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Digitalization of education during Covid-19 pandemic

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Abstract
The spread of pandemic Covid-19 has severely affected every aspect of human life including the education. The extended lockdown period for the Covid-19 pandemic has forced the schools, colleges and other educational institutions to shut down which has hampered the educational system all over the country. This situation has challenged the educational system across the country and forced the teachers to shift to an online mode of teaching overnight. As the digital learning process has become more prevalent in the world due to Covid-19 pandemic, it is important to know about its significance and its limitations in the present era. The purpose of this paper is to understand the main concept of digital learning and to emphasize the impact of digital learning on the education system of the country. Some fruitful strategies and suggestions are also pointed out for the academic institutions to deal with the challenges associated with the digital learning effectively and make the students more successful in a digital learning environment during this pandemic situation.

Keywords: Covid-19, digital learning, education

Introduction
On March 11, 2020, World Health Organization (WHO) declared Covid-19 as a pandemic (WHO, 2020) [13]. In all the phases of lockdown starting from lockdown 1.0 to lockdown 5.0, the educational institutions throughout the country have never got any relaxation to start their educational activities. Thus the pandemic Covid-19 impacted significantly on the education sector (Sahu, 2020) [10]. Nearly 1.6 billion students in 194 countries were impacted by the institutions being shut down. So in the sphere of education, shifting to online classes was the only option left for the students as well as the teachers so that the learning of the students would not be disrupted. This crisis has accelerated the development of a digital learning environment. The teachers were urged to provide the study materials in the form of PPT, PDFs, etc. The government is also recognizing the increasing importance of digital learning during this crisis. The use of digital media enables a vast number of students to access the materials online and this promotes the learning process. Despite of many advantages of digital learning there are some challenges faced by the students during this pandemic. Educational units are also struggling to find various alternatives to deal with this challenging situation. Thus the present study aims to understand the concept of digital learning and highlights the problems faced by the students amidst the Covid-19 pandemic. It also includes some suggestions for the academic institutions to deal with the challenges associated with the digital learning.

Concept of digital learning
Digital learning also known as 'online learning' is the learning which is facilitated by technology. It can be defined as the use of computer and use of internet technology to access the educational process outside of a traditional classroom. It is often referred to as "Technology Enhanced Learning" (TEL) or e-learning. It contains many features such as whiteboards, chat rooms, discussion forum, polls etc. that allows the instructor and the students to interact with each other in order to achieve the educational goals. Some of the digital learning tools are Google Meet, Zoom, Skype, and Microsoft Teams etc. that help the learners to study at home. Digital learning is considered as a new method of teaching rather than a face-to face teaching. It helps to offer and share materials in all kinds of formats such as PDFs, e-mails, slideshow, chat forums etc. In an online learning environment, the teachers and pupils do not meet physically unlike traditional classroom where the teachers and pupils

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interact physically. During this pandemic, one of the biggest challenges faced by the educational institutions is to continue the studies via digital mode by creating a virtual setting where all the students can attend a particular lecture hosted by a teacher at the same time

The purpose of the study is to highlight the impact of digital learning on the education system and to provide some recommendations for the success of digital learning.

Research Methodology
This research paper is conceptual and exploratory in nature. In order to meet such objective secondary method is adopted. This paper explores the importance of digital learning in the period of a crisis like COVID 19. The problems associated with the digital learning and the possible solutions were recommended based on the previous studies. The secondary data was collected from different authentic websites, books, reports, journals, periodicals relating to digital learning.

Challenges of Digital Learning
Are there any barriers for the teachers and students in availing digital education? Some of the major challenges of digital learning are:

- **Lack of interaction:** A teacher-student relationship can be best established in a classroom only. The things like face to face interaction with the teachers, understanding of concepts by clearing the doubts, asking questions, discussion and answering the questions can't be practically possible in an online classroom.
- **Lack of accessibility:** Are digital classes a critical issue for underprivileged students during Covid-19?
  Not all students have access to all digital devices. Many students don't have laptops, smart phones and other gadgets with them. There are some students who have these gadgets but are unable to afford the price of data packs. Students who are living in urban areas with good internet connection have been able to join in for online classes, but those students who are living in rural areas with poor internet connectivity are mostly unable to attend the online classes. Sometimes the students get disconnected from the online class due to fluctuations in network. Unavailability of devices, low download speed, installation issues and login problems creates barrier for the students to attend digital classes.
- **Difficult to ensure the focus of students:** During an online class, the audio and video button of students application is muted, this gives a chance to the students to engage themselves in various other works like chatting in Whatsapp or Facebook simultaneously. Several cases have been found where the students were letting the class run in the background and watching YouTube or playing pubg at the same time. Thus the teacher can't monitor the body language of students and ensure their focus in an online class.
- **Lack of participation:** It is a big challenge for the teachers to engage the students in an online process. The students may feel boring and unengaging due to lack of social interaction with the teachers and peers.
- **High investment for digital setup:** Digital education involves the usage of appropriate and latest hardware and software technology. A large amount of investment is required for getting the devices and developing the digital content. In India, implementation of digital technology is a difficult task as it requires huge infrastructure and funds.
- **Lack of real time teaching experience:** In digital learning, students lack real time teaching experience. They lack presentation skills, team spirit and other practical experiences which are valuable in shaping students mind both intellectually and emotionally.
- **Digital Eye Strain:** Exposing children to screens from a younger age for prolonged period can hamper their overall development. The light emitted from the screen of phone or laptop can strain children's eyes and could lead to vision problem.
- **Insufficient knowledge of software:** Has digital classes turned out to be a nightmare for the teachers amid Covid-19?
  Teachers may be inexperienced with the digital method of teaching. Nowadays, multiple softwares are available with varieties of options in it and it becomes very difficult to understand all of them in a short time.
  For instance, if a teacher wants to run a video on Google meet or Zoom then he or she has to experiment on it many times to get acquainted with it because sometimes it may work and sometimes it may not work. Many of the teachers have also expressed awful experiences while conducting online classes.
- **Cyberstalking and online harassment:** Cyberstalking or online stalking is a serious crime in digital platforms. It involves repeated use of electronic means to harass someone by monitoring someone's online activity, creating false online account on social networking, or repeatedly calling or texting threat e-mails to the victim etc.
- **Digital addiction or Digital obsession:** Due to the outbreak of Covid 19 pandemic, mobile phones and other digital devices have become so prevalent in daily life that many children would even say that they can't survive without their phones. Excessive dependence on technology leads to digital addiction among children.

Some real life based incidents on digital classrooms have been found recently in India
- In Himachal Pradesh, a father of a very poor family sold his cows to buy a smartphone for his daughter so that her daughter could attend online classes. And that cow was the only source of income for his family.
- In some districts of Odisha like Kandhamal and Sambalpur, many students used to climb the tress and hills every day to avail online classes. One of the teachers used to sit on the top of trees to take online class due to poor internet connectivity in that area.
- In Kerala, a school teacher was taking an online class and a couple of students started taking picture of that teacher with memes around it and made that picture viral. Many fake accounts in the name of the teacher were created on instagram and various offensive pictures of the female teacher were shared on social media.
- In Lucknow, a teacher received various unnecessary messages and videos on her mobile phone after a few weeks of taking classes on digital platforms.
- In a north- eastern state, during a rainy day, a student was walking on the road with an umbrella and phone in his hand, moving here and there in the rain to attend online class.

- In a Public School of Banglore, the rudeness of a teacher's language is pointed out by some of the parents that this kind of language will never help the students in learning via digital mode.
- In Kerala, the teachers have taken initiative to conduct online classes with the special feature of "Augmented Reality".

Digital classes are beneficial to an extent as it offers a good substitute to classroom learning during this pandemic but it can't replace the classroom learning as classroom learning is always a better mode of imparting knowledge and development of skills.

Possible Recommendations
The real question is - "Why digital education is lagging so behind"? Can we face the challenges of digital learning and benefit from it to shape the future of students? An effective educational system needs to be developed for imparting the lectures efficiently via digital mode. Some suggestions are pointed out for the success of digital education among the students and teachers

1. **Ensuring digital equity:** Efforts should be made by the teachers to ensure that every student has network to access the online resource. Teachers should use the best tool to impart lessons effectively to their students. The teachers can solve technical difficulties associated with digital learning by prerecording video lectures and sending them to those students who are unable to attend the online class so that they can watch in their own time.
2. **Reducing digital illiteracy:** Digital literacy comprise of a range of skills such as the efficient use of digital tools, ability to create, process and share the information on social networks that are vital to progress efficiently in a professional environment. Proper guidance can be provided by academic institutions that can guide the teachers and students to use various digital tools efficiently to reduce digital illiteracy. Teachers should be properly trained to utilize digital tools efficiently and the students should be encouraged to use different educational application and other digital platforms like Zoom, Google Meet, Online portals etc.
3. **Including "Discussion sessions" or "Live doubt classes":** After the class gets over, the teachers should ask the students if they have any problem or query on that lecture. Depending on the queries, a new discussion session can be opened in which the answers to the queries can be given. The teacher can also devote last 10 minutes of online class as feedback sessions. Online classes does not mean only imparting lectures, the aspect of solving the queries of the students is the most important aspect.
4. **New approaches of academic assessment:** New approaches for academic assessment should be adopted by educational institutions. The teachers should diversify their assessment methods. Academic assessment of students can be done through assignments, quizzes and projects. The feedback on assignments and projects should be provided frequently.
5. **Opportunities for active learning and active engagement:** The teacher must include a mixture of interactive activities in an online class. The teacher can assign some task to write a summary of todays lecture, assign creative assignments and worksheets, conduct quizzes and increase the competition of students by ranking prizes for winners. The teachers can include enthusiastic ideas, motivational real life incidents, stories and jokes in their lectures to make the online class more interesting, dynamic and fun-based rather than passive and boring.
6. **Giving personal attention to students:** Not every student pay proper attention to digital classes. The teachers should provide personal attention to each and every student. If the strength of the class is very large (say 50 students), then the teacher should conduct 2 sessions of 25 students in each sessions so that every student can be given proper attention.
7. **Use of "Augmented Reality" in digital class:** Augmented reality (AR) is the integration of digital information with live video or the user's environment in real time. The teachers can bring the digital information into the real life world by bringing 3D objects into the screen such as different animals, artificial solar system etc. to make the online class more interesting.
8. **Preventing digital strain on eyes:** Digital classes should be of short (20-25 minutes) duration. The lesson should be designed in such a way that the child can spend few minutes looking to the screen. This can help to prevent digital strain on eyes of children.
9. **Specific online teaching strategies:** Teaching online isn't like teaching in the classroom. Specific online teaching strategies should be applied to boost the learning process. For example-The teacher can use" Differentiation Instruction" of teaching the same material to all the students using a variety of instructional strategies and present it in a different way.
10. **Use of cordial language and appropriate content:** In a digital classroom, one has to be very much careful about the language which he or she is speaking to the students. In a traditional classroom, the students are under the control of teachers. But in a digital classroom, its not only the children who are listening to the teacher, but also observed by parents and some of the eminent people of the society. So the teacher should be very cordial and should check their content again and again before delivering it in a digital classroom.
11. **Providing anti-cyberstalking tips:** Proper awareness must be created about cyberstalking among the teachers and students. Some real life incidents related to cyberstalking should be shared among the teachers and students to make them careful so that they are not easily bullied on digital platforms.

Discussion and Conclusion
The study has outlined various impacts of digital learning during Covid-19 pandemic. The biggest challenge is to bridge the digital divide in education for ensuring equitable and inclusive access to education for all students. Though there are few challenges associated with digital learning, it has actually emerged as an advantage to the teachers as well as the students in continuing the teaching-learning process amidst the nationwide lockdown. No one knows how long the pandemic situation will continue, so digital learning is the demand of current crisis. Covid-19 has made people realize the importance of 'digital learning' as an effective way to maintain the continuity of education. Different countries of the world have introduced various digital platforms in this pandemic to secure the future of students. Digital learning is something new to both teachers as well as

students. It's a learning experience for all of us. Mere organizing classes over Zoom or pre- recording a bunch of videos and putting it on the website, that alone does not constitute an effective digital learning. The Central and State governments should take necessary steps and measures to ensure that all students get quality education via digital platforms. There is an urgent need to protect and save our students, society and the nation as a whole. Proper planning of digital education can result in overall development and progress of the students during this pandemic situation.

- The present study reveals that digital learning is no more an option; it's a necessary during pandemic situation. Thus, the teachers and students need a high level of preparedness and must possess certain skills so that they can quickly adapt themselves to the technology based system of education during a pandemic.
- This study will help the Education Minister to develop certain guidelines and measures on digital education to ensure quality education to all students.
- The study will also help the institutions and organizations to prepare contingency plans to deal with a challenging situation like Covid-19.

Suggestion for further studies
This study provides a strong platform to make further research on the future of student's education after Covid-19. Insights may be drawn on how digital education will alter the future of students education after Covid-19 and how the educational institutions can embrace the post-covid future of students.

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