

Challenges of E-Learning during the Pandemic and Its Implications in Education

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Abstract

A brief introduction regarding the current practices of e-learning and the circumstances which have been affected by the impact of the pandemic have been provided. The overall aim of the study which is meant to portray the impact of e-learning on the education system has been provided along with a list of objectives. Apart from that overview of potential materials and methods has also been provided. The usage of proper methods such as exploratory design, qualitative data analysis process, interpretivism along with proper justifications has also been illustrated for enhancing its reliability. The inclusion and exclusion criteria of the selected materials have also been explained. A brief overview of the positive and negative aspects of the e-learning process has also been portrayed.

E-learning facilitates women's education and contributes to women's empowerment. The opportunities and issues associated with e-learning are mentioned in this article. By evaluating all the opinions and perceptions of teachers and students, this article concludes that e-learning is needed to continue education; however, technological, financial, and ethical issues must not be overlooked. The digital infrastructure in developing countries needs to be developed, and student living in rural areas must be involved in this new mode of education.

Keywords

Advantages, Disadvantages, e-learning, Pandemic, Technical Knowledge.

INTRODUCTION

Research background

The learning process is an important aspect of life which can be useful for an individual to grow awareness along with enhancing the ability to face challenges during the several stages of life. The true notion of learning can be denoted through its importance in making an individual self-sufficient to acquire efficiency in mitigating challenges that can occur in both personal and professional life. The rise of the pandemic has also caused learners to implement effective methods for learning which is necessary for maintaining a flow in the learning process. Several learning institutes and learners of different age groups have been encouraged to adopt online learning as their daily medium for indulging in education programs during the era of the pandemic [1]. The medical guidelines formulated by the governments of several nations have made it essential to implement e-learning, also known as online, as an integral part of the learning process among students.

Aim and Objectives

Aim:

The aim of this study is to identify the challenges of the e-learning process along with its impact on the education system. Based on this aim, certain objectives can be formulated, which are,

- To identify the impact of online learning programs on the students
- To understand the positive and negative aspects of the

online learning

- To evaluate the perception of both learners and teachers regarding the implementation of e-learning in the modern era

Research purpose

The purpose of this study can be explained through the above-mentioned objectives which denote an overall aspect of identifying the newer approach of learning that is through the use of the internet. Apart from highlighting both advantages and disadvantages of the selected learning method, another focus point has been selected for shading further light which denotes the different dimensions of the e-learning process. Different dimensions such as the interaction between student and teacher along with the interaction of each party with the available resources for learning can be considered important factors that can influence the outcome of the learning process [1]. The overall aspect of this study can also be denoted through the purpose which focuses on clarifying several issues that can cause undesired results to occur while indulging in e-learning. This paper can also be used by stakeholders of a learning process to understand their roles which can foster success as an end result.

METHODS AND MATERIALS

Research design

Research design can be considered an important part of every research paper that can be useful to define the importance of the paper on society along with identifying the

effectiveness of the selected procedures. Two types of research design can be observed in the world of researchers such as exploratory and conclusive research methods [2]. Exploratory research design is considered a viable option which can provide answers for particular phenomena in certain settings. Conclusive research design on the other hand is known for providing undeniable research findings that can cater for the need of selected issues. The selected topic denotes the requirement for highlighting the implication of e-learning along with identifying the perception of the relevant parties such as students and teachers. It makes the use of *exploratory* research methods an appropriate option for this topic which can provide exceptional results that can reflect the effectiveness of this study in the modern era.

Research type

Selecting the proper research type can be useful for a researcher to enhance the level of significance of a study. The majority of the research method can be divided into two basic parts such as qualitative and quantitative research type which can be implemented as per the circumstantial requirement [3]. Quantitative data denotes the usage of numerical values along with relevant graphs, charts and other statistical information. Qualitative data on the other hand can provide process-based, storied data that can provide a brief reflection of the human perspective. The nature of this study which is focused on providing a brief overview of the reactions of the relevant stakeholders makes the *qualitative* approach a feasible option in this context.

Research philosophy

Research philosophy can also be considered an important addition to a research paper that can create alignment between the perspectives of a researcher and the readers. Among several research philosophies, *interpretivism* has been selected for the construction process of this study which is based on generating new concepts regarding the selected topic [4]. Several aspects such as human beliefs, attitudes, and perceptions can be considered important ingredients which can be used for placing significant emphasis on the factor of e-learning making interpretivism an appropriate choice.

Criteria for selecting sources

It is essential for a researcher to follow proper methods for selecting or rejecting sources for the data collection process.

Inclusion criteria:

- Journals, articles and information from newspapers will be used from authentic sources.
- Articles which have been published after 2018 will be included in this paper for providing support for data collection.
- Articles written in the English language will be used in this research paper.

Exclusion criteria:

- Personal articles and blogs will not be used in this research paper.
- Journals and articles before 2018 will also not be used in this study.

Data collection and analysis process

Different types of data collection processes can be used in different circumstances that can provide expected results to increase the validity of a research paper. Among the primary and secondary data collection methods, secondary sources have been chosen as appropriate for the selected topic, which is based on providing information from authentic free sources [5]. This kind of approach can be beneficial in terms of saving time and money at the same time which is important for a researcher.

RESULTS

Positive and negative aspects of e-learning:

The rise of technology in the modern era has also made it necessary for learning institutes to implement modern tools for learning. Adopting modern techniques in the teaching process can ensure productive activity or results that can enhance the student engagement level to a certain extent. Using modern equipment such as the Internet, computers along with the traditional learning component can provide a finer output to each learning program. Apart from providing an enhanced platform for learning it can also make students more engaged towards the learning process which can create a significant impact on the academic result.

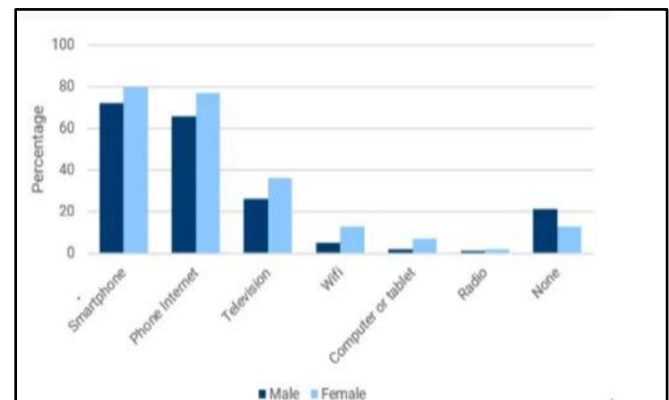


Figure 1: usage of digital equipment [6]

The several options which can be used by learners of different ages or genders have increased its implementation rate process to a significant extent. In this type of learning process, a learner can choose from various options among several items such as television, mobile phones, radio, laptops and others [6]. The freedom for choosing the appropriate tool for learning can cause a significant influence on the engagement level of the student which can influence the learning outcome. It also provides students with the freedom for choosing their own timetable for indulging in the learning operation, as they can participate from any place at

any time as per their convenience.

Apart from these positive aspects, the e-learning process is also known for its difficulties in several areas which can cause a negative impact on the overall learning experience. [6]. Lack of technical knowledge can be considered a barrier for both learners and teachers which causes issues for them to cope with the current trends. Poor knowledge of handling electronic peripherals and using the internet can hinder the process of e-learning for the participants which can be counted as a negative impact of digitalization [7]. The modernization of the education process has made it essential for participants to gather knowledge regarding these aspects which can assist them to fulfill the overall learning goal.

The online process can be considered a viable option for learning when compared with the current situation. It can be considered a successful process for fulfilling the basic needs of the learning period but lacks face-to-face interaction which is possible in a real classroom [8]. Apart from that online learning can also lack proper commitment from a student. A higher rate of distraction is another factor that can be considered as a negative side of online learning [9]. It is not uncommon for a learner to get distracted during the e-learning process which can degrade the academic performance level. Just like any other approach, online learning programs also have different sets of advantages and disadvantages, which can vary due to change in the place or time.

Effectiveness of e-learning and teaching during the pandemic period

The development of technology and science has brought a change in different spheres of society. Even the advancement of technology is perceived in the aspect of teaching and e-learning. The frequent use of information and communication technology is effective to shape the learning process for students in a resilient and modern way [10]. Exchange and sharing of knowledge through a digital platform has become easier and quicker than ever. In addition to this, the teaching and learning process anchored to digital platforms has become less time-consuming. As the outcome of this digital transformation, students and teachers are experiencing new roles and increased efficiency.

Technological advancements come with new possibilities for learning and teaching. Tradition methods of learning and teaching were confined to boring lectures and talks of the teachers, physical objects such as chalk, blackboards, and others. In contemporary times, teachers and students have a digital platform to make the learning and teaching process more attractive and easy to be understood even for individuals with limited cognitive ability. Surveys and reports show that the market of e-learning is going to surpass 243 billion USD by the year 2022 [11]. A considerable share of teaching staff is expressing their desire to embrace the advent of digital technologies and implement it to support digital education and less traditional educational models. In 2016, the market of e-learning amounted to 33.5 billion USD

which witnessed drastic growth in the following year. Therefore, the overwhelming progress of e-learning and digital education is defining the education system differently.

Education so far has the most important contribution to changing human civilisation in a positive direction. The outbreak of the pandemic has had a severe impact on education, specifically on higher education [12]. Governments around the world, to mitigate the severity of the disease, have implemented limitations on the movement of the students, gathering in educational institutions which a result restricts the opportunity for students to flourish in an academic career and professional careers as well. The educationalists have expressed their concern regarding the disruptions caused to the stream of education by the outbreak of disease. Hopefully, e-learning is proving to be effective to change the concern of educationalists to hope. Applications such as video conferencing, Google Classroom, Microsoft Word, and Excel are being used to continue online education even without being present in the classroom

Traditionally, in developing countries, e-learning has been underutilised throughout the ages. However, the emergence and horrific hazard of the pandemic since 2020 has changed the scenario and human civilisation is now relying on it for the purpose of education. A survey was conducted to examine the implications of a pandemic on the education of a medical institution and the experience of the staff regarding online education, and the barriers faced by them in their way of incorporating e-learning. The majority of 88% of respondents claimed that digital competency in providing e-learning is effectively increasing the educational value of staff's experience [13]. A technology acceptance model was used to conduct the survey and the respondents agreed to perceived usefulness, ease of use, and acceptance of online learning respectively in 77.1%, 76.5%, and 80.9%.

Evaluation of student's and teacher's perceptions of e-learning during pandemic era

Covid 19, according to the statement of WHO has not only taken human lives but also almost stopped the normal flow of teaching and learning around the world. Ghana, a country in the continent of Africa, was forced to postpone educational activities to combat the implications of the pandemic. A quantitative method was used by research for evaluating the perception of students and teachers regarding e-learning during the time of the pandemic. This research took a number of teachers and students from 802 populations from the University of Ghana to conduct the survey [14]. A total of 335 participants answered the survey questionnaire. Among them, 92.2% of participants claimed that they use smart phones as a tool to carry out e-learning. Other participants expressed them also use laptops, tablets, and desktops for educational purposes.

Besides the management, nursing, and other educational institutions, the severity of the pandemic is also apparent in the aspect of medical institutions. Covid 19 is shifting orthodox classroom teaching to a digitalised surrounding.

However, there are several challenges prevalent on the ground of online education, especially in developing countries such as assessment mode, technological issues, connectivity problems, and lack of digital knowledge among the teachers and students [15]. The perspective of teachers and the problems disrupting the e-learning platform are needed to be addressed and countered with feasible solutions. A research conducted a survey to understand the perception of teachers about the impact of online education. Responses from 30 teachers were collected in this research. The majority of teachers expressed a good perception of online education; however, some of them reflected poor and average perceptions.

The years of clinical attachment years are crucial for teachers and students. Hospitals and medical learning institutions, under normal circumstances, create a feasible environment for the teaching and learning process for medical students. However, in previous decades, e-learning was claimed to be effective in eliminating geographical barriers and the use of multimedia [16]. Developed internet connections, synchronised live streaming settings, and technological advances have made e-learning feasible. The national medical commission in India advocated for online classes due to the emergence of the pandemic in medical colleges all across the country [17]. In their way of adapting themselves to the changed surrounding, the teachers initiated utilisation of online teaching-learning media and methods to facilitate education to the students.

During the final segment of 2022, teacher resources and cyber security was the frequently discussed topic. A journal surveyed the evaluation of teachers' and students' perceptions regarding e-learning. Paige Johnson, the vice president of Microsoft education marketing states that the last couple of years have accelerated the digitalisation of education [18]. However, the capabilities of the educational institution are not enough to keep up with the risk of digital transformation. The schools have to incorporate an effective cyber security for the facilitation of e-learning.

DISCUSSION

E-learning involves different types of media such as audio, texts, and images to facilitate teaching and learning for children. Similar to higher education, the severe outbreak of the pandemic has disrupted child education. Researchers noted education as a crucial factor in alleviating poverty and contributing to the economic growth of the country. Using ICT to impart education comes with potential benefits for the governments of developing and underdeveloped countries in their accomplishment of the objective of "education for all" [19]. Among other evolutions, e-learning is the fastest-growing and most promising evolution in the segment of education. Developing countries such as India have been facilitating free elementary education for children; however, the people living in rural areas are still deprived of it due to the underdeveloped infrastructure.

Parents, teachers, and students are observed to complain

about e-learning due to the poorly developed digital infrastructure and network connectivity. Especially in the rural areas of India internet connectivity is claimed to be slow [20]. Those pupils are striving to cope with the new form of learning in the digital era. After the hitting of the pandemic, almost all schools, both private and primary, are intending to adapt to e-learning, however, the process of fully implementing is hampered due to connectivity problems. Apart from that, few students are struggling to make them familiar with the new mode of education. Though online education presents the opportunity for students to continue their studies in a homely atmosphere, it limits the chances to make one on one interaction with teachers [21]. The cognitive abilities of a child develop through interaction with other children while attending classes.

The new mode of education is making children self-cantered, as argued by several researchers. However, despite all the inhibition and issues, the emergence of e-learning is shaping the educational system. Online learning systems also come with the scope of empowering girls and facilitating their education [22]. Sources have proved that female education is a step closer to the success of the nation. In developing countries such as India, the education of girls is hindered by insufficient transport systems, family issues, and poor maintenance of hygiene in the institutions. Incorporating e-learning enabled the families to address those issues and educate their children to have properly education by staying at home.

During the pandemic, teachers in India faced numerous challenges while carrying out online classes in 2021. Among the most prevalent challenges, gaining access to pupils was significant [23]. Similarly, lack of discipline among children was another significant inhibition in the way of facilitating learning and teaching by the teachers.

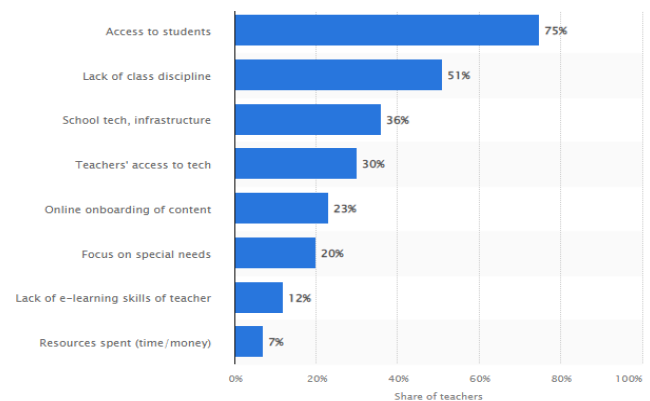


Figure 2: Challenges faced by teachers during online classes in India [23]

As shown by the above figure, 7% of teachers claimed that they have faced difficulties in e-learning in terms of financial and time resources. 30% of the teachers admitted that they have limited access to technology, and 12% of teachers do not have effective skills for e-learning. These issues are hindering the accomplishment of the objective of “education for all” in the nation. However, the revenue of online learning

platforms is estimated to have a positive growth rate.

Implications of e-learning are apparent among teachers and students who are obliged to make them digitally competent. E-learning comes with both opportunities and threats for students [24]. The threat is perceived on the ground of digital security and the opportunities of e-learning are that it makes knowledge sharing easy. The opinions of teachers, teaching staff, and students are collected from several qualitative and quantitative data sources to understand the perception of people associated with education. The emergence of the pandemic has changed the education system and they are obliged to embrace this transition.

E-learning in Thailand has become one of the major focuses of “national information technology policy”. E-learning aims to offer meaningful and beneficial learning content to students. The majority of students in Thailand have moderate levels of motivation for using online education [25]. Motivation, as opined by several researchers is key to the success of e-learning. For students in Thailand to complete their tasks and learning, it is required to implement e-learning. 168 sample students presented a significant connection between intrinsic motivation and academic achievement through online education. Therefore, the perception of teachers from different countries shows that e-learning can be an alternative to traditional education.

CONCLUSION

The massive outburst of Covid 19 has jeopardised the education systems of nearly all countries around the world. The education system has been subjected to severe damage. To cope with the new normal life and restrictions in movement, educationalists are recommending the introduction of e-learning. E-learning is facilitated by digital media such as video conferencing applications, e-text, e-books, audio, images, visuals, and others. E-learning enables students and teachers to interact online by staying in their familiar atmosphere. Though e-learning has been popularised in the last decades, it witnessed massive growth after the pandemic hit the world. Both developed and developing countries introduced e-learning to carry forward the learning-teaching process. E-learning needs the internet, computers, laptops, mobiles, and other smart devices. The traditional pen-and-paper method of teaching and learning is replaced by projectors, screens, and mouse. Children, parents, and students of higher education are becoming habituated to this new transition.

E-learning also contributes to girl education. Over the ages, the matter of female education has been overlooked by society and the government. Even female literacy is marked as a social stigma. They do not have access to traditional education to date. However, online education is able to provide learning for them. The opportunities of online education are apparent, however, it will be wrong to overlook the issues of e-learning. It comes with a burden on the financial state of the children. Students belonging to lower

income groups do not have the financial ability to enjoy the facilities of e-learning. Internet connection, smart phones, and computers are beyond their affordability. Therefore, they are being deprived of education in the new method. Besides, the ones who have access to smart devices are facing technical issues due to the poor technological infrastructure in several countries. It is recommended that the government and educationalists must scrutinise the infrastructure before the full incorporation of e-learning.

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