Effect of covid-19 on digital transformations in teaching learning methodology and its consequences in society: a review

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Abstract Covid-19 forced all the schools, colleges and universities to suspend their physical classrooms and implemented the digital transformations into the entire education system worldwide. The structure of teaching-learning-assessment methodology becomes affected by this closure. Just a handful of universities, colleges and schools might follow teaching methods online, but private, government and low-income schools, on the other hand, have totally shut down because they do not have access to e-learning solutions. The higher education industry has been profoundly impacted by the pandemic. However, the biggest concern to everyone is how the illness impacts the pace of work. Recent graduates in India fear that the present situation will result in work offers being withdrawn from companies. To manage the crisis and develop a long-term, resilient Indian education system, a multi-stakeholder strategy is required.

Keywords: Digital Transformations, Teaching-learning-assessment methodology, Higher Education sector, Employment rate.

1. Literature review
First case of corona virus (COVID-19) was observed in the Wuhan city of China. Wuhan, Hubei province of China is considered as the origin for the life-threatening viral outbreak of Novel COVID-19 [1]. Wuhan is the capital city of Hubei province which is also known as the one the major transportation hub in the China started serving the hospitals in their local regions with the pneumonia with unknown causes. The initial was traced with some of common exposures to the wholesale seafood market in Wuhan city which is also known for trading the living animals. After the SARS outbreak surveillance system was activated and respiratory related samples of suspected patients were sent to the labs for the investigations [2]. China notified the outbreak to WHO on December-31, 2019 and on January 1, 2020 seafood market of Huanan was closed till further notice. On January 7, 2020 it is found that corona virus has the >70% homogeneity with SARS-Cove and >95% with the bat corona virus [3]. Reports came from the Huanan also showed the positive result which clarifies that corona virus was originated from the Wuhan city. Soon the number of cases stated increasing exponentially [4]. Understanding of the transmission risk is still incomplete. Epidemiologic investigation from the Wuhan city at the beginning of the COVID-19 outbreak identified an initial association with the Huanan seafood market where the most of patients have visited [5]. However, human to human
transmission was the main mode of infection transmission which is spread by the large respiratory droplets caused by sneezing and coughs [6]. With the droplet’s transmission from a infected person virus released in the respiratory secretions when an infected person sneeze or cough, it can be transmitted also if a person touches the infected person surface and then he touches his nose, mouth or eyes [7] the air. The rate of transmission depends from individual and location to location [8].

2. INTRODUCTION

As Corona Virus is spreading very rapidly Government announced Lockdown Over the country so, all Schools and Colleges have been closed to limit spread of virus. This lockdown has largely affected the lives of a student as they are not capable to attend conventional classes in their institution. In this pandemic situation it really become challenging to keep the education continuous. There has to be a system where there is interaction between the students and teachers without actually being together or we can say distance studies. On this pandemic crisis many Organisation, Institution have come forward and developed some online platform in order to continue online learning straight from the home safely. Different online courses have been developed by various agencies like SWAYAM and MOOCS (Ministry of human resource development, 2020). And students have been taking up different courses to gain more knowledge in this situation. Many Government and private Institutions have taken a step to convert their conventional classes to online classes. They started teaching online so that this pandemic crisis does not affect the student education system. It’s a great opportunity to learn everything digitally staying from home safely. As all Institutions are closed however all teachers, professors are working hard from home and busy in preparing affective study material for their online classes. This makes a shifting in education from traditional classroom learning to computer-based online learning which might be one of the largest educational experiments to date. A teacher’s job is not just making their students learn. Their job is to overall spruce their students letting them know what is right and what is wrong and to help them from all aspects. Education through Online podium has a enormous advantage like it reduces use of paper, saves our time, with some easy and quick access to wide range of sources of information. Day by Day this digital education gives a new era to the educational system. Now Many Organisation are working to developed new platform where students, teachers as well parents can also connect. With all this Advantages there are some disadvantages also like In India there are so many areas are there which are still reluctant in electricity, and also there are some students who cannot afford this online classes because of lack of internet issue, need of mobiles, laptops and all. So, for those students studying online rather than studying conventionally is a immense problem. Due to this lockdown many people have lost their job even those who worked on daily basis-income have to face a great problem in order to continue their children’s online study. So, we should take some steps for them also as Education is necessary for each and every student.

3. The paradigm shift from ‘Think Digital’ to ‘Being Digital’.

Over the next five-year the new digital technology will give a sustainable and dramatically change on work outcome and work experience for employees in all over the field. The digital difference or what we say as thinking digital to being digital technologies is to reinforce, instead of exchanging the cognitive collaborative and therefore the physical capability of human beings. Digitalization refers to assembling of latest technologies that enhance the gathering and analysis of data during a way that it dramatically augments the capacity of human. Advance in digital technology including robotics software and machine learning, sensors and analytical tools-will lead to work in concrete with intelligent machines. Companies have no longer a formal work deign department but executive manager and engineer are constantly making choice among the engineers are different way to translate business objectives and market condition into processes tasks and jobs.

4. Significance challenges while implementing digital transformation in a short notice
During this Covid19 pandemic situation we are all locked at home but we cannot let our education be stopped it should be continued. With this view we started our education digitally. Though with a short notice it’s not easy to convert our conventional classes to digital classes but yeah if we can implement it properly it can be a lesson of how quickly things can adapt to it. The advanced technologies have the capability of planning, or managing anything at any time so that we can continue our education at any situation. This motivates us to do something more things with some creative and innovative ideas to immerse our learning experiences. By making proper use of technologies we reached into the digital world to make our education system more grateful with a short period of time.

5. Responses of the Education Sector’s in New Normal

It is a challenge for both the educators and students to accept the paradigm shift to digital transformation. The challenge needs to be converted to opportunities for a successful implementation of new education system. All organisation or educational sectors are providing a huge support to make this digital India more vital. The Covid19 have raised a red zone over the whole education system across the world. To get rid of this crisis we are pushed into the Digital world. These created some fascinating online platforms with varying online courses which is much obliging for the students to capture more quickly. In the transformation of traditional to Digital platform all education sectors provide an enormous support which helped us to continue our education during this pandemic.

6. The tradition of ‘learning Anywhere, Any-time’ Adds Value

In this Digital World of Education, we can do any-thing, any-where at any time. Developing academic institutions are driving the digital learning tradition too rapidly and easily to join the modern world. The most appropriate place for continuous education has been online courses and this can be done by adopting three ways of practices.

6.1. Use of Video Broadcasting Tools-

Different Educational Sectors have developed the online learning system using internet. It makes a way to move towards this Video Broadcasting tools through some Online Platforms like as Zoom, Google meet, Google Hangout, etc. which offers learning straight from home.

6.2. Usage of Asynchronous Learning Systems:

The pandemic has contributed to the use of asynchronous training programs by educational institutions. It lets students complete the classes at a certain time or place without having to attend. The idea, feedback and questions with the educators and colleagues can be hatred by learners, but sometimes They waited for the answer because they might not be answered immediately, but within time limits they would obtain the answer certainly. Like the Digital Library and Discussion Board, students can communicate online and also create a direct connection of students with teachers without a facilitator.

6.3. Use of Real-time Social Media Channels:

As nowadays the physical communication is prohibited as well as dangerous too, so to continue the communication the social media platforms are coming into the role. Using social media people situated anywhere can continue their communication without any obstacles. In the education system the social media have a vital role because along with the messages documents, voice notes, video lectures, link of any education sites can be shared very easily. By the help of social media it has become easier to reach every students. As well as students are also getting every study materials without any miss. There are many social media sites are available such as Facebook, whatsapp etc. Other than study using these one can know the current situation of any part of the world which helps to enhance one’s current affair knowledge.

7. Education firm nurturing in popularity:

Introduction of student to some of the principal concept and methods used in the analysis of moving image. A two-hour weekly lecture which introduces technical and structural aspect of film and television is accompanied by weekly film screening and a one-hour weekly workshop, where student
should be able to perform a close analysis of extract draw from film and TV and to understand the basic formal principle underlying the construction of auto-visual texts. Assessment is on the basis of an assignment (50%) which an analysis of clip taken from one of screening films. In this process trainee instructor inscribed in a module at an educational institute where films are used for reflective learning. An overview of the responses of the apprentice teacher survey indicates that the apprentice teacher considers the films fascinating and useful for their thoughts, but it is important to focus on the issues posed in the films by providing effective lessons, reading and guidance.

8. Organizing online assessment and online test

Corona virus (COVID-19) which is spreading now a days in a huge manner so that it is harmful to go outside until or unless it is very essential, due to which all the school colleges are suspended. Educational institutes are closed but we cannot stop the studies, as it will cost a heavy loss for the students. To continue the education we have chosen an alternate route so that no one should cost any kind of educational losses. As it is a pandemic situation so the education in online platform are considering now a days. All the materials as well as video lectures are provided in an online manner, along with these live classes are also taken by the teachers. After the completion of the topic several assessments are taken by the teachers, and finally some tests are also taken. All these are taken to know the study status of a student as well as to identify their problems, which also helps the students to know their weak point.

9. Automated online proctoring solution:

Over latest innovation in field of online Examination enables or client to conduct online Examination anywhere anytime within the real sense. Procter enables remote proctor to look at the candidates in real time via live video, screenshot and audio feed while the examination is ongoing. The video and screenshots are saved on the serves for audit and playback at a later time. The proctors have control over the candidate examination by passing continuing or ending the examination as and when required. Ability to proctor any online examination from a centralized remote location in real time. Each proctor can manage multiple candidate similar technology.

10. An audio-visual analysis of content:

It analyses both auditory and visual sources of information and discusses its interplay and coincidence in extracting high level semantic information. Access to visual information is used both for short and object-based purposes. Audio source parsing allows an identity mapping function to be extracted over time. Video parsing, indexing and retrieval based on content have recently increased to active research subjects through the enormous number of now available, unstructured video data, the spread of their use as a data source in many applications, and consequently the growing challenge of manipulating and retrieving the topic. There were many fields of application such as multimedia video on demand (VOD), digital video repositories and entertainment services, broadcasting systems and control systems. Multimodal interaction can serve two purpose:

A) Enhance the content finding of 1 source by using similar content Knowledge extracted from source.

B) Offer a more detailed content description about an equivalent video

11. Facial Recognition Technology

Facial recognition technology is the technology which compares images or videos of people entering in an application, with a database of already-known individuals and near-instantly confirms their identity, so that other person cannot enter or login to the application. In this pandemic situation we all are unable to go outside or in a college for attaining classes, because it is very much dangerous to go
outside for Covid19. So, as we have to use many applications with personal accounts, the security must be proper. For that reason, whenever we use the application the software should identify the faces of the account holder. Such as other person cannot access any of account in case of leakage of the password. It is also helpful for the attendance of the students, so that one cannot cheat by giving others attendance. For this security purpose the role of inbuilt recognition technology come into play.

12. How are the Innovative Technologies Helping Education Sector?

Technological innovations have a vital role on educational systems at all levels. Online courses, teaching, educational software, are helping to continue the education in these days. Only by the latest innovative technologies which have been introduced now a days, we are able to do our works or continue our education from home. Due to these students can clear their doubts from home, teachers can continue their lectures via video conferences and all. So, it has become the backbone of education system nowadays.

12.1 Advantage – For subsection make it 11 points Times Italic

12.1.1 Reduced costs –The advantage of online learning comes down to economics. A half-day of traditional classes is equivalent to a one-hour e-learning course. Online learning cuts many of these costs, including with hiring an instructor, booking a facility, printing materials.

12.1.2 Increased convenience and flexibility -Employees often struggle to fit ongoing education into their busy and rigid schedules. So, it become easier to take classes in online. Similarly, for students also it has become to do class from their home.

12.1.3 Ease of content update - In today’s situation, information and knowledge changes faster. With respect to printed materials which is used, the e-learning is much cheaper. The best part is that any change you make to your online content becomes immediately available to whole learning audience.

12.2 Disadvantages –

12.2.1 Diminished social interaction - When you imagine a traditional classroom, live group discussion, and students raising their hands to ask the questions likely comes to mind. For some students, these face-to-face interactions are a must to bring the material to life. So that some students do not feel much comfortable to do online classes.

12.2.2 Lack of practice-based learning – In online learning teacher taught to students in a theory manner. So that students just listen to the teacher and write the needful topics and the sums. But in case of lab/practical subject students have to do these manually after knowing the procedure which is not possible in online classes, so that students will not get the proper knowledge regarding the practical work.

12.2.3 Network and Connectivity – It is observed that many of the students as well as teachers come from the rural areas and the network facilities are not so good at those places. Due to which unavoidable problems occurs. Similarly, many students cannot afford a smartphone too, for them the online classes become a big challenge.

13. Augmented Reality (AR)

AR reality is a great benefit for both students and teachers. Teachers have a creative 3D modelling technique to interact with students to catch students’ attention and inspire them. When students find interesting things in the classes they also try to interact with the teacher in a better way which will make the class more interactive then before. Augmented reality is a virtual interactive way to the real world where the objects present around the world are modified and enhanced by the computers.

14. Artificial Intelligence (AI)
Artificial Intelligence or machine intelligence in education is an innovative and interesting learning system that has more personalized learning technology to satisfy the needs of the students as well as teachers. It consists learning with AI strategies with this technology students can relate virtual world to the real time studies. Artificial Intelligence is demonstrated by machines and natural intelligence are demonstrated by humans. Artificial Intelligence refers the human intelligence to machine by programming so that machines can think like humans to mimic their actions.

15. Virtual Reality (VR)

Virtual reality is also connected with AR which helps to offer smart interactive experiences. Nowadays virtual reality is used in the advanced fields such as medical, engineering, design, training etc. Virtual reality is the technology which helps to mimic the real world in 3D modelling way on a flat screen. Using this technology in the education sector helps the students to grow their interest on the studies. It also helps the teachers to explain the topic in a easier way so that students can understand easily.

16. Machine Learning (ML)

Machine Learning is simply the application of artificial intelligence which helps the machines to improve themselves automatically without any kind of pre-programming. Along with the time new technologies, informations are generating, to be familiar with them machines access some data and use those data to improve themselves. As the programs are becoming advanced machine should also be getting advanced in order to compete with the software, so that a best performance can out. Up to the level at which a machine can update itself by using artificial intelligence without any external effort is the main fundamental of machine learning.

17. Future Transformation: The Era of New Normal

17.1 The trend of digital classrooms / Flipped classrooms is growing - Technology is evolving day by day and these innovations are also being implemented of education. It makes it simpler and more accurate to fix problems. Teachers can now take classes via digital screens, so that each student can receive the same content. The curiosity of the students is enhanced by mixing different creative and modern styles. And every student receives world-class education, which was not accessible in conventional classes.

17.2 Online learning material, video lectures through various devices - Today, due to hi-tech network and technology, the education sector has changed as a fast-developing field. With computers and digital gadgets in classrooms, students find studying more enjoyable. The aim of a teacher should be, to create such an atmosphere, such as every student want to study. Moreover, the young students today are surrounded by computers and mobiles, bringing the same technology into the classrooms makes them feel easy and comfortable to study.

17.3 Online courses – MOOCs (MOOCs, which are in their entirety) & Other online learning courses – When we talk about MOOCs, it is fact that India is the world's second largest MOOC market. For many students, MOOCs have opened up the opportunity to be part of an educational movement. With the assistance of Internet access, this provides a great opportunity for quality learning. Why MOOCs in India are a good idea is because millions of Indians live in need and can not afford higher education in costlier organizations. MOOCs provide many courses online so that they can get the knowledge easily in a cheaper way.

18. Rethinking the Educator’s Role

During this Covid-19 pandemic some of new opportunities has arrived, which people can set as their goal. Educators can express their abilities by this opportunities. But they have to rethink about their life goals which they may have to change because of this pandemic. But it is not a new start of their goal. This is just they have to think their previous goals as virtually not practically. They have to think
that how can they achieve their goals. And how can they really use their opportunities for themselves for society also.

19. Encouraging Life Skills Needed for the Future

Covid-19 has changed everything like business strategies, education system etc. Now everything have to do in e-process. Students have to learn how to operate new software and have to create new path for their own. Everyone should manage themselves for the upcoming challenges in the world full of e-learning. For students teachers provide a view on how to start the e-learning. And for the businesses employees should know what can grow their company by work from home.

20. Final Thoughts

Covid-19 pandemic has change all of the system of education and now all need a new idea and arrangement for education system. Immediate planning is important to continue the schools and colleges and higher educations. Teachers can teach the students how to operate any software for learning. This can take some time to manage all of this, but we can fight this pandemic and can learn as previous. Now students can learn as their own also. The classroom study and the e-learning is much different from each other but we have to continue our education as e-learning.

21. Opportunity for students to become an entrepreneur

Many of the states are facing unemployment crisis where as Tripura is facing the unemployment crisis in the double digits. But at this pandemic situation if one wants to start a new business, they can get a much more bright opportunity. Now people can start their own business regarding their personal factors. They can create a new business of their own if they are not able to find a job. They can serve their intelligence for their own business and can grow up. And some of unemployment problem of students can be solved.

22. New challenges to the institution/organization/faculties/students/parents to get used to this new normal education policy

Covid-19 is bringing about a whole set of new challenges in every educational system as well as the students and faculties. This rapidly increasing situation of pandemic forced all of us to shift our every daily work system from offline to online. And it is also a challenging era for all teachers because of educate students from practically to virtually is not going too easy. And also, there is some merit also such as students can learn a topic twice or thrice if they have any problem in any topic.

23. Conclusion

From the overall study we come to know that, in this pandemic situation it is very harmful as well as dangerous to go outside. So that it is better to continue all our works and studies from home only. The using of latest technologies such as AR, AI, VR etc in the online platform makes it much more sophisticated and easier for the user. Apart from media sharing which also offers us almost every facilities we have wanted for such as connecting many people at a time, live screen sharing etc. People now can learn also can earn by sitting in home. It is now becoming very normal like the traditional works were, by introducing the era of new normal.

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