

Online Education : Emerging Substitute of Traditional Classroom Teaching due to COVID-19

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The global pandemic named COVID-19 has shaken the world affecting adversely all sectors in India as elsewhere. The shutdown of educational institutions during lockdown and unlock phases posed a challenge for continuity of education. This forced the universities and the colleges to start online classes for which neither the teachers not the students were prepared and trained. In this background, an attempt was made for investigating the suitability of online education as an emerging substitute of traditional classroom teaching during such pandemics. Responses of 384 students collected in August 2020 through online survey have shown that platforms like Google Product, Zoom and Youtube Live were used by 92% students. More than three-fourth accessed the classes through Androids smart mobile phones. Empirical findings have shown that only by one-third students considered online teaching as a good substitute of traditional classroom teaching. Not only this, the mix of both types of teaching was considered more effective only half of the selected students. The study underlines to undertake necessary measures for making online education as an effective substitute of traditional classroom teaching.

[**Keywords** : Online education, Classroom teaching, Digital platforms, COVID-19]

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1. Introduction

The novel coronavirus disease (COVID-19) made its appearance in Wuhan city of China towards the end of 2019. Its rapid global spread prompted the World Health Organization (WHO) to declare it as 'pandemic' on March 11, 2020. Most of the countries initiated a common goal to curb the spread of this infectious disease by imposing lockdown, social/physical distancing, restrictions on international and national flights and other transport systems, closure of schools/colleges/universities etc. The closures of the educational institutions due to the outbreak of COVID-19 lead to an unprecedented impact on traditional classroom teaching prevalent since the Britishers introduced modern system of education in India.

The first COVID-19 positive case was reported in India in Kerala on January 30, 2020. The government of India along with various state governments initiated several strategies to control the spread of the disease. Since March 25, India observed four phases of nationwide lockdown, which was extended up to May 31, 2020. The unlock periods paved their way from June 1 with restrictions especially in containment zones but educational institutes remained close leading to the only option of teaching through online or virtual mode.

Emphasising that technology and innovation will be the key to "democratising development and prosperity" in overcoming the economic and social challenges of a post-Covid-19 world, Union Minister of Commerce, Industry and Railways, Mr. Piyush Goyal, called for a mix of "virtual education and classroom education" in tapping the current potential for online education. Amid the novel coronavirus pandemic unwittingly opening up a huge potential for virtual learning, Mr. Piyush Goyal said the current potential for "virtual education" was huge - estimated at US dollars ten billion-, adding, it would be preferable to "do a hybrid of virtual education and classroom education" in helping the youth cope with the present challenges and global competition.

2. Objective of this Paper

The digital revolution in the higher education system in colleges and universities witnessed a new phase through online lectures, online examination and assessments teleconferencing, open books, presentations, slide sharing, national and international

webinars as well as research methodology and faculty development workshops. This was a positive step towards bringing the students and teachers together at one platform for completing courses to continue the studies and engage them in productive activities even in lockdown period, but as a coin has always two sides, the online education was confronted with many challenges as well. Understanding the teaching-learning process in this crisis period is imperative to design effective interventions for the smooth running of teaching and learning.

With this backdrop, the present study was undertaken to investigate the impact of COVID-19 on online education in colleges/universities. Its specific objectives were to know the best and most convenient platform and operating system being used by selected students for online classes; to find out the impact of background attribute/variable; and to investigate the views of students about online education vis-a-vis traditional classroom teaching.

3. Methodology

The universe of this study was graduate, post-graduate and doctoral students pursuing their studies in various universities and/or affiliated colleges in states and union territories of India. As the universe was very large and vague in nature, it was not possible to draw a definite sample. Only those students have been included who responded to an online survey using questionnaire as Google form. A structured questionnaire link using 'Google form' was sent to students in August 2020 through various social media platforms. It is a type of convenience sampling. A total of 384 students provided complete information regarding the survey by filling up the form and returning it timely. This is a type of unrestricted self-selected survey which is used in online researches. Unrestricted, self-selected surveys are those that are open to the public for anyone to participate in (Couper, 2000). The data thus collected were subjected to analysis using SPSS package. Statistical technique of Chi-square has been used to find out the association between two variables.

4. An Overview of Literature

COVID-19, a global pandemic, has created a situation forcing governments to put in place various safety measures to contain the

spread of the virus like lockdown, social distancing, washing hands frequently, sanitizing our surroundings and taking all the precautionary measures. All the educational institutions, religious places, government and private offices, markets, courts, banks etc. were closed as a preventive measure to contain the spread of virus. The lockdown has been a tough period for schools/colleges/universities like all other sectors and/or sub-systems of society (Mahajan, 2020). Educational institutions started online classes and examinations knowing well that neither teachers nor students were prepared for it and many of them lacked basic facilities like android mobiles/laptops/desktops and internet connections. Many scholars started exploring the impact of online education on students at various levels during lockdown periods and even during four unlock periods.

India Today (2020) reported that there is no doubt that the teaching-learning process in COVID-19 pandemic crisis is imperative to design effective interventions for the smooth running of teaching and learning in view of the closure of educational institutions. Kapasia et. al. (2020) investigated the impact of lockdown on learning status of undergraduate and postgraduate students during COVID-19 pandemic. Their study of 232 students in West Bengal showed that they were using android mobile for online classes. They were facing various problems like depression, anxiety, poor internet connectivity, and unfavourable study environment at home. These problems were more for those students from remote areas and marginalized sections.

Gonzalez et al. (2020) have reported a significant positive impact of COVID-19 of teaching-learning efficiency and performances by adopting online learning strategies. According to Manzoor (2020), the online mode of the teaching-learning process is not only discriminatory to poor and marginalized students, but also for hearing-impaired students. Jena (2020) has elaborated the merits and demerits of online learning platforms and highlighted tools and techniques for online learning which can ensure the continuity of education. With this backdrop, the present study aims to identify the learning status, mode of learning, and problems related to study during this lockdown amidst the COVID-19 pandemic. Mukhtar et al. (2020) have supported the use of online learning in medical and dental institutes due to its various advantages in Pakistan. As these types of learning modalities are student-centered, they are easily manageable

during this lockdown situation. Dhawan (2020) has also underlined the importance of online learning and e-learning modes in the time of such crisis as coronavirus. She has highlighted on the growth of EdTech Start-ups and given suggestions for academic institutions for dealing with challenges associated with online learning. Shahzad et al. (2020) have compared males and females to E-learning portal usage in Malaysia. The study included service quality, system quality, information quality, user satisfaction, system use, and E-learning portal success. The empirical data of 280 students from the different universities of Malaysia were analyzed using the Partial Least Squares Structural Equation Modelling. The study further divided the full model into two domains, i.e. female and male. In the male model, information quality and system quality had direct relationships with user satisfaction. At the same time, there was a positive relationship between user satisfaction and E-learning portals. Likewise, in the female model, E-service quality and Information quality both are supported by system use and user satisfaction. System quality has a positive relationship with user satisfaction, and user satisfaction has a positive relationship with E-learning portals.

5. Results and Discussion

Before analyzing the responses of selected students on various platform used for online classes and their views on online classes in comparison to traditional classroom teaching, it is imperative to know the background of respondents. The following table-1 provides data on the background of respondents, i.e. the profile of the study participants :

Table-1 : Background of Respondents

S.No.	Attribute/Variable	Frequency	Percentage
1.	Age Group		
	Upto 21 years	148	38.5
	More than 21 years	236	61.5
	Total	384	100.0
2.	Gender		
	Male	121	31.5
	Female	263	68.5
	Total	384	100.0

3.	Class of Study		
	Graduation	109	28.4
	Post-graduation	262	68.2
	Doctorate	13	3.4
	Total	384	100.0
4.	Stream of Study		
	Arts	140	36.5
	Commerce	64	16.7
	Science	113	29.4
	Design	52	13.5
	Others	15	3.9
	Total	384	100.0
5.	Type of Family		
	Nuclear	174	45.3
	Joint	160	41.7
	Single Parent	50	13.0
	Total	384	100.0
6.	Monthly Family Income (Rupees)		
	Below 50,000	194	50.5
	50,000 to 1 lakh	99	25.8
	Above 1 Lakh	91	23.7
	Total	384	100.0
7.	Residential Background		
	Rural	128	33.3
	Urban	256	66.7
	Total	384	100.0

Data displayed in table-1 showed that a little less than two-thirds of them were aged more than 22 years. The number of female students was more than double in comparison to male. Over two-third of the students were pursuing post-graduation; arts and science streams had more students than commerce, design and others; were more from nuclear and joint families than from single parent families; half from monthly income of less than Rs. 50,000 and another half from more than monthly income of more than Rs. 50,000

and two-third from rural background. Thus, the sample was heterogeneous one representing students from different age groups, sexes, class and stream of study, type and monthly income of family as well as residential background.

A number of platforms are used for online classes by the students. The following table provides the responses of selected students on the best & most convenient platform for online classes :

Table-2 : Best & Most Convenient Platform for Online Classes

S.No.	Platform	Frequency	Percentage
1.	Google Product	150	39.1
2.	Zoom	90	23.4
3.	Youtube Live	65	16.9
4.	Whatsapp	33	8.6
5.	Other	29	7.6
6.	Microsoft Product	10	2.6
7.	Skyp	7	1.8
	Total	384	100.0

It may be seen that three convenient platforms were mostly used by 92% students. They were Google Product, Zoom and Youtube Live in order of preference.

Debate on suitability and viability of online classes in India during COVID-19 pandemic in view of closure of all types of educational institutions started as the neither institutions nor staff members (teachers) and students were accustomed for it. Not only this, the teachers never had any training for developing and delivering E-content during their service tenure and in faculty development programmes/refresher/orientation courses they attended as part of their promotion in the colleges and universities. Similarly, the students were not equipped with necessary tools and techniques for attending online classes. All the teachers and students did not have laptop/desktop at their disposal. Even all of them did not have android mobiles with sufficient internet packs, especially those from the marginalized sections and remote rural/tribal areas having weak internet signals. It is in this context that the selected students were asked to rate online classes on five-point scale, i.e. outstanding, very good, average, not good and poor. Their responses are shown in table-3 on next page :

Table-3 : Rating of Online Classes at a Five-point Scale

S.No.	Rating	Frequency	Percentage
1.	Outstanding	32	8.3
2.	Very Good	126	32.8
3.	Average	147	38.3
4.	Not Good	54	14.1
5.	Poor	25	6.5
	Total	384	100.0

It may be observed from the responses in the table above that slightly more than one-third selected students rated the online classes as very good and almost one-third as average. If we combine these two categories, the proportion came to be little less than two-third (71.1%). On the other hand, one-seventh of them rated online classes as not good. If we add those students who rated them as poor, the proportion became one-fifth (20.6%). Among the background attributes/variables, the stream of study and gender showed significant association with rating of online classes (Asymptotic 2-sided Significance at .005 levels).

An attempt was also made in this study to find out the operating system used for accessing online classes by the selected students. The following table shows the relevant data on this aspect :

Table-4 : Operating System used for Accessing Online Classes

S.No.	Operating System	Frequency	Percentage
1.	Android	294	76.6
2.	iOS	43	11.2
3.	Mac-OS	2	0.5
4.	Windows	35	9.1
5.	Others	10	2.6
	Total	384	100.0

It is evidently clear that almost three-fourth selected students used Android as operating system for accessing online classes indicating the fact that mobile is most popular for joining online classes. One-eleventh used any one version of Windows. Among the background variables, residential area and age of the selected students showed significant association at .001 levels with the operating system used for accessing online classes.

The following table depicts responses of selected respondents regarding the medium used for accessing online classes :

Table-5 : Medium used for Accessing Online Classes

S.No.	Medium	Frequency	Percentage
1.	Smart Phone	315	82.0
2.	Laptop	53	13.8
3.	Other	16	4.2
	Total	384	100.0

The above table shows that more than three-fourth selected respondents used smart phones for accessing online classes. Laptop was used by nearly one-eighth students. Among the background variables/attributes of students, residential area and gender showed significant association at .001 levels with the medium used for accessing online classes.

Now, comes the real issue of online classes/teaching during COVID-19 period for continuing education at various levels, including the higher education, during lockdown as well as unlock periods when schools/colleges/universities were closed as a measure to contain coronavirus. There are two crucial issues involved: first, is the online teaching a good substitute of traditional classroom teaching and second, is the traditional classroom teaching supplemented with online teaching by providing E-study material could be more effective or not. Let us these issues one by one. The following table gives the break-up of selected students on as to whether the online teaching a good substitute of traditional classroom teaching or not :

Table-6 : Online Teaching is a Good Substitute of Traditional Classroom Teaching

S.No.	Response Category	Frequency	Percentage
1.	Agree	124	32.3
2.	Neutral	134	34.9
3.	Disagree	126	32.8
	Total	384	100.0

Data presented in the table above shows that the selected students are equally divided on this issue as nearly one-third showed have shown agreement, another one-third disagreement (almost the

same as those who showed agreement) and remaining one-third remained neutral on this issue. Only stream of study among background variables/attributes had asymptotic significant (2-sided) association at .001 level with online teaching as a good substitute of traditional classroom teaching.

The following table gives the break-up of selected students on the issue of traditional classroom teaching supplemented with online teaching by providing E-study material could be more effective :

Table-7 : Traditional Classroom Teaching Supplemented with Online Teaching by providing E-study Material could be more Effective

S.No.	Response Category	Frequency	Percentage
1.	Agree	218	56.8
2.	Neutral	104	27.1
3.	Disagree	62	16.1
	Total	384	100.0

It may be observed that more than half of the selected students agreed that the traditional classroom teaching supplemented with online teaching by providing E-study material could be more effective, whereas, a little more than one-fourth remained neutral. Only remaining nearly one-sixth seemed to be disagreed that even mix of these two types of teachings would not be more effective. It seems that probably only those who are more equipped with the tools/media with high speed internet facilities as well as conducive and comfortable atmosphere in their homes are in favour of supplementing traditional classroom teaching with online teaching by providing E-study material. However, none of the background variables/attributes showed significant association with this issue.

6. Conclusion

The whole educational system from elementary to higher levels has collapsed globally during the lockdown period of the novel coronavirus disease 2019 (COVID-19). India too has been badly affected since the beginning of April 2020. As a consequence, education has changed dramatically during lockdown and unlocks periods, with the distinctive rise of online learning, whereby teaching is undertaken remotely and on digital platforms. Though the comparative research on learning outcomes in digital education versus face-to-face classroom settings has a long history, dating back

to the 1920s in Europe, USA and other highly developed countries, still this type of research got impetus in India only during the on-going coronavirus pandemic. Arguments, both in favour and against online education in schools, colleges and universities, have been put forward in Indian scenario also.

This study has shown that online teaching was considered good substitute of traditional classroom teaching only by one-third students only. Not only this, only half of the selected students agreed that the traditional classroom teaching supplemented with online teaching by providing E-study material could be more effective. This amply demonstrates the fact that many steps need to be taken including infra-structural development and appropriate training to students and teachers for becoming accustomed for online teaching. There is need to arrange refresher and orientation courses for the teachers for preparing E-contents and teaching students on digital mode. Even the teachers have to take this challenge as an opportunity to go for virtual classrooms, virtual learning and teaching. Infra-structure for digital teaching in colleges and universities should be given priority for adapting to technology and virtual engagement of students. We also have to keep in mind the difficulties being faced by students of marginalized and vulnerable sections of society, who are without tools to access online classes and reliable internet and/or technology and are still struggling to participate in digital learning.

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