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## Impact of Covid-19 Pandemic on Teaching and Learning Process in Education System Through ICT

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### Abstract

Due to the COVID-19 pandemic, state governments temporarily shut down all schools and colleges. As per that disrupted situation, opening the schools and colleges was impossible. So, there is no doubt about it: the educational sector is going through a crucial time because all the competitive exams, college exams, and board exams have been cancelled and delayed due to COVID-19. Finding a solution for COVID-19, which affected around 600 million learners or students worldwide, was necessary. The educational system collapsed during the lockdown period of the novel coronavirus disease 2019 (COVID-19) in India and globally. This research aims to understand how the pandemic has disrupted the higher education sector and how the strategies can be implemented through digital learning tools and technology to transform the education system. It also aims to study the constraints of adapting to this current situation.

This paper will focus on an intellectually enriched opportunity for future academic decision-making. The intense purpose of this project addresses the required essential situations of online teaching-learning in education amid the COVID-19 pandemic and how we can use the existing resources of educational institutions so that effectively we can transform the formal education system into online education with the help of virtual classes and other e-learning tools like Moodle etc.

The impact of ICT in the era of digitalisation, globalisation and the information age is evident in higher education. ICT has revolutionised and transfigured classroom learning and teaching methods and altered distance learning programs, leading to reorganised libraries and attainable learning materials. Of course, we cannot say that the current educational information

technologies are exceptional for use, especially in the modern context of the coronavirus pandemic.

**Keywords:** COVID-19 pandemic, educational system, ICT

### **Introduction**

The COVID-19 pandemic has significantly impacted various aspects of life worldwide. Education is one of the sectors that were hit hard by this pandemic. With the closure of schools and universities, the education system was forced to adapt to remote learning and teaching through Information and Communication Technology (ICT). The shift towards ICT has significantly impacted education systems' teaching and learning processes worldwide. This article will explore the impact of the COVID-19 pandemic on the teaching and learning process in the education system through ICT.

### **Background**

The COVID-19 pandemic caused an unprecedented disruption in the education system worldwide. In response, many countries decided to close schools, colleges, and universities to prevent the spread of the virus. According to UNESCO, more than 1.5 billion students were affected by school closures, which accounted for 90% of the world's student population. This situation led to a significant shift in the education system, forcing it to adopt alternative teaching and learning methods through ICT.

### **Impact of the COVID-19 Pandemic on Teaching and Learning**

The COVID-19 pandemic significantly impacted the teaching and learning process in the education system. Here are some of the effects of the pandemic on teaching and learning:

**Challenges in accessing technology and internet connectivity:** One of the significant challenges faced by the education system during the pandemic was the lack of access to technology and internet connectivity. This challenge was particularly severe in developing countries, where many students could not access computers, smartphones, or the internet. As a result, many students were left behind and unable to participate in remote learning. In many countries, students from low-income households or rural areas could not access computers, internet, or digital devices, making remote learning difficult or impossible. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), 43% of households worldwide lack access to the Internet, making it difficult for students to access online learning resources (UNESCO, 2020). The COVID-19 pandemic has highlighted the

need for governments to invest in technology infrastructure to ensure all students have access to technology and digital devices to participate in remote learning.

**Increased dependence on ICT:** With the closure of schools and universities, the education system had to rely heavily on ICT for teaching and learning. Teachers had to learn new skills to use online platforms like Zoom, Google Classroom, and Microsoft Teams to deliver their lessons. Students also had to adapt to these new modes of learning, which required a lot of self-discipline and motivation.

**Reduced quality of education:** The sudden shift to remote learning harmed the quality of education. Many teachers were not adequately trained in delivering online lessons, which led to a decline in the quality of education. Moreover, the lack of interaction between students and teachers resulted in a reduced quality of learning.

**Increased workload for teachers:** The shift to remote learning required teachers to spend more time creating lesson plans, grading assignments, and communicating with students. This increased workload led to burnout among some teachers, who struggled to balance their work and personal lives.

**Increased focus on digital skills:** The pandemic has highlighted the importance of digital skills in the education system. Teachers and students had to learn digital skills to adapt to the new learning mode. This shift has opened up new opportunities for students to develop digital skills, which are increasingly important today.

**Loss of Social Interaction:** However, the shift towards online learning has also resulted in the loss of vital social interaction in the traditional education system. The conventional education system promotes social interaction between students, teachers, and peers. Social interaction is crucial in developing social skills and emotional intelligence, which are critical in personal and professional development. The loss of social interaction has also resulted in a lack of motivation among students. Online learning can be isolating, making students feel disconnected from the learning process. The lack of social interaction has also resulted in limited opportunities for collaboration and teamwork, which are critical in developing interpersonal skills. The lack of social interaction has also resulted in limited opportunities for students to build networks and relationships, essential in personal and professional development.

**Loss of Practical Learning:** The shift towards online learning has also resulted in a loss of practical learning opportunities. Many courses require practical or hands-on learning, such as

laboratory experiments, fieldwork, and internships. These practical learning opportunities are difficult to replicate online, limiting students' learning experiences.

**Teacher Preparedness:** Furthermore, the impact of COVID-19 on the teaching and learning process through ICT has highlighted the need for teacher preparedness. Adopting online learning has required teachers to adopt new approaches to teaching and learning, which requires new skills and knowledge. The pandemic has highlighted the need for teacher training and professional development to ensure teachers are prepared to deliver education in the digital age. The lack of teacher preparedness has resulted in limited access to education for many students. The inability of teachers to deliver effective online instruction has resulted in restricted access to education for students. The pandemic has highlighted the need for teacher training and professional development to ensure teachers are prepared to deliver effective online instruction.

**Digital Divide:** Another significant adverse impact is the digital divide in many countries. The pandemic has highlighted the inequities in access to technology and the internet, with many students in developing countries unable to access online learning due to the lack of internet connectivity or devices. This has resulted in many students being left behind, widening the education gap between students in developed and developing countries. The digital divide has resulted in the exclusion of many students from education. The lack of access to technology and the internet has limited the ability of students to access educational resources, resulting in limited access to education. The digital divide has also resulted in a widening of the education gap between students in developed and developing countries, resulting in restricted access to education for students in developing countries.

### **Benefits of ICT in Teaching and Learning**

Despite the challenges posed by the COVID-19 pandemic, adopting ICT in the education system has brought many benefits. Here are some of the advantages of ICT in teaching and learning:

**Increased access to education:** ICT has enabled students to access education from anywhere, at any time. This has opened up opportunities for students who were previously unable to attend school due to geographical or financial constraints.

**Improved flexibility and convenience:** The COVID-19 pandemic has accelerated the adoption of online learning worldwide, leading to increased flexibility in the learning process. Online learning allows students to access educational resources at any time and from any

location, provided they can access the Internet. This flexibility has allowed students to take charge of their learning process and work independently. Online learning has also allowed students to balance their academic commitments with other responsibilities, such as work or family obligations. In addition, online learning has allowed students to learn new skills they would not have otherwise learned in traditional classrooms. Online learning has facilitated interactive learning materials, such as simulations, animations, and virtual reality, which provide a more engaging and interactive learning experience. Furthermore, online learning has facilitated collaboration and communication among students from different geographical locations and cultures, which has helped to develop global competencies.

**Improved engagement:** ICT tools such as videos, interactive quizzes, and online forums have made learning more engaging and interactive. This has resulted in improved student participation and better learning outcomes.

**New Teaching Methods and Strategies:** The shift towards online learning has also resulted in the development of new teaching methods and strategies that have the potential to transform the traditional education system. Conventional teaching methods have been criticised for being teacher-centred, where the teacher delivers content to students, who are passive recipients of knowledge. Online learning has facilitated student-centred approaches to teaching, where the students actively participate in the learning process. Online learning has facilitated personalised learning, where students can work independently and focus on their learning needs. Online learning has also facilitated adaptive learning, where students receive personalised feedback based on their performance, allowing them to improve their learning outcomes. Additionally, online learning has facilitated the use of flipped classrooms, where students access learning materials before the class, and the class time is used for interactive discussions and collaborative activities.

**Digital Literacy:** The shift towards online learning has also highlighted the importance of digital literacy among students and teachers. Digital literacy uses technology to access, evaluate, and communicate information effectively. The COVID-19 pandemic has shown that digital literacy is essential for students to participate in online learning effectively. Teachers also need digital literacy skills to deliver online learning effectively.

**Improved collaboration:** ICT has significantly improved collaboration by providing real-time communication tools, collaboration platforms, and cloud computing, enabling remote working and enhancing data sharing. Collaboration through ICT has increased productivity, improved

decision-making, and allowed for effective teamwork among geographically dispersed student communities:

- **Real-time communication:** ICT provides real-time communication tools such as instant messaging, video conferencing, and webinars, allowing students and teachers to communicate and share information instantly from anywhere.
- **Collaboration tools:** Many tools enable students to collaborate, share documents and files, and track progress. Such tools include Microsoft Teams, Google Workspace, Trello, and Asana.
- **Cloud computing:** Cloud computing has enabled students to collaborate on projects in real-time from different locations. Cloud-based platforms such as Google Drive and Dropbox allow them to share documents, edit them simultaneously, and track changes.
- **Enhanced data sharing:** ICT has made sharing data and information among students easier. Data can be accessed and shared in real time, and revisions can be tracked to ensure everyone is working on the latest version.
- **Increased productivity:** ICT has increased productivity by enabling students to work more efficiently and effectively. They can work on the same document simultaneously, communicate instantly, and track progress, leading to faster completion of projects.
- **Improved decision-making:** Collaboration through ICT has improved decision-making by enabling teams to share ideas and opinions more easily. Students can contribute their thoughts and ideas to the project, leading to better-informed decisions.

## Conclusion

In conclusion, the COVID-19 pandemic has significantly impacted the teaching and learning process in education systems worldwide through ICT. The pandemic has highlighted the digital divide in many countries, resulting in unequal access to education. However, the shift towards online learning has also provided increased flexibility in the learning process, allowed for the development of new teaching methods and strategies, and emphasized the importance of digital literacy. Nonetheless, the loss of social interaction and practical learning opportunities is a significant challenge in the shift towards online learning.

To mitigate the impact of the COVID-19 pandemic on the teaching and learning process in education systems through ICT, governments must invest in technology infrastructure to ensure that all students have access to technology and digital devices. Governments must also provide digital literacy training for students and teachers to participate in online learning effectively.

Additionally, the traditional education system must adapt to incorporate the benefits of online learning while still promoting social interaction and practical learning opportunities.

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