

Digital transformation in the Indian education sector during Covid -19

Pandemic A study of challenges and opportunities

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Abstract:

The Corona Virus- 19 pandemic has changed the global world redefining every aspects of public life bringing in major changes in every sector from health, education, environment, trade and commerce to travel and lifestyle. At the forefront of these challenges has been the education sector from kindergarten to higher education has been impacted largely.

With the epicenter of the pandemic initially being Europe, schools were first shut down in Italy with rising confirmed cases and deaths from the coronavirus. In order to keep students safe and avoid spreading schools were shut down as a precautionary measure. The rapid spreading of the coronavirus within weeks across Europe, United States, Middle East, Australia, Asia, Africa and Middle East compelled nations to take decisive actions and swift medical emergency to mitigate the action of a full-scale pandemic and avoiding community transmission of the virus. Thus changing the course of action in every public sphere of life and lockdown becoming a reality.

The pandemic has challenged the education sector and broaden the horizon of learning and teaching. Thus becoming a catalyst for educational institutions worldwide to search for innovative solutions in a relatively short period of time.

This paper examines the impact of the pandemic on education in India and the challenges in adaptation of digital shift in India. It analyses the limitations and opportunities in the field of learning and imparting effective education in India towards achieving SDG's on education.

Keywords: COVID 19, Pandemic, Education, SDG, lockdown, Digital

Introduction

The Covid-19 induced lockdown withered the education system in India with Schools and educational institutions suddenly asked to shut since a nationwide lockdown that was first imposed towards the end of March 2020.

According to UNICEF, the Covid-19 pandemic has battered education systems around the world, affecting close to 90 per cent of the world's student population. In India, over 1.5 million schools closed down due to the pandemic, affecting 286 million children from pre-primary to secondary levels. This adds to the 6 million girls and boys who were already out of school prior to Covid-19. This disruption in education has severe economic implications too. A World Bank report, 'Beaten or Broken: Informality and Covid-19 in South Asia', has quantified the impact of school closures in monetary terms-India is estimated to lose \$440 billion (Rs 32.3 lakh crore) in possible future earnings. To fight back the disruption and damage, educational institutes across the country embraced the digital mode of education as a solution to fill the void left by classroom teaching. With this, the hitherto peripheral digital education in India came Centre stage and is now increasingly getting integrated into the mainstream. A new hybrid education system is being adapted in India.

According to a recent report by a United Nations Educational, Scientific and Cultural Organization (UNESCO) nearly 87 percent of earth's student population are out of school accounting to nearly 1.5 billion and 60 million teachers are also at home across 165 countries worldwide. An unprecedented situation due to the pandemic has globally transformed how students are educated redefining the concepts and changing it forever.

The tech-driven transformations that were once a choice have now become the only ways to deliver education amid the crisis.

However, it's not just the methods of learning that have changed; the pandemic also broadened the perspective of many educators about the role of technology. Today, school leaders, educators, and policymakers are more open to ideas that rely heavily on technology. Many experts believe, the crisis is an opportunity for the education industry to make it more tech-savvy, inclusive, and sustainable. In this blog, we will discuss how that is already happening in a time of technology-driven education.

While the Covid-19 pandemic has made online education the buzzword, a recent report by the global education network Quacquarelli Symonds (QS) says that the Indian internet infrastructure is still far from ready to support the shift. Only 24 per cent households have access to the internet, according to a 2019 government survey. In rural India, the numbers are far lower, with only 4 per cent households having access. A 2018 NITI Aayog report revealed that 55,000 villages in India did not have mobile network coverage. A 2017-18 survey by the ministry of rural development found that more than 36 per cent of schools in India operated without electricity. The emphasis on technology-driven education is also alienating many children from the underprivileged sections, preventing them from continuing their studies. Even other stakeholders are struggling. Teachers are not always trained and equipped to transition to online teaching.

The National Education Policy (NEP) 2020 has been introduced in India with a vision of reshaping the education system in India and transform the education standards by the end of 2040. The NEP has also emphasized the importance of online education, blended with the traditional mode that paved way in India towards digital Education.

Digital Education

Digital education is a revolutionary method of imparting knowledge, especially since it levels the playing field for all students. India is home to the largest population of children in the world, with an estimated 430 million children in the age group of 0-18 years in the country. The state of education in the country, especially in rural areas has been deplorable, with challenges such as archaic teaching methods, shortage of teachers, highly disproportionate student-teacher ratio, and inadequate teaching materials plaguing the sector.

Remote learning involves either live online classes for students, or digital content which can be accessed at any time - offline or online but lack a reliable internet infrastructure and the cost of online access can be prohibitive for poorer communities.

The UN says at least 147 million children are unable to access online or remote learning. In India, only 24% of households have access to the internet, according to a 2019 government survey. In rural parts of India, the numbers are far lower with only 4% of households having access to the internet.

As e-learning becomes the "new normal", the authorities have been taking steps to make digitisation of education accessible and affordable for all. The Union government is banking hugely on the Bharatnet project, which aims to provide broadband to 250,000 gram panchayats in the country through optic fibre to improve connectivity. Broadband connectivity in gram panchayats is expected to help rural schools provide online education to students who do not have internet access at home. Besides building the digital infrastructure, training has to be given to the teachers to use the system to provide authentic and seamless education to the students. Successful delivery of education is also in question because learning in colleges varies from that in schools. Digital education cannot be applied the same way at every level. To make digital education a reality and assessable to the entire population both urban and rural India. A well-defined **Digital infrastructure policy is needed that will** public digital and interoperable infrastructure that can be utilized by multiple platforms. The digital infrastructure should support the technology-based solutions should be relevant and updated.

With Pandemic engulfing across China and Honk Kong technology has been used efficiently. In a short span of time virtual classrooms got a new dawn various digital platforms are being used to conduct online classes from primary schools to universities. Across countries teaching and learning has shifted from the classroom to online. They spear headed the move with learning from home concepts becoming a reality from the month of February they quickly put digital platforms and interactive apps. While in China where the pandemic surfaced from started using live television broadcasts where in millions of Chinese students got access to learning material. The Norwegian Education Ministry opened a free national platform for various digital services in education.

Mexico has to offer a mix of distance education options, with open television for everyone since only 60 percent of the students have access to the Internet. While few other countries started using simpler easily available and accessible platforms like Microsoft and Google classroom with augmented synchronous face-to-face video instruction, to help preempt school closures. In Turkey, the Ministry of National Education launched a free “remote educational system” with a television- and Internet-based curriculum “on a national scale.

For the India, the challenge is greater being the world’s second most populous country, with more than 1.3 billion people and over 300 Million student’s population the largest student body in the world. With the scare of pandemic spreading India look an immediate action for a lockdown and social distancing that resulted in shutting down of schools and college.

Key Challenges for Online Education in India

There are some common challenges that were considered while preparing the new education policy. Some of them are provided below.

- More than 30% of the country’s population is not computer literate. Some of them even don’t know how to start a computer.
- Not everyone can afford a computer or a laptop. Some sections of the society such as farmers, maids, housecleaners, sweepers and waiters may face difficulties purchasing a laptop.
- Some teachers are not familiar with the new format of education. They are not well trained for online education classes. Besides this, it is not necessary that a good classroom teacher will be a good teacher in the online classroom.

Cox (2009) implementing new classroom technology from traditional to modern in school is highly needed because it can help students to use the digital platform and make use of in the digital era. Izenstark A. et al (2015) Google Classroom connected the students and teachers using digital mode. The apps helped the teacher to grade the assignment in a fast manner and it will be saved in the cloud for further reference. The instructor can intimate the students using Gmail notification. Bao (2020) explained that due to COVID-19 lockdown period, the education system is forced to shift into a modern platform. Information technology and Microsoft office helped the faculty to deliver the classes in the online mode. Few students and faculties faced the problem related to connection issues. In the case of retail sectors, they converted their business into an online platform. Dutta (2020) India faced different kinds of major challenges first time during COVID-19. Due to that, all the individuals were forced to be inside the house as a self-quarantine to save the human beings from the deadly virus. Demuyakor (2020) In his study he identified that the implementation of online learning programs during these lockdown periods was very useful. But the cost of studying using the internet was very expensive. The majority of the students were unable to pay for internet providers. Laxminarayan (2020) Prime Minister Narendra Modi announced to follow lockdown, to stay as a self -quarantine and to maintain social distancing. Advised all the citizens of India to wear masks and maintained self -hygienic to avoid the spread of the coronavirus in the country.

There is no question that technology will play a vital role in the future of education. But, it can be argued that technology by itself only provides the tools for building that future, not the reason itself. To reimagine the future of digital learning, it is important to understand the reasons and drivers pushing higher education towards the change and the heterogeneous nature of deliverance in a wide vast and diversifies country like India. There is perhaps no greater drive to change than building a future focused on student success. The Sustainable Development Goal 4 (**SDG 4**) is the **education** goal that aims to “ensure inclusive and equitable quality **education** and promote lifelong learning opportunities for all.” The Pandemic has changed the mission of many countries that were battling in ensuring female education promoting various ways to bring girls to schools from constructing toilets in school to feeding them free Mid-day meals to ensure they attend education.

In India, few universities quickly raised to the occasion and began the online classes to begin with Digital Learning Task Force was set up comprising technology experts and academicians to facilitate the process in urban cities. With the advancement of technology it is seen that students, management and teachers have actually embraced the new concept of virtual class rooms with digital aids that is well suited to the needs and availability of technology and resources talk in-person classroom is not the only mode of learning. It is being supplemented with the new system from Google classrooms to Microsoft teams live broadcasts on Television sets to webinars by „educational influencers“ to virtual reality proficiencies.

In Rural India low-cost private and public schools have array of challenges in terms of human resources, education technology, and administrative processes, among many other things.

But the reality in rural villages was a contrast with students not having access to laptops and desktops mobiles phones were used to learn but internet was a barrier that led to discontinuing of education by children. Girls were engaged in household chores and boys were seen in fields working or helping as daily wage labor.

Concluding Remarks

India is striving towards the new norm of industry 4.0 that has major thrust on digital transformation in the education sector and compliance with the industry need that has resulted in radical change in both imparted education and learning. Digital education will soon become reality and a successful model if the challenges can be addressed with effective infrastructure needs. The new education system will offer *customized Courses with effective Learning Management System (LMS)* an appropriate knowledge management tools that is designed as student-centric for effective learning. India being a country with vast social and regional diversity has pose major language barrier. Majority of India’s population is incapable of reading or writing English, but with technology and digital tools learning material can be made digitally customized to make it available in local regional languages that results in effective learning. An important aspect of digital content is availability of extensive array of study material, resources that can foster an ecosystem of free learning.

Internet Connectivity and electronic gadgets like IPad and laptops and Desktops are still a major issue in India, especially in rural areas. Every school going child need electronic gadgets that has to provided free of cost and unless internet is provided freely like electricity in every parts of India especially rural villages where children can access at homes or in school campuses that motivates students to continue learning. Many questions need to be addressed firstly, will imparting knowledge and learning through traditional method will soon become a think of past with more and more innovative method to engage students via technology will be become a reality soon. If so, how will developing countries cope up the infrastructure challenges and bridge

the digital divide. Smart Phones, Computers, laptops, electricity, internet are needed that is an additional cost to the already shoe string budget on education sector.

For the educators and students community the COVID-19 pandemic has demonstrated the significance of building resilience to face challenges from pandemic disease to climate change, conflict, violence to terror and rapid technological transformation that has potential to change the face of education in coming days. Technology seems to be the only way not just to face this disruption head-on but also to prepare for the post-coronavirus world. Tech-savvy educational institutions have already transformed dramatically during the crisis.

The pandemic is also an opportunity to remind ourselves of the skills students need in this unpredictable world such as informed decision making, creative problem solving, and perhaps above all, adaptability. To ensure those skills remain a priority for all students, resilience must be built into our educational systems as well. Technology giants like Google, Facebook, and Microsoft and so on will be leading education providers will have to rethink on business models and facilitate countries to ensure SDG 4 education to all. From this study and the above data we concluded that currently, the Indian digital infrastructure does not support online education system in the country until and unless rapid development does not happen to set up the necessary requirements to adapt to the New system of learning facilitated by digital education system that requires internet, electricity, and E-learning in every sector the challenges will remain the question of digital divide if unaddressed will be a major stumbling block in India. Majority of the rural areas in India have unequal distribution of digital facilities and infrastructure that poses challenges in deliverance and learning process. In addition to digital infrastructure effective Policy is necessary to make digital system of education a reality in India.

As governments and private organizations encourage educators and students to get digital with Education & Technology solutions, many challenges are being addressed. With the rising use of smartphones and computers across socio-economic classes, tech-enabled education is slowly becoming mainstream.

In a country like India, digital solutions help such low-cost schools and colleges to deliver more effective and comprehensive education even in remote areas. Services like e-learning app development are becoming more easily available and cost-effective. Schools and policymakers can consider such services to make education equally accessible for all. The number of households having a smartphone and access to the internet is increasing rapidly. It's an opportunity for educators to leverage the surge in technology adoption to deliver better education.

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