COVID-19- IMPACT ON LEARNING PROCESS

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ABSTRACT

Remote and online learning went mainstream during Covid-19 as most of the universities and schools were closed. Most teachers and students were not prepared for this abrupt change and were not familiar with the use of ICT tools for remote teaching learning. The non-availability of suitable power and telecom infrastructure, availability of universal tools for teaching and evaluation were great challenges for both teachers and students alike. The present study explores the perceptions of, and challenges faced by, the students of classes XI and XII in school and those in the University, residing in Delhi NCR.A total of 274respondents participated in the study by answering a structured questionnaire. Percentage method, chi-square test, bar graphs and pie charts have been used to analyse and present the data. The study concludes that students' preference for online learning is independent of income level, gender, level of numerical/lab work in subject studied and their educational level. The remote teaching learning is expected to stay in the future, the government as well as the educational institutions should focus on improving infrastructure and training of the teachers and the students alike.

Keywords: *Covid-19, Learners, Technology, Evaluation, Tools, Stress.*

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Introduction

The Covid-19 pandemic has created an unprecedented challenge in delivery of education as it resulted in large scale closure of schools. Remote teaching and learning went mainstream and, in many cases, the only way to impart education during the Covid-19 crisis.

The access to remote education during Covid-19 has been impacted by socio-economic factors like gender, family income, rural or urban area and the digital divide. Remote Learning has been further impacted due to lack of computers skills and unavailability of tools adding to the inequality in access to education.

Challenges remain in the mechanism to deliver a holistic learning to all sections of the society with emphasis on experimental and hand-on learning, research, innovation and critical thinking. These include teacher training, access of ICT devices, communication infrastructure, availability of tools for teaching, evaluation and feedback.

There have been studies to evaluate the student challenges and perception of e-learning but not many studies evaluate the same during Covid-19. Further the studies relate mainly to University students and there is a lack of sufficient research covering school students. The present study explores the perceptions of, and challenges faced by, the students 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 the Study

- To find out the most preferred platforms used in online teaching by schools and colleges during COVID-19 pandemic.
- To find out which one is the most used device for online learning among students.

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- What challenges students are facing by unexpectedly switching to online classes due to the coronavirus outbreak specially in infrastructure and Technology, motivation and stress, communication and feedback, and their assessment and evaluation.
- To find out the impact of income level, gender, level of numerical/lab work in subject studied and educational level on students' preference for online teaching and learning.

Data Collection and Research Methodology

The study uses both primary as well as secondary sources of information. The primary data has been collected with the help of a structured questionnaire. 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.

A total of 274 respondents(students) residing in Delhi-NCR have contributed to this research study by filling up the questionnaire and giving us the required data. The percentage method, chi-square test, bar graphs and pie charts have been used to analyse and present the data.

Limitations of the Study

The area of survey is restricted to Delhi NCR and respondent students selected are those who are engaged in higher level of studies (11th standard and above). This survey is based on sampling method and does not disclose the character of the entire population and is done for a period from October 2020 to January 2021 during the lockdown restrictions. Because of covid-19, only online responses are collected via google form.

Thus, the results and conclusions are suggestive in nature.

Data Analysis and Interpretation

The present section tries to find outthe most preferred platforms used in online teaching by schools and colleges during COVID-19 pandemic, the most used device for online learning among students, challenges with respect to infrastructure, Technology, motivation, stress, communication and feedback, and their assessment and evaluation. It also tries to find out the impact of income level, gender, level of numerical/lab work in subject studied and educational level on students' preference for online learning.

- **The most preferred platforms used in online teaching by schools and colleges during COVID-19 pandemic.**

Various video conferencing apps used in online teaching give possibility of real-time face to face interaction and feedback from students. Among the various platforms used, the most popular is Google meet (27%) followed by Google classroom and Microsoft Teams (20% each) (Fig1).
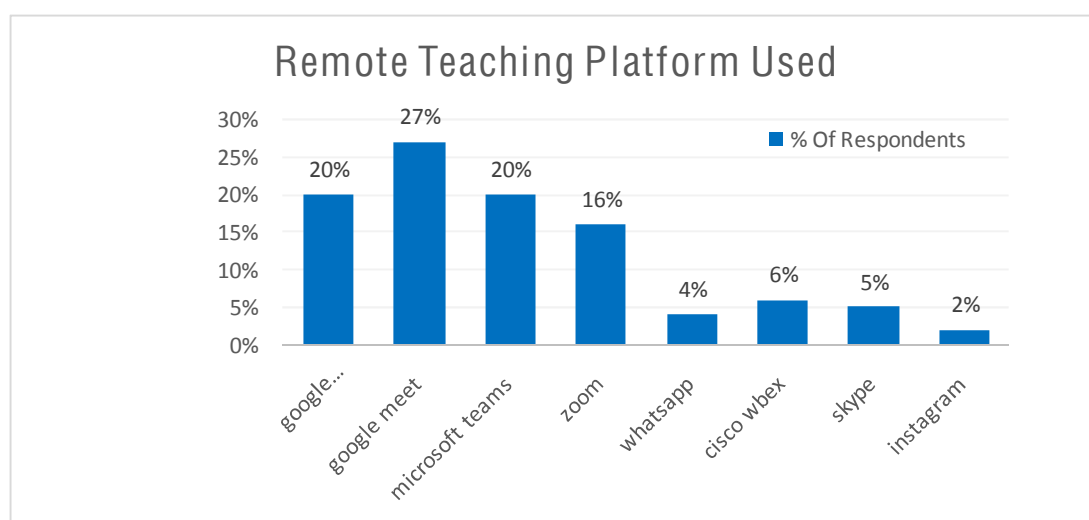

Figure 1 Remote Teaching Platform Used

- **The most popular device used for online learning among students.**

The study shows that the most popular device used by students for online learning during pandemic is mobile phones (61%), while 25% used laptop/desktop and 13.5 % used tablet (Fig2).
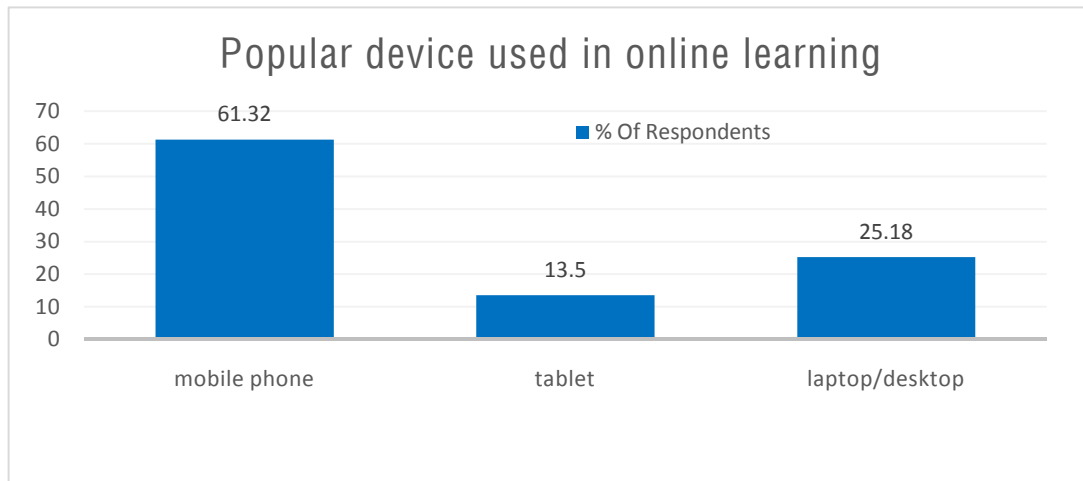

Figure 2: Popular devices used

- **Challenges students are facing by unexpectedly switching to online classes due to the coronavirus outbreak with respect to infrastructure and Technology, motivation and stress, communication and feedback, and their evaluation.**

Infrastructure and Technology

A key requirement for online learning is continuous Internet access and electricity, as well as familiarity of basic computers and apps. Most of the student respondents in our survey are satisfied with electricity supply and internet connections at their home place and with the learning tools and platforms used for online learning(Fig3)
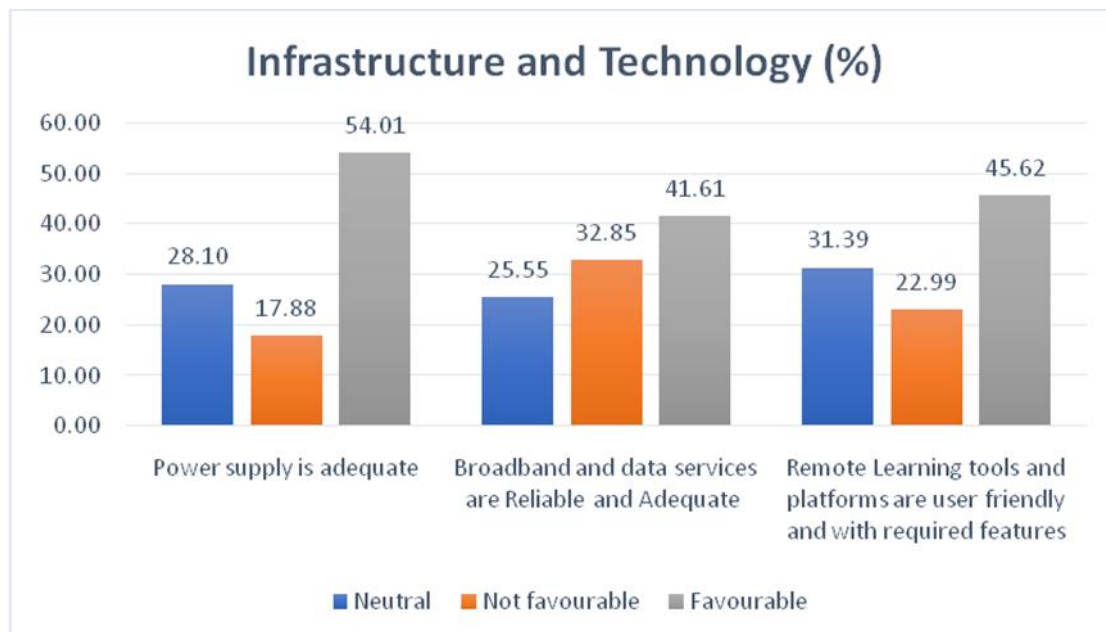

Figure 3: Infrastructure and Technology

Motivation and Stress

In classroom learning students could participate in extracurricular and cocurricular activities during college/school hours. It is also tough for them to concentrate and absorb what is taught online due to distractions at home. The data reveals that 48% of the respondents think that online learning methods have significantly impacted their mental health and general wellbeing (Fig4)
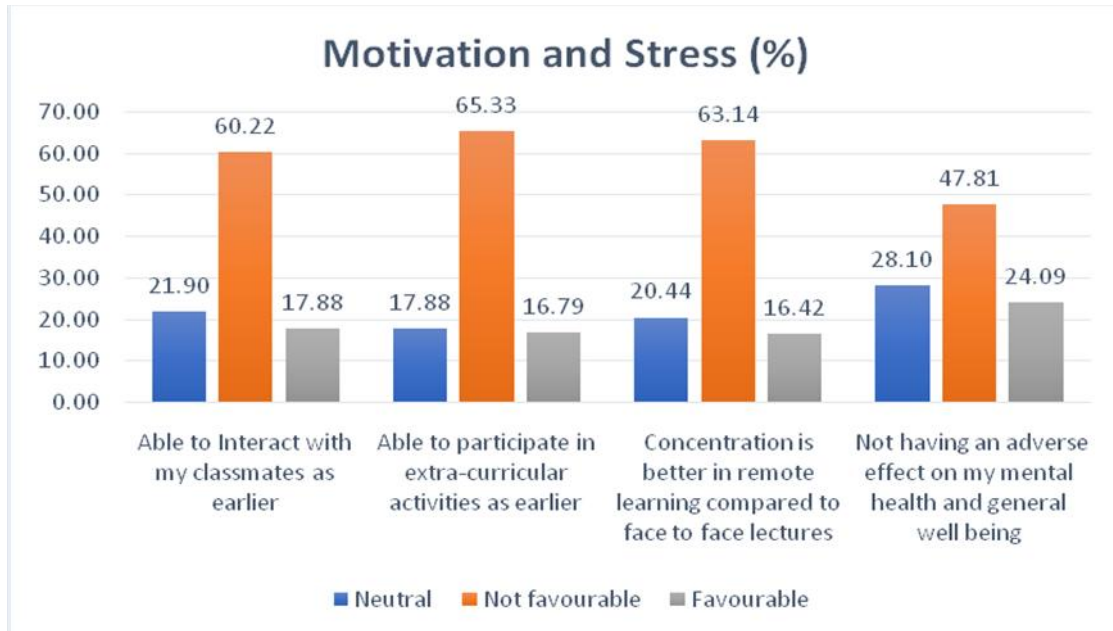

Figure 4: Motivation and Stress

Communication and Feedback

Students benefit when communication and feedback is effective as it facilitates learning. Feedback and communication is satisfactory in online learning except in the area of query resolving(Fig5).
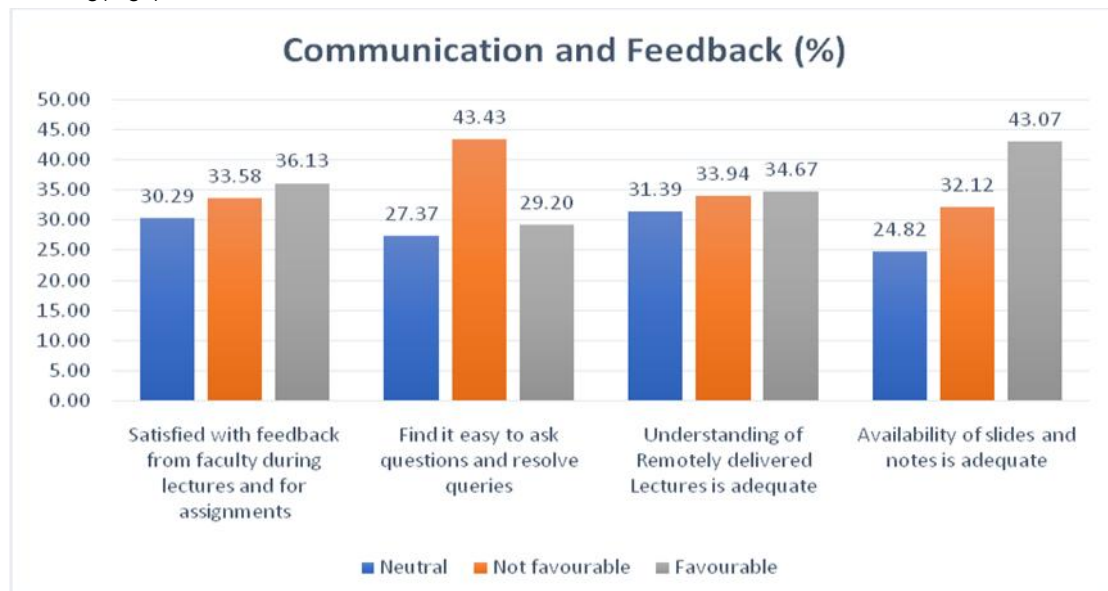

Figure 5: Communication and Feedback

Assessment and Evaluation

As far as smooth submission and assessment methods are concerned there's a very fine line marking a difference in the opinions of the students as 36.13% of the respondents are not satisfied and 36.77% are satisfied with the evaluation process as per our study (Fig6).
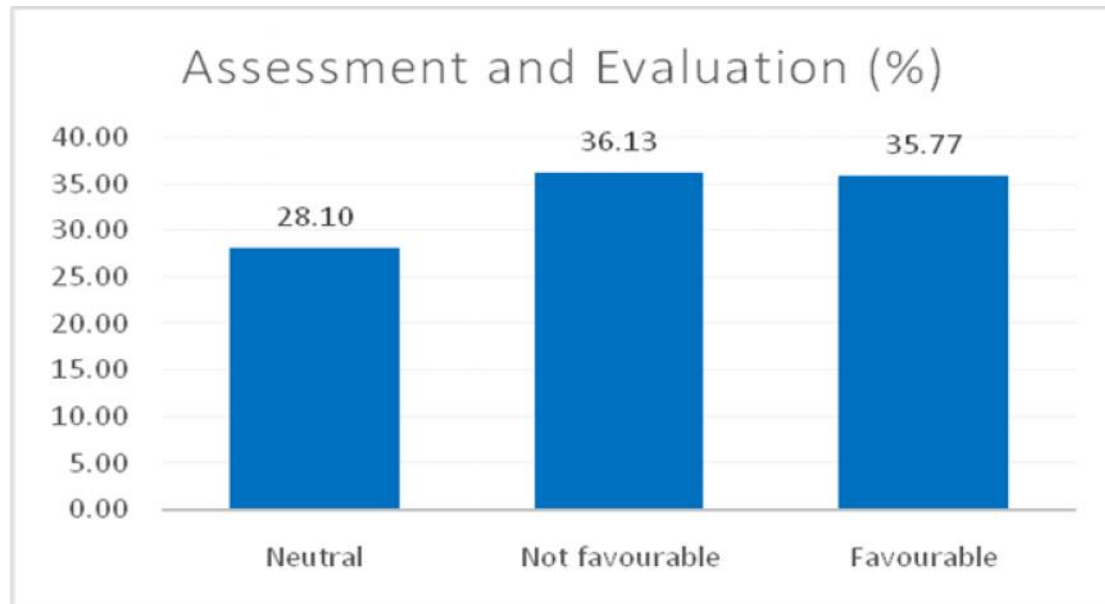

Figure 6; Assessment and Evaluation

- **The impact of income level, gender, level of numerical/lab work in subject studied and educational level on students' preference for online learning.**

Table 1: impact of income level, gender, level of numerical/lab work

Factor:	Gender	Family Income Level	Level of enrolment	Proportion of Numerical or Lab work in the subject(s)
Pearson Chi-Square	7.436[a]	11.363[a]	5.739[a]	9.392[a]
df	4	8	4	10
significance level	.05	.05	.05	.05
P value [Asymptotic Significance (2-sided)]	.115	.182	.220	.495

- **Impact of gender on students' preference for online learning**

Ho (Null hypothesis): Students' preference for online learning is independent of Gender.

Ha (Alternate hypothesis): Students' preference for online learning is dependent of Gender.

Since p value = .115 > 0.05 = , we accept Ho, that is, students' preference for online learning is independent of Gender

- **Impact of Family income level on students' preference for online learning**

Ho: Students' preference for online learning is independent of Family income level.

Ha: Students' preference for online learning is dependent of Family income level.

Since p value = .220 > 0.05 = , we accept Ho, that is, students' preference for online learning is independent of Family income level.

- **Impact of level of educationon students' preference for online learning**

Ho: Students' preference for online learning is independent of level of enrolment.

Ha: Students' preference for online learning is dependent of level of enrolment.

Since p value = .182 > 0.05 = , we accept Ho, that is, students' preference for online learning is independent of level of education.

- **Impact of Proportion of Numerical or Lab work in the subject(s) on students' preference for online learning**

Ho: Students' preference for online learning is independent of Proportion of Numerical or Lab work in the subject(s).

Ha: Students' preference for online learning is dependent of Proportion of Numerical or Lab work in the subject(s).

Since p value = .495 > 0.05 =   , we accept Ho, that is, students' preference for online learning is independent of Proportion of Numerical or Lab work in the subject(s).

Conclusion and Suggestions

The results of the data analysis show that out of various devices used by the respondents for attending online classes mobiles (Smartphone) is their first preference and mobile data is their main source of internet. Google meet followed by Google classroom and Microsoft Teams is the most preferred platform.

Most of the student respondents in our survey are resident of Delhi NCR and are satisfied with electricity supply and internet connections at their home place and with the learning tools and platforms used for online learning.

The data reveals that 48% of the respondents think that online learning methods have significantly impacted their mental health and general wellbeing. Distractions in the home environment and from other apps on the learning devices is adversely affecting the concentration while learning. Majority of them reported that they are unable to interact with their classmates and participate in extra-curricular activities as earlier. This social isolation is leading to several mental health issues like stress, anxiety and negative thinking.

Most of the respondents are satisfied with the availability of slides and notes and are able to understand the remotely delivered lectures. They feel satisfied with the interaction with faculty during classes and for assignments but do not find it easy to ask questions and resolve queries during online classes.

As far as assessment and evaluation is concerned our study shows no difference between satisfied and dissatisfied respondents. Though unethical modes/means used for taking examinations remains one of the most serious drawbacks ofE-Learning.

The survey indicates, students' preference for online learning is independent of income level, gender, level of numerical/lab work in subject(s) studied and theirenrolmentlevel. This shows that learners from all sections of the society can adapt well with the technology.

Suggestions

The analysis and the conclusions of the study point to a need to strengthen the infrastructure for online delivery platforms. The availability of reliable high-speed internet is must for the delivery of the content. Universalisation of remote learning platforms is preferred so that the teacher's and the students familiarise themselves with a single tool instead of trying to master many different software tools. A suitable training program for students as well as teachers on the effective use of this platform for remote learning and evaluations is essential.

A suitable home environment is desirable for effective online education. Where such an environment is not available, easy access to Internet cafes and designated remote learning centres, is recommended.

To address the anxiety and stress levels of the students, counsellors must be readily available and regular counselling sessions are needed. Besides online classes, offline sessions should be also organised from time-to-time so that the students can meet and interact with their peers.

Examination and evaluation are a challenge in a remote learning scenario. A fool-proof method is to be devised to maintain sanctity of the examination process. It could be in the form of conducting examinations through designated remote learning centres.

A blended learning methodology is desirable to have the best of the online and offline learning process. The practical lab work and the examinations can be conducted in offline mode or through the designated centres. As the blended learning environment provides opportunities for the students to interact with the teachers and peers and also to learn at their own pace, the Government and the educational institutions should focus the efforts and resources in facilitating the same.

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