

Benefits and Challenges of Online Education during COVID-19 Lockdown in India

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ABSTRACT

The outbreak of novel coronavirus COVID-19 had resulted in the “Lockdown” all over the world and had arrested millions of lives in numerous ways. In March 2020, the nationwide lockdown in India resulted in closing of all the learning institutions physically. The teachers and students underwent a lifestyle change due to the integration of the online education system in the mainstream academics. The primary aim of this research is to identify the benefits and challenges of online education during the COVID-19 lockdown in India. The present article outlines the government initiatives taken for inclusion of online education in India. It also discusses the integration of online learning in India via various modes of delivery that are available as resources for students and teachers. Furthermore, this paper aims to review the researches which identify the benefits and complications of online education during the COVID-19 lockdown. This is a secondary research article considering 21 studies conducted over the past two years (2020-2021) that examined the pandemic and its alarming impact on the education system in India. The studies collected were from peer-reviewed from electronic databases such as: Springer, Sage Publications, ResearchGate, Taylor & Francis, Elsevier, ejournal.upi.edu, Wiley online library. Future studies can investigate the strategies to deal with these challenges in online education.

Keywords: COVID-19 Pandemic, Online Education

The world faced an unusual situation in the form of the COVID-19 pandemic. The Merriam-Webster Online Dictionary defined a pandemic as “an outbreak of a disease that occurs over a wide geographic area and affects an exceptionally high proportion of the population”. The ongoing pandemic is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The novel coronavirus was first detected from an outbreak in Wuhan, a city in China, in December 2019. It then proliferated to the entire globe. On 30th January, the World Health Organization declared a Public Health Emergency of International Concern, and raised it to the status of a pandemic on 11th March 2020. The pandemic impacted all aspects of life, including health, economy, culture, education, politics, environment, etc. It disrupted education provision at an unusual scale, with education systems

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around the world being impacted by forcing school closures and abrupt changes to normal school operations. In India, it forced physical closure of schools by pushing all institutions to migrate to an online platform. School closures impacted students, teachers, and families with far-reaching economic and societal consequences.

Technology based teaching especially online education has become the most appropriate alternative to keep educational activities functional in many parts of the world during the pandemic period (Paudel, 2020). Online learning is defined as “learning experiences in synchronous or asynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access. In these environments, students can be anywhere (independent) to learn and interact with instructors and other students” (Singh & Thurman, 2019). It has become an effective means to run educational activities functional and prevent the possible loss of academic session created due to lock downs.

The closure of schools and universities for a considerable period of time has made the institutions and the policy makers including government oblige to plan and implement alternative ways of face-to-face mode of teaching and learning for keeping educational activities functional. Owing to this, the government of India initiated using of online education as part of the teaching-learning process in the country.

According to Mishra, Gupta, & Shree (2020), a new education policy was drafted. It is regarded as a crucial step in the time of this pandemic. The Government of India initiated the "SWAYAM: Study Webs of Active-Learning for Young Aspiring Minds" project. It is regarded as one of the major initiatives in times of the pandemic in India. It is a Massive Open Online Courses (MOOC) platform that hosts online courses.

Ministry of Human Resource Development of India launched various programmes via the SWAYAM platform (Mishra, L., Gupta, T., & Shree, A., 2020):

- Swayam Prabha: There are 32 DTH channels dedicated to telecasting high-quality educational programmes throughout the week for School education (9-12 levels) and Higher Education.
- ARPIT: Is Annual Refresher Programme in Teaching (ARPIT) is an online professional development programme
- e-PG Pathshala: It is run by the University Grants Commission (UGC) and the National Council of Educational Research and Training (NCERT) that provides high-quality curriculum-based and interactive e-content in 70 subjects across all disciplines.
- e-Vidwan: It is a premier database of profiles of scientists/researchers and other faculty members working at leading academic institutions and other R & D organisations involved in teaching and research in India.
- National Digital Library: To help students to prepare for entrance and competitive examinations. To enable people to learn and prepare from best practices from all over the world. To facilitate researchers to perform inter-linked exploration from multiple sources.
- e-ShodhSindhu: It merges UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium. The e-ShodhSindhu will continue to provide current as well as archival access to more than 15,000 core and peer-reviewed journals and several bibliographic, citation and factual databases in different disciplines from a large number of publishers and aggregators to its member institutions. It includes

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centrally funded technical institutions, universities and colleges that are covered under 12(B) and 2(f) Sections of the UGC Act.

- CEC-UGC Youtube Channel: It provides access to unlimited educational curriculum based lectures absolutely free.
- Diksha: It supports various courses of NCERT, CBSE and SCERTs across India.

India's apex regulatory body of higher education, UGC, has taken the present educational scenario very seriously and put some efforts proactively to resolve the deadlock of completing courses and examinations in ongoing semesters. In recent times, class X and class XII board examinations conducted by the states and the centre were cancelled. The government introduced an alternative marking system for result evaluation and declaration. All these steps were taken due to gruesome situation in the pandemic. The educational scenario of the post-COVID-19 outbreak would not be easy to manage teaching-learning situations.

Integration of various modes of delivery in Online Education system in India

The whole country went in lockdown in March 2020. The online education system marked the beginning of a revolution in academics in India. In the face of COVID-19, the shared vision of the education system realized that during the pandemic period, teachers and students were equally motivated to adapt online teaching-learning platforms for fulfilling their educational needs. Everyone is skilled in using social media apps such as WhatsApp, Facebook, Twitter, Instagram, which helps them transition to using online educational platforms such as ZOOM, Cisco WebEx, Google Meet and Microsoft Teams. There were some useful educational apps such as Office 365, Google classroom. More user-friendly video-conferencing apps can be downloaded free of cost and easy to use (FutureLearn, 2020).

Resources for Online Education in India

There are free online resources available from several organisations that offer interactive activities for students of all ages. That keeps their brain active while also testing their ability. There are various online learning platforms in India as well for students to learn online in an interactive, user-friendly cyber environment. Students have options to choose from multiple applications based on content, teachers, intuitive user interface, gamification, doubt clearing, progress syncing, and multiple quizzing options etcetera

Some of the leading learning applications for school students from primary to secondary school are (Online Mode):

- Byju's
- Meritnation
- myCBSEGuide
- Vedantu
- Khan Academy
- Doubtnut
- Vidyakaul
- Toppr

Some of the leading learning applications for students appearing for competitive examination are (Online Mode):

- CAclubindia
- Indigolearn

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- Drmentors Medical PG app
- Testbook
- Unacademy
- Adda 247
- GradeUp

Some of the leading learning applications for students for advanced learning are:

- Coursera
- Simplilearn
- Udemy
- Sololearn
- Coding Ninjas
- Jigsaw Academy

Some of the leading learning applications for students for language learning are:

- Duolingo
- MemRise
- HelloTalk
- Babbel

As a consequence of the pandemic, education system has been dramatically changed and shifted into an online education mode. Use of fully online based teaching and learning is a new experience for all educators, teachers and learners in the Indian education system. However, unforeseen and immediate change from in-person learning to online education has its own pros and cons. The questions about the preparedness, designing and effectiveness of e-learning is still not clearly understood, particularly for a developing country like ours, where the technical constraints like suitability of devices and bandwidth availability poses a serious challenge. This paper aims to identify the benefits and challenges of online education during the COVID-19 lockdown in India.

METHODOLOGY

Aim

To identify the benefits and challenges of online education during the COVID-19 lockdown in India.

Data identification

The key words used to search for researches and studies were “online education during COVID-19 in India”, “e-learning in India during pandemic”

Data collection

The literature consisted of researches published in various peer-reviewed electronic journals and sources such as Elsevier, IEEEExplore, ResearchGate, Springer, Taylor & Francis, and Wiley Online Library. The researches chosen were from a period of the past two years (2020-2021).

Data analysis

The present research is a systematic review of pre-existing researches on the topic. Duplicates, review studies, and studies without systematic data were excluded from this study. All data included was collected from Indian researches conducted in the past two years i.e. 2020-2021. The relevant researches were then content analysed.

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The sources of the 20 researches included in this study are as follows:

Elsevier- 03

IEEEExplore - 01

ResearchGate- 10

SagePub - 01

Springer- 02

Taylor & Francis- 02

Wiley Online Library - 01

RESULTS

S. No.	Author(s)	Variables	Category	Results
1	Agarwal, A., Sharma, S., Kumar, V., & Kaur, M. (2021)	E-Learning, Environment, Health, COVID-19	Environmental impact	Their paper aims to evaluate the impact of e-learning on the environment and public health during COVID-19 lockdown. It is found that e-learning has potential to reduce carbon emissions, which has beneficial impact on the environment. However, the mental health is impacted as e-learning may lead to self-isolation and reduction in academic achievements that may lead to anxiety and mental depression. Due to usage of electronic devices for learning, the eyes and neck muscles may be put in strain, having deleterious effects on physical health.
2	Biswas, S. & Biswas, A. (2021)	Coronavirus, COVID-19, Pandemic, Anxiety, GAD-7, HAM-A	Mental health	They found that almost all the students went through anxiety because of the pandemic.
3	Harjule, P., Rahman, A. & Agarwal, B. (2021)	COVID-19, Online learning, Mental health, School children, Composite anxiety index	Mental health	The results of this cross-sectional study showed that there is a significant difference between the preferred modes of learning online or traditional classroom methods during the pandemic. A significant increase in the screen times of school children was observed while learning online under school closure scenario. This was one of the causes of several anxiety issues and mental

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				health concerns amongst school going children and their parents in India. It was also observed that there was not much change in the sleeping patterns of the school going children under lockdown situations and most parents were content that their wards are safely learning at home.
4	Kapilan, N., Vidhya, P., & Gao, X. Z. (2021)	Students, learning, conventional laboratory, virtual laboratory, COVID-19	Cost effectiveness	They observed that more than 90 per cent of the participants were happy about the virtual laboratory and they expressed that their learning process improved with virtual laboratory experiments. This expanded their academic reach, academic excellence and effective training, and minimized the operating cost.
5	Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021)	Online learning, Perception, Readiness, Preferences, Content analysis	Flexibility and accessibility, lack of infrastructure and connectivity	Results indicated that students opted for online classes to manage the curriculum during this pandemic. They found that students prefer recorded classes with quizzes at the end of each class. The students like the flexibility and convenience of online education. Broadband connectivity issues in rural areas make it a challenge for students. Shifting entirely to online mode may not be possible. There needs to be a hybrid model.
6	Naik, G. L., Deshpande, M., Shivananda, D. C., Ajey, C. P., & Manjunath Patel, G. C. (2021)	COVID-19, lock down, Higher education, online learning, traditional teaching	Lack of infrastructure and connectivity	They study confirmed that the traditional chalk and talk methodology is often better than online sessions. Drawbacks included lack of facilities, infrastructure, technical tools, and internet access for conducting online sessions.
7	Shakeel, A., Shazli, T., Salman, M. S., Naqvi, H. R., Ahmad,	Assignment-Based Exam, E-Examination, E-Learning,	Academic dishonesty	Their findings suggest that both modes of examination have their own challenges largely governed by the digital and economic divide. They also reported high

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	N., & Ali, N. (2021)	Open-Book Exam		levels of academic dishonesty and misconduct in the form of cheating, fabrication, facilitation and plagiarism.
8	Alvi, M., & Gupta, M. (2020)	School feeding program, COVID-19, Education, Maternal nutrition, Nutrition security, Child Health	Socioeconomic impact	They focused on the dietary security of children who depend on school feeding and supplementary nutrition programs. They found that the impact is much more severe for girls and children from already disadvantaged ethnic and caste groups.
9	Arora, A. K., & Srinivasan, R. (2020)	COVID-19, teaching – Learning Process, Virtual Classes, COVID-19, Impact on learning	Lack of infrastructure and connectivity, lack of training, lack of social interaction	Their study identified issues with the network, lack of training, and lack of awareness as the challenges faced by teachers. Drawbacks included less attendance, lack of personal touch, and lack of interaction due to connectivity issues.
1	Chandra, Y. (2020)	Pandemic, academics, COVID-19, online learning	Development of new skills	Results indicated significant differences between the fear of academic failure and online and home environments among male and female students. Many of them have started diverting themselves to various creative activities and taking up courses that are helping them to learn new technical skills. By using emotional intelligence and distancing from boredom and depressive thoughts, students were trying to cope with the effects of a current pandemic situation.
1	Dangi, R. R., & George, M. (2020)	COVID-19, Pandemic and Epidemic	Mental health	They found that most of the students had severe anxiety. Some of the students were moderately anxious. Education, online classes provided by online institution and duration of online classes were associated with anxiety.
1	Harsha, R., & Bai, T.	Pandemic, Lockdown,	Technological friendliness by	They found that the students are happy that institutions are

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	(2020)	Social Distancing, online education, distance learning, online platform	the educational institutions	putting efforts to keep the curriculum on track amidst the lockdown. They state that Online Education is "not a substitute but an appendage to classroom teaching and other methodologies". It is a temporary relief during a difficult situation.
1	Jadhav, V. R., Bagul, T. D., & Aswale, S. R. (2020)	COVID-19, Lockdown, Online education, WHO	Technological friendliness by the educational institutions	Students have difficulty concentrating on their studies. They found that some students say that there is a positive impact. Students prefer that exams should be online, and professors take classes online. The issues include the increased cost of education.
1	Jena, P. K. (2020)	Online learning, Online platforms, Perceptions of learners and educators	Flexibility and accessibility	Their study concluded that teachers can provide a more interactive distance learning experience by delivering real-time, simultaneous video conferencing.
1	Kapasias N, Paul P, Roy A, Saha J, Zaveri A, Mallick R, Barman B, Das P, & Chouhan P. (2020)	COVID-19, E-learning, Lockdown, Undergraduate and postgraduate learners	Mental health, socioeconomic impact	They found that students faced problems related to depression anxiety, poor internet connectivity, and an unfavourable study environment at home. Students from remote areas and marginalized sections mainly face enormous challenges for the study during this pandemic.
1	Nambiar, D. (2020)	Online classes, COVID-19, Survey, Teachers' Perspective, Students' Perspective	Social interaction	Their study showed that important areas for teacher and student satisfaction with online classes are quality and timely interaction between student and professor, technical support availability, structured online class modules, and modifications to accommodate the conduction of practical classes.
1	Raj, U. & Khare, S. (2020)	Education, Students, India, COVID-19, System	Lack of infrastructure & connectivity, socioeconomic impact	This research found that many faculties in India have switched to online classes thanks to the lockdown. Students do not connect because they don't have

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				a laptop, desktop, or tablet.
1	Shenoy, V., Mahendra, S., & Vijay, N. (2020)	COVID-19, Lockdown, Technology Adaption, Teaching, Learning, Students Engagement, and Faculty Experience	Acceptance and readiness	Their study found that emotions and perceptions of faculty towards the usage of technology and experience are different. Online education has created a revolution in Indian higher education, as there was lots of resistance in the teaching fraternity towards adapting to technology and the virtual engagement of students. Due to the situation, most of the higher education in Bangalore has widely adopted technology but not without opposition. Students' involvement is more than the regular class engagement.
1	Sreehari, P. (2020)	COVID-19, Lockdown, E-learning, Online learning	Flexibility and accessibility	This research revealed that Zoom is the most used virtual learning platform for online classes during the Covid-19 lockdown. The students prefer online learning as they are comfortable with e-learning, can learn at their own pace. The difficulties include network and bandwidth problems. They favoured the blended learning approach.
2	Thomas, A., Shenoy, M. T., Shenoy, K. T., Kumar, S. S., Sidheeque, A., Khovidh, C., & Sivendu, P. (2020)	COVID-19, Lockdown, Cross-sectional survey, Undergraduate medical education, Medical students	Lack of infrastructure and connectivity, Acceptance and readiness	They found that students do not prefer online classes. Difficulties include network problems. They felt that teachers should try to make the online lectures more interactive.

DISCUSSION

As the COVID-19 Pandemic created global crisis. Education sector was also disturbed. Owing to this, as mentioned above a lot initiatives by the government of India were taken into consideration. A lot of online portals and channels came into existence. Integration of online mode of education was also introduced in the educational system. Hence, after doing a review of the studies below are the advantages and challenges of online education during COVID-19 that were collectively faced by the students and teachers: -

Advantages of Online Education during COVID-19 Pandemic in India

- **Development of new skills:** Online education helped in development of a new skill as children took up creative activities and courses that help them develop healthy coping strategies to deal with the pressure and stress of the pandemic (Chandra, 2020). They developed new skills which helped them improve their academic performance and grooming themselves. Online learning encourages students to be more productive, use time which keep individuals safe from the pandemic situation like the spreading of COVID-19.
- **Technological friendliness by the educational institutions:** Even institutions, schools, colleges, and universities understood the difficulties that students and faculties faced due to the pandemic and lockdown. Harsha & Bai (2020) found that the students were happy that institutions are putting efforts to keep the curriculum on track amidst the lockdown. According to Jadhav, Bagul & Aswale (2020), there is a positive impact. Students preferred that exams should be online, and professors take classes online during lockdowns. They state that Online Education is not a substitute but an appendage to classroom teaching and other methodologies (Harsha & Bai, 2020). It is a temporary relief during a difficult situation.
- **Flexibility and accessibility:** Students and teachers liked the flexibility and convenience of online education, and reference material could be accessed anytime and from anywhere. Students opted for online classes to manage the curriculum during this pandemic (Muthuprasad et Al., 2021). They found that students prefer recorded classes with quizzes at the end of each class. The students like online learning as they are comfortable with e-learning can learn at their own pace (Sreehari, 2020). The study material is easily stored and can be re-accessed. Jena, P. K. (2020) found that teachers can provide a more interactive distance learning experience by delivering real-time, simultaneous video conferencing.
- **Cost-effectiveness:** Online education proved as a cost-effective technology that is quite affordable and enhances communication between educators and students. One educator can teach various virtual classes simultaneously that reduces travelling to places. It can accommodate more learners at a particular time. Kapilan, Vidhya, and Gao (2021) found that provisions such as virtual laboratories were cost effective while maintaining academic excellence and efficacy.

Challenges of Online education during COVID-19 pandemic in India

- **Socioeconomic and environmental impact:** Impact on Children from lower socioeconomic backgrounds and rural areas in India were seen to be affected academically during the covid-19 pandemic. Alvi & Gupta (2020) focused on the dietary security of children who depend on school feeding and supplementary nutrition programs. They found that the impact is much more severe for girls and children from already disadvantaged ethnic and caste groups. Kapasia et Al. (2020) found that students from remote areas and marginalized sections mainly face enormous challenges for the study during this pandemic. Agarwal et al. (2021) found that e-learning has potential to reduce carbon emissions, which has beneficial impact on the environment.
- **Mental health difficulties:** Due to the pandemic and isolation individuals were dealing with grief, loss, stress, anxiety, and depressive symptoms. Students dealt with academic stress and pressure on top of it. Biswas & Biswas (2021) found that almost all the students go through anxiety because of the pandemic. Dangi & George (2020) found that most of the students had severe anxiety. Some of the students were moderately anxious. Kapasia et Al. (2020) found that students faced problems related to depression and

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anxiety. Chandra (2020) indicated significant differences between the fear of academic failure and online and home environments among male and female students. Agarwal et al. (2021) revealed that mental health is impacted as e-learning may lead to self-isolation and reduction in academic achievements that may lead to anxiety and mental depression. Harjule, Rahman, and Agarwal (2021) observed a significant increase in the screen times of school children while learning online under school closure scenario which was one of the causes of several anxiety issues and mental health concerns amongst school going children and their parents in India.

- **Physical health difficulties:** Agarwal et al. found that, due to usage of electronic devices for learning, the eyes and neck muscles may be put in strain, having deleterious effects on physical health.
- **Lack of infrastructure and connectivity:** Muthuprasad et Al. (2021) indicated that broadband connectivity issues in rural areas made it a challenge for students and teachers. An agricultural education system has many practical oriented courses. Kapasia et Al. (2020) found that students faced problems related to poor internet connectivity at home. Students from remote areas and marginalized sections mainly face enormous challenges for the study during this pandemic. Naik et Al. (2021) found that the traditional chalk and talk methodology is often better than online sessions. Drawbacks included lack of facilities, infrastructure, technical tools, and internet access for conducting online sessions. Sreehari (2020) revealed that Zoom is the most used virtual learning platform for online classes during the Covid-19 lockdown. The difficulties include network and bandwidth problems. Thomas et Al. (2020) found that students do not prefer online classes. Difficulties include network problems. They felt that teachers should try to make the online lectures more interactive. According to Jadhav, Bagul & Aswale (2020), the issues include the increased cost of education. Arora & Srinivasan (2020) identified issues with the network.
- **Lack of awareness and training:** Teachers and students faced difficulties during online teaching sessions due to a lack of awareness about online applications and the technology involved. Arora & Srinivasan (2020) identified issues with the network, lack of training, and lack of awareness as the challenges faced by teachers. Drawbacks included less attendance, lack of personal touch, and lack of interaction due to connectivity issues.
- **Acceptance and readiness:** A lot of teachers and students preferred traditional methods of teaching. Thomas et Al. (2020) found that students do not prefer online classes. Fakhrunisa & Prabawanto (2020) identified challenges as teacher readiness in running applications to carry out online learning, online learning facilities for students, limitations in achieving knowledge that demands mathematical thinking, and constraints in giving feedback to students. Naik et. Al. (2021) confirmed that the traditional chalk and talk methodology is often better than online sessions. Shenoy, Mahendra & Vijay (2020) found that emotions and perceptions of faculty towards the usage of technology and experience are different. Online education has created a revolution in Indian higher education, as there was lots of resistance in the teaching fraternity towards adapting to technology and the virtual engagement of students owing to fear, anxiety and consciousness among students and faculty.
- **Academic dishonesty:** Shakeel et al. (2021) found that both, in-person and online modes of examinations, have their own challenges largely governed by the digital and economic divide. They reported that 72.9% of the students said that online exams of such type promote academic dishonesty in the form of cheating, fabrication, facilitation and plagiarism.

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- **Difficulty in social interaction:** Arora & Srinivasan (2020) identified issues with lack of interaction due to connectivity issues. Nambiar (2020) showed that important areas for teacher and student satisfaction with online classes are quality and timely interaction between students and professors and peers.

CONCLUSION

To conclude, there are more challenges to this transition from traditional education to online education. Most of the researches encourage "blended teaching" or 'Hybrid model', which includes the best parts of both offline and online education. Future studies can investigate how to overcome these challenges in online education and increase the advantages.

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Conflict of Interest

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