ROLE OF TECHNOLOGY IN ONLINE LEARNING DURING COVID-19

DR. AARTI DEVESHWAR

Associate Professor, Department of Management Studies, Deenbandhu Chhotu Ram University of Science and Technology, Murthal, Sonepat, Haryana. E-mail-aarti.deveshwar@gmail.com .

SALONI

Research Scholar, Department of Management Studies, Deenbandhu chhotu Ram University of science and technology, Murthal, Sonepat, Haryana. E-mail- psaloni560@gmail.com.

ABSTRACT

Technology has played a vital role in the fight against COVID-19. Various technologies have been developed to face and detract the impact of csorona virus. This pandemic has forced social distancing across the world. It also led the closure of school and colleges and migrate all these to online platform. Online learning is the use of internet and other technology to develop and transfer educational material to the learner. This pandemic creates migration method for university, faculty and students. This paper discussed about the various technologies used in learning. It also examined the challenges and opportunity for online learning. It is evident that online method is more suitable for the learning form all technique during the distance education.

Keywords: COVID-19, technology, online, challenges, opportunities

Introduction

The deadly disease corona virus also known as COVID-19 has affected the allover world with its infection. The COVID-19 crisis has created a hug impact on the Business, economy, schools and hospital system. Online education, tele-work and telemedicine become important to slow down the spread of virus. This pandemic generated acute demand for innovative technologies to cope with damage from corona virus. As current situation of COVID-19 is like you have to work harder for the life. But to face this situation technology helps a lot. We can see technology in every aspect of our life like in learning, earning and living. So it is important to know about the different technology which is adapted by the people to face this crisis. The pandemic create threat to the people but also provided opportunity for the technology based solution and practices of technology which includes work practice, information management and design and use of technology. The use of the digital technology provides the useful and necessary tool to help local and regional government on the frontline of the emergency to provide essential public services during the corona virus crisis. As corona virus spread all over the world, in response to this pandemic government have to put some essential restriction on the movement of the people and rule of physical distancing and the functioning of services. . Online learning is the use of internet and other technology to develop and transfer educational material to the learner. To curb the spread the COVID-19, whole world accept the social distancing as suggested by WHO, and it has caused closure of doors of schools and collage. All these policies disturbed the traditional method of teaching and learning. This paper discussed the various technologies used in educational sector during the COVID-19 pandemic and challenges and opportunities associated with these online learning methods.

LITERATURE REVIEW

Drouin et al. (2020) examined the uses of social media and other communication technology by the parents and their children in the beginning stage of COVID-19 in U.S. authors take a sample of 260 for the investigation. The result of the study showed that parents and children had increased use of social media and technology in the beginning of the pandemic. The structural equation model showed that the people with high anxiety level increased the use of social media and other communication technologies to get information and social support.

Kumar et al. (2020) analyzed the different dimensions of modern technology and it application to overcome the effects of COVID-19. It was a review based study. The conclusion of the study showed that modern technology contributed a lot, it help people to fight this infection. The technology helped in identification of the level of infection spread. Modern technology helped in disease tracking, diagnosis, predicting outcome of patient health, protein structure, drug discovery and to spread awareness through social media and internet.

Singh et al. (2020) examined the application of virtual reality technology for COVID-19 which helps in fighting against this pandemic with audiovisual based virtual technology. The study was based on the lots of literature review. The conclusion of the study revealed that virtual reality technology provided a platform to avoid the face to face interaction between the doctor and COVID-19 infected patient. Authors suggested that it is beneficial for the remote site for planning, treatment, telemedicine and controlling of infection.

Ting et al. (2020) explored the different application of four digital technologies and their impact on the public health. The two strategies for envisagement the COVID-19 were detection monitoring, surveillance, monitoring and prevention of COVID-19 and to reduce the impact of COVID-19 to healthcare which is related to COVID-19. Conclusion suggested that in place of relaying on the classic public health strategies, in 2020 we need to use wide range of digital technologies to improve the public health strategies.

Uohora et al. (2020) described the Microsoft prospective and explained the importance of technology in transforming the public healthcare landscape which imparted new and refined capability in health care sector. Conclusion revealed that technologies help people in various form like it help people to return to work, make student to learn from home and in medical sector it help in tracing, testing and treating the infected people. Authors suggested that for better application of the technology, it require careful governance and also need for maintain balance between the social need, economic recovery, public health and individual right.

Vaishya et al. (2020) examined the role of artificial intelligence technology to prepare for prevention and fight with covid-19 and other diseases. For the analysis authors reviewed lots of article and collect data from different platforms. The conclusion of the study showed that health care sector need decision making technology to prevent the spread of this disease and also to predict the impact of pandemic in future. Artificial technology provides real-time information and suggestion to avoid the spread of this virus. Authors identified seven application of the artificial intelligence technology to reduce the impact of COVID-19.

Whitelaw et al. (2020) examined application of the digital technology during the COVID-19 pandemic. Study highlighted the way successful countries adopted technology to respond for crisis planning, tracing the contact, testing and quarantine. Conclusion of the study showed that the countries those respond instant responses to the pandemic were successful in containment and reduce the effects could provide a way to the other countries.

Galanakis et al. (2021) investigated the potential innovation during COVID-19 in the food sector for food safety, bioactive food compounds, food security, and sustainability which were affected by corona virus. Approaches during the lockdown and post COVID-19 era were also discussed in this article. The results of the study reveal that innovation and approaches in the food sector were internet and communication technology, block chain in food supply chain and 4.0 applications. It also suggest that there was a need to explore social marketing to understand the need and prospective of customer toward the food sector.

OBJECTIVE

The objective of the study is to examine the various technologies used to scale down the menace of COVID-19 for the education and challenges and opportunities related to the application and uses of these technologies.

DATA AND METHODS

The research is descriptive in nature and the study is carried out by employing key word technology and COVID-19 from the database of Google Scholar and Research Gate.

Technologies used in Education

COVID-19 affects whole world with its infection, which has result like lockdown, social distancing and other precautionary measure to slow down the impact of this disease. As it also affect the educational sector due closure of school. Which led the online learning in this study material is directly transfer to the student.

1. **eLearning:** because of spread of COVID-19 and closer of all schools, role of distance learning has been increased and it become top educational technology in 2020. In the eLearning program, educational content for study is delivered to the student through laptops, computers, smart phones or tablets. It save time as well as provide opportunities for the interactive learning.

2. **Big Data Will Get Bigger: To fulfill the learner's need, learning experience need to be personalized. Now we have bigger data than ever before because of COVID-19 and booming in online learning.** Instructional

Designers have appropriate information about the experiences of learner which helps in customize and present the courses in a suitable format.

3. **Blockchain Technology:** in Massive Open Online Courses (MOOCs) and ePortfolios Blockchain technology has been used which helps in verify skills and knowledge. From blockchain, The Distributed Ledger Technology (DLT) brings many benefits to education, especially in data storage. The storage is technically limitless because With the addition of new data every time, it adds another "block" to the system.

4. **Video-Assisted Learning: This is used in the distance learning program where students learn with the help of computer screen.** Videos are important in lesson learning and content can be understand easily.

5. **Learning Analytics: it helps teachers to measure, collect and report learning of students. Through this, it is possible for teacher to understand and optimize learning and environment in which it occurs.** Teachers can improve knowledge and skill acquisition of the students by reading the insights from learning processes of students.

6. **Immersive Learning with VR and AR:** Virtual Reality (VR) and Augmented Reality (AR) helps **to change the class learning experience** in education. VR offers a constructed reality while AR provides an extended view of real image. These help to explain complicated concept that plain image or lab experiment could not show to the students.

7. **Artificial Intelligence (AI): In US EdTech market it is predicted that AI grow by more than 45% and become primary trend. With the help of** AI-driven programs, learners and teachers can get helpful feedback. This is the reason that most of schools use AI systems to monitor student progress and it also alarm teachers if there are be some problem with performances of students.

8. **Social Media in Learning: in this current situation, social media plays very important role in the communication for the many educational institutions which help students to interact with each other. Teachers and students can easily share study materials in group and discuss with other. It also helps regarding to solve or clear doubt regarding concept. Animated learning videos also go viral on social media.**

Challenges

The specific nature of the COVID-19 pandemic needs strong coordination of connected data, people, and systems to facilitate worldwide collaboration in fighting against it. When we talk about online education there are many challenges which are affecting the efficiency of online learning. There challenge can be as follow:

1. **Lack of resources:** Lack of resources creates Short and long-term personal and academic difficulties were as a result system cannot fulfill the needs of students and institutions. Only in small number of counties have been capable to implement distance education program.

2. **Digital Competency:** it means having group of skill, knowledge and attitude when using the digital devices to perform any duty or responsibility, like problem solving, coordination with respect to efficiency and effectiveness and information management.

3. **Poor digital Infrastructure:** some time when we don't have proper digital infrastructure we may not communicate and share information at right time. It may create error in the transmission of the information for the education or any business houses.

4. **Social Economic factor:** Inequality in the social and economic status of student also creates difficulties in the online learning of students because it can create shortage of devices for the student and teacher. COVID-19 has increased the poverty because of lockdown and social distancing. Those students who have no internet connection could not access the study material at the right time.

5. **Intrusion of Human and Pets:** when family member, friends and pets interfere or create disturbance and deviation during the process of teaching and learning. It can be seen that during the online video conferencing someone's pet can bark in background and family member also can disturb or create noise.

Opportunities

When any problem arises during any situation it comes with opportunities with it. In online learning it provide platform for the student and online educator to facilitate education. Online learning helps in reducing the spread of virus and maintained

the academic calendar for the school, university and any other institutions. In this situation online learning become quike and acceptable mode of learning and teaching.

1. **Innovation in technology**: university and research center take up the responsibility to provide technology to scale down the impact of COVID-19, for this many innovative technology have been developed by the researcher for the tracking, testing and treatment of the corona virus patients.

2. **Research Innovation**: according to WHO this deadly pandemic is a threat to the humanity because of rapid spread of virus. As the threat of the virus has huge impact on the human life, researcher start to find out the solution to this crisis by providing short-term and long-term solution to the problem.

3. **Social and Economic Interventions:** during this pandemic many people come to support each other for finance or social activity. Some companies also provide low cost or free internet to the people so that they can access the educational material easily and everyone have equal chance of knowledge.

Conclusion

COVID-19 pandemic spread all over the world and affect the every aspect of life. It also affects the education of the children. To solve the problem relating to the education, online learning is most suitable technique to provide education to students with social distancing. .Technology like social media provides source information and content for the learning. In the end, we can say that when we talked about the technology in education there is a lot of collection. Technology provides seeped to education and transformed whole learning and teaching process. E-Learning is an educational tool which enhanced accessibility of education and provides convenience of education and it also shift the learning behaviors and needs of learners for learning. But when we use online learning it come with some challenges and opportunities as they are also associated with it. Challenges related to disturbance during online conference, non availability of the devices, poor digital infrastructure and social economic factor etc. opportunities associated with online learning are innovation in technology, research innovation and social and economic interventions. In the present situation all technologies has contributed in improving the lives of people and have significant advantages in helping the people to fight this virus.

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