A Study of On-line Learning: COVID-19

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Abstract

Educational institutions like schools, colleges, and etc. in India are currently based on only traditional methods of reading and learning, basically they follow the traditional set up of face-to-face lectures in a classroom. Although many academic units have now-a-days started blended learning, still a lot of them are stuck with the same old procedures. The sudden outbreak of a deadly disease called Covid-19 caused by a Corona Virus (SARS-CoV-2) has shook the entire world. The World Health Organization declared it as a pandemic. This situation has greatly challenged the education system across the world and forced educators to shift to a completely new (i.e. online) mode of teaching overnight. The article contains importance of online learning, strengths, weaknesses, Opportunities, & Challenges (SWOC) analysis of e-learning in the time of crisis. This article also put some light on the growth of EdTech Start-ups during this time of pandemic and natural disasters and includes suggestions for academic institutions on how to deal with challenges associated with virtual learning.

Keywords: coronavirus, COVID-19, education, online learning, technology, EdTech

Introduction

The life threatening and infectious disease Corona Virus also known as Covid-19 has deeply affected the global economy. This tragedy has also shaken up the entire education system, and this fear is likely to resonate across the education sector globally. The Covid-19 pandemic outbreak forced many schools and colleges to shut down temporarily. Several areas are affected worldwide and there is a fear of losing the whole ongoing educational year or even more in the coming future. As per the assessment of the researchers, no one can say with certainty as of when we will be able to get back to our normal teaching process. As social distancing is preeminent at this stage, this will have negative effects on learning opportunities. Educational units are struggling to find options to deal with this critical situation. These circumstances make us realize that scenario planning is an urgent need for academic institutions (Rieley, 2020). This situation demands from us humanity and unity. There is an urgent need to protect and save our students, faculty, academic staff, communities, societies, and the nation as a whole.

Online Education is a tool which helps making the teaching learning process more user-friendly, more innovative, more creative knowledge in coetaneous or non- coetaneous surroundings using various devices (e.g., mobile phones, laptops, etc.) with the access to internet. In this space, students can be everywhere (ind 2019). The systematic erudition of an environment is organized in the sagacity that the students must attend live lectures. In the immediate classroom interactions between teachers and students, and there is a chance of instantaneous response, while non-systematic environment of learning is appropriately structured.

In the second type of learning environment, the content is not offered in the form of live sessions or classes; it exists in different learning systems and forums.

Review of Literature on the Use of Online Education During Crisis Situation: Knowledge delivery becomes a lot more challenging with the increase of natural disasters like floods, cyclones, earthquakes, hurricanes day by day.

These hazards close the doors of schools, colleges and etc. in various ways. Sometimes, it creates serious consequences for young people and they are affected by natural disasters every year. Situations of crisis and conflicts are the prime obstacles in the means of providing education. Many students and teachers also experience psychological tribulations at the time of this lethal crisis viz., stress, fear, anxiety, depression, and insomnia that escort to a lack of focus and enthrallment. Disasters create mayhem in the lives of people (Di Pietro, 2017).

With the global hike in temperatures and changing weather patterns, the number of extreme weather events have been increased now-a-days causing varying amounts of loss to life and property. A large numbers of educational institutions were shattered and thousands of students were affected by these natural disasters. They forced to stop their study in the midway which finally leads to child labor, early marriage, exploitation, (Baytiyeh, 2018). When disasters and crises (man-made and natural) occur, schools and colleges needs to be closed and should discover new ways to go on with the teaching learning activities (Chang-Richards et al., 2013).

For example, in 2016, Italy experienced three really violent and powerful earthquakes bringing enormous destruction in the several areas. About 1,00,000 people became homeless, the buildings and structures collapsed, causing massive loss of life and property. The University of Camerino, one of the oldest universities in the world suffered innumerable losses. The university was in a huge problem, it's structure collapsed, a large number of students became homeless and some flew away. In such a crisis situation, students were in shortage of education.

Face to face education was not possible at that time; therefore, administration came forward to devise few plans to continue the educational processes. Before the devastating earthquake, learning in online version at the University was cumbersome. But they were inexorable, and to carry on the teaching learning processes smoothly. The learning was continued over Webex (an online tool) developed by Cisco. Webex facilitated professors in designing the instructional programs and sharing notes and presentations with students according to their need. Unbelievably, within a month, the university was well-versed with e-learning strategies and techniques.

They settled themselves comprehensively well in an e-learning world. They believed that the value of the face-to-face teaching method should not be reduced, but e-learning can be incorporated in a blended mode to bring in efficiency, effectiveness, and competitive edge over other competitors by imparting quality education (Barboni, 2019). In February 2011, Christchurch was shocked due to a 6.3 magnitude earthquake and the University of Canterbury collapsed.

IT enabled education and online learning helped the university to begin again its operations and gave them a second chance to survive (Todorova & Bjorn-Andersen, 2011). After the attack of violent hurricane, the Southern University of New Orleans, transformed into an e-learning campus. To provide education the University started offering several online courses and mobile-phones were used to provide education to the students of several remote place (Omar et al., 2008).

Flexibility is one more attractive aspect of online learning; a learner can plan according to their own convenience. Coalesce of face-to-face lectures with modern technology develops the blended learning and capsized the classrooms; this sort of learning environment can fasten the learning prospective of the scholars. Students can learn as per their time and place; thereby life-long learning became an inevitable approach of life. The government also started recognizing the increasing significance of online teaching and learning in this dynamic world.

The harsh detonation of Corona Virus disease thus escalates our competency in terms of online learning, that is, whether it is the only solution during COVID 19 Pandemic.

Objectives of the Study

1. To explore the development of online learning in past and present context.

2. To conduct Strengths, Weaknesses, Opportunities, & Challenges (SWOC) analysis of online learning during the Corona Virus pandemic.

3. To provide some suggestions and recommendations for the success of online mode of learning during a crisis situation like the Covid-19 Pandemic.

Review of Related Literature

Rapid developments in technology have made distance education much more easy (McBrien et al., 2009). "Most of the terms (online learning, open learning, web-based learning, computer-mediated learning, blended learning, m-learning, for ex.) have in common the ability to use a laptop or computer connected to a network, that allows the learner to learn from anywhere, anytime, in any rhythm, with any means" (Cojocariu et al., 2014).Online learning can be termed as a tool that can make the teaching–learning process more student-centered, more innovative, and even more flexible. Online learning is defined as "learning experiences in synchronous or asynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access. In these environments, students can be anywhere (independent) to learn and interact with instructors and other students" (Singh & Thurman, 2019). The synchronous learning environment is structured in the sense that students attend live lectures, there are real-time interactions between educators and learners, and there is a possibility of instant feedback, whereas asynchronous learning environments are not properly structured. In such a learning environment, learning content is not available in the form of live lectures or classes; it is available at different learning systems and forums. Instant feedback and immediate response are not possible under such an environment (Littlefield, 2018). Synchronous learning can provide a lot of opportunities for social interaction (McBrien et al., 2009). Amidst this deadly virus spread such online platforms are needed where (a) video conferencing with at least 40 to 50 students is possible, (b) discussions with students can be done to keep classes organic, (c) internet connections are good, (d) lectures are accessible in mobile phones also and not just laptops, (e) possibility of watching already recorded lectures, and (f) instant feedback from students can be achieved and assignments can be taken (Basilaia et al., 2020).

Research Methodology

It is a descriptive study and tries to comprehend the significance of e-learning during the crisis period. The tribulations related with online learning and probable solutions were also recognized based on earlier studies. The SWOC analysis was carried out to comprehend various strengths, weaknesses, opportunities, and challenges as an adjuvant to online learning at the time of critical situation Content analysis was done for research tool. The research method is descriptive research. The qualitative aspects of the research study were also taken for consideration. This study is completely based on the secondary data. A systematic review was done in detail for the collected literature.

Secondary sources of data used are (a) journals, (b) reports, (c) documents, (d) company websites and scholarly articles, (e) research papers, and other academic publications.

Discussions

The 21st century has brought about a great deal of change in the world of education. Those days are gone when teaching was limited only within the confines of a classroom. The internet has brought about a paradigm shift in the traditional way in which learning has been done. It has taken learning far beyond the hallowed walls of the universities and into the palms of everyone.

But how did such a radical transformation occur? Though there are plentiful instances of the practice of machines and tools in education throughout history, e-learning is the name of contemporary prudence of relatively new concept. Slide projectors and television-based classes have been there since the 1950s. However, one of the first instances of online learning in the world can be traced back to 1960, at the

University of Illinois, USA. Although the internet was not invented back then, then students continued their learning from computer terminals of interlinked network. In the year 1984 the first-ever whole online course was offered by the University of Toronto.

In the early 1990s the Open University in Britain was one of the first universities in the world to start online distance learning program. In India, the Indira Gandhi National Open University is the leading university in the world with more than 4 million enrolled students, most of whom presently obtain education by means of online modes. The Online Market Size: The Present Scenario Online learning is booming in current times.

The growth of online learning can be expected in leaps and bounds by the virtue of the prevalent availability of high-speed internet, use of new technologies such as 4G and the prospective of 5G, in the foreseeable future. The worldwide market size of online learning is approximately $187.87 billion in 2019, and has increased by 400% over what it was just six years ago. This extraordinary expansion is not only the upshot of rapidly evolving scenario in the world of technology, but is also by the spread of education in the developing world.

The online learning is gradually escalating its market share at the pre-university level beyond high school. In addition, e-learning is growing in presence beyond the traditional fields as well. Recent growth and Developments in Online Learning: Online learning has advanced far ahead of its original potentiality. It is no longer limited to an instructive mode learning, which is based on a one-way monologue from the teacher to the student. Current progresses in online learning facilitate the student to participate as an active role player in the learning process, with systematic, regular feedback and assessments.

This has considerably enhanced the efficacy of the teaching system; align it with classroom-based learning. Some of the characteristics that whet the online education can be as follows: Less expensive than traditional teaching methods: As the cost of teaching is low, the expenses borne by the students inevitably come down. This makes education far more widespread and economical.

Vast diversity in terms of available courses: These days, online courses on every topic are accessible at the touch of a button- from religion to commerce, philosophy to fashion designing, programming to painting, photography to yoga are covered by e-learning. Study groups: There is a scope of mixing between like-minded scholars over the world, exchange of information and ideas. Flexibility: Flexibility is related to the terms like time, money, and location. Online learning allows the student and the educator to be at opposite sides of the world, in different time zones, and yet passes on the knowledge effectively.

Much less infrastructure required: As the additional cost for providing education minimizes in the era online mode of learning, it is a huge incentive to the education providers. Standardized quality: Since the content available online can be evaluated and revised at any point in time, it helps maintain a reasonable standard of quality. Smartphone has played a decisive role in making online learning practicable. It is hastily press forward even in rural areas, bringing high-quality education, at par with the best in the world, available to the masses. Massive open online courses (known as MOOCs) are a promising new field. The New York Time stopping since then.

Almost all the schools, colleges, and universities are having to face the lockdowns to curb further spread of the Corona Virus. Most of the academic institutions are, therefore, looking for the facilitates of online education for smooth conduct of teaching learning. The SWOC Analysis of Online Learning is discussed below. In the past few years, e-learning started receiving fame in the developing countries including India. Many platforms endow with affordable courses to students via Massive Open Online Courses (MOOC).

While a lot of institutions in India were unenthusiastic in accepting online mode of teaching and learning. Anyway, the challenges induced by the Corona Virus pandemic introduced everyone to a new arena of virtual and distant learning. Instructors indulged them in remote teaching through various platforms like Google meet, Skype, Adobe Connect, Microsoft teams, and few more, though ZOOM emerged as a clear winner. Also, to conduct smooth teaching learning programs, a list of online

etiquettes was shared with students and proper instructions for attending the classes were given out to them (Saxena, 2020). Strength: E-learning approaches and processes have really strength.

The online learning modes have the capacity to rescue us from these hard times. It is user-friendly and very flexible in time and location. The e-learning mode enables us to customize our procedures and processes based on the needs of the learners. There are an ample number of online tools those are important for an effectual and resourceful learning environment. Educators may use a combo of audio, videos, and text to communicate with their students in this pandemic time to maintain a live-touch to their lectures.

This can help in forming a mutual and interactive learning environment where students can easily give their instant feedback, ask questions, and learn with interest. The time and location-flexible feature of e-learning is effective during the pandemic times, such as Covid-19. As the closure of places and unsafe traveling by roads can create a lot of troubles, e-learning can be remained as one of the most important options of getting an education at the convenience our house.

Technology provides innovative and flexible answers at this time of pandemic situation to continue education and to help people to be in touch and working in virtual mode without the necessity of face-to-face mode. This leads to planned and systematic changes in organizations as they approve new technology for interacting and working (Mark & Semaan, 2008). Weaknesses: Online Education has certain weaknesses in the form that it hampers the regular communication between the learner and the educator, leading to loss of human touch.

Users can at times face various technical hindrances that slow down the teaching learning process (Favale et al., 2020). Though the flexibility of time and location is one of the most attractive feature of online learning, yet these aspects are - serious behavior creates a lot of problems. Though all the learners are not the same and their coping skills vary according to their capabilities and confidence level. Some do not feel comfortable or at ease while learning online which increases their frustration and confusion.

Now, academic institutions can continue with their teaching and learning by utilizing this opportunity. The people are generally complacent and scared to try some new modes of learning. This crisis will be a new phase for e-learning and will encourage people to look at the effective side of online learning technologies. The time is already started when there is a lot of scope in bringing out surprising innovations and digital technologies. Already, EdTech companies are doing pretty well by helping us fighting the pandemic and not letting learning to be disrupted.

It will enhance problem-solving skills, critical thinking skill, analytical abilities, and adaptability among the students. In this crucial situation, learners from any age group get the right to use the online tools and enjoy the benefits of flexible time and location associated with e-learning. Teachers can build up innovative pedagogical methodology. Challenges: Online learning faces a number of challenges ranging from content issues and pedagogical issues.

It is a constraint for institutions to be connected with their students and make them participate in the teaching learning process for the whole pandemic time. It is a confrontation for teachers to swap from offline mode to online mode, changing their teaching pedagogies and managing their time. It is challenging to develop content which not only covers the curriculum but also engaging the students (Kebritchi et al., 2017). The standard of e-learning programs is truly a test for everyone.

There is no clear guideline set by the government in their educational policies regarding e-learning programs. There is a non-availability of standards for quality, quality control, development of e-resources, and e-content delivery. This problem needs to be solved at once so that everyone can be benefited from the advantages of quality education via e-learning (Cojocariu et al., 2014). One should not merely focus on the pros attached to virtual learning during the crises but should also consider developing and enhancing the quality of virtual courses delivered in such emergencies (Affouneh et al., 2020).

Conclusions and Suggestions

According to World Economic Forum, the Covid-19 pandemic also has altered the way of receiving and imparting education. To discover new answers for our recent problems, we ought to bring in some much-demanded innovations and change. Teachers as well as students practiced the traditional methods of teaching – learning where physical presence of the teacher inside the class room is essential. Thus they are not ready to accept any transformation.

But amidst this pandemic situation, which offers a paradigm shift- people have no other options with them other than adapting to the dynamic system and accepting the change. It will be helpful for the academic sector to include the large number of surprising innovations offered by various online platforms. But amidst all, we cannot unaware of the situation where the students have limited access to all online technology. There is every possibility that a group of students may lose out when classes occur online due to their restricted financial resources. This is all because of the heavy costs associated with digital devices and internet data plans.

This digital divide often widens the gaps of inequality. This difficult time of fate has taught us many new things. Everything is so unpredictable that we should be prepared to face challenges. Though this COVID-19 outbreak did not give us much time to plan we should take a lesson from which that planning is the key. We should plan everything; and should always have a back-up plan ready. We have to do scenario planning for that. We have to be prepared for all types of critical and challenging situations and act accordingly.

This pandemic has also aware us, that the students must acquire certain skills like problem-solving, critical thinking, and most importantly adaptability to survive in crisis. Educational institutions should build buoyancy in their systems to provide opportunities and prioritize the presence of these skills in their students. Today, we are compelled to learn online mode of education., it would be surely easier for us if we have already mastered it. The time we engaged in learning the modes could have been spent on nurturing innovative content. But it is better late than never.

COVID-19 pandemic surely has speed up the process of online learning. For instance, the e-application like ZOOM, Google Meet, CISCO WEBEX allow conducting live online classes, web-conferencing, webinars, video chats, and live meetings. In this crisis period when the majority of the schools, colleges, universities, companies are closed due to lockdowns/curfews and most of the people are following the concept of working from home, these apps provide the useful means to be connected over online platform. Disasters will continue to occur and technologies will likely help us cope with them (Meyer & Wilson, 2011).

The willingness of post-secondary institutions to step-up and engage and provide opportunities for those people will never be as large as the need. The only way we can even make a mark in this is to learn, to collaborate and cooperate across institutions and time and spatial boundaries.

We should be more adaptive to accept changes needed in the environment and should adjust to different delivery modes, for instance, remote learning or online learning in situations of pandemics. Institutions and organizations should be prepared to deal with challenges such as pandemics and natural disasters (Seville et al., 2012). Reliability and sufficient availability of Information Communication Technology infrastructure, learning tools, digital learning resources in the form of Massive Open Online Courses, e-books, e-notes, and so on are of great importance in such severe situations (Huang et al., 2020). Instruction, content, motivation, relationships, and mental health are the five important things that an educator must consider while imparting online education (Martin, 2020).

Some teaching approaches like lectures, case-study, debates, discussions, experiential learning, brainstorming sessions, etc. can be followed and performed in online mode to assist the effectual and proficient teaching and learning practices. In such frightened condition teaching and learning should be made fascinating to minimize the stress, dread, and anxiety levels of people. In reality the students and teachers across various academic institution never practiced e- learning model sharing knowledge. Most of them are comfortable with conventional modes of teaching.

The COVID-19 outbreak is the opportunity to exploit the best from the current situation. People are learning a lot in this demanding situation. Amidst lots of tools on hand, teachers must choose the effective tool and apply it to impart knowledge to their students. The gradual and effective method is required. The academic institutions must guide the stakeholders (the teachers and students) on how to access and how to use various e-learning tools.

The appropriate guidance will be effective in covering major part of curriculum content with effective use of such technologies thus, provides the suitable means to reduce the digital illiteracy. Teachers can deliver the content of the curriculum through numerous formats, like, videos, audios, and texts. It will be useful if educators harmonize their instruction with video chats, virtual meetings, and so on to get instant responses and preserve a human touch with the students.

Disasters and pandemic such as Covid-19 has already created a lot of anarchy and strains; therefore, it is very important to study and apply the technology intensely and with due diligence to conquer these worries and anxiety amidst such crisis.

References

Ayebi-Arthur, K. (2017). E-learning, resilience, and change in higher education: Helping a university cope after a natural disaster. E-Learning and Digital Media, 14(5), 259–274.

Affouneh, S., Salha, S., N., Khlaif, Z. (2020). Designing quality e-learning environments for emergency remote teaching in coronavirus crisis. Interdisciplinary Journal of Virtual Learning in Medical Sciences, 11(2), 1–3.

Barboni, L. (2019). From shifting earth to shifting paradigms: How webex helped our university overcome an earthquake. CISCO, Upshot By Influitive.

Basilaia, G. , Dgebuadze, M., Kantaria, M., & Chokhonelidze, G. (2020). Replacing the classic learning form at universities as an immediate response to the COVID-19 virus infection in Georgia. International Journal for Research in Applied Science & Engineering Technology, 8(III).

Baytiyeh, H. (2018). Online learning during post-earthquake school closures", Disaster Prevention and Management. An International Journal, 27(2), 215–227.

Brianna, D., Derrian, R., Hunter, H., Kerra, B., Nancy, C. (2019). Using EdTech to enhance learning. International Journal of the Whole Child, 4(2), 57–63.

Briggs, B. (2018). Education under attack and battered by natural disasters in 2018. TheirWorld.

Carey, K. (2020). Is everybody ready for the big migration to online college? Actually, no. The New York Times.

Chang-Richards, A., Vargo, J., Seville, E. (2013). Organisational resilience to natural disasters: New Zealand's experience (English translation). China Policy Review, 10, 117–119.

Cojocariu, V.-M., Lazar, I., Nedeff, V., Lazar, G. (2014). SWOT analysis of e-learning educational services from the perspective of their beneficiaries. Procedia-Social and Behavioral Sciences, 116, 1999–2003.

Di Pietro, G. (2017). The academic impact of natural disasters: Evidence from the L'Aquila earthquake. Education Economics, 26(1), 62–77.

Favale, T., Soro, F., Trevisan, M., Drago, I., Mellia, M. (2020). Campus traffic and e-Learning during COVID-19 pandemic. Computer Networks, 176, 107290.

Huang, R. H., Liu, D. J., Tlili, A., Yang, J. F., Wang, H. H., Zhang, M., Lu, H., Gao, B., Cai, Z., Liu, M., Cheng, W., Cheng, Q., Yin, X., Zhuang, R., Berrada, K., Burgos, D., Chan, C., Chen, N. S., Cui, W., Hu, X., et al. (2020). Handbook on facilitating flexible learning during educational disruption: The Chinese experience in maintaining undisrupted learning in COVID-19 outbreak. Smart Learning Institute of Beijing Normal University.

Kebritchi, M., Lipschuetz, A., Santiague, L. (2017). Issues and challenges for teaching successful online courses in higher education. Journal of Educational Technology Systems, 46(1), 4–29

Keeton, M. T. (2004). Best online instructional practices: Report of phase I of an ongoing study. Journal of Asynchronous Learning Networks, 8(2), 75–100.

Kim, K.-J., Bonk, C. J. (2006). The future of online teaching and learning in higher education: The survey says. Educause Quarterly, 4, 22–30.

Liguori, E. W., Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. Entrepreneurship Education and Pedagogy.

Littlefield, J. (2018). The difference between synchronous and asynchronous distance learning.

Martin, A. (2020). How to optimize online learning in the age of coronavirus (COVID-19): A 5-point guide for eeducators.

Mark, G., Semaan, B. (2008). Resilience in collaboration: Technology as a resource for new patterns of action. In Begole, B., McDonald, D. W. (Eds.), Proceedings of the 2008 ACM Conference on Computer Supported Cooperative Work (pp. 127–136). Association for Computing Machinery.

McBrien, J. L., Cheng, R., Jones, P. (2009). Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. The International Review of Research in Open and Distributed Learning, 10(3), 1–17.

Meyer, K. A., Wilson, J. L. (2011). Online journal of distance learning administration (vol. IV, no. I). University of West Georgia, Distance Education Center.

Omar, A., Liu, L. C., Koong, K. S. (2008). From disaster recovery to mobile learning: A case study. International Journal of Mobile Learning and Organisation, 2(1), 4–7.

Partlow, K. M., Gibbs, W. J. (2003). Indicators of constructivist principles in internet-based courses. Journal of Computing in Higher Education, 14(2), 68–97.

Parkes, M., Stein, S., Reading, C. (2014). Student preparedness for university e-learning environments. The Internet and Higher Education, 25, 1–10.

Rieley, J. B. (2020). Corona Virus and its impact on higher education. Research Gate.

Save the Children. (2014). No child left behind, Education in crisis in the Asia-Pacific Region Victoria.

Save the Children. (2017). "1.8 Million children out of school as South Asia floods put education at risk."

Saxena, K. (2020). Coronavirus accelerates pace of digital education in India. EDII Institutional Repository.

Seville, E., Hawker, C., Lyttle, J. (2012). Resilience tested: A year and a half of ten thousand aftershocks. University of Canterbury.

Singh, V., Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018). American Journal of Distance Education, 33(4), 289–306.

Song, L., Singleton, E. S., Hill, J. R., Koh, M. H. (2004). Improving online learning: Student perceptions of useful and challenging characteristics. The Internet and Higher Education, 7(1), 59–70.

Todorova, N., Bjorn-Andersen, N. (2011). University learning in times of crisis: The role of IT. Accounting Education, 20(6), 597–599.

Tull, S. P. C., Dabner, N., Ayebi-Arthur, K. (2017). Social media and e-learning in response to seismic events: Resilient practices. Journal of Open, Flexible and Distance Learning, 21(1), 63–76.