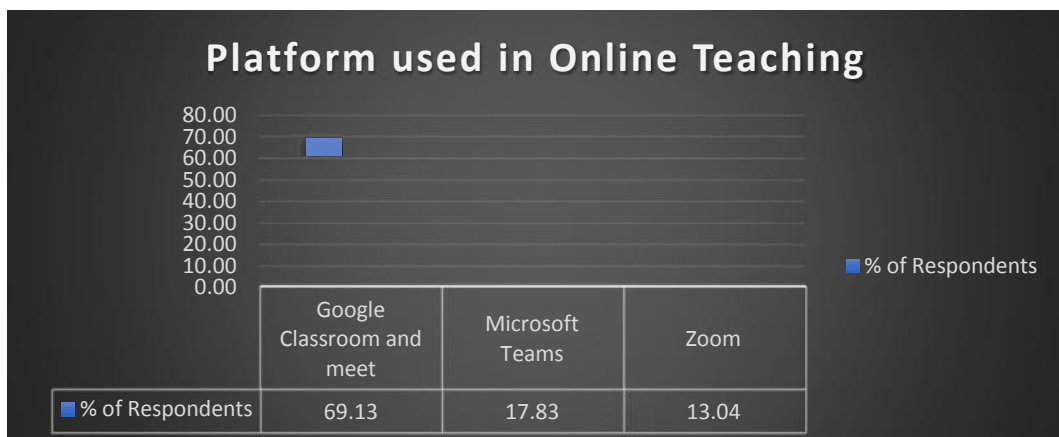

Platform used in Online Teaching

	Google Classroom and meet	Microsoft Teams	Zoom
% of Respondents	69.13	17.83	13.04

Figure 1: Platform used in Online Teaching

The most used platforms in online teaching by schools and colleges in during COVID-19 pandemic is Google Classroom and Meet (69%), followed by Microsoft Team (18%) and 13% used Zoom platform to teach online during pandemic.

- **Challenges teachers are facing by unexpectedly switching to online classes due to the coronavirus outbreak specially with respect to technology & utilities, motivation and stress, communication & feedback and evaluation & assessment**
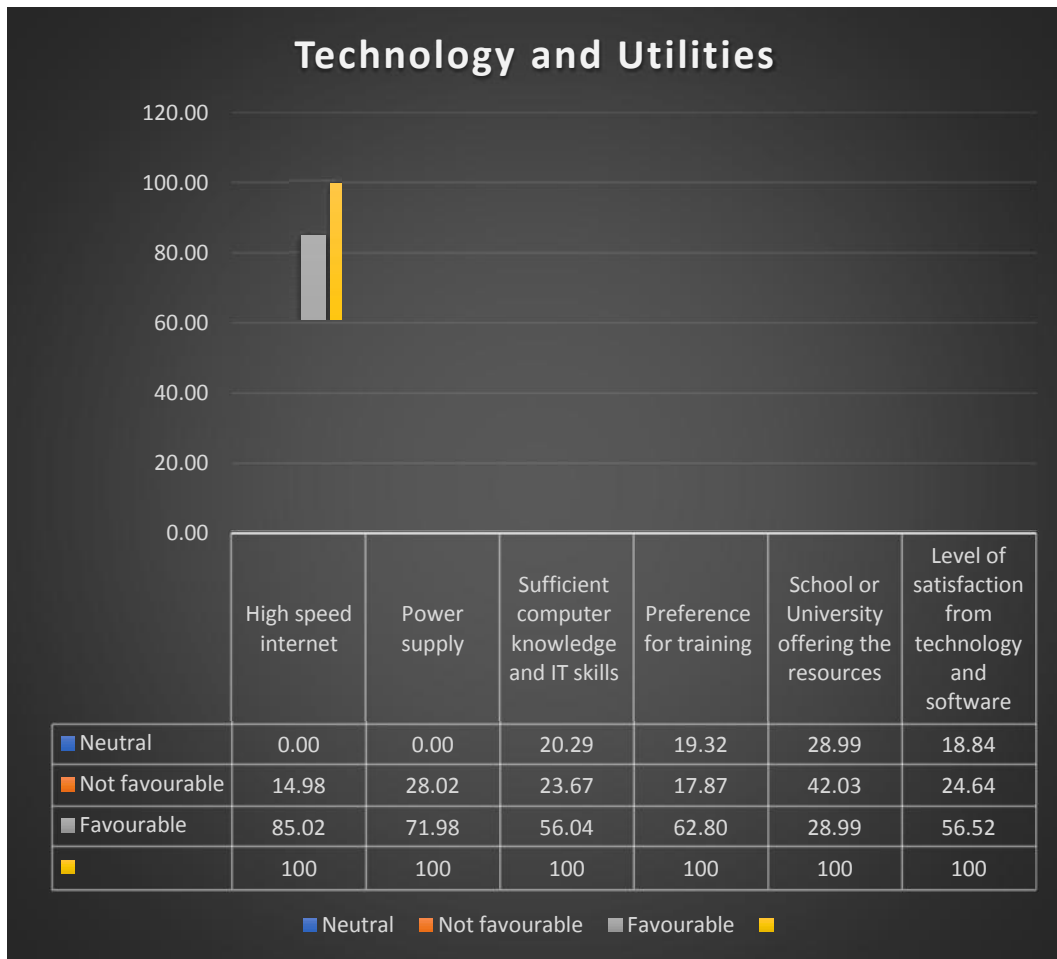 - **Technology and Utilities**

Technology and Utilities

	High speed internet	Power supply	Sufficient computer knowledge and IT skills	Preference for training	School or University offering the resources	Level of satisfaction from technology and software
■ Neutral	0.00	0.00	20.29	19.32	28.99	18.84
■ Not favourable	14.98	28.02	23.67	17.87	42.03	24.64
■ Favourable	85.02	71.98	56.04	62.80	28.99	56.52
■	100	100	100	100	100	100

■ Neutral   ■ Not favourable   ■ Favourable   ■

Figure 2: Technology & Utilities

The chief support system of the shift to online pedagogy is the technology. The factors of technology that the teachers' responses are sub divided into are; high speed internet, power supply, sufficient computer/IT knowledge, adequate training for conducting the lectures, availability of resources and the levels of satisfaction from the used platforms and software. The data reveals that over 85% of the respondents (teachers) have access to high-speed internet; approximately 72% have undisturbed electricity supply. The key factor being the adequate knowledge and computer skills to conduct the online lectures and about 56% of the total respondents are satisfied with the technology used for online teaching. However, 63% of the total respondents would prefer further enhancing their skills for conducting online lectures. 42% of the total respondents deny the involvement of schools or universities being helpful in offering the resources for conducting the lectures. About 56.5% of the respondents are satisfied with the technology and software currently in use for conducting the lectures.
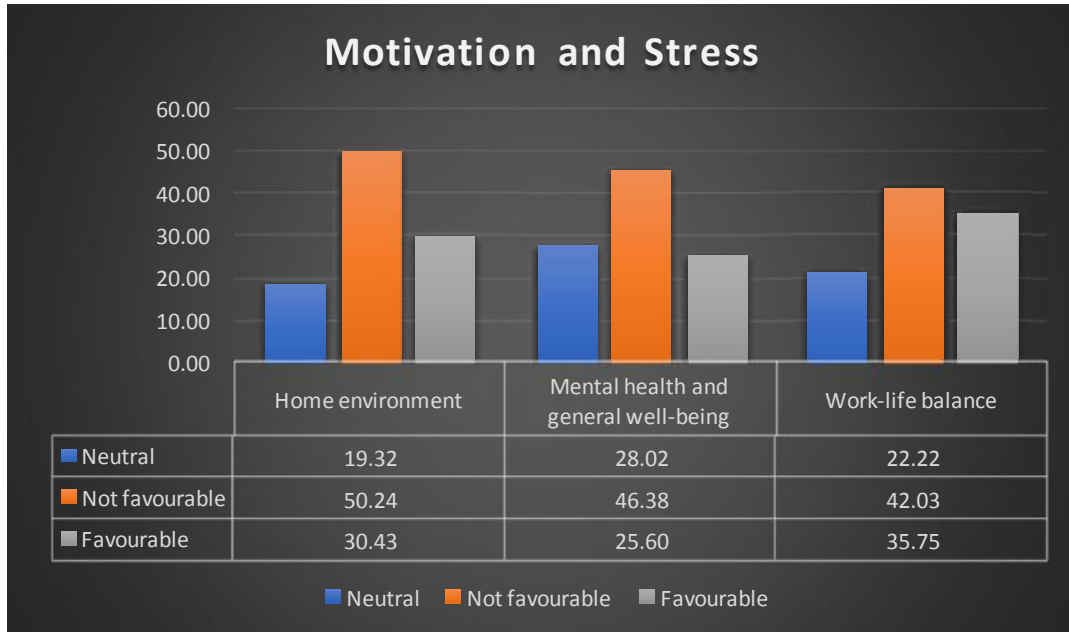
▪ **Motivation and Stress**

Figure 3: Motivation & Stress

Considering the impact of motivation and stress on the overall performance of an individual, the data reveals that about 46% respondents agree with the online shift adversely impacting their mental health and general well-being. Moreover, over 42% teachers reveal that online teaching negatively affecting their work-life balance. Over 50% respondents say that home environment is hindering their online lecture conducting.
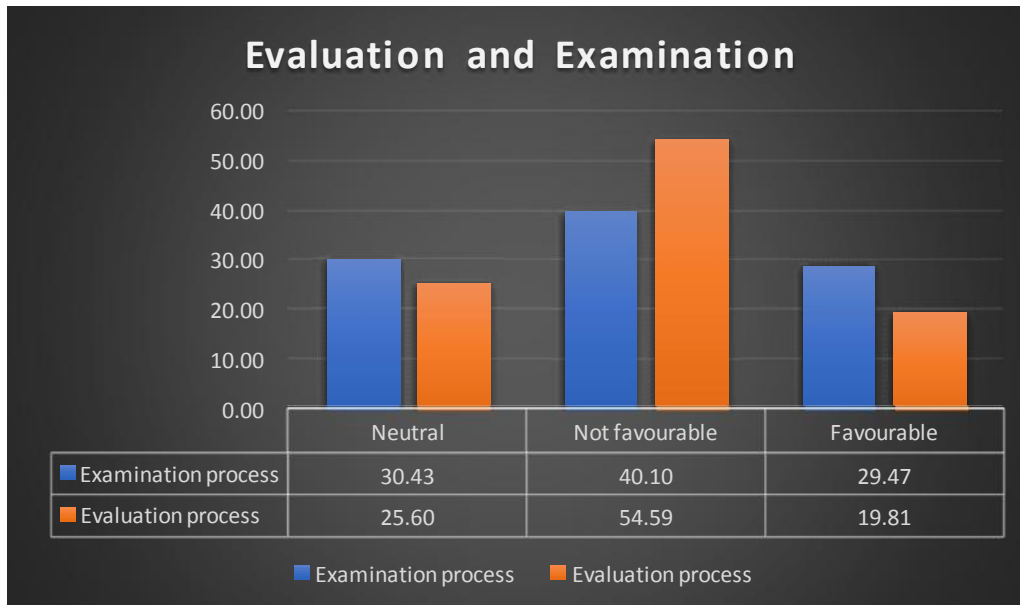
▪ **Evaluation and Assessment**

Figure 4: Assessment

Assessment or examination of learners is an important aspect of any teaching learning process. Our data reveals that only 29% of the total respondents are satisfied with the examination process via online mode. Followed by the examination process is the evaluation process and according to the data 55% of the total respondents finds online evaluation more complicated than traditional evaluation.
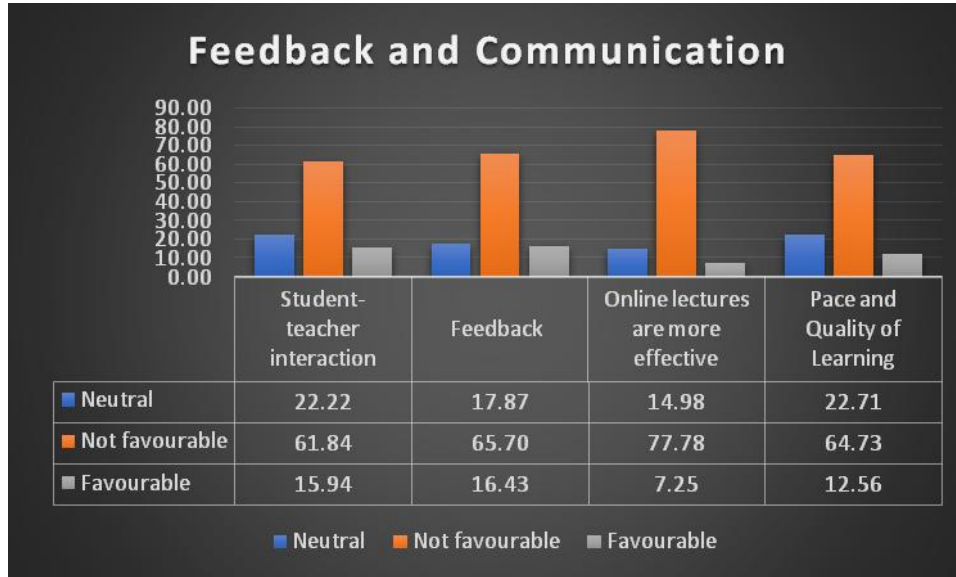
▪ **Feedback & Communication**

Figure 5: Feedback & Communication

Feedback and communication are the backbone of teaching and learning process. To study this aspect, four factors are studied viz. student teacher interaction, feedback process, effectiveness of the lectures delivered and pace and quality of learning. The data reveals that the student- Teacher interactions have subsequently decreased and about 62% of the total respondent's report lack of adequate interaction. Approximately 66% of the respondents find it difficult to get immediate feedback from the students. 78% of the teachers said traditional lectures are more effective than online lectures. The data also reveals that nearly 65% of the respondents believed that students do not absorb as much through remote teaching as traditional process of teaching and learning.

- **To find out the impact of gender, type of institution, level of numerical/lab work in subjects taught, and class taught on teachers' preference for online teaching.**

Table 1: Impact of gender, type of institution, level of numerical/lab work

Factor:	Gender	Type of Institution	Level of class taught	Proportion of Numerical or Lab work in the subject(s)
Pearson Chi-Square	3.818	.691	10.356	22.678
df	2	2	10	10
significance level	.05	.05	.05	.05
P value [Asymptotic Significance (2-sided)]	.148	.708	.410	.012

▪ **Impact of gender on teachers' preference for online teaching**

H_o **(Null hypothesis):** Teachers' preference for online teaching is independent of gender.

H_a **(Alternate hypothesis):** Teachers' preference for online teaching is dependent of gender.

since p value = .148 > 0.05 =   , we accept Ho

that is, teachers' preference for online teaching is independent of gender

- **Impact of type of Institution on teachers' preference for online teaching**

Ho (Null hypothesis): Teachers' preference for online teaching is independent of type of Institution.

Ha (Alternate hypothesis): Teachers' preference for online teaching is dependent of type of Institution.

since p value = .708 > 0.05 =   , we accept Ho

that is, teachers' preference for online teaching is independent of type of Institution

- **Impact of Level of class taught on teachers' preference for online teaching**

Ho (Null hypothesis): Teachers' preference for online teaching is independent of Level of class taught

Ha (Alternate hypothesis): Teachers' preference for online teaching is dependent of Level of class taught.

since p value = .410 > 0.05 =   , we accept Ho

that is, teachers' preference for online teaching is independent of Level of class taught.

- **Impact of proportion of numerical or lab work in the subject(s) taught on teachers' preference for online teaching**

Ho (Null hypothesis): Teachers' preference for online teaching is independent of proportion of numerical or lab work in the subject(s) taught.

Ha (Alternate hypothesis): Teachers' preference for online teaching is dependent of proportion of numerical or lab work in the subject(s) taught.

since p value = .012 < 0.05 =   , we do not accept Ho

that is, teachers' preference for online teaching is dependent on proportion of numerical or lab work in the subject(s) taught.

Conclusion

The COVID-19 pandemic has forced educational institutions all over the world to close, jeopardising academic calendars. Almost all educational institutions have switched to online teaching platforms in order to keep academic activities alive. This transition from traditional classroom teaching to online digital teaching will be long-lasting, and every economy must prepare for it. Video conferencing apps such as Meet, Teams and Zoom allow teachers to give live lectures to the entire class while also sharing reference documents on-screen. It also allows for real-time face-to-face interactions and immediate feedback between teachers and students. Our survey shows that G Suite for Education is most popular app used in online teaching during pandemic because it offers many other services such as Gmail, calendar, docs, sheets, forms, and many more besides Google meet and classroom in one app. There is no additional charge for call-in members, and the platform is safe. Most of the respondents in our survey are resident of Delhi NCR and are satisfied with internet connections and electricity supply at their home place and also with their computer knowledge and IT skills and with the technology and software they're currently using for conducting the online lectures. However, majority of the respondents would like further enhancing their skills for conducting online lectures and denied of getting any help from their schools or universities in offering the resources for conducting the lectures. As per our survey, this sudden transition from traditional classroom to online teaching is adversely affecting the motivation and mental stress of the teachers. Absence of physical exercise and peer-to-peer interaction and activities, extra workload generated during the lockdown, absence of domestic and other helpers etc caused mental distress in teachers such as anxiety or depression. Many respondents also revealed that teaching from home is disturbing their work-life balance and their home environment is not very favourable for taking online classes. Many factors at home like background noises of television, chatting family and friends, construction site, pets etc distracts teachers during online teaching. All teachers may not have enough separate space, furniture and other equipment to take classes from home.

Learning and teaching is followed by the assessment test. The present survey indicates that the pedagogical shift has a negative impact on the evaluation and examination processes and that the majority of the respondents are not satisfied with it. Cheating during examination is the main concern of the online exam as learners take the exam in their own surrounding and on their own computer and strict invigilation like in a face-to-face exam is not possible. The different platforms used by the institutions for evaluation have been newly developed and the respondents are less accustomed to them, so they find it more complicated than with traditional script evaluation.

Another important factor in teaching learning is proper communication and timely feedback on assignments and during class by the teacher to student's queries. The present study indicates that online pedagogy lacks in this front. Most of the respondents are not satisfied with the student-teacher interaction and feedback process in digital teaching. They feel that in traditional classrooms, they can provide learners with immediate face-to-face feedback during the lecture or during specified tutorial hours while in virtual classrooms, students find it difficult to ask questions and resolve queries. Many learners do not attend live online lectures to save data limits and rely on recordings and sometimes they have interrupted internet connectivity with slow speed because of which also rapid feedback is missing in online learning.

Another finding of this survey indicates that most teachers support blended learning after the pandemic, and teachers' preference for online learning is independent of gender, type of institution, or grade of class taught, but is dependent on the proportion of numerical or lab work in the subject(s) taught. This shows that most teachers in Delhi NCR, can adapt to technology and prefer online digital education, with the exception of those who teach numerical or lab-based papers. This may be because, with the current affordable teaching platforms, it is impossible to teach numerical papers like mathematics and accounting, as well as science subjects that require a physical lab.

Suggestions

The Covid-19 pandemic has catapulted the instructor into online teaching without any preparation. The instructors have performed admirably but at the same time have faced significant stress and technological challenges in meeting the expectations of the remote teaching. As online teaching turns mainstream over the next few years, the critical aspect of teacher training cannot be ignored. Structured and standardized teacher training courses are the need of the hour.

Standardisation is also required in software and tools used to deliver online teaching. Currently a plethora of tools to teach and evaluate are being used and Universities must standardise on the tools, so the learning curve is shorter and a uniform teaching and learning experience is available to the teachers and leaners. Standardisation of tools would also result in easy availability of the lectures online and in a standard format. Further, E-labs and affordable teaching platforms should be developed to teach numerical papers like maths and accounts.

Contact points for teachers and students for face-to-face interaction just be established. These could be in the form of a blended learning pedagogy where regular interactions and classes are organised for the students to interact with the faculty.

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