
Impact of Covid-19 Pandemic on Education in India: A Case Study

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Abstract: The whole world has been disrupted by the pandemic of Covid-19. The lockdown in various countries has immensely affected the education of students. Students can no longer interact with their teacher on one to one basis. This has caused a shift from the traditional classrooms learning to the computer based learning and it may be the largest change in the educational system till date. The online learning has become new normal in India due to pandemic, it becomes necessary to keep track of its growth & to find out whether it is capable of fulfilling student's primary objective i.e. learning. Therefore, the present study was designed to understand and find out students point of view, perspective and objective on ground level. This study could be used in future to overcome the found limitations and help in implementing a more effective online education process for students of all levels.

Keywords: Education, Pandemic, Covid-19, Corona virus, E-learning, Online study, World Health Organization (WHO).

INTRODUCTION

Corona virus disease commonly known as COVID-19 is the infectious diseases caused by the newly discovered a virus named as "coronavirus". WHO Director-General declared this outbreak as a pandemic on March 11, 2020 in one of his media briefing [1]. From that day, every country started imposing lockdowns in their respective nation in order to spread control of this disease. This disease is highly contagious in nature, as it can be easily transmitted through respiratory droplets and various contacting routes like hand, mouth and nose [2]. The person suffering from this disease can easily transmit the virus to a non infected person who is in close proximity, say about 1 meter range. This disease can also be transmitted by using objects like clothes, utensils, books etc. of the infected person [3].

The pandemic situation had caused a lot of havoc in various departments. Education system is such one of the severely affected departments. According to UNESCO, the pandemic had affected 1.6 billion students and youths in more than 190 countries and continents. Closure of educational institutions had impacted 94 percent of the student population worldwide, upto 99 percent in lower and lower-middle class income countries [4]. India is one of such countries whose education system has been severely affected by the pandemic. In fact, educational institutions have been trying to respond to this situation with adopting eLearning in place of face to face classes. Although, the educational institutions have various challenges to adapt all these changes like choosing the right technology and trying to engage their students [5].

The students are also facing various challenges on their end as face to face learning is more interactive and conductive in respect of online learning. Specially those students who have less self regulation struggles the most as there is no in-person support available to them [6].

Online Education for Students

To resolve these issues Indian Ministry of Human Resource Development (MHRD) that has made numerous arrangements or including online portal and providing ICT resources free of cost. Listed below are some of the initiative of government which can help education system in this pandemic:

- **Diksha Portal:** This portal comprises video lessons, assessments, worksheets and textbooks for all level students, teachers and even parents. These e-Learning content are all aligned to the curriculum. The content that has been created by 250 and more teachers who will teach in different regions and languages. Under the guidelines of Central Board of Secondary Education (CBSE) & National Council of Educational Research and Training (NCERT) the content has been fabricated and it consist of approx 80,000+ learning materials for students of class 1 to 12. Even an application is also provided which can also be used offline. (Website: <https://diksha.gov.in/explore>)
- **e-Pathsala:** e-Pathsala is a learning app launched by Central Institute of Educational Technology (CIET) and NCERT for classes 1 to 12 in several languages. This application consists of e-books, videos etc. not only for students but also educators and parents in different languages. In this website NCERT has incorporated 1986 audios, 2500 videos, 504 e-Books and 508 Flip the books for a classes 1 to 12 in

different languages. This application can be downloaded from the IOS & Google Play Store. (Website: <https://epathshala.nic.in/>)

- **Swayam Prabha TV Channels:** Swayam Prabha is the group of about 34 DTH channels. All of these channels telecast high-standard educational programmes on a 24x7 basis using GSAT-15 satellite. In every day, there is new contents for about in 4 hours which is further replicate 5 times a day so that the student can choose convenient time according to their need. The contents for these channels are curated and provided by NIOS, IGNOU, NCERT, UGC, NPTEL, CEC and IITs. This initiative is made by the government for those who do not have access to the internet.
- **National Repository of Open Educational Resources (NROER):** It is an open sources which includes books, videos and interactive modules for students and teachers. NROER also works as a host of STEM-based games. All the contents are mapped according to the syllabus of classes 1 to 12 and it also includes resources for teachers. NROER database consists of a total 14527 files out of which 401 collection, 1345 interactive content, 2586 images, 2779 documents and 6153 videos of multiple languages. (Website: <https://nroer.gov.in/welcome>)

Higher education sector is most affected by this pandemic. As, most of the syllabus of higher education is based on laboratory work but that is not possible now due to closure of institutions. And even students of post-graduate are not able to perform their research because most of the research is based on field work [7]. This situation is creating a pressure on universities and the government to develop new online learning technology that is more compatible and practical. The other concern of graduates who have recently completed their graduation or is to complete their graduation is that whether they would be able to get a job in this pandemic situation or not?

Government Initiatives

Some of the initiatives made by government in higher education are listed below:

- **Swayam:** Swayam is an online platform that enables hosting of all the courses, which is taught in classroom from class 9 till post-graduation which is available for anyone, anywhere, at any time. Best thing is that all the courses available on this platform is free of cost to any learner. All the courses are created by specially appointed nine coordinators i.e. AICTE (All India Council for Technical Education), UGC (University Grants Commission), NPTEL (National Programme on Technology Enhanced Learning), CEC (Consortium for Educational Communication), NCERT (National Council of Educational Research and Training), NIOS (National Institute of Open Schooling), IGNOU (Indira Gandhi National Open University), IIMB (Indian Institute of Management, Bangalore) and NITTTR (National Institute of Technical Teachers Training and Research). (Website: <https://swayam.gov.in/>)
- **e-PG Pathsala:** e-PG Pathsala is a platform which is specially designed for Post graduate students. It consists of more than 20000 texts, more than 19000 videos, 30000 and more quizzes and 723 papers which all belong to 70 subjects across disciplines of arts, humanities, mathematics, social science etc. Students can access all these content even if there is no internet connectivity available. (Website: <http://epgp.inflibnet.ac.in/#>)
- **DAISY:** DAISY stands for Digitally Accessible Information System and as the name suggests this is a DTH channel which is specifically broadcasted in sign language for hearing impaired students. These contents can be later on accessed on NIOS website or YouTube. This initiative is appreciable as it helps impaired students who need to put an extra effort as compared to normal students.
- **Manodarpan:** Manodarpan is an initiative by MHRD as part of Atma Nirbhar Bharat Abhiyan. It is one of its own kind. Manodarpan monitors and promotes the mental health problems and concern of students & teachers & to facilitate help to discuss the psychosocial implications of mental health of cases such as COVID-19 and beyond. This is the first kind of initiative which is made by our government to check and improve the mental health of students and teachers which is a very important aspect and it is generally neglected. (Website: <http://manodarpan.mhrd.gov.in/>)

RESEARCH QUESTIONS

1. How Covid-19 has affected the education sector and students of all levels in India and worldwide?
2. What are the various factors that are playing an important role in influencing the education sector especially in India?
3. What are the initiatives made by the Government of the India in order to improve the position of online education practice?
4. What are the various challenges that are faced by students on a daily basis to access online e-learning systems?

LITERATURE REVIEW

In March 2020, WHO declared Covid-19 as a pandemic from which every country of the world started imposing lockdown in their respective nations [8]. This lockdown started impacting everyone whether it was any individual or organization or sector. Education sector is one of the sectors which has been highly impacted by closure of schools, colleges and universities. On this topic, there have been numerous researches till date. Edeh et al. published a paper in May 2020 titled as "Impact of Coronavirus Pandemic on Education" [9]. In their study, they adopted a survey methodology. A questionnaire was prepared which was administered using an online platform in countries namely India, Bangladesh, Nigeria and Saudi Arabia. They concluded that the coronavirus pandemic has immensely affected the education system. The fields which are mainly affected according to authors are research, staff professional development, academic programs and jobs in the academic sector. They also suggested that there is an urgent need to adopt technology in education, as to fight back the effects of the coronavirus & other pandemic in future. The limitation of the study is that it was conducted online and as in developing countries like India the main problem is deficiency of infrastructure for internet connectivity. Most of the students in these countries cannot afford an internet system, mobile, computer and hence they were not able to participate in such online surveys.

Based on field experiments with 458 students a group of researchers Gonzalez et al. analyzed the effect of Covid-19 pandemic on the e-learning platform performance of the students in higher education. The paper was titled as "Influence of COVID-19 confinement on students' performance in higher education"[10]. The 458 student were from three different subjects and belonged to Universidad Auto´noma de Madrid (Spain) which were further divided into 2 groups. The first group which was the control groups belonged to 2017-18 and 2018-19 academic years. The second group on which the study was conducted belonged to the 2019-20 academic year. When results of both the groups were compared, they concluded that there was exponential degradation in students performance of the second group. This degradation may be due to either new learning methodology imposed in lockdown or new assessment procedure. The limitation which can be clearly seen in this study is that it was conducted on a limited number of students of a university from Spain so it can be said that the study result would not be the same for other countries and their educational institutions.

Emma Garcia & Elaine Weiss wrote a report titled as "COVID-19 & student performance, equity, & U.S. education policy" [11]. The researchers reviewed a number of research papers and newspaper articles and concluded that this sudden transition to remote learning has led to massive increases in the stress & disruption for both students and parents. They also concluded that there are multiple challenges which are faced by children, teachers, families etc. which impose excess stress especially on students with low family income. Due to the non availability of required technology a large number of the students lose most of their learning time. The report had its limitations as all of the research was based on news or other research papers which limits the scope of outcome.

Xavier Bonal and Sheila Gonzalez published a paper titled "The impact of lockdown on the learning gap: family & school division in period of crisis" [12]. The paper analyzes the effects of Covid-19 at both educational and societal levels. The online survey was conducted between 26 & 30 March 2020 with family and children aged between 3 & 18. Based on 35,419 responses, it was concluded that there are compelling inequalities in vulnerability to school learning depending upon family and school characteristics. The absence of a school environment nullifies the socialization benefits provided by primary education. They further concluded in their paper that this pandemic has disrupted guidance processes which are especially important for adolescent children in their studies. In addition, the families with lower or no education background have fewer resources and also lack knowledge to help their children with school work. Finally, family social, economic and cultural status plays an important role in influencing the learning process of students through the new e-learning procedures. The limitation found in the research is that as it was conducted online and most of the students were not able to participate in the online survey due to lack of resources on their end.

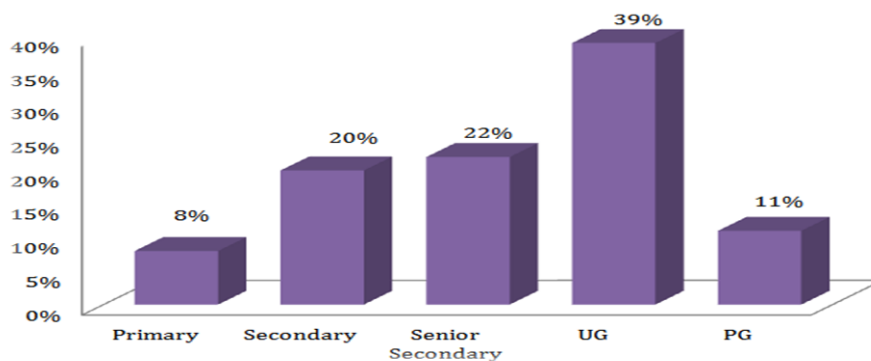


Fig.1: Participation percentage from different educational levels

METHODOLOGY

A descriptive, observational study was conducted based on a questionnaire prepared amongst the students of different states of India. The questionnaire was prepared and some government and private schools were selected in every state. The study was conducted on ground level and a seminar was held and students were asked to fill a form with questions regarding their view on online learning, whether they like studying online, what are the reasons for their like or dislike etc. The study population was distributed mainly in five categories based on their classes i.e. primary (Pre-nursery to class 3), secondary (class 4 to 8), senior secondary (class 9 to 12), undergraduate and post-graduate. The data of population participation from all the categories are analyzed and represented in statistical form in figure 1:

In figure 1 it is clearly shown that the maximum number of participation is from the undergraduate students. Participation from senior secondary and secondary level is somewhat in succession. The lowest participation is seen from the primary and PG level of students. The study population is further distributed during data analyses according to gender. In figure 2, the study population is further classified according to gender distribution.

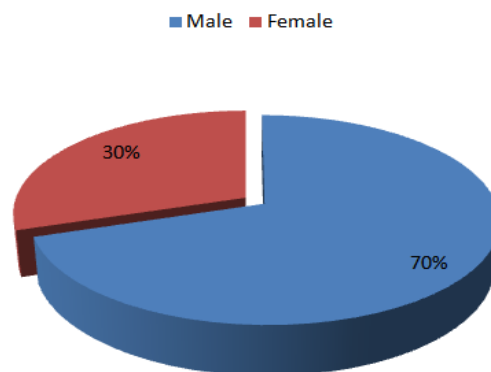


Fig.2: Gender distribution in percentage of study population

In figure 2, during analyzing data it was seen that there was more participation from male in comparison to female populations. This difference was exponentially high so there is instant need of awareness and activeness in our female population. Females play an important role in the growth of the economy of a society or a whole country. They are the main pillar of the growing society so their participation is necessary. There could be various reasons for such less participation of women which is further discussed in the result section. The data collected through field survey is analyzed in statistical form and the result is further calculated and discussed.

Table 1: Students responses/feedbacks on online classes

Perception	No. of students	Percentage
Like	12,202	23.96%
Dislike	38,734	76.05%

RESULT

In a field survey, a total of 50,936 students participated from different states of India. These students belonged to different educational levels and different disciplines too. As they all belong to different educational levels it is but natural that they belonged to different age categories. The maximum participation was from mathematics discipline students as it showed activeness and awareness among this group of students. According to the responses of questions asked from the students the result has been discussed in tabular and statistical form.

In Table 1, it is shown that most of the students dislike this new method of learning. There were various reasons stated by the students. Maximum number of students belong to middle class and lower middle class families as there are no or less resources available to them which result in loss of most of their classes. The other reasons could be the problem of net connectivity and even most students also complain about the concentration problem due to the environment at home as in India most families are joint families and all of them live in the same house.

Table 2: Reasons for favouring online classes

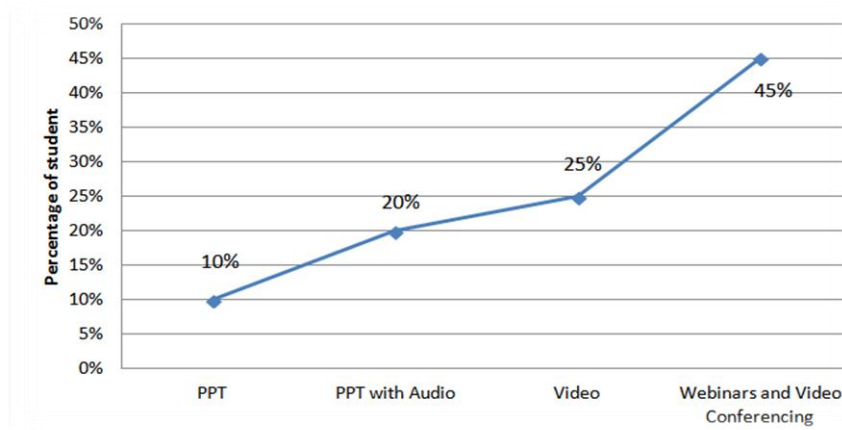
Reason	Percentage
Face to face interaction is limited	5%
Study time becomes flexible	49%
Study location becomes flexible	32%
No need to visit campus	10%
Other reasons	5%

Table 2, indicates the maximum number of students like online classes because it provides flexibility in timing. Various institutions and schools provide recorded videos of online classes after their online streaming so that it is available to all students at any time. Because of this students are able to access these recorded videos anytime according to their need. And the second reason for liking online classes is flexibility of location as students can attend their classes sitting comfortable at home in their pajamas. There is no need to attend campus which makes their life much easier.

Table 3: Drawbacks of online class

Drawback	Percentage
No curricular activities	32%
No labs and scientific experiments	26%
Lack of two way communication	8%
Not meeting friends	15%
Net connectivity issues	19%

In table 3, main five drawbacks of online classes have been suggested according to students. According to survey, it was found that according to students the biggest drawback of online classes are no curricular or field activity and according to UG and PG students there is no laboratory and scientific experiments which left them with only theoretical learning. Many other drawbacks were listed by students like lack of two way communication as they are doubts are not cleared on time which result in further confusion in chapter. They are not able to meet their friends and discuss their doubts or have group competitions which help them to enhance their knowledge. Last one is the issue of net connectivity where students are not able to attend live interactive classes at time instead they have to rely on recorded videos.

**Fig. 3: Choice of sources for online classes**

In figure 3, it is shown that the most preferred way by students for online classes is through webinars and video conferencing. Webinars and video conferencing provide two way interaction, if any student has any doubt he/she can ask or type their doubt instantly which is solved by the teacher during class only. The least preferred way is PPT presentation as there is no interaction and there is no way of getting doubts cleared. Similarly, PPT with audio and video are not favorably preferred as the videos are pre recorded and if there is any change in syllabus it takes plenty of time to get updated. PPT with audio does not provide any clarity in topics as there are only slide presentations with audio in fact it could be said video and presentation with audio are the same and have the same impact.

CONCLUSION

The present research concluded that most students are not in favour of online classes because they claim that this learning style lacks curriculum activities. Most affected are the undergraduate and postgraduate students because they are not able to do experimental and laboratory work which is an important part of their syllabus and in fact all the theoretical literature are based on these experiments. The universities and schools should design in such a way that students are capable of doing experiments and curricular activities along with their regular syllabus. Education sector has been immensely impacted by Covid-19 pandemic. This situation has led to several challenges although different new chances have also evolved. Through introducing various technology, the government, universities and schools are seeking and exploring alternative ways of online learning in order to deal with the current situation. Need of the hour is to develop an effective method that helps educational institutions to strengthen student's knowledge. It seems that the Covid-19 situation is going to stretch longer, hence there is a need to make efforts on maximum utilization of online learning so that the students are not only able to complete their academic year but also get ready for future such calamities. Universities should develop plans in order to make sure that all children have continuous accessibility to learning during the pandemic. Government should make policies to help individuals from remote regions and with lack of resources in order for effective delivery of education. If this online system of learning is used wisely then it could turn out to be beneficial. Further detailed statistical study could be undertaken to find out the impact of Covid-19 on the education system of India.

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