International Journal of Engineering, Business and Management (IJEBM)
ISSN: 2456-7817
[Vol-6, Issue-6, Nov-Dec, 2022]
Issue DOI: https://dx.doi.org/10.22161/ijebm.6.6
Article DOI: https://dx.doi.org/10.22161/ijebm.6.6.7

Status of Online Education in India: Pre and Post COVID-19 Era

Dr. Susheela[1], Dr. Vandana Nasa[2]

[1]Assistant Professor, TDL Government College for Women, Murthal, Sonepat, Haryana, India
[2]Associate Professor of commerce, Govt. College for Women, Sonipat, Haryana, India

Received: 06 Nov 2022; Received in revised form: 01 Dec 2022; Accepted: 08 Dec 2022; Available online: 14 Dec 2022

Abstract— *For the past several years, the COVID-19 pandemic has forced educational institutions around the world to close their doors and as a result, the academic calendar has been badly put on the line. The COVID-19 pandemic has sparked a global realization that the current way of the education system is not going to work and it needs serious reforms in developing countries like India where most of the curricula are designed for traditional offline modes of education. Online education is one of the most reliable methods that can help combat the inevitable crisis faced in India by the education sector due to COVID-19. There have been numerous challenges and opportunities created by the sudden change in teaching and learning methods. A critical analysis of the educational sector's impact during an Indian disease outbreak is presented in this article. Moreover, various aspects of how India approaches this critical situation through online education are discussed. In addition, the article provides information about how to handle the challenges of online education. The results of the investigation carried out in this paper indicate that majority of respondents are prepared to enroll and utilize the benefits of the online education system with few hurdles that need to be tackled by the government of India in order to spread this adoption to the masses.*

Keywords— ***Online Education, Post COVID-19, teaching and learning methods.***

I. INTRODUCTION

Education is necessary for the sustainable development of a nation. In India, getting an education is among the basic rights of a human being and the current literacy rate is around 74%. In India, the primary mode of education includes offline classes and distance learning opportunities [15]. However, nowadays, another mode of education is also getting pace in India as well as other parts of the World, and this mode of learning is known as online learning. One reason behind the adoption of the online teaching mode is that this mode is already being tested around the world with very fruitful results and benefits. Another major reason behind adopting this approach is the recent pandemic (COVID-19) faced by different countries of the world that resulted in the disruption of offline modes of teaching due to the closing of schools, universities, etc. As a global pandemic, COVID-19 has urged social distancing and also obstructed the teaching-learning process. Due to it, people are forced to sit indoors, and sitting idle indoors can cause mental stress. At this stage of the pandemic, it was very challenging to continue education in offline mode, especially in developing countries like India [7, 8, 13]. Online education came to the rescue at this stage and helped in continue our studies through virtual means of education [1, 3]. In an online education system, virtual classes can be easily organized using the Internet and knowledge can be virtually imparted using multiple media. In this system, by using Internet-based communication tools like E-mail, WhatsApp, Videoconferencing, and Instant Messaging, learners (students) are able to communicate virtually with teachers and other fellow students. Teachers can provide online classes as effectively as traditional ones by using virtual classrooms with all the necessary tools. Online education is also known as e-learning. In online learning, videoconferencing can be an effective way to enhance group collaboration, which can be used to replace face-to-face classroom learning to some extent [9, 10]. Online learning provides flexibility in terms of timings, places, quality content, etc. and it is having following benefits, especially in the COVID-19 crisis:

1. It's possible to gain knowledge at home and at the same time help in maintaining social distancing during the pandemic.
2. Severe epidemic situations can be easily minimized by staying at home together with maintaining social distancing.
3. It provides an all-time available platform (24X7) to provide interactive support to students as and when needed.
4. It makes it feasible to provide real-time reporting and monitoring of students.
5. With the help of Internet connection, this mode of learning is turning more learners and enhancing collaboration that spreads around the world by breaking location boundaries.
6. It is helpful in improving the overall image of an institution due to its adoption of global education standards.

II. LITERATURE SURVEY

The authors in [10] carried out a survey on 307 agriculture students to investigate their perceptions and preferences for online education. They concluded that 70% of students are ready to adopt the online mode of education and they prefer recorded classes with quiz support. However, it is important to note here that the study is based only on agriculture students. A similar restricted study is carried out in [19] and is focused on the suitability of online education for medical students. Authors in [20] studied available challenges and opportunities to adopt online education in India. However, the study was before the COVID-19 pandemic. Authors in [21] carried out an investigation to analyze stress experienced by different students while facing online education and suggested emotional intelligence-based strategies to cope with academic stress. Authors in [15] carried out an investigation to compare online versus offline modes of education in India. The study carried out in this paper is different from the study carried out by the authors of [15] in that this paper studied various online resources and platforms available to promote online education in India which is beneficial to readers of this paper in the current scenario. Moreover, it also helps in providing up-to-date knowledge to its readers.

III. METHODOLOGY

The methodology adopted in this research paper to carry out an investigation regarding the status of the online education system in the pre and post-COVID-19 era is based on the study carried out on some journals and e-contents relating to online learning system. The main aim is to find out the problems associated with online learning systems, especially during pandemics. A list of actions taken by the government of India to support the online learning process during the lockdown period for COvid-19 is collected from government websites. Moreover, online and/ or offline counseling sessions and videoconferencing meetings using ZOOM/ Google Meet are organized by an author with fresh learners from Indira Gandhi National Open University (IGNOU) during the lockdown period in India. The idea was to collect various perceptions of the learners and educators. Finally, collected data is analyzed to determine the benefits and detriments of the Online Learning system during the lockdown, as well as propose better ways to make it more effective.

IV. RESULTS AND INTERPRETATION

RQ1: What are various Online Platforms of Teaching Adopted in India during COVID-19?

During this pandemic, the Indian people have shown a coordinated and collective effort while being productive with their time under the current circumstances by embracing Information and Communication Technology (ICT) during the learning process and contributing to the nation's intellectual wealth. In order to make sure that students do not miss out on their classes during the lockdown, the University Grants Commission (UGC) and other statutory bodies across India have advertised online classes across the different universities [11]. Plannings are made on large scale in order to provide audio-visual content for students with self-assessment exercises. Arrangements are made to provide online sessions to students for clearing their doubts on important topics. Table- 1 below shows the summary of various key digital initiatives started in India during COVID – 19 by different government bodies such as UGC and MHRD in order to strengthen digital literacy [16-18].

Table- 1: Summary of Digital Initiatives in India during COVID- 19 ERA

S. No.	Digital Platform Name	Description	Link
1.	SWAYAM	• A program initiated by Govt. of India • Aims to achieve three key principles of the new education policy namely quality, access, and equity for all students. • Bridge gap between digitally untouched hitherto students and the mainstream of global quality knowledge economy • Hosts all courses from class 9th till post-graduate degrees. • All the courses are divided into four sections – (1) video lectures, (2) specially prepared reading materials which can be downloaded or printed, (3) self-assessment tests which include tests and quizzes, and (4) online discussion forums to clear the doubts.	https://swayam.gov.in/
2.	MOOC	• Designed for geographically dispersed students, it allows students to learn via the Internet for free. • Students and professionals use them primarily for higher education and career advancement. • MOOC courses typically consist of a course instructor that provides course material and a course platform that provides technical infrastructure facilities. • MOOC courses can be free as well such as degree programs of universities, certification courses are generally paid. • There are two types of MOOCs: self-paced and abridged schedules.	https://www.mooc.org/
3.	e-PG Pathshala	• The MHRD's "e-PG Pathshala" is part of the UGC's "National Mission on Education through ICT". • High-quality content is developed by subject experts from universities across India and other R & D institutions. • Today's date covers approximately 70 subjects related to different disciplines such as Art, Humanities, Mathematics, Social Science, etc.	https://epgp.inflibnet.ac.in/
4.	SWAYAMPRABHA	• It is an initiative of MHRD to provide high quality education channels across India. • It consists of 34 digital satellite channels dedicated to providing educational content 24X7 through the GSAT-15 satellite. • At least four hours of new material will be presented each day, followed by five repeats a day, so the students can choose the time most convenient to them. • Provides quality content for school students (9th to 12th) and higher education students.	https://www.swayamprabha.gov.in
5.	National Digital Library	• It is a virtual repository of educational resources and is sponsored and funded by MoE via its National Mission on Education through Information and Communication Technology (NMEICT). • The service offers free of cost access to a wide range of multilingual	https://ndl.iitkgp.ac.in

		learning resources, including textbooks, articles, videos, audiobooks, lectures, simulations, fiction, and a lot more. ● Indian Institute of Technology Kharagpur develops, operates, and maintains it.	
6.	Shodhganga	● It is an online digital repository maintained by INFLIBNET, India that provides thesis and dissertations submitted across Universities in India. ● Currently, 646 Universities are contributing 359378 full-text thesis and 8657 synopses ● INFLIBNET also maintains another repository called "Shodhgangotri" that provides approved Ph.D. synopses and research proposals across India and helps in avoiding duplication of research.	https://shodhganga.inflibnet.ac.in/ http://shodhgangotri.inflibnet.ac.in/
7.	e-Shodh Sindhu	● An initiative of MoE (formerly MHRD) to promote Higher Education and Research across India ● It is a merged digital platform of three consortia namely UGC-INFONET Digital Library Consortium, NLIST, and INDEST-AICTE Consortium. ● Provide access to over 10,000 core and peer-reviewed journals, e-books, factual databases relating to citation, and bibliography related to a wide range of different disciplines.	https://ess.inflibnet.ac.in/
8.	Vidwan	● A premier database of profiles of leading and active faculty members, scientists, and researchers working at leading R & D organizations and academic institutions ● Aimed at promoting research and collaboration	https://vidwan.inflibnet.ac.in/
9.	DIKSHA	● It is a national platform initiated by NCERT to promote school education in the year 2017 ● Currently, it supports 18+ languages and covers the curriculum of NCERT, CBSE, and SCERTs across India ● provides features such as explanation contents, quizzes, question banks, and exam preparation material, teacher's training facilities, student assessment capabilities. ● QR codes in textbooks help in easy navigation of contents	https://diksha.gov.in/
12.	CEC-UGC YouTube channel	● The Consortium for Educational Communication (CEC)- UGC is a digital initiative started by UGC of India aiming at promoting higher education through the power of Television and ICT by providing quality audio/ visual and web-based content	https://www.youtube.com/user/cecugc; https://www.youtube.com/user/cecedusat

RQ2: What are various live-video communication Platforms available in India during COVID-19?

During the past decade, video communication has become increasingly popular especially in the field of education due to the global COVID- 19 pandemic. It refers to the transmission of real-time face-to-face on-screen information via video streaming/ sharing and helps even geographically dislocated senders and recipients to interact using both audio and video. Table- 2 summarizes different live-video communication platforms that gained popularity in the field of digital education [16-18].

Table-2: List of Various live-video communication platforms available in India during COVID-19.

S. No.	Platform Name	Description	Link
1.	Zoom	● Cloud-based service that offers audio-visual conferencing, chats, collaboration, and webinars through computer desktop or mobile ● allows up to 100 attendees to join a maximum of 40 minutes of meeting free of cost and up to 500 attendees using subscription-based services of any time duration ● Zoom does not support HD Videoconferencing right now.	https://zoom.us/download
2.	Google Meet	● In terms of total participants, Google Meet is similar to Zoom except that the free meeting minutes are for 1 Hour and in live streaming, total viewers can be up to 1,00,000 ● Google Meet provides "Caption" facilities that translate the narrations of the speaker for easy understanding to the non-native audience ● provides facility to join calls using Google Calendar	https://meet.google.com/?pli=1
3.	Skype	● A VoIP service-based software to make a free video, and voice calls one-to-one and in groups. ● The commercial version gives facilities of a phone call and SMS facilities. ● Provides features such as end-to-end encryption, real-time language translation, live subtitles, screen sharing, etc.	https://www.skype.com/en/get-skype/
4.	Facebook Live	● Through Facebook Live, we can live-stream events, performances, and gatherings on social network platforms. The stream allows viewers to share, react, and comment during it. ● It is very handy for businesses, and individuals to promote themselves. ● Facebook Live can be done on a Page, in a group, or at an event. ● Live-stream can be scheduled one week in advance. ● In addition, the video is recorded and published to the profile or page so that it can be viewed at a later time. ● Facebook live streaming can be of a maximum of 8 hours duration.	
5.	YouTube Live	● YouTube Live is a convenient way for creators to reach out to their audience in real-time with a live feed, comments, and chats. ● Live-stream using YouTube live requires activation of the google account (which took around 24 hours). After that, we can directly go live with millions of audiences. ● Streaming from mobile requires that the YouTube channel has a minimum of 1000 subscribers. ● It does not have a maximum time duration limit for creators to live-stream but a maximum of only 12 hours of content can be archived.	
6.	FreeConference	● With HD quality, this service offers free and unlimited conferences. Provides send invitations and reminders facilities once a conference call is scheduled. ● Provides facilities for 1000 call participants and 100 web participants to	https://www.freeconference.com/

		join the conference at a time without any complex setup and unnecessary delay. ● Allows dial-in facility using toll-free conference call numbers in 15 different countries.	
7.	Webex	● Provides unlimited conference calls with robust crystal-clear audio, powerful controls, unparalleled security, high-quality video, and rich screen sharing facilities for any sized organization.	https://www.webex.com/
8.	Microsoft Teams	● Teams from Microsoft is a collaboration app that keeps you and your team organized, connected, and informed by providing facilities like online meetings, chatting, document storage, screen sharing, etc. ● Online meetings can have up to 10,000 participants.	https://www.microsoft.com/en-in/microsoft-teams/group-chat-software/

Merits of online learning during COVID- 19 Pandemic

Online learning allows individuals to use their time more productively, thereby protecting them from pandemic issues like spreading COVID-19. In the online mode of learning, it is easier to access experts/specialists from around the country and abroad, and their facilities are available online 24/7 at any time. Some of the key dominating factors of online learning that emerged during the COVID-19 pandemic are as follows:

1. It offers geographical reach even to far-flung and rural areas.
2. It is an affordable and cost-effective way to foster communication between educators and students by means of the virtual class concept and accommodation of more students at one time. Virtual classes allow educators to offer multiple classes simultaneously, reducing travel time between locations.
3. Classes and conferences conducted in online mode can be easily recorded and saved on a web server database for future reference. Digital distribution of these saved contents can be redistributed among students for reviewing again.
4. Online examinations can be easily conducted using specialized software and it helps in avoiding unnecessary delays in the annual academic calendar, especially during the COVID-19 pandemic.
5. Handy tool for learners who want to learn from home especially women and physically disabled persons.
6. Online education platform gives us an opportunity to learn time management skill as generally we are balancing our job/ personal life and education together at the same time.
7. The online platform provides more opportunities to concentrate and focus as the learner is away from the crowded classroom environment.
8. It offers added flexibility to learn and provides a self-paced learning environment to its learners.

Demerits of online learning during COVID- 19 Pandemic

As with other teaching methods, online learning also has its own negative sides which one must be aware of so that proper strategies must be prepared in order to have uninterrupted learning [4, 5]. The main disadvantages of an online learning environment are as follows:

1. The major hindrance to the growth of online learning is the lack of basic technical knowledge required to keep one's a part of the online classroom. Students and teachers need to be trained in a basic understanding of digital learning technologies. Many a time there is a lack of resources that are required to conduct or to be a part of online classes.
2. Online safety is another major concern in digital learning as not every learner has the necessary knowledge, and resources to keep themselves away from the dark sides of the digital world. Many a time children become vulnerable to online sexual exploitation because of spending more time in the digital world.
3. Affordability of high-speed internet connectivity and necessary gadgets is another major concern for developing nations like India where low-income families can't afford such investments in the education of students. This results in an increased

gap between privileged and unprivileged students. However, the government of India is continuously making its best efforts for decreasing this gap.

4. Another challenge is to keep students focused on screens for a long time period. Here, the teacher must have some extra skills to make students engaged in the online classroom by making the class environment more crisp and interactive so as to make students more focused and attentive.
5. Due to the increase in the cases of cyber-attacks and/ or frauds, the security of personal data is another major concern without the latest antivirus software and other critical security updates.
6. Last but not the least, online learning can create problems such as laziness, and lack of interpersonal relations among teachers and students especially due to a lack of self-discipline and a lonely home environment.

Bottlenecks for online learning growth in India

Major hurdles faced to successfully adopting online learning in India are as follows [4, 6, 12, 14]:

- Lack of high-speed internet connectivity especially in rural and far-flung areas is a major bottleneck in promoting online education in India [2].
- HD quality video calls/ conferences consume a larger amount of internet data. The major population in India generally uses limited internet data plans in their day-to-day life. Thus, hindering online education growth on a large scale.
- In developing countries like India, there is pitifully low access to the internet. Thus, many of the education models may fail miserably. The NITI Aayog claims in their report entitled "Strategy for New India @75" that quality and reliable internet connectivity is a major bottleneck along with the fact that there are still around 55,000 villages that are left without mobile network coverage.
- In developing countries like India, there is an intense need for self-discipline for learners as the online learning platform is being used for the first time by the masses and there are chances of distraction.
- Lack of devices and technophobia is another major bottleneck for both teachers and students.

V. CONCLUSIONS

No doubt, online learning is of great use, especially for teachers, institutions, and students in India. Moreover, it is a platform for student-led advancements and learning. Online education has brought a positive opportunity for students and working professionals to acquire additional knowledge along with their regular studies and jobs. Yes, the online learning platform is great handy all across the world and we as a learner in India must take this opportunity in a positive way especially in the current COVID-19 pandemic situation as our regular offline classes are badly affected. The online classroom-based study is the only option left for students in India that can help the academic education system to continue in a more systematic way as well as help in saving precious time for students. This option is being openly adopted and is widely being spread among the community because of the efforts of the government of India on large scale. However, there is a need for parents and teachers to be more vigilant so that students will only adopt only positive side of the internet. Moreover, students need to be more self-disciplined so as to safeguard themselves against cyber fraud and avoid laziness.

REFERENCES

[1] Appana, S. (2008). A review of benefits and limitations of online learning in the context of the student, the instructor and the tenured faculty. International Journal on E-learning, 7(1), 5-22. Waynesville, NC USA: Association for the Advancement of Computing in Education (AACE).

[2] Arasaratnam-Smith, L. A., & Northcote, M. (2017). Community in Online Higher Education: Challenges and Opportunities. Electronic Journal of e-Learning, 15(2), 188-198.

[3] Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. International Journal of Instructional Technology and Distance Learning, 12(1), 29-42.

[4] Dang, A., Khanra, S., & Kagzi, M. (2022). Barriers towards the continued usage of massive open online courses: A case study in India. *The International Journal of Management Education*, *20*(1), 100562.

[5] Gupta, R., Aggarwal, A., Sable, D., Chahar, P., Sharma, A., Kumari, A., & Maji, R. (2022). Covid-19 pandemic and online education: Impact on students, parents and teachers. *Journal of Human Behavior in the Social Environment*, *32*(4), 426-449.

[6] Jena PK (2020) Impact of pandemic COVID-19 on education in India. Int J Curr Res (IJCR) 12(7):12582–12586

[7] Kumar S, Maheshwari V, Prabhu J, Prasanna M, Jayalakshmi P, Suganya P, Jothikumar R (2020) Social economic impact of COVID-19 Outbreak in India. Int J Pervasive Comput Commun. https://doi.org/10.1108/IJPCC-08-2020-0107

[8] Martin N, Lazalde OM, Stokes C, Romano D (2012) An evaluation of remote communication versus face-to-face in clinical dental education. Br Dent J 212(6):277–282

[9] McBrien JL, Cheng R, Jones P (2009) Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. Int Rev Res Open Distrib Learn. https://doi.org/10.19173/irrodl.v10i3.605

[10] Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID-19 pandemic. Social Sciences & Humanities Open, 3(1), 100101.

[11] Naik, G. L., Deshpande, M., Shivananda, D. C., Ajey, C. P., & Manjunath Patel, G. C. (2021). Online Teaching and Learning of Higher Education in India during COVID-19 Emergency Lockdown. *Pedagogical Research*, *6*(1).

[12] Sengupta, S. (2022). Possibilities and challenges of online education in India during the COVID-19 pandemic. *International Journal of Web-Based Learning and Teaching Technologies (IJWLTT)*, *17*(4), 1-11.

[13] Tadesse S, Muluye W (2020) The impact of COVID-19 pandemic on education system in developing countries: a review. Open J Soc Sci 8(10):159–170

[14] UNESCO (2020) Education: from disruption to recovery. Priya KB, Rajendran P

[15] Wadhwa, N., & Khatak, S. (2020). Online versus offline mode of education–is India ready to meet the challenges of online education in lockdown. *Journal of the Social Sciences*, *48*(3), 404-413.

[16] https://www.education.gov.in/en/higher_education

[17] https://www.education.gov.in/en/e-contents

[18] https://www.education.gov.in/sites/upload_files/mhrd/files/irde_21.pdf

[19] Nimavat, N., Singh, S., Fichadiya, N., Sharma, P., Patel, N., Kumar, M., ... & Pandit, N. (2021). Online medical education in India–different challenges and probable solutions in the age of COVID-19. Advances in Medical Education and Practice, 12, 237.

[20] Jindal, A., & Chahal, B. P. S. (2018). Challenges and opportunities for online education in India. *Pramana research journal*, *8*(4), 99-106.

[21] Chandra, Y. (2020). Online education during COVID-19: perception of academic stress and emotional intelligence coping strategies among college students. *Asian education and development studies*.