

Effect of COVID-19 pandemic on Educational Sector in India – 3-D view

Analysis for futuristic enhancements

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Abstract

Background: The covid-19 outbreak adversely impacted the educational sector in India. Consequently, online education foisted in almost all the educational institutions in India, from primary to higher educational levels. Sudden shifts from traditional education to online education have impacted all three dimensions of the educational ecosystem, namely: the students & parents, the teachers, and the educational institutions. Many authors researched the difficulties of students, teachers, or institutions or concentrated on specific regions or a particular level of education in their research work. This research work has considered responses from the school level to higher education level from different institutes (public and private), considering the entire educational ecosystem (students, teachers, and institutions) across India, which distinguishes its contributions from others.

Objectives: This paper put forward the positive and negative impacts of the pandemic on the educational ecosystem and their effect in the post-pandemic. So that new strategies can be designed to prevent the issues in the future to continue online education.

Methods: Formal structured interview was conducted among teachers, students/parents, and administrative staff of Government and private educational institutions across India. Around 60 responses from each category were collected, analysed, and summarized.

Results: It is identified that the unprivileged (belonging to below the poverty line & from families in which parents lost their job due to the pandemic) students could not attend the classes and could not pay the fee in time. Low-budget Educational institutions are affected a lot. Further findings have been elaborated in the Result & Discussion session.

Conclusions: The study's findings might be helpful to the institutions, employers, and regulatory authorities of all educational institutions planning to implement online education as a regular activity in the future. The insights driven by the findings can make them revisit their existing policies and redesign the new strategies to succeed in online education in the future. Researchers could extend their research on finding the view of students in adopting online education considering various metric. The recommendations for practitioners would bring equal opportunity to all the students from various

financial and societal backgrounds and improve overall student learning in India. Further research will understand the outcome of online education in various sectors, the consequences of online teaching-learning, and its impact.

Keywords: Impact of Covid-19 on the educational sector; Mobile learning; Digital Learning; Distance Learning; E-learning; Impact of online classes

1. Introduction

As people from different areas or countries are interconnected, the risks or threats they face are also interconnected. The COVID-19 virus has hit the world, and everyone is in a pandemic. The COVID-19 virus, which started in China, did not stop at its national border; instead, it spread worldwide. It has affected every nook and corner of the world, irrespective of age, gender, income, and nationality. Due to COVID-19, the world has seen many changes, and a new normal has been adopted. The virus has impacted every aspect of life, especially the worldwide educational sector, which resulted in Closed schools and educational institutions. Due to COVID-19, the education industry may face the biggest challenge. The current education system is going through the most significant shift ever; it has never been interrupted at the fundamental level globally until now.

In the initial stage, governments decided to temporarily shut down the schools to reduce the impact of COVID-19, but later, schools were reopened for a few grades, resulting in an increased number of cases, and then closed again. Classes were suspended, and all the exams, including the entrance test of all the educational institutions, were postponed indefinitely. Thus, the lockdown demolished the agenda of every student. (Manish Balasaheb Pawar et. al, 2021) Due to the lockdown, almost all educational institutions must choose online modes. During the lockdown, there was hope for teachers and students to continue their classes or educational activities online. COVID-19 has created many opportunities and challenges for all educational institutions to strengthen their technological knowledge.

On 15 March 2020, India declared a nationwide lockdown of schools and colleges. Board exams and exams conducted by universities were postponed. Online learning was strengthened, even though pre-COVID, only a quarter of households (24 percent) in India had access to the internet, and there is a significant rural-urban and gender divide. In March 2021, all educational institutions again opened. Due to the second wave again, schools and colleges were closed. After July 2021, schools and colleges started again and continued online or hybrid modes of teaching.

21st-century abilities like internet facilities, smart boards, smart devices, and virtual meeting platforms like Google Meet, Zoom, Google classrooms, etc. made online learning possible during the pandemic.

This research articulates the changes happening in the educational sector from a three-dimensional viewpoint. This research work also deeply discusses the opportunities and challenges for the educational industry when they want to continue online education.

2. Objectives

Educated parents supported their children throughout the pandemic, but children of illiterate parents were helpless. There are students in India who come to school just to get food. The midday meal scheme has helped many children from unprivileged families to get their nutrition. Those children suffered a lot. Many school-going children were forced to work. Female and transgender children from low-income families were affected (Abinaya Suresh, 2021). The pandemic has also affected Low-budget private institutions and schools, resulting in the close-down of the same. Even India excluded private schools from additional education funds to help schools respond to COVID-19 (AndaleebAlam and Priyamvada Tiwari, 2021). Due to that, the teachers working in those institutions lost their jobs. Institutions reduced human resources by 50% or more.

Andreas Schleicher (2021) has briefed on the crisis that happened in the educational sector due to pandemics and strategies renewed in OECD countries. 42% of higher secondary students were registered in vocational education and training; 1 in 3 was joined in combined school and work-based programs. Distance learning has followed in most countries to continue to support students. Manish Bansal (2022) briefed on the effect of a pandemic on various dimensions, including the Research community, Teachers, Financial Education, and so on in India, based on secondary data. Most students defer their education to the next year since the teaching-learning process is only online (SwarupSaha et al., 2021). The paper also briefed on the positive and negative impact of the pandemic on the education sector. (Pravat Kumar Jena, 2020) has also spelled similar points.

The use of education technology and how it differs in government and private schools of Chennai and Tamil Nadu are analyzed (Emiliana Vegas, 2021). It accentuates that support from parents is the key to success in online learning at the school level. The challenges and barriers teachers face in a home environment based on online teaching were articulated by (Amit Joshi and Muddu Vinay, 2021). The paper has divided the barriers into four categories and summarized them based on the primary data collected from 19 teachers in Uttarakhand state, India.

Bradley D.F. Colpitts et al. (2021) suggested realistic ideas to strengthen the educational ecosystem's three pillars or dimensions: the students, the teachers, and the institutions in Japan's Higher Educational sector. At the institutional level, the paper suggests improving the IT capability (including

hardware and software tools); at the faculty level, the suggestion is to enact professional development opportunities; at the student level, the suggestion is to improve mobile-assisted language learning.

Brototi Biswas and AneesahRahaman (2021) limited their study to Mizoram in India and specified the lack of technical facilities in highly literate villages and remote areas. AishwaryaAvasti (2021) highlighted the trends of post-covid-19 in the educational sector, which include: Educational institutions can run with different shifts per day, Assessment systems may be altered into a new shape, and so on.

ProtivaKundu and ShivaniSonawane (2020) highlight some of the school closure issues and the need for immediate attention by the Government in this regard. Sharma, A. et al. (2021), KrunalSoni and PurviDipenDerashri (2020), Sanjay GovindPatil (2021), Sudakshina Gupta. (2020) and Ankita Nandi (2021) have shared their views on the effect of pandemics on the educational sector. These papers summarized the overall positive and negative impacts of the Covid-19 pandemic on the educational sector.

Niharika and ArtiVaish (2021) summarized the parts of e-learning, its benefits, types of e-learning platforms used, barriers of e-learning, Edtech (Educational Technology) companies that had tremendous growth during a pandemic, and some of the positive and negative impacts of a pandemic on the education sector.

TruptiVikasPatil and Prashant RamraoPawar (2021) also shared their viewpoints on the effect of pandemics on comprehensive education and some recommendations. Hasan Hussain (2021) has shared his viewpoints on the same line stating the overall positive and negative impacts. Showkat Ahmad Dar and Naseer Ahmad Lone (2021) articulated the SWOC analysis of e-learning, the emergence of EdTech, the importance of the internet during a Covid-19 pandemic, and the highlights of the effect of e-learning in India.

Technology helped the students and teachers to associate virtually through various digital platforms like online classrooms, Google Meet, webinars, and so on. However, it is not affordable and available to many unprivileged students nationwide.

2.1 Research Gap

Most of the research works so far done in this field have either collected data from students or teachers only or on the impact on the educational sector specifying overall positive and negative impacts. One literature paper (Manish Bansal, 2022) has briefly described the effects from a multidimensional viewpoint, which is also based on secondary data.

This research work analyses the impact of the Covid-19 pandemic in the educational sector after collecting experiences of teachers, students/parents, and academic staff from various institutions across India with formal interviews and self-witnessing the experiences of educators, students, and institutions in person in a three-dimensional view of the educational ecosystem

3. Methods

The Qualitative research analysis was conducted on the responses from a formal structured interview. A formal structured interview (with open-ended questions) was conducted among teachers, students/parents, and administrative staff of Government and private educational institutions across India. The respondents were randomly picked and asked the questions. Their answers were recorded. Around 60 responses from each category were collected, analyzed, and summarized. The interview questions asked are shown in Table 1.

Table 1: Interview Questions

Q1: Gender: male/female
Q2: Category of the respondent: Teacher / Student (or Parent) / Admin staff
Q3: How do you feel about online education?
Q4: In your view, any positive impact on online education?
Q5: In your view, is there any negative impact due to online education?

The demographic profile includes 180 (75 male and 105 female) participants. In that, 20 males and 40 females of teaching faculties, 32 males and 28 females of administrative staff (including public and private institutions), and 23 male and 37 female students/parents participated. The total respondents were from various levels of education across India, including primary, secondary, junior college, and higher educational levels. The demographic profile of the entire data contributors is shown in Table 2.

Table 2: Demographic profiles of entire data contributors

	Students/parents	Teachers	Academic staff
Public Institute	20	15	18
Private Institute	40	45	42
Primary school	7	8	9
Secondary school	8	7	8
Higher sec. school	10	6	7
Under Graduate	12	15	16

Higher Education	23	24	20
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3.1 Data collection

Data collection was a tedious job and took around a month. Before data collection, the details of students/parents, educators, and administrative staff from various educational institutes across India were collected. Then, formal Telephonic interviews were conducted to collect the data after seeking prior appointment and consent to participate in the data collection. In the beginning, telephone details of 100 participants from each category (students/parents, teachers, and academic staff) were collected. The randomly selected participants were called, and their responses were noted down. Responses were limited to 60 numbers in each category since many shared the same view. Data was collected during the third week of December 2021 and ended in the second week of January 2022 during the start of the Covid-19 third wave in India.

After collecting, all the responses were scrutinized, and impacts were summarized under the appropriate category. This post-mortem analysis of the covid-19 pandemic can help the Government and the policymaking authorities design new strategies for future online education in India and outside India.

4. Results

The new normal or the distance and online learning forced on the educational sector have many positive and negative impacts. The summary of the data collected was furnished under different headings: impact on students, teachers/educators, and educational institutions. There are many benefits and limitations of distributed learning environments provided by online learning enforced. They were summarized under the 3-D ecosystem view.

4.1 Impact on Students / Parents

Students are the victims of the covid-19 pandemic. Pre-school, School, College, and professional college students suffered during this pandemic. The sudden Closure of schools and colleges has impacted their studies a lot. Most of their exams were postponed and canceled later. Students in 10th, 11th, and 12th standard were graded with previous tests, and it has escalated into huge issues since many complaints from parents after seeing their final grades and marks. Students who study during final exams were affected by poor grading. Some of them who had the scope of doing well in the final exams and getting better opportunities lost their chances.

4.1.1 Hindered Regular Education

The pandemic made all classes suspended and exams at different levels postponed. From the beginning of the pandemic, students have lost their studies for 3 to 4 months. Even after online classes start, students face difficulty continuing their regular classes for various reasons.

4.1.2 Improved digital literacy

The pandemic made learners/students use digital technology for learning and acquiring knowledge. Moreover, it has improved the digital literacy of the students.

4.1.3 Unpreparedness for online mode

When the online mode of education started, most students were unprepared for that situation. It has diverted their concentration in many ways.

4.1.4 Partial digital world access

Especially unprivileged students from rural areas had limited or no access to the digital world. They cannot afford a laptop or smartphone to attend online classes. Even if some own a digital device, they do not have sufficient internet facilities to attend online classes.

4.1.5 Loss in Employment Opportunities

Lots of industrial internships for students were canceled or postponed. Most of the recruitment and placement for final year students got affected and postponed. Placed students got delayed in joining their job. It led to an increased unemployment rate in India.

4.1.6 Poor nutrition

Many students from unprivileged sectors depend on Midday meals at the school level. Closure of schools has impacted them appallingly. Due to the Closure of schools, there was a lack of discipline and daily activities. Students get up late and rush to attend online classes without meals. Untimely food habits increased, leading to poor nutrition and other health issues in privileged families.

4.1.7 Minimized global employment opportunities

Many students who got placement in other countries lost their job due to covid-19 restrictions. Their job offers were delayed or denied.

4.1.8 Support from parents

Due to enforced online classes, mainly school children's parents had increased responsibility to support their children's education from home. Educated parents may be able to guide them, but uneducated parents cannot.

4.1.9 No Access to global education

The pandemic has significantly meshed up the higher education sector. Indian students who enrolled in many foreign Universities lost their educational opportunities during the pandemic, and in most cases, the opportunity was postponed, which led to wastage of time.

4.1.10 Unequal access to educational resources

During pandemics, students solely depend on lecture materials from teachers. Alternatively, they were relying on sources from the world wide web. This opportunity was not equal among students. Unprivileged students could not access the required educational resources.

4.1.11 Interrupted learning

Schools provide students with essential academic knowledge and extra-curricular and co-curricular activities for all-round development. When schools close, students have deprived of opportunities for their overall development. Mainly students who have no or fewer opportunities beyond school suffer a lot.

4.1.12 Lack of physical involvement:

Students virtually participate in the online class. Even if he/she could see and hear everyone in the online class, they could not physically move with everyone. It hinders the process of learning and grabbing the things which are communicated nonverbally in the class. It reduced the absorbing capability of a student.

4.1.13 Lack of concentration in class

Students may attend the class from various backgrounds, affecting their concentration in many ways. E.g., Families with more school-going children and less space had noise disturbances.

4.1.14 Lack of Peer learning

Peer learning is essential for any classroom's effectiveness. It happens in physical classes, improving students' understanding of any subject. A peer discussion about the covered topic may raise doubts on the subjects and can be clarified with the help of further discussion or self-learning, or faculty assistance later. Students may not have peer learning in online classes or might have minimal peer learning opportunities, and holistic learning is compromised.

4.1.15 Enhanced uses of electronic media

Due to online education, students utilize more electronic media for sharing information and clearing doubts. The study materials were shared, and doubts were cleared through SMA, Phone calls, and social media like WhatsApp, Instagram, and Facebook.

4.2 Impact on Teachers/Educators

In the educational sector, every stakeholder is impacted by the pandemic. Educators also experienced it. They had both positive and negative experiences due to the pandemic.

4.2.1 Work from Home Culture

The pandemic made all the schools and colleges close temporarily; later, teachers were asked to work from home due to a lockdown imposed by the Government. Most of the teachers were happy at the beginning since they did not need to commute to school or college. Many of them were utilizing the facility to visit their hometown as well. However, the work assigned to teachers increased significantly due to reduced employees and other reasons. Their fixed working hours were lost, and they were asked to work even in the evenings and at odd times (whenever needed). Working from home made most teachers exhausted and burnout due to excess workload and imbalance between household and professional activities. Due to the Closure of schools and colleges, teachers could not meet their colleagues; this also caused more pressure on them since sharing their experiences and emotions with friends, and colleagues relax the mind.

4.2.2 Work-Life Imbalance

Tackling the office as well as household chores was difficult. When working from home, the teachers must take care of their families and complete household and professional work (many female teachers and professors suffered in this regard, even some male educators).

4.2.3 Higher Stress

With the Closure of schools, teachers/educators have to work for unknown or long durations, and to support learning activities; they should have a strong internet connection to stay connected with the students.

4.2.4 Buy and use your device concept

To work from home and to complete the jobs, the educators need to purchase their own digital devices like smartphones, laptops, uninterrupted power supply (UPS), and strong internet connection. Furthermore, they must pay for it within their income to continue the job. Suddenly, due to the lockdown, some educators could not buy their own devices and were terminated from their jobs. Some

took the devices for rent and paid considerable amounts to protect their jobs. Educators from remote places and rural areas could not afford that, or it was not possible to get them. This situation created much pressure on Educators.

4.2.5 Unemployment/less or no payment

Teachers working in Private schools and rural areas lost their jobs for various reasons. Most private schools pay significantly less to teachers for various reasons like fewer student admissions, delayed payment, etc. In most cities, teachers who could commute by vehicle were kept in their jobs, and others were terminated. They had to shift their jobs to ordinary jobs to run their daily household and earn bread and butter.

4.2.6 Worldwide exposure

The pandemic forced the education sector to use online modes for teaching and learning. Academicians were allowed and asked to attend webinars and seminars online. The pandemic enabled learners to interact with people from different places worldwide. This increased worldwide exposure and the adoption of the international community.

4.2.7 Blended learning

The pandemic forced teachers and learners to use different digital technologies and tools along with the traditional way of teaching, which led to blended learning. Blended learning encouraged the teachers and learners to become more techno-savvy. Most teachers in India, especially conventional teachers, learned to use digital technologies and improve their technical skills. This blended learning brought distributed learning environments for the learners.

4.2.8 Enhancement in collaborative work

Adopting new norms by educational institutions increased the collaborative skills of educators and enabled them to collaborate with peers across the world to enhance their work collaboratively.

4.2.9 Increased no. of online meetings

Due to the online mode of education, educators had considerable opportunities to attend virtual meetings, e-conferencing, and webinars. Attending such meetings made them explore more and gain colossal knowledge.

4.2.10 Other Positive impacts of Pandemic on Teachers:

Teachers and Educators were to take online classes. It has improved their digital literacy; otherwise, most teach in traditional ways. Educators needed to find various technological tools to conduct the

classes and attract the students' concentration. Some universities and colleges conducted faculty development programs and online workshops to improve educators' digital literacy. It has improved their technical skills and knowledge of using various digital tools. For example, teachers started using Google forms to conduct online tests. They also learned to create a google form, set questions using that, and conduct exams online. Earlier attending online workshops and seminars was not preferred and less valued by educational institutions. This pandemic increased the value of attending online workshops and seminars. It has given educators more opportunities to attend various online workshops and webinars to increase their knowledge level, improve their CVs and give credit for their working institutions.

4.3 Impact on Educational Institutions

In the educational sector, every stakeholder is impacted by the pandemic. Educational Institutes also experienced it. They had both positive and negative experiences due to the pandemic.

4.3.1 Enrichment in Open and Distance Learning (ODL)

The shutdown of schools and colleges enriched the Open and Distance learning programs. There is more opportunity to conduct online classes for various courses where there is no necessity for physical classes. The pandemic made most educational institutions start online courses with slightly reduced fees.

4.3.2 Improved IT Infrastructure

Due to the pandemic, educational institutions had to improve their IT Infrastructure to conduct a hybrid mode of classes. It may be beneficial for educational institutes in different ways.

4.3.3 Investing more in LMS

Educational institutions must rely on learning management systems (LMS) and other technological tools to conduct examinations. The institutions had to invest heavily in learning management systems to continue education. It is not possible for all low-budget educational institutions in India

4.3.4 Fewer student admissions & Closure of institutions

Due to the covid-19 pandemic, most institutions conduct online classes, and some of the low-budget private institutions have closed or reduced their human resources to 50% or more. So student admissions have been reduced to a significant level.

4.3.5 Delay in Fee Receipt

Most parents from various sectors lost their jobs due to the lockdown. There was more fluctuation in their job, which made them unemployed. It led to delayed payment or not being affordable to pay the fee. Remarkably this has affected private institutions a lot.

5. Discussion

COVID-19 has obstructed the education sector of India. Though it has generated many challenges, various opportunities were identified to overcome them. The Indian Govt. and different educational stakeholders have reconnoitered the possibility of Open and Distance learning (ODL) by espousing different digital technologies (which are the abilities of 21st-century) to cope with the COVID pandemic situation. India had to transform education via digital platforms to reach out to the nook and corner of the nation. The unprivileged students may suffer due to the online education mode as they were neither prepared nor affordable for distributed learning environments. However, the Government of India and Indian universities are insistently trying to resolve this problem. Even though the online mode of education has some disadvantages, the priority is to utilize digital technology to create an expedient position for crores of young and dynamic students in India.

Educational institutions must strengthen the technical knowledge of faculties and be prepared with the required IT infrastructure to face similar situations in the future. Even if the COVID-19 crisis stretches further, there is an urgent need to make efforts on maximum utilization of online platforms; so that students not only earn their degree in time but also prepare for the future digital-oriented professional environment. The concept of "work from home" has greater relevance in such a pandemic situation to reduce the spread of the pandemic; at the same time, it should not burn out the educators with the heavy workload. Governments are responsible for ensuring that all children from private educational institutions receive a quality education. India should develop creative strategies to ensure every student has sustainable access to learning in any pandemic situation. Since the online mode of education benefits a lot, Government and private employers should recognize and encourage students to learn from online mode and accept them if they can justify their expertise for earning jobs.

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