

# Online Education: From Periphery to Epicentre in Covid-19 Crisis

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## ABSTRACT

*Nowadays, COVID-19 has emerged as a pandemic disease that has disrupted the whole life in general and the education system in particular. Industry 4.0 is also seeking an innovative and experiential way of learning. With this scenario in mind, the author has written this chapter which will throw light on the need and significance of online education, tools available for online education, and how this online education has become a boon in the COVID-19 crisis. In the last part of the chapter, the author has suggested post-COVID-19 strategies to be adopted by the educational institutes to make the education system more innovative and effective as well as to ensure the health and safety of its people.*

**Keywords:** Online Education, AISHE, issues in online education, tools and instruments

## INTRODUCTION

These days whole world including India is passing through an unprecedented difficult time due to the outbreak of the COVID-19 pandemic. The outbreak of the coronavirus has been declared as an emergency for the safety of public health and therefore the governments of many countries have declared a total lockdown to protect the lives of their people. The Government of India has also declared lockdown in many phases; starting from 'Janta Curfew' on March 22, 2020, to Lockdown 1.0 (March 25, 2020 to April 14, 2020), Lockdown 2.0 (April 15, 2020 to May 3, 2020), Lockdown 3.0 (May 4, 2020 to May 19, 2020) and Lockdown 4.0 (May 20, 2020 to May 31, 2020). Due to this national lockdown, all Universities and colleges are closed for the last two months. The teaching-learning process and research activities have been badly disrupted. Students and teachers are forced to remain inside their houses. Books are locked in the libraries.

As per the All India Survey on Higher Education (AISHE) 2018-19, there are 993 Universities, 39931 Colleges and 10725 Stand Alone Institutions. The number of students enrolled in higher education is 37.3 crore and the total number of teachers employed is 14.16 lacs. This data shows the volume of students affected due to this COVID-19 pandemic. On the one hand, the Universities and colleges are not able to continue their classroom teaching and students and teachers are not able to interact physically. On the other hand, the fourth Industrial Revolution (Industry 4.0) is transforming the world around us and education is also not untouched. Industry 4.0 is not only disrupting the industrial process, management of people and governance in business but has impacted education as well. It has introduced many new aspects like artificial intelligence (AI), big data, the Internet of things (IoT), cloud computing, nanotechnology and 3D paintings, etc. Due to this, Education 4.0 has adopted technology in the teaching-learning process.

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With this background of COVID-19 and Industrial Revolution 4.0, we feel the need for online education in this hour of time. At present, online education has become indispensable. It has become a matter of discussion. Earlier, a few years back, it was treated as an ornamental method of teaching and only premier institutions had started using it and highlighting it to attract the students, but now during this COVID-19 pandemic, the online education has moved from periphery to epicenter of teaching-learning methods. It has become a matter of discussion in every webinar and a lot of FDPs (Faculty Development Programmes) have been started to provide a hands-on training about the ICT (Information Communication and Technology) tools and different online education tools.

### What is Online Education?

Online education is a type of education that needs an online medium. It is e-learning. It is a type of distance education. It's boundary-less education. It does not require any classroom infrastructure to be delivered. Thus a person can learn anywhere in the world. No pre-defined size of brick and mortar structure is required. It's anytime anywhere education. The tutor as well as the learner can fix their time as per their flexibility of time and place, so it is flexible also. It's virtual and massive open online courses. The following table presents a comparison between traditional teaching and online teaching.

**Table1- Difference between the traditional method of teaching and online teaching**

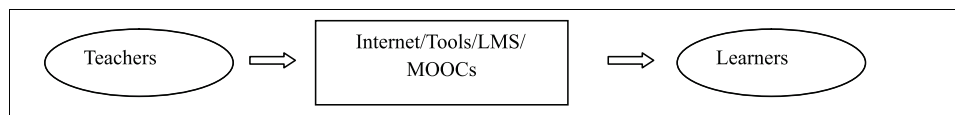
S.N.	Traditional Teaching	Online Teaching
	It is an old approach. It is chalk and board teaching.	It is a modern and futuristic approach. It is Education 4.0 in its evolution as compared to Industry 4.0.
2	It requires a classroom for teaching and learning. It is regular teaching.	It is boundary-less. It is more distance education. It is flipped classroom learning
3	It is time-bound teaching. A fixed Time Table is applied.	It has flexibility in time slots.
4	It is teacher-centric.	It is student-centric.
5	It is a direct face to face mode of teaching. The teacher and students remain in front of each other.	It is virtual teaching. Teachers and students sit apart at a distance and connect through video conferencing.

Source: Author's own compilation

### Mechanism of Online Education

Online education requires the internet as a medium to impart. There are different tools and instruments which are required to impart online education. It is given through a Learning Management System (LMS) or MOOCs (Massive Online Open Courses). In India, MOOCs are provided through SWAYAM and NPTEL. The online education may be imparted as following:

**Fig.1- Mechanism of online education**



Source: Author's own creation

### Tools and Instruments

To impart online education internet is one of the essential requirements. Then laptop, tablet, or smartphone can be used as connecting devices for the purpose of online education. The following list shows the various video conferencing platforms, Learning Management System (LMS) and other tools for the online teaching-learning process.

**Table 2- Tools and Instruments**

S.N.	Purpose of tool	Available options
1	LMS (Learning Management System)	Canvas, Edmodo, Moodle, Google Classroom, Kahoot, Socrative
2	CMS (Content Management System)	WordPress, SlideShare, Omeka
3	MOOC (Massive Open Online Course)	Udemy, Edx, NPTEL, SWAYAM
4	Forms & Surveys	Google Forms, Survey Monkey, Zoho Survey, CrowdSignal, IKA, Socrative
5	Engagement	Toasty, Mentimeter
6	Blogging	EduBlogs, My Class, Blogger, Medium, WordPress
7	Notes & Documents	Evernote, Google Keep, Microsoft Word, Google Docs, Zoho Docs
8	Video conferencing for small groups	Zoom, Google Meet, Hangouts, Microsoft Teams, Go To Webinar, Cisco Webex, Big Blue Button, Jitsi, Skype, Whereby, Blackboard
9	Screen and Video Recording	Loom, Screencastify, Screencast-O-Matic, Twitch, Showme, Techsmith Snagit, etc
10	Video Casting	OBS (Open Broadcast Studio)
11	Video Hosting	YouTube, Vimeo, Twitch, Peer Tube, Video Review
12	Podcasting	Anchor, Soundcloud, Podomatic, Blubrry
13	Cloud Storage	Google Drive, DropBox, OneDrive,
14	Reporting & Analytics	IntelliBoard

*Source: Author's own compilation*

As shown in Table 2, there are many tools and software available for the teachers and the students by which they can learn nowadays in the COVID-19 pandemic crisis. For online education, there are 4Cs which play a very important role and they are discussed as below:

1. **Connectivity:** There should be proper access to information for the students and for that the proper supply of power and the internet is a must. The connectivity between the teacher and students must not be disrupted.
2. **Capability:** The teacher as well as students must be capable of learning and adopting new things.
3. **Content:** The content must be of good quality, need-based and in the local language so that the students can learn it easily. The interest of the students can be maintained by creating good content.
4. **Cost:** The cost is significantly low in comparison to the traditional method. Therefore it is convenient to adopt.

## ISSUES IN ONLINE EDUCATION

Although online education can help the educationists to continue imparting knowledge to their students in this COVID-19 period, these are some challenges and issues which must be solved to make online education more effective.

1. The very first challenge is the *lack of digital culture and motivation*. Indians believe in human touch and proximity. They are being pampered from their childhood. They believe in face to face interaction and emotions. Therefore it is a great challenge to change this mindset of culture into digital culture. The same problem lies with online education. The students and the teachers do not have a psychological feeling of classroom teaching during online education. There is always a lack of motivation among students for online education and it is a big issue and challenge to provide a comfortable environment with technology.
2. Another challenge is related to *improper digital infrastructure & power supply*. It is a matter of concern for us that we have seen Government initiatives like 'Digital India' even though poor connectivity of the internet, poor data quality and hanging system or smartphones in webinars and online conferences are examples of improper digital infrastructure. Nowadays in the COVID-19 period, most of the people are at their homes due to national lockdown, therefore they are busy watching movies on Netflix, making videos on Tik Tok and playing online video games, etc which results in slow speed of the internet. Our country cannot bear this load which shows the inadequate supply of data networks. The 5G network is still in its initial phase and broadband supply is limited to metro or cities only. Sub-urban areas and villages are still behind in developments of broadband. This problem is being faced by many teachers and students during their online classes too when they have to lose their lecture due to improper and inadequate supply of data and electricity too. The power supply is very much required for wifi connections at home.
3. To ensure *privacy and security of data* is another challenge in online education. Then data security is always a question in India due to poor cyber laws and unethical behaviour. Recently we have listened about the incidents of data leakage either through the ZOOM App or through other means. There was also news in media about the hacking of data on the Aarogya Setu App too. It is an important issue to be discussed in online education.
4. It's *distance education*. The distance develops courage among the notorious students to behave in an undisciplined manner. Many times the students keep themselves busy in other activities or other social networking sites during an online class. The Bois Locker Room episode on Instagram is an example of such nuisances that can be created by anyone and it is not possible to trace them out every time. Avoiding their distraction and keeping them disciplined is a big issue.
5. *Unawareness about available e-resources* is one more challenge for online education. Although we have online courses through the National Programme on Technology Enhanced Learning (NPTEL) since 2003, it is mainly for engineering and technological education and mainly the courses are available in the English medium. Thus the students rarely opt for such courses and hardly completes after enrolment. They are not full-fledged programmes but like add on courses. Another initiative of the Ministry of Human Resource Development, Govt. of India under Digital India is SWAYAM (meaning self) which stands for 'Self Webs of Active Learning for Young Aspiring Minds'. It is an Indian Massive Open Online Course (MOOC) platform since 2017. The National Digital Library of India (NDLI) is a project under the MHRD and was dedicated to the nation on June 19, 2018. The MHRD has initiated this library under its National Mission on Education through Information and Communication Technology (NMEICT) to develop a framework of virtual repository of learning resources. In spite of these available e-resources, the students who are living in villages or suburban areas or who are studying in higher educational institutions are not aware of it. There is no proper branding and promotion of these platforms. We do not see any television or media commercial for the promotion of these e-resources. Now in COVID-19, the UGC and the AICTE have circulated many letters to Vice-Chancellors of different Universities of the nation to make these e-portals popular for online education.



6. The *lack of e-literacy* is also a big issue in online education. Most of the population in India lives in rural areas where digital literacy is found only in a few numbers. According to National Digital Literacy Mission (NDLM), the digital literacy drive of government has barely touched 1.67 percent of the population as the three flagship programmes of the Indian Government named NDLM, DISHA (Digital Saksharta Abhiyan) and PMGDISHA (Pradhanmantri Grameen Digital Saksharta Abhiyan). The Parliamentary Standing Committee of the Ministry of Electronics and Information technology has indicated about it in its report presented in January 2019.
7. The students in higher education are from *different social backgrounds* and they all do not have laptops or tablets. It is not possible for them to attend these online classes. We should understand the ground-level realities of the level of students. In a study 'Scenario amidst COVID 19- Ongoing Situations and Possible Solutions' conducted by child rights NGO 'SMILE FOUNDATION', it was found that about 56% of children had no access to smartphones which have emerged as essential tools for online learning during the corona virus-induced lockdown.
8. Balancing between family and work is quite difficult in online education which is like work from home in COVID-19. The atmosphere of the home and surroundings of family members always disturb the provider as well as the receiver.

Thus the major issues in online education are lack of digital culture, lack of proper digital infrastructure, privacy and security of data, discipline among students, unawareness about e-resources and lack of e-literacy.

## ONLINE EDUCATION AS A BOON IN COVID-19 CRISIS

During this COVID-19 period, online education has covered a long way. It has become the epicenter of today's education. Things have changed very rapidly in general and particular in the education system in the last three months. The whole country has been locked to save the lives of its citizen, to maintain the physical distancing and to avoid the community spread of coronavirus. And as we know, 'Necessity is the mother of invention' and the need of time has given a rise to the online education system. All the Universities and higher educational institutes have started their online classes, online meetings and conferences through Zoom or Google Meet Apps. They are delivering different assignments and projects through LMS like Google Classroom or Moodle etc. They are providing notes and study material through blogs, WhatsApp and emails. They are also developing e-content with the help of OBS (open broadcast studio) or Screencast-O-Matic which are being displayed on the websites of the educational institutes. The quizzes and class tests are completing through Google Form and Socrative. Seminars have been replaced by Webinars.

Online education is a boon because it has given a learning opportunity not only to students but to teachers also. Many of the teachers were not aware of LMS or other available options for online education. Now they have started to learn and use these options. This COVID-19 has given an opportunity to all teachers to 'Learn-Unlearn & Relearn'. Teachers and educational institutes have accepted the challenge and try to overcome it. It's really the time to justify the phrase 'Survival of the Fittest'. They have noticed the alarming bell and they understand that online education is also the need of this time so they have started to adopt it in the changing scenario. It is essential to learn the blended learning and teaching because it is also emphasized by the NAAC (National Assessment and Accreditation Council). NAAC has focused on the use of ICT tools in the teaching-learning process. It demands to provide information related to the use of ICT tools in the teaching-learning process, LMS used, MOOC development, e-content development for e-Pathshala. So it is a good time to learn as we do not have any other option than online education in this COVID-19 crisis. AICTE (All India Council for Technical Education) has also demanded to complete the 25 percent syllabus through online mode. The UGC Chairman Prof. D P Singh has given nod to the top 100 Universities in NIRF (National Institutional Ranking Framework) ranking to start online courses for the session 2021 without prior approval of UGC. These courses would be under the 'PM e-Vidya Program' as part of the Aatmnirbhar Bharat Abhiyan (self-reliant India

campaign). These all initiatives of NAAC, AICTE & UGC are empowering to the online mode of education. Therefore, if the faculty members develop e-content and demonstrate their lectures using LMS, video conferencing and ICT tools, they will certainly have an edge over those who do not adopt the online education system. They will be admired by their employers and students both.

## POST COVID-19 STRATEGIES FOR EDUCATIONAL INSTITUTIONS

Dr. Mike Ryan, Emergencies Director at World Health Organisation (WHO) in a recent press conference mentioned that COVID-19 is a Pandemic but possibly it is becoming an endemic disease. It means now we will have to change our lifestyle and we will have to learn to live with this endemic disease. And even it is a well-known truth that DAAR KE AAGE JEET HAI (victory is beyond fear), so we should convert this crisis into an opportunity. It means online education will be a regular custom. Therefore the Universities, HEIs (Higher Educational Institutions) and faculty members have to adopt some different and innovative way of teaching methodology to survive and to keep the education system alive. Some of the key suggestions related to Post COVID-19 strategies are as follows:

1. The very first thing is related to the safety of life. Our PM Mr. Narendra Modi has also said JAAN HAI TO JAHAN HAI (if you have the life, you have the world). Therefore all the educational institutions have to install anti-COVID disinfection tunnels, thermal scanning cameras. The security guards must be provided with thermal screening devices or digital thermometer. The mask, face shield and sanitizer should be provided in plenty to its staff. The students, staff and all people should follow the guidelines issued by WHO, the Government of India, UGC and other administrative bodies to keep their life safe. They should follow norms of wearing masks and keeping social distancing and installing AAROGYA SETU APP in mobile phones. The educational institutions should upgrade the health care centers & medical facilities. This will reinsure trust and wellness among all employees and students which will later result in better performance.
2. As we know that there are two types of patients in any hospital. Those who are serious and need intensive care come in IPD (Inward Patient Department) where they get admitted and supervised thoroughly by the doctors and nursing staff for their cure. Second, who need just a consultation related to their health visit in OPD (Outward Patient Department) where they are given a prescription by a doctor and they go away to their homes. In the same way, the educational institutes should identify two types of student i.e. slow learners and advance learners. The slow learners should be treated as IPD patients, it means they should be called to the educational institutes and they must be taught in classrooms. They need a direct face to face interaction and eye contact with the teachers to get a psychological impact in learning. And the advance learners may be supported by providing online education or by e-content as they need only a mentorship otherwise they are self capable. Thus, now educational institutes will have to adopt a Blended Learning & Teaching method; one classroom teaching to slow learners and online teaching to advance learners. This will also help in maintaining the social distancing in the institutes as the number of students will be reduced by dividing into slow learners and advance learners and inviting only slow learners to the institutes.
3. The classes may be run in shifts or on alternate days to maintain the number of students at a time in the educational institutes as well as in their transport vehicles.
4. The Universities and educational institutes should publicize the available e-resources and National Digital Library among students so that they can utilize them as much as possible.
5. As most of the educational institutes provide free transportation and free uniform facilities to their students, now these education institutions can distribute free smartphones or tablets to the students who

are socially and economically backward. This will support them with the required digital equipment which is necessary for online education.

6. The institutes will have to convert their websites into active websites. They will have to provide maximum information through their websites. They will have to upload the e-contents on the websites so that the students can learn at their homes. The ICT tools must be enabled on a large scale. The students, as well as faculty members, will have to learn and use these ICT tools on a regular basis. The LMS should be adopted for teaching and engaging students. The different feedbacks should be taken by Google Form now. The different information must be given to students and teachers by emails only. The meetings must be conducted by video conferencing tools. Techniques like blended learning, flipped classrooms and BYOD (Bring Your Own Devices) are to be adopted. The workshops and orientation programmes should be conducted to create e-literacy among the students and to make them comfortable with the use of these ICT tools. It will also fulfill the mandatory requirements of NAAC as NAAC demands maximum use of ICT tools in the teaching-learning process.
7. The teachers will have to shift their roles. Now they will not only teach or deliver the content as per syllabus but they will have to create the content as per the needs (strengths and weakness) of the students. They must start playing the role of facilitator and students will have to start personalized and self-learning. Even the students will have to be involved in syllabi curriculum development as per the need of Industry 4.0.
8. Classroom examination systems must be converted to audio-video based questions. They must be given simulated projects to check the application of knowledge. The projects may be evaluated online through PowerPoint presentations. Online examinations can be conducted through different available software. The restriction of time and restriction of no of attempts for a question can be imposed so that the sanctity of examination can be maintained. This will not only reduce the number to maintain social distancing but also prepare the students as per the future requirement of Industry 4.0.

## CONCLUSION

Earlier, in the late fifties, it was said that 'A teacher is a creature who has no future' but this COVID-19 crisis has proved 'A teacher is a real creature who saves many future'. Teachers are producing the best citizens of the nation so there is a big challenge on them. Earlier they were delivering lectures in the classrooms but now skilling online education in general and online teaching in particular. But we should understand that online education is a means and a tool but not an end itself. We have to synthesize the old traditional method of teaching with the digitalization of education. We should not be dependent only on search engines like Google but we should create our own e-content by using our intelligence to clear the conceptual clarity of students. Online education is a good means for Value addition in teaching and learning. The students and teachers must keep on learning-unlearning & relearning to adopt new means and methods. The online education or use of technology in education has become indispensable and it will help the education system to go hand in hand with Industry 4.0 too.

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