

The Impact of COVID-19 Pandemic on E-Learning in India

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ABSTRACT

This paper explores the transformative impact of the COVID-19 pandemic on e-learning in India. The study explores the rapid growth of the Education Technology (EdTech) sector, its burgeoning role in higher education, and its subsequent shift towards a hybrid learning model. The pandemic accelerated the integration of e-learning into the education landscape, increasing enrollments and diversifying online learning resources. It also shed light on critical issues, including social inequities in e-learning access, challenges faced by learners adapting to new modes of education, and the importance of pedagogical improvements. The government's response to the crisis included promoting e-learning through various platforms. This paper highlights the multifaceted impact of COVID-19 on e-learning in India and the changing educational landscape, emphasizing the coexistence of e-learning and traditional classroom-based education in the post-pandemic era.

Keywords: e-learning, COVID-19, edtech, pandemic, coronavirus and e-learning

INTRODUCTION

In the wake of extended lockdowns, students found themselves relying exclusively on e-learning to pursue their studies. This period provided students with valuable experiences in e-learning, exposing both its advantages and disadvantages, as well as the associated challenges. This chapter seeks to chronicle students' encounters with online learning, particularly in the context of the COVID-19 pandemic. To begin, we will examine various e-learning activities both before and during the pandemic. The subsequent section will focus on live online classes, which gained popularity among a majority of respondents during the COVID-19 pandemic. Finally, we will explore the overall impact of the COVID-19 pandemic on e-learning.

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In December 2019, China's Wuhan city in Hubei Province reported mysterious cases of pneumonia. On January 7, 2020, the causative agent of this pneumonia was identified as a novel coronavirus, 2019-nCoV, subsequently named COVID-19 by the World Health Organization (WHO). The virus rapidly spread from Wuhan to more than 210 countries worldwide (Keni et al., 2020). The WHO declared COVID-19 a Public Health Emergency of International Concern on January 30, 2020, and later declared it a pandemic on March 11, 2020 (WHO Director-General, 2020). By mid-2020, the pandemic had affected over seven million people, leading to governments imposing lockdowns to curb its spread. India also enforced a lockdown on March 24, 2020, which had a profound impact on daily life, including the education system (Gettleman & Schultz, 2020). As of August 2021, COVID-19 had claimed approximately 4.38 million lives, with roughly 204 million individuals worldwide recovering from the disease (McKeown et al., 2022).

This pandemic brought about significant societal changes. It disrupted the established social order, compelling people to work, learn, and carry out various activities from the confines of their homes (Yang et al., 2020). The abrupt closure of educational institutions due to lockdowns prompted authorities to seek alternatives to traditional classroom-based learning (Maatuk et al., 2021). E-learning, or online learning, emerged as a lifeline for education and learning systems during the pandemic. Governments, universities, and global educational organizations turned to various e-learning platforms during this crisis, with Massive Open Online Courses (MOOCs) like Coursera, edX, Udemy, and Udacity gaining immense popularity. The Indian government also encouraged learners to utilize its SWAYAM platform for enrolling in MOOCs. Apart from MOOCs platforms, some individuals and traditional educational institutions offered courses through platforms such as YouTube. Many EdTech companies experienced substantial growth during this period. McKeown et al. (2022) argued that, despite the COVID-19 pandemic, global higher education was shifting towards a new era primarily dominated by online learning. Although attempts to promote online learning existed before the pandemic, the sudden outbreak of COVID-19 accelerated the adoption of online learning both globally and in India. This was primarily due to the impracticality of traditional classroom learning during lockdowns,

necessitating all stakeholders to embrace online delivery, even those who had previously been skeptical (Singh et al., 2021).

A significant shift occurred in e-learning as traditional educational institutions and educators were compelled to incorporate e-learning into their teaching methods, primarily through platforms like Zoom, Google Meet, and Google Classroom. This transition aimed to adapt to the new market and social conditions brought about by the crisis. The extent to which traditional educational institutions could adapt to this new mode of learning became a major challenge (Dhawan, 2020). Murphy (2020) noted how the COVID-19 pandemic boosted e-learning, with many universities adopting it as an alternative to conventional teaching, although he also highlighted that e-learning exacerbated educational inequalities. Impey and Formanek (2021) observed a significant surge in e-learning enrollments during the pandemic, with India contributing a significant portion of new learners.

For many, particularly those in rural areas, the COVID-19 pandemic was their first exposure to the e-learning ecosystem. This chapter aims to shed light on the perspectives of first-time e-learning users. Despite potential shortcomings in the online learning mode, during COVID-19, online learning was no longer an option but a necessity (Dhawan, 2020).

A survey of 200 university leaders conducted by Times Higher Education during COVID-19 found that 53% of universities had shifted 100% of their teaching to an online mode. Approximately 33% of universities reported that more than 75% of their teaching had transitioned to online platforms due to the pandemic. Those institutions that remained offline cited discipline-specific challenges as the principal reason for not transitioning to online learning.

The International Association of Universities (IAU) conducted a global survey on the impact of COVID-19 on learning, revealing that two-thirds of the sample institutions had replaced classroom teaching with online learning. The COVID-19 pandemic wrought radical changes in higher education worldwide, compelling institutions and educators to develop and deliver online courses. They also had to provide proper training to instructors to stay competitive and relevant in this new educational landscape, as perceived by various stakeholders like students, parents, and policymakers (Yang et al., 2020).

Several studies have indicated a manifold increase in e-learning enrollment worldwide during the pandemic. Castaño-Muñoz and Rodrigues (2021) cited two reasons for the surge in enrollments during the COVID-19 crisis: the extensive use of online resources, including e-learning, and the growing need for upskilling and reskilling by individuals and organizations. Kumar (2021) conducted a bibliometric analysis of the 50 most cited papers on COVID-19 in Scopus and found that education and e-learning during COVID-19 emerged as key research themes.

García-Peñalvo et al. (2021) described the challenges of online assessment in higher education during the COVID-19 pandemic. They highlighted that universities and educational institutions were unprepared for online evaluation and suggested techniques to enhance online assessment for teachers and institutions.

E-learning and video-sharing platforms also played a pivotal role in educating and disseminating information about COVID-19, including disease prevention and appropriate social behavior during the pandemic.

Crisis and Opportunity

The famous quote from the HBO show 'Game of Thrones' by Lord Baelish, "Chaos is not a pit. Chaos is a ladder," is apt in the context of the COVID-19 pandemic and the growth of e-learning. The pandemic presented an opportunity for new phenomena to emerge, for experimentation, and for the upliftment of the underprivileged. In various ways, COVID-19 acted as a catalyst for e-learning, fostering introspection into existing pedagogical tools and institutional programs, reevaluating communication methods, and imparting lessons on the best practices for learning and education during times of disruption and stress, such as the COVID-19 pandemic.

The pandemic also served as a catalyst for the development of innovative tools and technologies, accommodating both existing and novel learning paradigms. The complete reliance on e-learning during the pandemic has made learners more aware of the role of online education and instilled a newfound appreciation for traditional classroom education. Consequently, many learners, as well as respondents in the present study, now prefer blended or hybrid learning in the post-pandemic era, where both e-learning and classroom learning complement each other. This integration is seen as a more effective way to provide

comprehensive education compared to the isolation of each mode. While e-learning offers access, quality, and diversity of lectures, physical classroom setups provide essential experiential aspects.

McKeown et al. (2022) argued that, despite the crisis induced by COVID-19, global higher education is transitioning to a new era. Importantly, the education system was not permanently damaged by the pandemic, as it adapted to the changing circumstances by leveraging new tools and technologies. These changes are expected to continue post-pandemic.

EDTECH BOOM IN THE TIMES OF COVID-19

EdTech, short for education technology, involves the use of technology to enhance learning and improve user performance. It encompasses a digital or online technology sector focused on creating and deploying tools, including software, hardware, and associated technological processes, to facilitate learning and education. Prior to COVID-19, K12 Inc. (LRN) was one of the prominent players in the global EdTech industry (Frankenfield, 2020). The EdTech sector had been growing steadily even before the pandemic. In 2019, investments in EdTech reached \$18.66 billion and were projected to exceed \$350 billion by 2025 (World Economic Forum, 2020).

COVID-19 expedited the integration of technology, especially e-learning, into education. By January 2022, the estimated worth of the EdTech industry globally had reached \$224 billion (Howarth, 2022). During the pandemic, around 81% of students in Wuhan, China, attended online classes through the Tencent K-12 Online School (World Economic Forum, 2020). By May 2022, 99% of students in the US were using the internet for learning (Howarth, 2022).

In India, BYJU's emerged as a major player in the EdTech sector, becoming the world's leading EdTech unicorn with a valuation of \$21 billion (Howarth, 2022). Other notable players in the Indian EdTech industry include Unacademy, UpGrad, Physicswallah, Vedantu, and Toppr. The number of EdTech companies in India grew from around 3,500 in 2019 to about 9,000 by the end of 2021, significantly driven by the impact of COVID-19. These EdTech companies provide online content and MOOCs through their websites

or applications. The entry of EdTech into the Indian education landscape can be traced back to the launch of Educomp in 1994 (Saraswathy, 2020). Since then, more EdTech companies gradually entered the market, claiming that their technology and courses could disrupt the education sector. BYJU's became one of India's most valuable EdTech companies in 2019. During the COVID-19 crisis, EdTech companies offered free courses, in line with UNESCO's suggestion that such platforms could assist learners during pandemics (Dhawan, 2020). Six new unicorns emerged in the EdTech sector between 2020 and 2022: Unacademy, Eruditus, UpGrad, Vedantu, Lead School, and PhysicsWallah.

After the COVID-19 pandemic, some higher education institutions, such as universities and autonomous colleges, began offering courses through EdTech platforms. Although the University Grants Commission (UGC) initially expressed reluctance and cautioned against such practices, it later permitted institutions to offer their courses, including degree courses, through privately owned EdTech platforms (Barman, 2022). Presently, 59 universities offer 120 undergraduate, 29 postgraduate, and two postgraduate diploma degree courses through e-learning (Barman, 2022). This shift reflects the government's inclination to engage private players in both traditional and online learning, further driving the growth of digital education and enhancing transparency in their operations.

The unplanned transition to online learning during the pandemic, without proper preparation and training, resulted in uneven learning experiences for both students and providers, which may not be sustainable in the long run. At the same time, the increased reliance on technology in education is expected to usher in a new hybrid model of learning. Wang Tao of Tencent Education suggested, "I believe that the integration of information technology in education will be further accelerated, and online education will eventually become an integral component of school education" (World Economic Forum, 2020). In response, several EdTech companies that had experienced rapid growth during the COVID-19 crisis have recognized the importance of offline presence. Companies like PhysicsWallah have opened offline centers in locations such as Kota. BYJU's and Unacademy have also established offline centers at some locations to complement their digital presence (Patwardhan & Verma, 2022). This change reflects the reduced valuation and funding for EdTech companies after the reopening of physical educational institutions.

As a result, excessive growth and complete dependence on e-learning during the COVID-19 crisis are giving way to a move toward a hybrid model, which combines online and offline learning.

Most EdTech companies primarily focus on K-12 education or competitive exams like JEE, NEET, IAS, NET, SSC, and various state PSC exams, catering to specific student segments. Respondents in the present study mentioned utilizing EdTech platforms for exam preparation, especially for UPSC, JKPSC, and JKSSB level exams. Some students found value in free courses provided by EdTech platforms, particularly for understanding specific subjects. These platforms offered a valuable resource for individuals to explore and learn during the excess time at home due to COVID-19. The pandemic significantly boosted EdTech adoption among learners, as educational institutions remained closed, offering students ample time to explore various e-learning resources.

IMPACT OF COVID-19 ON E-LEARNING

The COVID-19 pandemic brought several lessons for education stakeholders through e-learning, influencing technology, societal dynamics, and policies. It reshaped the perspective on equitable, sustainable, and fair methods of learning and education, especially in higher education (McKeown et al., 2022).

The immediate impacts of COVID-19 on e-learning are noteworthy, including:

- a) COVID-19 compelled everyone to explore e-learning and online educational resources, even those who were previously opposed or hesitant to use them.
- b) The pandemic gave rise to numerous new e-learning platforms, EdTech companies, MOOC platforms, YouTube channels, websites, and more. The online delivery mode became the primary means of education during the COVID-19 crisis, leading to the emergence of new e-learning startups.
- c) Enrollment in e-learning platforms surged dramatically, as observed in the present study. Sahoo et al. (2021) also found similar results regarding increased enrollments during the pandemic. Although e-learning users were steadily increasing even before COVID-19, the pandemic accelerated the rate of enrollments (Impey & Formanek, 2021).

- d) Academic capitalism flourished as more private players entered the education sector with the aim of generating profits rather than focusing on equitable education (Gretzk & Julia, 2021).
- e) COVID-19 presented both challenges and opportunities for implementing new policies and programs for different education stakeholders. It created the challenge of introducing online resources for learning among those who had limited prior experience. Simultaneously, it provided opportunities for many to offer services that were previously impossible.
- f) The pandemic offered global exposure to individuals who were previously limited to national or local education systems, promoting the internationalization and globalization of higher education.
- g) Learners experienced issues of social distancing and social isolation during COVID-19, which were exacerbated in e-learning. Many students missed interacting with their peers in a physical classroom setting, which led to difficulties in concentration and increased stress. The present study's respondents also cited a lack of interaction as one of the major issues in e-learning.
- h) In the COVID-19 crisis, inequities in the education system, particularly in e-learning, became evident. Different socioeconomic groups had varying access to e-learning, which impacted many students. Affluent students from privileged backgrounds fared better in online learning, while underprivileged learners struggled with inadequate devices, poor internet connectivity, and limited exposure.
- i) Some learners faced challenges in adapting to new learning styles within the e-learning ecosystem during the pandemic. Role conflicts also arose for some, as they juggled their educational responsibilities with other duties at home (Baticulon et al., 2021).
- j) Following the pandemic, institutions have become more focused on integrating e-learning with classroom learning. They experienced the practical application of e-learning during the crisis, which led to greater emphasis on blended learning approaches. A UNICEF and UNESCO (2020) report identified that e-learning could be more effectively implemented by addressing pedagogical issues such as bridging the digital divide, upskilling teachers, and developing policies for recognition and assessment.

k) Funding for education was redirected to the health sector during the COVID-19 pandemic, as it primarily impacted the healthcare system.

Government's Response to Continuing Education During COVID-19

The government of India, along with educational institutions, implemented various measures to mitigate the impact of COVID-19 on the education system. In response to the pandemic, the government imposed a strict nationwide lockdown, leading to the closure of offices, both government and private, including educational institutions. This crisis prompted the government and educational institutions to adopt various solutions for continued education through remote learning. These solutions included:

a) Core remote-learning solutions such as TV, radio, WhatsApp, YouTube, and various government platforms, which were accessible to the majority of stakeholders. Notable government e-learning platforms in India included Swayam, Digital Infrastructure for Knowledge Sharing (DIKSHA), e-Pathshala, and the National Repository of Open Educational Resources (NROER).

b) Learning-enabling solutions, which provided support for remote learning through measures like financial assistance and distribution of sanitation kits (UNICEF & UNESCO, 2021).

CONCLUSION

The COVID-19 pandemic has brought about a significant transformation in the education system in India. The EdTech industry experienced a substantial boom during the pandemic, with a surge in new startups entering the e-learning sector. The government actively promoted e-learning during the crisis. The University of Jammu, following UGC directives, adopted online classes through various mediums and encouraged students to enroll in online courses (MOOCs) on SWAYAM.

In summary, the impact of COVID-19 on e-learning in India has been profound and multifaceted. The education landscape has witnessed substantial changes, including the rapid growth of EdTech companies, a shift towards blended learning models, and increased attention to equitable access and pedagogical improvements in e-learning. As we move

forward, it is clear that e-learning will continue to play a significant role in the education system, alongside traditional classroom-based learning, as education stakeholders seek a balance between both modes to provide holistic and accessible education.

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