**Abstract**

Almost every sector of the economy is affected by COVID-19; and the education sector is no exception to this. In the midst of COVID-19, which has been disturbed by the academic year, educational institutions are developing better methods, albeit complementary to conventional classroom education. Captured in the vortex, the Indian education system needs to change the paradigm to online education. Working and e-collaborations exploded during the outbreak of the Corona Virus crisis (Favale et al., 2020). As a result, the reach of online learning has also increased during this challenging time. From preschools to top-tier universities, most learning institutions now provide online education of varying degrees. Now, academic institutions can take this opportunity by training their teachers to teach and students to learn via online methods. People have always been complacent and have never sought new ways of teaching and learning. The crisis will be a new phase for online learning which will enable us to look at the positive side of e-learning technology. This is a time when there is a great deal of room to carry out exciting innovations and new advancements. Online education facilitates self-development which can be soon recognized by efficient teachers. However, this has also increased the workload for educators due to extended working hours. Particularly for teachers and professors living in rural areas facing issues of connectivity. However, statistics have shown that online learning has been proven to enhance the ability of students to retain information.

As technology plays a vital role, various providers of educational services need to rethink their strategies and remain strong. COVID-19 has raised red flags in the education sector and has moved its way to digital growth.

**Keywords:** COVID-19, impact, education, online teaching

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**INTRODUCTION**

In the global crisis triggered by the Covid-19 pandemic, both individuals and organizations in various fields are voicing concern about the future of their otherwise normal operations and the prospect of mitigating their effect on results, while preserving the safety measures mandated by authorities such as the WHO.

According to UNICEF reporting, 106 countries are currently implementing national closures and 55 are implementing local closures, affecting around 98.6 percent of the world's student population.

The higher education sector, partially dependent on the worldwide exchange of knowledge, professors and students, needs to adapt rapidly to new requirements. In an attempt to outsmart the disconnected paradigm, educational organizations need to access the resources of their existing structures. COVID created many challenges and opportunities for the educational institutes to strengthen their technological knowledge and infrastructure (Pravat, 2020a). However, in a country like India, where not every student is well equipped with high-speed internet and digital gadgets, this sudden change in the nature of learning causes distress to many students. Many advanced educational institutions in India also are currently not equipped with digital facilities to cope with a sudden change from traditional education to the online education system.

**ONLINE LEARNING RESOURCES**

Fortunately, the Indian government has recognized the untapped potential of e-learning. Some of the online tools established by the government are as follows:-

1. **DIKSHA** - This is an online school education platform. It provides teachers, parents and students with learning materials relevant to the prescribed school curriculum. It has more than 80,000 e-content products in multiple Indian languages, catering to Grades 1-12.

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2. **e-PATHSHALA** - A online portal and smart phone app developed and introduced by the National Council for Educational Research and Training. This has 1886 audios, 2000 videos, 696 e-books (e-Pubs) and 504 Flip Books for classes 1 to 12 in different languages. 
   Website: [http://epathshala.nic.in](http://epathshala.nic.in) or [http://epathshala.gov.in](http://epathshala.gov.in)

3. **NATIONAL REPOSITORY OF OPEN EDUCATIONAL RESOURCES (NROER)** - A repository of the highest quality educational content on a variety of subjects in multiple languages comprising a total of 14527 files, including 401 sets, 2779 documents, 1345 interactive, 1664 audios, 2586 images and 6153 videos in different languages. 
   Website: [http://nroer.gov.in/welcome](http://nroer.gov.in/welcome)

4. **SWAYAM** - The National Online Education Platform hosts 1,900 courses covering both schools (classes IX to XII) and higher education (both UG and PG) in all fields, including engineering, humanities and social sciences, law and management. SWAYAM's main attribute is that it is blended with traditional education. The courses are engaging and developed by the best teachers in the country and are available free of charge to any learner in the country. Credit transfers for SWAYAM courses (maximum 20%) are possible. There has been a three-fold increase in access to the website during the shutdown era. 
   Website: [https://www.swayam.gov.in](https://www.swayam.gov.in)

5. **SWAYAM PRABHA** - Has 32 DTH TV channels broadcasting educational content on a 24/7 basis. All these channels are available for viewing all across the country using DD free Dish set top box and antenna. Also new private DTH operators are broadcasting these courses via their networks. The platforms include both school education (classes IX to XII) and higher education in a broad range of topics such as engineering, vocational training, teacher training, performing arts, social sciences and humanities, law, medicine, agriculture and many more. 
   Website: [https://www.swayamprabha.gov.in](https://www.swayamprabha.gov.in)

6. **NISHTHA** - It is an integrated teacher training platform and smart phone app 
   Website: [http://www.nishtha.ncert.gov.in](http://www.nishtha.ncert.gov.in)

7. **NATIONAL DIGITAL LIBRARY** - This is a digital archive with a wide range of academic content in various formats and provides interface support for leading Indian languages at all academic levels, including researchers and lifelong learners, all disciplines, all popular access devices and differently abled learners. 
   Website: [https://ndl.iitkgp.ac.in/](https://ndl.iitkgp.ac.in/)

8. **e-PG PATSHALA** - It's for postgraduate students. Postgraduate students can use this portal for e-books, online courses and study materials during the lock-down time. The importance of this platform is that students can access these facilities without having internet all day long. 
   Website: [https://epgp.inflibnet.ac.in/](https://epgp.inflibnet.ac.in/)

In addition to the aforementioned, there are several other resources used by University Grants Commission (UGC), National Open School Institute (NIOS) and National Indira Gandhi Open University (IGNOU) that are being stepped up.

The lockdown period saw a major upsurge in digital learning. Access to the above mentioned online tools have grown almost five times. In addition to these, other institutions offer online classes in a number of ways.

### PROS OF COVID-19 ON EDUCATION SECTOR

Initially, the education sector in India was skeptical about online education, however it has become the need of the hour. It is a boon if used in the right manner. The following are the pros of online education/e-learning:-

1. **Reduced costs**: Online education is much more accessible than traditional learning, because most of the reading or reference materials are readily available online and can be accessed as many times as a student desires. In particular, e-learning reduces two major cost points – property and transport.
2. **Diverse learning options:** Online learning is highly interactive. The ways in which students can be educated is virtually limitless. For example: students will gain a greater understanding of the subjects taught when teachers use interactive resources such as graphics/videos to help them understand. Using photos, sharing resource links, serving evaluation tests can all be accomplished by clicking a button. In fact, lectures may be recorded and shared with a wide variety of audiences for reference purposes. It also allows a much wider number of children to be educated.

3. **Develops Confidence in Students:** We’ve seen that many children who are usually withdrawn in classroom settings open up in online classes. Typical Indian classrooms contain about 70-80 students. Online classes may include a certain degree of anonymity, so the child will not be so afraid to speak to the teacher from behind the computer screen. They are much more likely to engage through their questions. It may be due to a supportive home climate. This boost of trust helps them perform better and encourages them to participate more in classroom activities.

4. **Collaborative session:** Online courses, which are interactive in nature, will draw more attention and participation from students.

5. **Less absenteeism:** There are fewer chances of students missing out on classes, as they can easily access recorded sessions from their home at any time.

6. **Increased Access and Reach:** E-learning can take place anywhere, as long as there is a device and connectivity. Physical class allows a student to come to classes, but in this mode, a student may have access to lessons sitting anywhere in the world.

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**CONS OF COVID-19 ON EDUCATION SECTOR**

However, online learning does not come without its cons, some of the cons of online learning are:-

1. **Not easily accessible:** in a country like ours, where a large percentage of the population still struggles with poverty, using technology as a means of educating children will not be easy. Many people, especially in villages, do not have access to the required devices and internet connection.

2. **Technology issues:** Any break in data transmission will lead to a loss of consistency of learning for the student, which can be detrimental. In addition, if a child is technophobia, he or she can face learning difficulties.

3. **Not suitable for all:** It is a well-established fact that students have a dominant learning style. Some of them are visual, some sensory, some kinesthetic, etc. E-learning, which allows a child to sit in front of a computer and take lessons, may not be suited to all learning styles.

4. **Attention deficit:** Many students appear to lose attention for a longer period of time during virtual lectures. Boredom occurs easily as there is a lack of face-to-face interaction. Teachers need to keep their online sessions crisp and engaging enough to help students understand everything.

5. **Lack of social interaction:** Human beings learn a lot simply by being around other human beings. Sadly, e-learning takes away all the physical interactions that students and teachers that have at school premises. It’s always better for students to be around other students to talk or discuss ideas that are an essential part of learning. Peer learning definitely takes a hit.

6. **Teacher training:** E-learning requires teachers to be technology-friendly, which, sadly, is not always the case. Teachers need to spend more time in aligning themselves with the latest technological advancements to ensure that they can run their online classes seamlessly. They’re not prepared for this change. They need to get acquainted with the technology; this will be difficult, especially for older teachers who have never used platforms like Zoom or Microsoft teams.

7. **Excess Screen Time:** Online lessons can lead to increased exposure to student’s screens time, which can negatively affect the wellbeing of students staring at the screen constantly for hours.

Although all types of learning have their benefits and disadvantages after, the current crisis, it is clear that some kind of blended learning must emerge with e-learning as a key part of the overall teaching-learning.
framework. We also need to learn to strike a balance between delivering online education to students and broadening our horizons.

## OVERCOMING ONLINE EDUCATION BARRIERS

Student involvement is a term frequently addressed in the field of online education. Generally, student involvement appears to be seen as the level of interest shown by students in the subject being taught; their interaction with subject, teacher and peers; and their willingness to learn and advance through the course.

### I. Overcoming Social Barriers

It's necessary to develop a community on an online course. Students can become disengaged if they feel alienated or are unable to communicate with their teacher and peers. We can promote the community in our online course and overcome social obstacles to student participation with the following strategies:

1. **Make your first contact before the course starts:** Send an email to introduce yourself and include directions on how to get started. Add a personal touch by having a short video clip that relays the same details so students can get a sense of your personality.

2. **Create an introductory activity:** Introduce your students to each other and make them feel like they are part of a scholars' group. Build a basic introductory Blackboard Discussion Thread.

3. **Providing opportunities for learner interaction:** Blackboard discussion thread, Padlet walls, or VoiceThread activities are great ways to foster student interaction. You can also create online study groups where students meet through Google Hangouts or other video conferencing services. The first study group could be directed by teacher-created questions, and then we could ask students to come up with future questions.

4. **Encourage sharing:** Social media can be used to connect students with your content. Students may exchange course-related tools informally via a Facebook community or Twitter hashtag.

### II. Overcoming Administrative Barriers

Students can get frustrated if they don't know how and when to get in contact with the teacher. They can also be discouraged if they do not know their progress or if objectives are not clearly communicated. We can help students to succeed by using these strategies to overcome administrative barriers to student engagement:

1. **Set up communication methods and hours:** Communicate email address and phone number as well as the ideal days and times to reach the teacher. Let students know in advance when the teacher is going to be gone for more than 24 hours to prevent feelings of disappointment.

2. **Provide instructions frequently and in various ways:** Be direct and concise in your instructions and expectations. Also, include your directions in a variety of ways, such as via e-mail and during online class. When you make a video with instructions on how to complete an assignment, be sure to have the same directions given in text format also.

3. **Provide effective and timely feedback:** This is important in any course, particularly online. Make your presence known in a discussion forum by getting involved early and asking questions to keep the discussion going. Students will also be conscious of their progress during the course. Self-checking practices also help direct student learning and prepare students for course assessments.

### III. Overcoming Motivational Barriers

Students may face obstacles when completing their online course work from the comfort of their home. To overcome motivational obstacles to student participation and keep the students on track we can use the following strategies:

1. **Chunk the contents:** Chunking involves breaking down information into smaller bits that are easier for the brain to process. Content should be structured in a logical manner that directs the learning process. Conceptually similar information should be grouped together, making it more meaningful and easier to understand. Video lectures should also be broken into shorter sections, usually 5-7 min.
2. **Send reminders to keep students on track:** Update the course calendar with deadlines and send reminders to the students to remain on track. If the student falls behind, make time to speak to the student about what he or she should do to get back on track. It's also beneficial to have some kind of checklist for students to know what they need to do and when.

3. **Use a variety of multimedia and modalities:** We will have various types of learners in our course and thus we should use a range of content-delivery approaches and learning activities to keep them engaged. If our course is text-based, consider including images or graphics to clarify concepts. You can also replace some text with videos or audio, depending on the subject.

### UNESCO Recommendations

In order to make an effective online learning framework UNESCO made ten recommendations for engaging students in an online learning set-up. The recommendations given are:

1. **Examine readiness and select the most suitable tools:** Agree on the use of high-tech and low-tech solutions based on the reliability of local power supplies, internet access, and technical skills of teachers and students. This could range from interactive digital learning channels, video tutorials, MOOCs to radio and TV broadcasts.

2. **Ensure the inclusion of distance learning programs:** Implement measures to ensure that students, including those with disabilities or low-income backgrounds, have access to distance learning programs if only a limited number of them have access to digital devices. It is recommended that temporarily we decentralize these devices from computer laboratories to families and provide them with Internet access.

3. **Protect data privacy and security:** Consider data security when uploading data or educational resources to websites and when exchanging data with other organizations or individuals. Ensure that the use of software and websites does not infringe the privacy of students.

4. **Prioritize approaches to tackle psychosocial issues before teaching:** Maximize the resources available to connect schools, parents, teachers and students. Build communities to ensure frequent human interactions, allow social care interventions and resolve potential psychosocial problems that students can face when they are isolated.

5. **Plan the distance learning curriculum:** Hold discussions with stakeholders to explore the potential period of school closures and determine if the distance learning curriculum will concentrate on introducing new knowledge or improving students' knowledge of prior lessons. Prepare the schedule according to the situation of the affected areas, the level of study, the needs of students and the availability of parents. Choose appropriate learning methodology based on the status of school closures and home-based quarantines.

6. **Provide guidance to teachers and parents on the use of digital tools:** Arrange brief training or orientation sessions for teachers and parents as well, where training and facilitation are required. Help teachers plan specific arrangements, such as solutions for the use of internet data, if they are needed to provide live streaming of lessons.

7. **Integrate appropriate approaches and limit the number of applications and platforms:** Integrate tools or media that are available to most students, both for synchronous communication and lessons, and for asynchronous learning. Refrain from overloading students and parents by asking them to download and test too many applications or platforms.

8. **Define rules for distance learning and track the learning process of students:** Establish rules for distance learning with parents and students. Design formative questions, tests, or exercises to closely monitor the learning process of students. Consider using tools to obtain student feedback submission.

9. **Define the duration of distance learning units on the basis of student self-regulation skills:** Maintain a coherent timing according to the level of self-regulation and metacognitive abilities of students, especially for live streaming classes. Preferably, it should be 20 minutes for primary school students and 40 minutes for secondary school students.
10. **Create communities and strengthen connections**: Build a community of teachers, parents, and school administrators to resolve the sense of isolation or helplessness, promote sharing of views, and explore coping mechanisms in the face of learning difficulties.

**CONCLUSION**

The ongoing COVID-19 crisis has provided an opportunity to rethink the deep-rooted classroom mode of education and underscored the importance of online learning. Although online education cannot replace classroom education due to the personalized nature of attention and face-to-face interactions, it can work complementarily to the brick-and-mortar model of education. It has been a great leveler as it has enabled the various stakeholders to work together and assess the gaps and flaws in the conventional model. Current pedagogy needs to be redesigned to seamlessly integrate online learning into mainstream education. Equally relevant is the need to build a quality benchmark for education providers. This will encourage the weaning away fly-by-the-night players in the field. So far, e-learning has proved to be a boon for urban areas. It should be further extended to serve rural and underserved hinterlands as well as differently-abled sections of society. New-age technologies such as Artificial Intelligence, Machine Learning, Virtual Reality, and others, may be instrumental in bridging the vital differences. Thus, the COVID-19 pandemic could only be a ‘tip point’ for reference.

**REFERENCES**


