



In the Time of Covid-19 - Exploring the Padagogia of Teaching and Learning

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Traditional learning methods, such as face-to-face lectures in a classroom, are used by the world's educational institutions (schools, colleges, and universities). Even while many academic institutions have begun to employ blended learning, many are still stuck in the past. The sudden appearance of Covid-19, a deadly disease caused by a Coronavirus that frightened the entire globe. The World Health Organization designated it as a pandemic (WHO). The global educational system was faced with a dilemma as a result of this predicament, compelling educators to transition to an online teaching mode practically quickly. Many academic institutions that were previously hesitant to leave their old pedagogical method now have no choice but to embrace online teaching and learning totally. In this study, the benefits of online learning are examined, as well as a SWOT analysis of e-learning strategies in times of crisis. This article also covers the emergence of Educational Technology in the classroom amid pandemics and natural disasters, as well as recommendations for academic institutions on how to deal with online learning challenges. The data acquired from diverse sources for this study was analyzed using the content analysis research tool and the descriptive research method. This research taught us, among other things, to have a recovery plan, to be flexible as a learner, educator, or lecturer, and to prepare students for any eventuality.

Key words: *coronavirus, COVID-19, education, online learning, technology, educational technology*



INTRODUCTION

The Covid-19 pandemic has impacted every aspect of society, especially education. The Covid-19 dilemma has spawned a global education crisis (Education International 2020) for which no one is prepared. Millions of students have been impacted by school closures around the world, with the long-term consequences still unknown. In order to offset the consequences of the pandemic on education, 'emergency remote teaching' was implemented as a temporary remedy (Bozkurt & Sharma 2020).

Contributions and recommendations to help educators and schools implement an "emergency remote teaching" program can be found all around the world (e.g., COL 2020; OECD 2020). Many situations have seen the use of online platforms. While some see this unprecedented, rapid, and forced shift from face-to-face to online teaching (or "online emergency remote teaching," as Bozkurt & Sharma 2020 call it) as an opportunity to change education or even a "revolution" that must be continued, others are more cautious and question its implications in terms of equity and social justice. Clearly, during and after Covid-19, concerns about educational inequity and exclusion grew much more public and important. According to existing literature, Covid-19 has an impact on teaching in many regions of the world, especially in terms of the obstacles, limits, and challenges those governments, institutions, and stakeholder confront (Zhang et al. 2020; Judd et al. 2020; NFER 2020; Huber & Helm 2020). Other articles include explanations of how institutions and stakeholders reacted to the new environment produced by the Covid-19 pandemic, as well as experiences, innovations, and methods for dealing with remote instruction (Ferdig et al. 2020). (Moorhouse 2020; Zhang et al. 2020; Bao 2020). The national, institutional, and pedagogical responses to the closure of schools and universities in March 2020 in South Africa are examined in this research. It offers a summary and analysis of the crisis activities and reactions, as well as issues, challenges, and opportunities.

Some organizations, schools, and universities have begun to phase out in-person training. Returning to normal teaching, according to the researchers, will be challenging in the near future. Learning opportunities will be limited during this period due to the prevalence of social separation. Institutions of higher learning are scrambling to find solutions to this challenging situation. These circumstances emphasize the importance of scenario planning in academic institutions (Rieley, 2020). This is a situation in which humanity and cooperation are essential. Our learners, educators, academic staff, communities, societies, and the country as a whole must all be safeguarded and saved as soon as possible. A variety of concerns are associated with e-learning. Accessibility, cost, flexibility, learning pedagogy, lifelong learning, and policy are some of the arguments in favor of online pedagogy. Online learning is seen to be simple to use and has the potential to reach rural and isolated areas. It is believed to be a substantially less expensive method of education in terms of transportation, lodging, and the overall cost of school. Another advantage of online learning is the opportunity to schedule or plan one's time



to finish online courses. Blended learning and flipped classrooms are learning settings in which face-to-face lectures are combined with technology in order to maximize students' learning potential. Students can learn whenever and wherever they want, gaining new abilities and preparing for a lifetime of learning. The government recognizes the growing importance of online learning in today's fast-paced environment. The recent outbreak of Corona Virus disease may encourage us to add yet another argument in favor of online learning: its ability to serve as a remedy in times of crisis.

LITERATURE REVIEW

E-learning, often known as online learning, is a type of education that takes place online.

Distance education has become more accessible thanks to rapid technological advancements (McBrien et al., 2009). "The ability to utilize a computer connected to a network, which allows the option to learn from anywhere, anytime, in any rhythm, with any means" is what most terminology (online learning, open learning, web-based learning, computer-mediated learning, blended learning, etc.) have in common (Cojocariu et al., 2014). Online learning can be described as a tool for making the teaching–learning process more student-centered, inventive, and adaptable. "Learning experiences in synchronous or asynchronous environments using various devices (e.g., mobile phones, laptops, etc.) with internet access" is how online learning is defined. Students can learn and communicate with teachers and other students from anywhere (independent) in these environments " (Singh & Thurman, 2019). Students attend live lectures, there are real-time interactions between educators and learners, and there is the prospect of quick feedback in a synchronous learning environment, but asynchronous learning settings are not well designed. Learning content is not available in the form of live lectures or courses in such a learning environment; instead, it is available through various learning systems and forums. In such a setting, instant feedback and fast response are impossible (Littlefield, 2018). Synchronous learning can provide a wealth of social engagement opportunities (McBrien et al., 2009). In the midst of this deadly virus's spread, online platforms that allow, video conferencing with at least 40 to 50 students, discussions with students to keep classes organic, good internet connections, lectures accessible on mobile phones as well as laptops, the ability to watch previously recorded lectures, and instant feedback from students are required (Basilaia et al., 2020).

Necessity of online teaching and learning

Due to the significant breakout of the global pandemic Covid-19, much of the world is under quarantine, and many cities have become ghost towns, with its impacts visible in schools, colleges, and universities as well. Among all of this, online teaching and learning can be considered the crisis' cure. The Corona Virus has forced educational institutions to shift from an offline to an online form of instruction. The institutions that were previously resistant to change will be forced to accept modern technologies as a result of this crisis. This disaster will



demonstrate the financial benefits of online teaching and learning. We can preach to a huge number of pupils at any time and from anywhere in the world using online teaching options. All institutions must juggle various online pedagogical techniques and endeavor to make better use of technology. Many institutions all across the world have totally digitalized their operations, recognizing the critical need in this situation. In the midst of the chaos, online learning is emerging as a victor ludorum. As a result, improving the quality of online teaching–learning is critical at this point. Following the Covid-19 outbreak, online education in South Africa institutions has exploded. Educators have modified their entire pedagogical approach to face new market conditions and adapt to changing scenarios, resulting in an overnight shift of traditional classrooms into e-classrooms. During this difficult period, the main worry is not whether online teaching and learning methods can provide high-quality education, but rather how academic institutions will be able to implement online learning on such a large scale (Carey, 2020). Any educational institution, anywhere in the world, will be harmed by resistance to change. They'll be judged on how quickly they adjust to changes in such a short time and how well they retain quality. Educational institutions' reputations are on the line, and they are being scrutinized. Their ability to adapt is demonstrated by how effectively they behave and preserve the quality of their education in the face of the crisis. The only option is to switch from face-to-face lectures to online ones. Academic institutions, for example, would not be able to convert all of their college curricula into an online resource in a single day. The three largest problems with online teaching are distance, scalability, and personalized teaching and learning. Institutional measures can only aid us in combating this pandemic (Liguori & Winkler, 2020). There is a requirement for a quick transition to an online learning mode. Therefore, Google's products such as Gmail, Google Forms, Calendars, G-Drive, Google Hangouts, Google Jam board and drawings, Google Classroom, and Open Board Software can be extremely useful in such situations (not a Google product, helps in recording meetings in the form of files). These tools can be used as a viable substitute for face-to-face classes (Basilaia et al., 2020).

Challenges of Online Teaching and Learning

There are a variety of technologies accessible for online schooling, but they can occasionally cause a lot of problems. Downloading faults, installation issues, login issues, audio and visual problems, and so on are all examples of challenges and problems linked with modern technology. Students may find online instruction to be tedious and uninteresting at times. Students never find time to do online learning since it requires so much time and flexibility. Online learning also has a significant problem with personal attention. Students desire two-way communication, which can be challenging to provide. The learning process will not reach its full potential unless pupils put what they've learned into practice. Online content can be theoretical at times, making it difficult for students to practice and learn successfully. Course content that isn't up to par is also a huge issue. Students believe that the main impediments to online learning are a lack of community, technological issues, and difficulty understanding instructional goals (Song et al., 2004). Students were found to be unprepared to balance their



work, family, and social lives with their study lives in an online learning environment in a study. Students were found to be underprepared for a variety of e-learning and academic-type abilities. In addition, students have a low degree of preparation when it comes to using Learning Management Systems (Parkes et al., 2014).

Challenges and Possible Remedies

Although online education has a number of drawbacks, we cannot overlook its advantages in these times of crisis. We can always come up with answers to these problems. Rerecording video lectures, checking the content, and always having a Plan B on hand can all help to ensure that the teaching and learning process is not disrupted. Online classes should be engaging, interactive, and dynamic. Teachers should provide pupils with time limitations and reminders to keep them aware and focused. To the greatest extent possible, efforts should be made to humanize the learning process. Students should be given individual attention so that they can readily adapt to this new learning environment. To communicate with students, you can use social media and numerous group forums. When it becomes tough to reach out to students via texts, various messaging apps, video chats, and other means, communication is key—content should be designed to allow students to practice and perfect their abilities. The quality of the courses should be continually increased, and professors should strive to offer their best effort. Online programs should be intended to be innovative, interactive, relevant, student-centered, and group-based (Partlow & Gibbs, 2003). Educators must devote a significant amount of work to developing efficient online instruction methodologies. Effective online instructions encourage learners to provide feedback, ask questions, and deepen their understanding of the course material (Keeton, 2004). Through online instructions, institutions must focus on pedagogical concerns and stress collaborative learning, case learning, and project-based learning (Kim & Bonk, 2006). The problem for educational institutions is not just identifying and adopting new technology, but also reinventing teaching, consequently assisting students and academic staff who are looking for digital literacy instruction.

The Study's Objectives

- ❖ To investigate the insurgence of Educational Technology and online education.
- ❖ During the Corona Virus epidemic and natural disasters, we undertook a Strengths, Weaknesses, Opportunities, and Challenges (SWOT) study of online learning.
- ❖ To make some ideas and proposals for the success of online learning in a crisis situation.

Methodology of Study

The research is descriptive, with the goal of determining the value of online learning during times of crisis and pandemics like the Covid-19. Based on past research, the issues related to online learning and viable solutions were also identified. During this critical scenario, a SWOT



analysis was undertaken to discover numerous strengths, weaknesses, opportunities, and challenges related to the online style of learning. Content analysis was utilized as the research instrument for assessing the data collected from various sources for this study, and descriptive research was employed as the research technique. The qualitative features of the research study have been taken into account. This research is entirely based on secondary data. The collected literature was subjected to a thorough review. Journals, reports, search engines, firm websites, and scholarly articles, research papers, and other academic publications are all used as secondary data sources.

Introduction of Educational Technology during Pandemic

We can witness writing slates in all classrooms during the 1100s if we go back in time and look at Educational Technology through the ages. The Abacus helped children comprehend the principles of math in the 1600s; and in 1913, film snippets were advocated by Thomas Edison as a substitute for teachers. Sidney Pressy invented the first teaching machine, known as the MCQ machine, in 1927. Online education began in the 1960s at the University of Illinois, while India's Educational Technology adventure began in 1994 with the introduction of Educational computer.

Educational Technology first appeared on the market around 2010, with the goal of disrupting the education sector. Biju's, a learning application, became one of the most valuable Educational Technology firms in 2019. Since then, a slew of other businesses has sprung up to compete with Biju's. "Online learning is the future," Li Kang, Ai English Executive Director, said. "If there hadn't been a virus, that understanding would have taken another several years, but this has sped up the process." "In the middle of the crisis, Educational Technology emerge are seizing all of the correct possibilities by offering free online courses to students. These Educational Technology and learning apps, according to UNESCO, can assist students during such difficult moments. Paytm, Mobiwik, Tez, PhonePe, and other digital payment startups expanded fast during and after demonetization. Educational Technology are now aiming for better results in the wake of the pandemic. Educational Technology stat up working hard to make the most of this circumstance by offering students a variety of free courses and e-resources. Although, as a majority of Indian cities, especially small cities, still endure periodic electricity shortages, the availability of electricity and a stable internet connection is still a bigger hurdle in their way. According to reports, these companies' activities are already giving them benefits. Their consumer base is vastly improving; it may be for a limited time, but even if they can maintain a few people, it is solely for their benefit.

While working on these Educational Technology emerge, educators in the role of facilitators confront a variety of challenges, such as when to start utilizing it, how to limit distractions for students, and how to sharpen students' abilities using IT. Students' participation isn't enough; educators must work hard to boost student engagement, keep their attention, collect feedback, and evaluate them in a variety of ways. This will result in a productive and enjoyable learning



environment. Educational Technology will never be able to replace a teacher, but it can help to improve instruction. Educational Technology companies can be of tremendous assistance to students during times like these, when Covid-19 has compelled schools and institutions to remain entirely closed for a few weeks due to the severity of the crisis (Brianna et al., 2019).

The cooperation from Microsoft and Google, according to a statement released by the Department of Education, would aid in the process of "adapting and expanding the use of digital platforms for remote teaching" (DOE ,2020b). The majority of schools choose to use synchronous meetings using Google meet and Classroom Teams, both of which are free to use. Some schools also used the Skype and Zoom platforms for teaching and learning, while others were using the WhatsApp platform for classroom instruction, which had some challenges with limited use in the free version as well as security concerns. Before the Covid-19 pandemic, teachers took advantage of the Moodle platforms that were already in place in their classrooms.

SWOT Analysis of Online Learning during Covid-19

Knowledge delivery becomes a difficult challenge in the aftermath of natural disasters such as floods, cyclones, earthquakes, hurricanes, and so on. These dangers wreak havoc on instructional processes in schools and universities in a variety of ways. It can sometimes lead to school and college closures, which has major ramifications for kids, deprives them of their fundamental right to education, and puts them in danger in the future. "Every year, natural calamities harm 100 million children and young people. The majority of them will have to miss school "(World Vision).

The most significant impediments to education are crisis and conflict situations. During times of crisis, many students and teachers experience psychological issues such as stress, fear, anxiety, sadness, and insomnia, all of which contribute to a loss of focus and concentration. People's lives are wreaked by disasters (Di Pietro, 2017). As weather patterns change and global temperatures rise, a growing number of extreme weather occurrences have become the new normal. Various quantities of lives and property were lost as a result of such catastrophes. Table 1 lists some of the natural calamities that have wreaked havoc on educational systems. These catastrophic disasters devastated a large number of schools and universities, affecting thousands of students. Their education was interrupted in the middle. "Child labor, early marriage, exploitation, and induction into the military forces are all risks that child face when their education is disrupted" (Baytiyeh, 2018). Schools and colleges must be resilient in the face of disasters and crises (both man-made and natural), and they must discover innovative ways to maintain teaching–learning activities (Chang-Richards et al., 2013).

In 2016, Italy, for example, was struck by three severe earthquakes. This resulted in widespread devastation in a variety of regions. Approximately 1,00,000 people were displaced, houses and infrastructure were destroyed, and there was significant loss of life and property. The University of Camerino, one of the world's oldest universities, has suffered a significant setback. The institution was in disarray; its structure had crumbled, and a huge number of



students had become homeless or had departed. Students were robbed of education and learning under such circumstances. "It is difficult to cling to the traditional path when the road itself has crumbled," as it is accurately remarked. This meant that face-to-face instructions were not possible at the time, so management and leaders devised various methods to keep the educational processes going. Prior to the earthquake, e-learning at the university was inconvenient. But they were unstoppable, and they used Cisco's Webex (an online application) to continue the teaching–learning process. Professors were able to use Webex to assist them with building their instructional programs and share notes and presentations with their students. The university was well-versed in e-learning tactics and methodologies in less than a month. They fit very well into the e-learning environment.

They argue that while the value of face-to-face training cannot be diminished, e-learning can be utilized in conjunction with traditional methods to improve efficiency, effectiveness, and competitiveness by providing high-quality education (Barboni, 2019). A 6.3 magnitude earthquake struck Christchurch in February 2011, causing the University of Canterbury to collapse. The university's operations were restarted and given a second life thanks to information technology and online learning (Todorova & Bjorn-Andersen, 2011). Following the devastation caused by Hurricane Katrina, Southern University in New Orleans switched to an e-learning campus. Several online courses were given, and displaced students were educated using mobile devices (Omar et al., 2008). The most recent calamity comes in the form of the Covid-19, which is sweeping the globe like a forest fire. To prevent the Corona Virus from spreading further, all schools, colleges, and universities in the most impacted districts have been placed on lockdown. As a result, many academic institutions are turning to online learning to help them with their teaching and learning processes. Figure 1 depicts the SWOT Analysis of Online Learning.

Natural Disasters That Affected Teaching And Learning .

Natural Disaster That Affected Teaching–Learning Badly.	
Year	Natural disasters
2009	A violent earthquake in 9 the city of L'Aquila
2010	Floods in Pakistan
2011	Tropical storm Washi in the Philippines
2011	A series of earthquakes in New Zealand
2013	Tropical storm Haiyan in the Philippines
2015	Gorkha floods in Nepal
2017	Harvey and Irma Hurricanes in the United States
2017	Floods in Nepal, Bangladesh, and India
2018	An earthquake in Papua New Guinea
2018	Earthquakes and tsunamis in Indonesia
2019	The typhoon Lekima in China

2019	The typhoon Hagibis in Japan
2019	The tropical cyclone Idai in Southeastern Africa
2019	The heat wave in Bihar

Source. Save the Children (2014, 2017), US News and World Report, & Briggs, 2018.



(Adapted from Nedeff V & Lazar G 2014 SWOT analysis)

Students can provide rapid comments, ask questions, and learn in an engaging manner. In times of crisis, such as man-made calamities, natural disasters, or pandemics such as Covid-19, the Anywhere-Anytime characteristic of e-learning is advantageous. Closures of places and risky road trips can cause a lot of problems, but e-learning will allow us to acquire an education from the comfort of our own homes or offices.

Technology allows people to connect and even work remotely without the need for face-to-face interaction during times of crisis, providing inventive and resilient methods to counteract disruption. As companies adopt new technologies for communicating and working, this results in a slew of system adjustments (Mark & Semaan, 2008).

Weaknesses

E-learning has flaws in the sense that it might obstruct contact between the learner and the educator, resulting in a loss of direct communication and personal touch. Users may encounter a variety of technological issues that obstruct and slow down the teaching–learning process



(Favale et al., 2020). Though time and location flexibility are an advantage of online learning, these features are weak and can cause complications. Nonserious student behavior in terms of time and flexibility might lead to a slew of issues. While learning online, not all students and learners feel at ease, which leads to greater dissatisfaction and misunderstanding. Inadequate compatibility between the design of technology and the psychological components required by the learning process, as well as insufficient customization of learning processes, can block the teaching process and produce an imbalance.

Opportunities

Although there are many prospects for online learning in general, this time of crisis will allow it to flourish, as most academic institutions have converted to this format. During the Corona Virus outbreak, online learning, remote working, and e-collaborations skyrocketed (Favale et al., 2020). Academic institutions can now take advantage of this possibility by having their teachers teach and students learn online. People have always been complacent and have never experimented with new learning methods. This crisis will usher in a new era for online learning, allowing individuals to consider the positive aspects of e-learning technologies. This is a period when there is a lot of room for new discoveries and digital developments to emerge. EdTech firms are already contributing by assisting in the fight against the epidemic and ensuring that learning does not come to a standstill. Teachers can use technology to create a variety of customizable programs to help pupils comprehend more.

The use of online learning will put both the educator and the students to the test. It will help pupils improve their problem-solving skills, critical thinking talents, and adaptability. Users of any age can utilize the online resources in this critical scenario and benefit from the time and place flexibility that comes with online learning. In this panicked environment, which is now known as Panicogogy, teachers might develop creative instructional approaches. EdTech startups have a lot of potential to bring about fundamental changes in practically every aspect of education, including teaching, learning, evaluation, assessment, results, certification, degrees, and so on. Additionally, rising market demand for e-learning presents an incredible potential for EdTech start-ups to disrupt the education sector through technical disruption.

Challenges

Learner concerns, educator issues, and material issues are just a few of the challenges that online learning faces. Institutions face a difficult task in engaging students and getting them to participate in the teaching–learning process. Teachers face difficulties in transitioning from offline to online mode, adjusting their pedagogies, and managing their time. It's difficult to create content that not only meets the curriculum's requirements but also engages students (Kebritchi et al., 2017). E-learning program quality is a major difficulty. The government makes no explicit mention of e-learning initiatives in its educational policies. There are no standards for quality assurance, quality control, e-resource development, or e-content



distribution. This issue must be addressed soon so that everyone can benefit from the advantages of high-quality e-learning (Cojocariu et al., 2014). It is important to consider not only the benefits of using online learning in times of crisis, but also how to build and improve the quality of virtual courses given in such situations (Affouneh et al., 2020). E-learning takes a long time and costs a lot of money. It is not as simple as it appears; obtaining the devices and equipment, maintaining the equipment, training human resources, and generating online content all require significant cost. As a result, an effective and efficient educational system for online education must be designed.

In this difficult time, ensuring digital equity is critical. All digital devices, the internet, and Wi-Fi are not available to all teachers and learners. A lack of proper digital tools, no internet connections, or shaky Wi-Fi connections can cause a lot of problems, and many students may miss out on learning opportunities as a result. Institutions should make every effort to ensure that every student and faculty member has access to the necessary resources. They must also ensure that all educational apps work on mobile phones if learners do not have access to laptop computers. As a result, actions must be taken to close the digital gap. A well-known and extremely true saying is that "practice makes perfect." Students and professors at various universities have never fully put e-learning into reality. The majority of them are complacent and limited to outdated teaching methods.

The Corona Virus outbreak provides an opportunity to make the best of a bad situation. In this difficult scenario, we may learn a lot. There are numerous tools accessible; teachers must select the appropriate tool and use it to provide education to their learners. Academic institutions can create a step-by-step guide to show teachers and students how to access and utilize various e-learning tools, as well as how to cover significant curricular subjects using these technologies, thus minimizing digital illiteracy. Teachers can use films, audios, and texts to teach the curriculum in a variety of ways. To gain rapid feedback and retain a personal connection with learners, educators should supplement their lectures with video chats, virtual meetings, and other methods.

Recommendation

- ❖ Ayebi-Arthur (2017) looked at a case study of a New Zealand institution that was severely impacted by seismic activity. She discovered in her research that, following that terrible episode, the college became more resilient to online learning. During those challenging times, technology assisted them in overcoming the obstacles. They do, however, imply that a strong IT infrastructure is required for online learning.
- ❖ The infrastructure must be strong enough to offer uninterrupted services both during and after a crisis. The Covid-19 pandemic, according to the World Economic Forum, has also transformed the way that many individuals acquire and give education.



- ❖ We may need to introduce some much-needed innovations and changes to find fresh solutions to our challenges. Teachers have grown accustomed to traditional teaching methods such as face-to-face lectures, and they are hesitant to accept any change. But, in the middle of this crisis, we have no choice but to adapt to the changing situation and accept change.
- ❖ It will benefit the education sector and may result in a slew of unexpected developments. We can't forget about the students who don't have access to all of the technology available online. These students are less affluent and come from less affluent households with fewer economic resources. As a result, they may be disadvantaged when classes are held online.
- ❖ Because of the high cost of digital devices and internet data plans, they may lose out. This digital divide has the potential to deepen inequality gaps. This horrible turn of events has taught us that nothing is certain and that we must be prepared to meet challenges.
- ❖ Although we did not have much time to plan for this outbreak, we should learn from it that preparing is essential. We should plan for everything and have a backup plan in case plan A fails. Only by doing scenario planning will we be able to do this.
- ❖ All crucial and tough circumstances that may arise must be prioritized and planned for accordingly.
- ❖ This epidemic has also taught us that in order to survive a crisis, pupils must acquire particular abilities such as problem-solving, critical thinking, and, most importantly, flexibility. To secure and prioritize the presence of these qualities in their students, educational institutions must embed resilience into their processes.
- ❖ "Perhaps the most important lesson for others is to embrace e-learning technologies before calamity strikes!" (Todorova & Bjorn-Andersen 2011). Today, we are compelled to do online learning; things would be different if we had mastered it previously. We could have used the time we wasted studying the modes to create additional content.
- ❖ However, it is better to be late than never. This virus has undoubtedly enhanced the online learning process. For example, because of its useful features, this e-application named ZOOM is gaining a lot of attention. It enables live online classes, web conferencing, webinars, video chats, and live meetings to be held. Due to lockdowns/curfews, most schools, colleges, universities, and businesses are closed, and most people work from home. This software assists in keeping people linked via video conferencing. In the middle of the ongoing turmoil, this app is trending on Google Play. People who use social separation were relieved to learn about this software. Business meetings can also be held via ZOOM. Disasters will continue to strike, and technology will almost certainly assist us in dealing with them (Meyer & Wilson, 2011). "We are in a world where conflict and

environmental degradation are going to have a lot more people, families, and communities living in precarious contexts," Don Dippo, the Co-Principal Investigator at Borderless Higher Education for Refugees, said. The desire of postsecondary institutions to engage and create opportunities for those individuals will never match the demand. We can only make a dent in this if we learn to interact and cooperate across institutions, as well as across time and space.

- ❖ The only true way to achieve this is to rely on technology to provide the environment for people to collaborate. " In pandemic scenarios like Covid-19, we require a high level of readiness so that we can swiftly adapt to changes in the environment and respond to alternative delivery modes, such as remote learning or online learning. Institutions and organizations should create contingency plans in the event of pandemics or natural disasters (Seville et al., 2012).
- ❖ In such dire circumstances, the availability and reliability of information communication technology infrastructure, learning tools, and digital learning resources such as Massive Open Online Courses, e-books, and e-notes are critical (Huang et al., 2020). While providing online education, an educator must keep five things in mind: instruction, materials, motivation, connections, and mental wellness (Martin, 2020).
- ❖ To enable effective and efficient teaching and learning practices, several teaching tactics (lectures, case studies, debates, discussions, experiential learning, brainstorming sessions, games, drills, and so on) can be employed online. Teaching and learning should be made exciting in such panicked situations, where the lives of so many people are on the line. People's stress, fear, and anxiety will be reduced as a result of this.
- ❖ Teachers and students should be given suitable techniques and learning support, and government backing is also critical at this point. The ability of online educators to teach in both a pedagogical and technical manner is critical. For online learning to be successful and for people to be prepared for any crisis-like event, strict quality management procedures and continual development are essential. Natural calamities might pique our interest in adopting cutting-edge communication technologies and e-learning solutions (Tull et al., 2017).

Conclusion

- ❖ In order to make e-learning more effective in these difficult times, we must concentrate on more efficient technology utilization, that is, technology that has low procurement and maintenance costs but can effectively aid educational activities.
- ❖ Before implementing and using any e-learning tool or technology, the benefits and drawbacks must be considered.



- ❖ When it comes to introducing the correct technology to various educational endeavors, institutions should perform extensive research.
- ❖ The aim and context of technology adoption should be well defined. Several aspects influence the choice of a technology, including security characteristics, laboratory availability and condition, internet speed, internet access, recipients' digital literacy levels, and so on.
- ❖ Even in times of disaster, e-learning may assist in offering inclusive education. In educational institutions, such systems must be developed to ensure that no student is denied an education because of their location, social class, ethnicity, or other factors.
- ❖ Online teaching approaches assist and facilitate learning–teaching processes, but there is a pressing need to assess the benefits and drawbacks of technology in order to fully realize its potential.
- ❖ Disasters and pandemics, such as Covid-19, can cause a lot of turmoil and tensions, so it's critical to study technology thoroughly and thoroughly to balance these concerns and tensions in the midst of such a crisis.



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