

E-Learning Challenges During Pandemic, A Review On E-Learning Tools In Education

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Abstract: COVID-19 has disturbed most of the businesses in the world. Education is the only industry that is completely moved to online mode in most countries around the world. e-Learning was the best way out for continuing education during the pandemic. This study aims to determine the challenges and barriers confronted during switching to online due to the COVID-19 pandemic. The contribution of this study is to evaluate the learners' new capabilities in online education and to evaluate the feasibility of the virtual methods of learning.

Index Terms: eLearning Challenges, Pandemic, Covid19 Challenges, eLearning During Pandemic, Education in Pandemic, Tools for Education, Moodle, Canvas, Google Classroom

1. INTRODUCTION

At the end of 2019, a viral disease "corona virus" found in Wuhan China, later, it has spread throughout the world, which has been declared as a pandemic by World Health Organization (WHO). An infected person can transmit corona virus through coughing and sneezing. Individuals can also be infected from touching surfaces contaminated with the virus and touching their face (e.g., eyes, nose, and mouth). While corona virus continues to spread it is important that the people should take precautions to prevent further transmission of covid-19, reduce the impacts of the outbreak and support control measures. In the beginning of March 2020, many countries closed the doors of institutions for students and teachers and suggested e-learning education from home (1). It is an immediate decision of establishing e-learning process, it has allowed little time for planning or suggestion on both the potential risks to safeguard against and the potential opportunities to leverage. Education commissions suddenly issued guidelines encouraging school, colleges and universities to move on to online education while taking into account their respective capacities and available infrastructure.

We are now in a situation of disaster and must counter with different and available ways of learning such as e-learning systems and mobile learning applications. Online learning is not a new technique for learners. However, COVID-19 is motivating the need to explore online teaching and learning opportunities. Though, there are many challenges associated with e-learning during this situation of a pandemic such as communication, computer literacy, work process, technology tools, time management, stress and so on.

2. LITERATURE REVIEW

E-learning is not a new technique of learning at distance. Hence, at the end of the 20th century, the computer and internet are introduced in the market so e-learning tools and study methods are also expanded. In 1980 the first MAC enabled the individuals to have their personal computers in their homes, making it easier for people to learn about different subjects and courses to develop skill sets. Then, at the end of 80's virtual learning environments began to increase, with people gaining access to a wealth of online information and e-learning opportunities (2). In the early 90's many schools and universities had been set up online courses for those persons who were not able to attend a college due to distance, job or time restriction. At the end of the 90s the learning management systems (LMS) is operating on a wide range. On the other hand, some universities designed and developed their own systems. The learning management system has given opportunities to students and teachers to exchange learning materials, do tests, communicate with each other in many ways, track and trace their progress. As technology improves by the 2000's, employees got training by using e-learning methods to improve their businesses. At the beginning of 2010, e-learning has been inspired by social media such as YouTube, Facebook, Google, Skype, etc. The previous few years were relatively productive for the development of e-learning and added many fascinating and useful features to it.

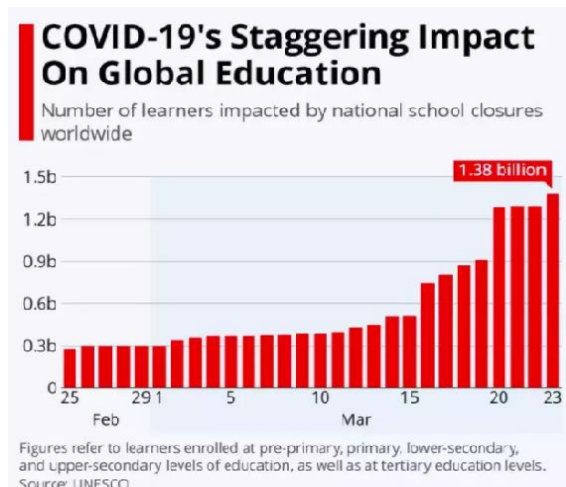


Figure 1: Impact on Education

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HISTORY of eLEARNING		
1924	THE FIRST "TESTING MACHINE"	The first mechanical testing machine was developed by the University of Cambridge. It was used to test the strength of materials.
1954	THE FIRST "TEACHING MACHINE"	The first teaching machine was developed by the University of Cambridge. It was used to teach the principles of mechanics.
1960	COMPUTER-BASED TRAINING	The first computer-based training program was developed by the University of Cambridge. It was used to teach the principles of mechanics.
1966	C.A.I. IN SCHOOLS	The first computer-aided instruction (CAI) program was developed by the University of Cambridge. It was used to teach the principles of mechanics.
1969	ARPANET HERALDS INTERNET	The first computer network, ARPANET, was developed by the University of Cambridge. It was used to connect computers across different locations.
1970	COMPUTER MOUSE & G.U.I.	The first computer mouse and graphical user interface (GUI) were developed by the University of Cambridge. They were used to interact with the computer.
1980s	PC'S BEGIN WITH THE FIRST MAC	The first personal computer, the Apple Macintosh, was developed by the University of Cambridge. It was used for personal and business use.
1990s	THE FIRST "DIGITAL NATIVE"	The first "digital native" was born in the 1990s. They are people who have grown up with computers and the internet.
2000s	BUSINESSES ADOPT eLEARNING	The first e-learning program was developed by the University of Cambridge. It was used by businesses to train their employees.
2010+	SOCIAL ONLINE LEARNING	The first social online learning platform was developed by the University of Cambridge. It was used to connect learners and teachers.

Figure 2: History of E-learning

Some universities were already established their virtual courses for the students who were doing job and have some issues to attend the classes physically. Teachers were using different methodologies to sustain the virtual classes by recording their lectures in form of audio and video. Furthermore, they were available online according to the schedule of their class (2).

Now the situation is different online classes is not an option it is compulsory for all of the students.

3. E-LEARNING CHALLENGES

The increase of corona virus has enforced millions of students and teachers to move their transmission online. The government closes the education sectors and we have to adapt to a new lifestyle until further notice. Teachers and supervisors are now on a mission to keep students on track with the help of online classes. The shift from classroom to e-learning doesn't go as efficiently as we want it to be. There are consequences of e-learning and maybe it is discouraging and frustrating both for teachers and students. Here is research on the most common e-learning problems and challenges facing by the teachers and students.

3.1 TIME MANAGEMENT

The teachers shifted their classes from classroom to home over the internet having no additional training and extra budget. Therefore, teachers have to adopt different tools to deliver their lectures for e-learning methodology. Teachers used to start their day by sitting in front of a computer, laptop, or tab and opening multiple apps for multiple purposes, switching between them. They stay online more than 10 hours per day to answer the queries of the student, set up and make more efficient the processes of online class. They have to sit in front of systems for checking assignments, quizzes and presentations submitted by the students. Furthermore, they have to initiate virtual parent-teacher meetings and evaluates whether their teaching methodology is working great in this time of pandemic or they have to switch on something else.

3.2 AVAILABILITY OF DEVICE

Each student or teacher has not owned his or her personal laptop, computer, tab or mobile to use for online learning. Most of them should have to share the laptops and computers with their parents, sisters/ brothers to available for e-learning (3). Therefore, if there are two or three siblings and all of them have to attend their e-learning classes then it would be a mess for all of them. Parents cannot afford individual gadgets for each of them.

3.3 INTERNET CONNECTIVITY

Now a day, the usage of the internet is increased and millions of people around the world are experiencing technical issues. There is a problem in video and audio calls over the internet, sometimes speed is too slow and you are unable to attend e-learning class. Students and teachers who belong to a rural or urban area are facing the same problem of connectivity. If there are many persons at home and using the internet on their gadgets at the same time then the situation is quite worst for all of them and everyone has to struggle for smooth internet connectivity. Some students and teachers do not have an internet connection at their home due to affordability while some are living in that geographical area where there is no access of network (4). Any distortion in the internet connectivity can cause an interruption in the learning for the child, which can be detrimental. Additionally, if distortion occurs at the teacher's end then it can cause discipline and time management issues.

3.4 COMPUTER LITERACY

Practice makes a man perfect is a famous and very true proverb. It is a tough time for teachers, students, and parents to start using a digital tool without any prior training. Teachers of schools and colleges have never really practiced e-learning before covid-19 pandemic. Most of them are satisfied with their traditional teaching methods. Many of them had never used the computer or any other gadget so they did not have any idea how to use it and how to communicate with their student using different applications and tools.

3.5 ISOLATION

A person learns a lot by simply being interacted with other people. Unfortunately, e-learning takes away all physical communications that students and teachers might have in the classroom (5). It is always better for students to indulge in-group studies, discuss ideas, and share their knowledge, which is an essential part of the development and growth of students. In isolation, it is a tough time for the student to halt their outdoor activities and staying at home they are becoming more stressful and it affects their social skills.



3.6 COMMUNICATION

During the online classes, it is a great challenge for teachers to engage the student in lectures without the physical presence of the teacher. Usually, students cannot sit for a longer time in front of computer so they lose their focus during their e-learning class (5). Students are getting bore easily as there is no face-to-face interaction. Moreover, it is challenging to develop content, which not only covers the curriculum, but also maintain the interest of the students in these online classes.

3.7 AFFORDABILITY

Many students who belong to poor families have to work in restaurants, hotels, and offices to share the burden of their families and get some earning to pay their school fees or utilities. In this situation of pandemic parks, hotels, restaurants and all such types of buildings are closed. Therefore, it is hard for the student to continue their studies and maintain their lifestyle. These students cannot afford food for a day; they have no access to computers, laptops or even internet to participate in these e-learning classes.

3.8 ONLINE EXAMINATION

One of the major challenges is an online examination or assessment. There are many constraints that can affect the grades of a student (6). In online exams, the student has an opportunity to use unfair means like the internet or books. There is no authenticity who is attempting the online exam. For instance, the student gets his question paper and sends it to someone else to solve his paper. Availability of the internet, electricity and computer can be obstacles for the student in this specific time of the examination.

4. TOOLS USED FOR ELEARNING

During this period of the pandemic, many platforms are available for teaching to the students. Many schools are adopting virtual tools to communicate and enhance their educational experience. However, with the variety of tools/platform it is difficult to select one of them. Some platforms, which are quite famous these days, are Blackboard, Moodle, Canvas and Google Classroom (7) (8) (9). On the other hand, communication tools also available for online classes like skype, WhatsApp, Facebook and many more. Here is an analysis of the above-mentioned platforms, which can be used for effective e-learning class.

Blackboard Learn At A Glance

Good: New Ultra Experience version with streamlined workflow of original features. Also has three deployment options, persona-specific mobile apps.

Bad: Software can be buggy at times, doesn't integrate with Google Apps.

Bottom Line: Long-time LMS solution designed to help students and employees improve their learning experience.

Figure 3: Blackboard

Moodle At A Glance

Good: Flexible deployment options, teachers can choose their own content and activities, dedicated Moodle mobile app.

Bad: Ads displayed in free accounts may be distracting to some users. Moodle for School plans only accommodates up to 500 users and some users reported that interface is not always intuitive.

Bottom Line: Open source platform with a modular design for teachers to build their own curriculum.

Figure 4: Moodle

Google Classroom At A Glance

Good: Strong collaborative focus, easy to set up classes and assignments, integrates with other Google products and many educational apps.

Bad: Not available for businesses, accounts for parents aren't offered.

Bottom Line: Learning management solution intended for schools that's used for both online and classroom courses.

Figure 5: Google Classroom

Canvas At A Glance

Good: Canvas can leverage Arc, a new-generation tool that makes educational videos more collaborative.

Bad: Canvas doesn't have built-in gamification features, but can integrate with third-party tools that allow gamification.

Bottom Line: An LMS created for educational institutions, Canvas was designed to better engage users in the teaching and learning processes.

Figure 6: Canvas

Nowadays, e-learning environments are the key in the academic field, where they are being introduced whether in school, college or universities. New applications are added to the virtual learning platforms on a daily bases. The objective is to improve the efficiency, interaction and make the courses more interesting to grab the attention of students. So far Google Classroom and Moodle are considered to be reliable; the reason is they are easy to understand and their pricing (free of cost).

5. DISCUSSION

Because of this analysis, we can see there are a number of challenges faced by both teachers and the students during this pandemic. These days online classes are like a brick in the pillar of education, online classes need a well-built syllabus and strong academic practices. Teachers need to be aware of the level of students and their problems, as well as how they can assist them to learn new programs of study. Students may have more interruption and less supervision in the e-learning class, which can lessen their motivation in the learning process. The teacher will need to play a vital role for engagement; such as involving students to regularly ask questions and respond to their questions or discussion. Online courses are generally not as effective as traditional school classes, but they are surely better than no classes. Students with lesser resources at home, learn less when they are not in school. The government and administration should initiate some training programs for teachers as well. For online exams, monitor the students by using screen capture apps or using screen-sharing tools to find what they are doing.

6. CONCLUSION

E-Learning is a necessity in the educational area, for schools, colleges, and universities around the world. As new tools and applications are launched rapidly, so, new challenges are also associated with them. The only objective is to improve efficiency, coordination and to minimize the obstacle in the e-learning environment. This case study has made a comparative study of the challenges faced by the students and teachers. Though e-learning is

different from a typical school environment thus, teachers and students have to play an equal role to keep on track for continuity of education. In addition, the government and administration should support and provide facilities to the teacher and the students. From this case study, we aimed to discover the most appropriate challenges of e-learning in COVID-19. Different tools which can be used for e-learning classes, although they have different features, it depends on institute or teacher which tool they are adopting for their online classes' preference. However, they should continue improving existing methodologies and creating content for classes. Right now, online classes are allowing students to access coaching and interacting with teachers, which is the only way to continue their studies. Therefore, we may be doubtful of online learning, but it is also time to embrace and improve it.

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