International Journal of Information Science and Computing
Citation: *IJISC*: **09**(01): 15-23, June 2022
DOI: 10.30954/2348-7437.1.2022.3

INFORMATION SCIENCE AND TECHNOLOGY FOUNDATION

Post-COVID-19 Pandemic Main Challenges with e-Learning

Mustafa Kayyali

Ph.D. Scholar in Management (TQM), Azteca University, Mexico

Corresponding author: aztecakayyali@heranking.com

Received: 17-02-2022 **Revised:** 28-05-2022 **Accepted:** 04-06-2022

ABSTRACT

The COVID-19 period witnessed many difficulties that accompanied the educational process around the world, and caused paralysis of the educational process in several countries of the world, in addition to the inability of higher education institutions to provide several distance education programs such as medical programs, applied programs, and scientific programs. Part of this problem has been solved through the use of artificial intelligence AI techniques, the Internet of Things IoT, and other modern technologies. With the fading of interest in COVID-19 around the world at the beginning of 2022, and the beginning of the recovery phase, higher education institutions began to return to the traditional education mode, and the previous difficulties that were prevalent during the COVID-19 period faded away. Some higher education institutions continued to provide their educational programs through the distance education model, whether as a result of their operational conditions or because their main orientation is distance education. These institutions faced several difficulties associated with their teaching model in the post-pandemic phase. This paper discusses the most important problems facing distance education and the proposed problems.

Keywords: E-Learning, Online, Higher Education, COVID-19, Recovery Phase

COVID-19 was the most affecting factor in the higher education sector in contemporary times. As of 28th March 2020, the coronavirus (COVID-19)[9] pandemic has caused more than 1.6 billion learners to be out of school in 161 countries, and nearly 80% of the students enrolled in HEIs globally. By October 2020, 108 countries reported losing an average of 47 days of in-person instruction, or nearly a quarter of the school year. Governments have scrambled to replace traditional schooling with distance learning

How to cite this article: Kayyali, M. (2022). Post-COVID-19 Pandemic Main Challenges With e-Learning. *IJISC.,* **09**(01): 15-23.
Source of Support: None; **Conflict of Interest:** None

options. Furthermore,students from disadvantaged backgrounds have suffered the most, as they depend on the university for digital equipment and computer skills.

During the COVID-19crisis, distance learning, or as it is called e-learning, emerged as a safe, practical, easy, and viable option for continuity, perpetuity, development, and improvement despite all the difficult circumstances that resulted from the pandemic. In addition, it is an easy-to-access option for students, easy to implement for higher education institutions, and easy-to-use for professors. Distance education spread widely even before the emergence of the COVID-19 epidemic, and it had a positive impact on all aspects of the educational process, and in many cases, it showed a great advantage compared to traditional education.

An example of e-learning is the spread of click universities[1] across the world when the Internet revolution appeared, such as The Open University in the United Kingdom, the Open University of Catalonia in Spain, the Open University of South Africa, the Open University in China, the Open University of Sukhatai in Thailand, the Turkish Anadolu University, the Korean National Open University, the Open University in Indonesia, and the Indira Gandhi Open University in India. Many critics look at distance education with suspicion, given that one of the components of the real educational process is direct contact between the lecturer and the student, forgetting that modern communication techniques, the great development in modern technology, and the huge investments estimated at billions of dollars have enabled direct and instantaneous communication between the lecturer and the student.

Not all students, not even universities, teaching, and administrative bodies, were able to make this change and move to this completely new model, just as the societies hosting students did not accept this change. Some other negative factors are the dispersion of students, technical errors, and the weakness of the internet in some developing countries. As these factors are considered one of the negative factors for distance education, as it is difficult for these students to attend a full study program, lectures, and register attendance for educational programs while they are in front of a laptop screen or mobile screen, as they are not accustomed or prepared to accept this new reality. More studies are researches on behavioral psychology and restricting the student's distraction as much as possible should be focused on e-learning. Meanwhile, distance education was the only option available, and therefore all parties to the educational process had to be prepared to accept and understand it, and all elements of the educational process must be informed that we are facing an international dilemma and a catastrophic epidemic.

Generally, during difficult circumstances, and painful times, solutions with a high safety factor and less risk can be applied as the best viable solutions, and in this regard, if we compare ourselves to our ancestors who suffered during the spread of the Spanish flu, and other pandemics with the disastrous repercussions that it caused, we will find that we are in a better condition. At the very least, HEIs have not stopped working during the COVID-19 pandemic. The distance education option appeared as the only option to bypass the direct effects of COVID-19 and to continue the educational process at the minimum levels, given that it is the alternative option to closure. However, students from disadvantaged backgrounds are more likely to attend universities that lack the digital materials and infrastructure needed to teach remotely and are less likely to receive support at home. As a result, learning inequalities have increased markedly. As we mentioned earlier, the COVID-19 epidemic paralyzed HEIs around the world, and it also caused many universities to stop working, drop scientific and research studies and experiments,

and poorly implement academic programs that depend on direct communication between the lecturer and the student, such as medical and pharmaceutical programs. Distance education is a 100% applicable option in theoretical programs and literary faculties, but its application is difficult in practical programs.

It is also not easy for all members and stakeholders in HEIs to accept this new reality, or even to transfer education to a distance education model, as it is not easy for families to accept that the educational process takes place entirely from home. It is difficult for parents and students to accept this direct and blatant conversion in the education model. In e-learning models of education, the transparency factor seems difficult to apply, and ensuring the integrity of examinations is very controversial. Furthermore, it is not possible to adopt the open examination model in all academic programs. In addition, an additional obstacle is the entry of these graduates into the labor market. One of the main problems that accompanied the spread of COVID-19 is the inability of higher education institutions around the world to compensate for the time that was lost, and students will need double skills to understand the information that they could not understand during the epidemic period. Despite all of the above, higher education institutions managed to overcome the instability phase, continue the educational process, and move to the safe side. As I mentioned earlier, many higher education institutions continued to offer higher education programs according to the distance education model, and in the post-pandemic period, these institutions witnessed many difficulties and challenges, which can be mentioned in the following section.

Main Challenges with E-Learning

Online learning has already seen rapid growth over the past few years. However, the COVID-19 pandemic has made distance learning the only option available to higher education institutions. As a result, e-learning has begun to gain the attention of HEIs, students, and stakeholders. While people have lost many opportunities to get the necessary education and training traditionally, thanks to e-learning, education is more accessible than ever before. For example, when used with motivation, e-learning can make the learning process more engaging. To create effective course content, lecturers need to understand the process in all its key concepts and skills. Those faculty members should also understand the limitations and potential drawbacks of e-learning. E-learning has presented some challenges and certainly has its weaknesses. However, this does not mean that lecturers should not focus their efforts on developing the educational process. To ensure that all efforts will yield the best results, lecturers must consider the differences between traditional education and e-learning so that they can plan the learning process in detail.

There are many challenges associated with the e-learning process specifically that students were eager to return to the traditional education model and to communicate face-to-face again. The main challenges can be mentioned as follows:

It's hard to keep learners engaged with their e-Learning content

It is difficult to draw the learner's attention to distance education and to make him/her interact with the educational process as a whole[4]. The entire educational process takes place in front of a laptop or mobile screen, and there is no direct interaction with the learner. Therefore, the lecturer must find a specific and logical mechanism to encourage the learner to interact with the educational process.

Transforming boring modules into amazing e-learning experiences

Some educational modules are harsh and cause boredom to the learner, and lead to him/her losing focus and passion for what he/she learns. It is difficult for the lecturer, in this case, to encourage the learner and find inspiration and passion in the scientific content presented in these modules and turn them into an interesting and exciting scientific experience for the student.

Lack of learner engagement and motivation

Unfortunately, not every online learner will 100% commit to an e-learning experience. They may be distracted, preoccupied, or simply unmotivated[3]. We live in an age where interest is a hard-to-get component of the educational process. In addition, because the education process takes place via the Internet, distraction is very widespread. One example of this is social media and notifications that can be sent to the learner during the lectures he/she attends, and this causes the learner to become distracted and lose focus on what he/she is learning. One of the proposed solutions to overcome this situation is the use of interactive teaching methods and even the use of modern and advanced technologies, which leads to urging the student to interact, participate and be active.

Staying up-to-date with modern technology

E-learning is not limited to Zoom or popular platforms related to distance education, but rather it extends to the use of modern technology such as Artificial Intelligence AI, Virtual Reality VR, and Augmented Reality AR, and the use of this technology (as far as possible) is very important for the success of E-learning.

It's difficult to hold learners accountable to implement what they've learned

In many cases, students suffer from great and central difficulties related to the practical application of the theoretical skills, theoretical experiences, and theoretical information that they were subjected to during the E-learning experience. There must be an applied side to all theoretical experiences, skills, and lectures that the learner undergoes.

Designing e-learning courses for different generations

Similarly to the above, it is difficult to draw the attention of the learner and keep him/her awake and aware of the educational process, especially among young people, Z generations, and young people who were involved in higher education in their early stages. These people are very easy to be distracted and divert their attention to the temptations of modern technology and social media platforms. For this reason, it is very important to diversify the visual content provided to them and to know their goals, preferences, and knowledge backgrounds, to enhance the distance education experience provided to them.

Balancing low e-learning budgets

The provision of distance education requires an advanced and developed infrastructure, and the preparation of this infrastructure requires laboratories, equipment, and technologies that higher education institutions may have difficulty securing and equipping due to the high financial costs, which are associated at the

same time with the existence of a low budget for higher education institutions[7]. E-learning is not limited to remote communication platforms and programs, but rather it extends to the use of modern investments that support the educational process and lead to the development of the digital infrastructure as a whole.

E-Learning is best suited for certain training topics

It is difficult to offer distance education as a suitable option for several academic programs, such as medical and scientific programs, and programs that require multiple tests and experiments, such as pharmacy, nursing, dentistry, and other applied programs. Distance education can be a distinctive and very successful option in theoretical programs, administrative sciences programs, literature, and teaching foreign languages, but it is difficult to apply in other fields. Therefore, higher education institutions must choose the programs that they will offer via the internet very carefully to maintain their academic reputation.

E-Learning easily goes out-of-date and requires frequent changes

E-Learning requires continuous development, and higher education institutions must maintain the development, follow up on everything new related to investment in digital infrastructure, and update it permanently and continuously.

Lack of interaction

Interacting with distance education is still one of the biggest difficulties and obstacles facing this educational model. Although studying at home is very convenient, this educational model increases the learner's isolation and distance from the educational institution, which leads to spending additional time in front of the laptop screen[6]. This also hinders the learner from having a productive learning experience. Higher education institutions can involve learners in a social learning environment by providing opportunities to interact with others, which leads to breaking this isolation and enhancing interaction between learners with each other.

Students with disabilities and special needs

One of the ethical problems that distance education faces is dealing with people with special needs[5]. Some learners may face various disabilities, whether auditory, kinesthetic, hearing or visual impairment or even difficulty in movement, which impedes their access to distance education. Higher education institutions can find special models to deal with people with specific disabilities, which leads as a result to their obtaining a distinguished education, and achieving the desired benefit. HEIs must make education accessible to all, regardless of their disabilities.

Data privacy, and security

One of the other ethical problems that distance education suffers from is the security of information and protection from piracy and hacking, in addition to the need to protect the privacy of the learners, the privacy of their data, and the privacy of the lectures, posts, and seminars that they participate in[2].

Solutions to Difficulties

Certainly, distance education is one of the best and most applicable options in higher education institutions, whether during the period of the COVID-19 epidemic, in the recovery phase, or even in the general conditions that higher education institutions around the world may suffer from. According to the previous difficulties and challenges, the following solutions can be mentioned and put forward as some options that lead to overcoming the problems associated with distance education in the post-pandemic stage. We propose the following solutions to the above problems:

Student interaction with the educational process that takes place remotely

Higher education institutions can provide the educational experience using modern visual technologies and the use of visual content, which leads to increased student interaction with the educational experience and obtaining the required added value.

Boring modules with distasteful content

Members of the teaching staff can present dry educational modules differently, in a different manner, or in a different way, or even add content and an applied aspect to these educational modules, which leads to increasing the student's passion for education. Some modifications can be made to these educational modules to make them look more learnable for students.

Lack of interest and attention

This issue is the lecturer's direct responsibility. In this case, the lecturer must present the lecture in a qualitative, interactive way or devise ways that lead to making the educational process centered around the student and not on him/her as the center of the educational process. One of the possible solutions, in this case, is to divide the students into discussion and dialogue groups that contribute to their involvement in the educational process.

Use of modern technology

Modern technologies have developed greatly over the past three years, and new inventions and equipment have been introduced that make the distance education process very similar to physical education, such as interactive applications of the Internet of Things, artificial intelligence, virtual reality, augmented reality, and DeepFake in the educational process. The higher education institution that provides distance education programs can invest in these modern technologies, which contributes to the student's obtaining a distinguished educational experience.

Practical application of theoretical programs

This problem is considered one of the main problems in distance education, which is the absence of practical skills for the theoretical lectures that the student attended. This difficulty can be overcome by including cultural and scientific skills and applied experiences in the curriculum offered by higher education institutions.

Dealing with modern generations

With the spread of social mediaapps such as TikTok and Instagram, modern generations have found it very difficult to accept distance education, particularly in its traditional form of lectures that are delivered via Zoom or Skype. HEIs, as a solution to this problem, must increase the visual and media content in the educational experience, which leads to the success of the educational process and the introduction and involvement of these modern generations in these experiences that depend on distance education.

Low budget

Distance education requires a budget and investments in higher education institutions that lead to the success of the educational experience. The absence of funding or weak digital investment in HEIs that provide the distance education experience leads to a comprehensive weakness in the entire educational process.

Specific distance education for specific educational programs

The goal of distance education is to increase access and break the barriers of geography, borders, politics, and other regional boundaries, and it is not for an educational institution to obtain huge profits. HEIs might offer educational programs that are impossible to apply via the Internet and make them available for teaching through the e-learning model. Once HEIs do that, they would be questioned about their credibility and academic reputation.

Dealing with learners with special needs

Higher education institutions must provide all equipment, materials, preparations, capabilities, and other technical, logistical, and moral facilities that lead to all learners with special needs obtaining a distinguished educational experience, regardless of the disability they suffer from.

Information protection and security

Higher education institutions can take measures to protect the information and data available to them, as well as finding methods, algorithms, and software to encrypt very important data in a way that guarantees the protection of sensitive information and data.

Future of e-Learning

As we noted above, the demand for E-learning increased around the world during the period of the COVID-19 epidemic, and distance education did not vanish after the end of the epidemic, but rather it became reliable as a major complement to academic education. In addition, many higher education institutions around the world offer a large number of their educational programs according to the dual education models or even offer all their theoretical programs remotely. In addition, the 2030 Sustainable Development Goals launched by the United Nations Development Initiative encouraged the provision of quality, equitable and inclusive education for all, and the promotion of lifelong learning opportunities for all that lead to the development and success of e-learning[8].

We do not deny the existence of great, important, and fateful challenges facing the distance education experience, and despite that, through the concerted efforts of all international efforts around the world, the development of modern technologies, the facilitation of internationalization and communication of higher education institutions around the world with each other, we can reach solutions to all technical and administrative problems, and educational facing distance education.

RESULTS

As we noted above, there are many difficulties and challenges facing the application of digital education in the Post-COVID-19 phase, and most of these problems, difficulties, and challenges are solvable operational difficulties, technical difficulties that logical solutions can be found, and financial problems that can be avoided through funding for digital infrastructure..In addition, we have noticed that distance education is the only viable option in times of adversity and problems, and is not limited to the period of the epidemic. This educational model can be applied at any time or circumstance in which any region or country suffers from instability, war, conflict, tension, or unrest.

RECOMMENDATIONS

- ❖ We recommend conducting new research and studies related to e-learning, and the application of e-learning during difficult times.
- ❖ We recommend HEIs invest in e-learning, and in creating platforms that facilitate e-learning experiences for their faculty members and students.
- ❖ We recommend extensive studies regarding e-learning during difficult times.
- ❖ We recommend developing software and equipment that contribute to the development of the e-learning experience
- ❖ We recommend higher education institutions focus on protection modules, and the protection of data, files, and student records while implementing e-learning experiences.

REFERENCES

1. Editor, W. 2022. Campus commerce: Bricks vs. clicks. University Business. Retrieved December 22, 2022, from https://universitybusiness.com/campus-commerce-bricks-vs-clicks/

2. El-Khatib, K., Korba, L., Xu, Y. and Yee, G. 2003. Privacy and security in e-learning. *International Journal of Distance Education Technologies,* **1**(4): 1–19.

3. Lim, D.H. and Kim, H. 2003. Motivation and learner characteristics affecting online learning and learning application. *Journal of Educational Technology Systems,* **31**(4): 423–439.

4. Martin, F. and Bolliger, D.U. 2018. Engagement matters: Student perceptions on the importance of engagement strategies in the Online Learning Environment. *Online Learning,* **22**(1).

5. Mohammed Ali, A. 2021. E-learning for students with disabilities during COVID-19: Faculty attitude and perception. *SAGE Open,* **11**(4): 215824402110544.

6. PavinIvanec, T. 2022. The lack of academic social interactions and students' learning difficulties during COVID-19 faculty lockdowns in Croatia: The mediating role of the perceived sense of life disruption caused by the pandemic and the adjustment to online studying. *Social Sciences,* **11**(2): 42.

7. Tabatabaei, T.S., Karray, F. and Kamel, M.S. 2013. Adaptive budget for online learning. 2013 IEEE 13th International Conference on Data Mining Workshops. https://doi.org/10.1109/icdmw.2013.40

8. United Nations. (n.d.). Goal 4 | Department of Economic and Social Affairs. United Nations. Retrieved December 22, 2022, from https://sdgs.un.org/goals/goal4

9. World Health Organization. (n.d.). Update on covid-19 28 march 2020. World Health Organization. Retrieved December 22, 2022, from https://www.afro.who.int/news/update-covid-19-28-March-2020.