

The Significance of Adopting E-Learning in Institutions of Higher Learning during the COVID-19 Pandemic and Beyond

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ABSTRACT

The confirmation of the first case of the Covid-19 pandemic in Kenya on 13th March 2020 led to suspension of face-to-face learning and closure of all schools and institutions of higher learning. In order to avoid massive loss in the development of human capital with significant long-term economic and social implications, institutions of higher learning were asked to adopt alternative ways and means to face-to-face instructional methods to enable learning to continue. This study points out that E-Learning had been widely adopted by Institutions of higher learning worldwide prior to COVID-19 pandemic. To date Institutions of higher learning have continued to use E-Learning in a blended mode in order to reduce the potential of COVID-19 transmission. The development of Information Technology, acceptance of E-Learning system by learners and instructors, prior experience in the use of E-learning platforms and need for self directed learning are some of the factors that have accelerated the adoption of E-Learning by institutions of higher learning worldwide. The findings of this paper show that the adoption of E-Learning by institutions of higher learning has numerous benefits and advantages. This study recommends that institutions of higher learning should involve all stakeholders in the development and implementation of E-Learning systems, develop E-Learning policies, carry out capacity building and change management, avail continuous technical support to learners and educators so that e-Learning is widely accepted and adopted

Keywords: Adoption, e-Learning, institutions of higher learning, COVID-19

I. INTRODUCTION

According to UNESCO, THE World Bank and UNDP institutions of higher learning refer to education institutions such as universities or other education establishments that are legally authorized by the state

authorities to offer different types of advanced programmes. Education in Institutions of higher learning plays a critical role in producing a pool of highly skilled manpower in various specialized fields necessary for promoting higher productivity for national socio-economic development, and carrying

out research to provide solutions to societal challenges. Globally education, training and research are key platforms for national socio-economic development (Ministry of Education, 2019). Kenyan Government like other governments acknowledges that education and training of their citizenry is key in the realization of Kenya's Vision twenty thirty (Ministry of Education, 2019).

Covid-19 pandemic has had a huge impact on all the sectors of society, and education has been no exception. Most businesses were affected, citizens and employees were encouraged to work from home (Qiao et al., 2021). As a measure to curb the spread of Covid-19 virus, in March 2020 all schools and institutions of higher learning worldwide were closed thus interrupting the learning of more than one billion students worldwide. The Government of Kenya asked institutions of higher learning to adopt alternative ways and means to face-to-face instructional methods in order to reduce the spread of COVID-19 and enable learning to continue. The use of E-Learning platform was a key option for continuation of learning (Gaceri, 2021).

More than 1.5 billion students ranging from primary school to institutions of higher learning had to study at home highly relying on digital education platforms during the COVID-19 pandemic (UNESCO, 2020). E-learning has greatly transformed content delivery to students in institutions of higher learning. According to Gaceri, (2021) the integration of the e-Learning technology into the institutions of higher learning is a trend that many institutions of higher learning are slowly adopting because of how importance and the benefits it promises.

A majority of institutions of higher learning in Kenya had adopted E-Learning even before COVID-19 with the aim of coping with the increased demand for university education and to widen access to university training and education (Kibuku et al., 2020). Nowadays, the higher education system is in a continuous process

and institutions of higher learning have to keep pace with the needs, desires, and requirements of students. Thus, information technologies and E-Learning systems are essential factors in carrying out the activities of universities, these institutions investing more and more in online systems and devices.

E-Learning is considered among the best methods of education and the most preferred method of content delivery due to its numerous benefits and advantages. E-Learning was adopted to ensure that learning and teaching took place remotely even while learning institutions were closed (OECD, 2020). In a study conducted by (Goyal, 2012) points out that information and communication technology (ICT) development in most learning institutions has made e-Learning to emerge as a paradigm of modern education. E-Learning is the intentional use of networked information and communication technologies in teaching and learning to access educational curriculum for a course, program or degree outside a traditional classroom (Chitra & Raj, 2018). E-Learning has grown in significance as an educational tool just like technology has developed and progressed over the years. Chitra & Raj, (2018) states that the term E-Learning comprises a lot more than online learning, virtual learning, distributed learning, networked or web-based learning. As the letter "e" in E-Learning stands for the word "electronic", E-Learning incorporates all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices.

E-Learning

E-Learning is an innovative approach in delivering learning content through electronic forms (Chaka, 2020) and it is conducted via internet enabled devices such as mobile phones, laptops, notebooks and many other tools to acquire knowledge in regard to academic and non-academic issues. E-Learning can be synchronous or asynchronous. In synchronous

learning students attend live lectures and have real time interactions with their instructors hence instant feedback (Dhawan, 2020) whereas in asynchronous learning learners cannot hold live classes, chats and instant feedback and the learning content is available at different learning systems and forums. The key features of e-learning, including online discussions, chat rooms, online quizzes, polls, and more access to educational content, are the main reasons students' increasing interest in this new technology (Grimus, 2020).

E-Learning combines two main areas learning and technology. Learning is a cognitive process for achieving knowledge, and technology is an enabler of the learning process, meaning that technology is used like any other tool in the education praxis, as is a pencil or a notebook, for example. E-Learning systems aggregate various tools, such as writing technologies, communication technologies, visualization, and storage. For these reasons, researchers and scientists have sought to transform E-Learning systems into technically transparent tool, like a pencil or notebook. E-Learning systems played a significant role during the COVID-19 pandemic (Banji et al., 2021)

E-Learning is the most preferred method of content delivery given it several benefits and advantages. E-Learning is important for education during pandemics such as COVID 19, offering the opportunity to continue with the learning amid school closures (Batdı, Togan and Talan, 2021). The closure of institutions of higher learning during the COVID 19 pandemic could have led to massive loss in the development of human capital with significant long-term economic and social implications were it not for the adoption of E-Learning by institutions of higher learning that enabled learning to continue.

The State of E-Learning in Institutions of Higher Learning

A study by Babu, (2018) point out that E-learning has become as necessity in institutions of higher learning and it is being deployed in educational establishments throughout the world. The rise of E-Learning technology used by institutions of higher learning can be attributed to globalization. Prior to Covid-19 pandemic institutions of higher learning had adopted E-Learning to break down geographical and social boundaries to offer distance learning education (Babu, 2018)

E-Learning was underutilized in the past especially in developing countries. Many institutions of higher learning had adopted blended learning that is online and face-to face modes of instruction so as to increase the learning potential of students with some at preliminary stages while others at maturity levels (Kibuku et al.,2020). Hadullo et al., (2018) study points out that there is a substantial increase in the use of learning management systems (LMSs) to support e-Learning in institutions of higher learning in particularly in developing countries. Closure of institutions of higher learning in March 2020 led to the adoption of a full E-Learning experience (Odoyo & Olala, 2020)so that learning could continue remotely amidst the pandemic (Batdı et al., 2021). Even after the reopening of institutions of higher learning in October 2020, there is a continued use of e-Learning in a blended mode to teach common courses with a high number of students so as to avoid physical contact amongst students and instructors.

Factors that have accelerated the adoption of E-Learning

1) Development of Information Technology

Development of information communication technology (ICT) is making many organizations propel toward a truly global economy. The increase in Internet savvy users and faster bandwidth have

immensely helped in boosting the growth of e-Learning. Today, the Internet and the World Wide Web have promoted learning activities that provide a high degree of interaction between learners and geographically separated teachers (Al-atabi & Al-noori, 2020). In a study conducted by Jabeen and Sadique, (2020) points out that globally advances in technology and increased need for diversified and easily accessible systems of learning have led to the rise of e-learning systems. Globally many institutions of higher learning have adopted ICT with an aim of transforming education to match international standards. This has prompted many institutions of higher learning to look for innovative ways such as E-Learning, B-Learning and M-Learning to deliver the learning process (Mwangi, 2017; Silva & Souza, 2016). In a study conducted by (Ayele & Birhanie, 2018) the author has indicated that the dramatic advancements of information and communication technologies have changed people's day-to-day operations in all sectors of the economy. The change is also reflected in the teaching learning activities of higher education institutions all over the world. The traditional face-to-face course delivery system needs to be supplemented with flexible e-learning technologies.

Acceptance of E-Learning System by Learners and Instructors

The success of any information system depends on the usage of the system by users (Almaiah 2018). Thus, in the context of E-Learning system, students and instructors acceptance of E-Learning is considered as one of the main criteria for the success of E-Learning system. The Technology Acceptance Model (TAM) has proved to be helpful in analyzing and comprehending factors that led to the adoption of technology. The Technology Acceptance Model (TAM) developed by Davis demonstrates that the adoption of E-Learning technology is influenced by the perceived ease of use and the perceived usefulness. According to TAM the perceived

usefulness and the perceived ease of use determines the attitude towards the use of innovation (Salloum et al., 2019). Ayele & Birhanie, (2018) study points out that perceived usefulness and perceived ease of use are determinants of behavioral intention. Behavioral intention, management support, and training determine the actual usage and adoption of E-Learning by students and instructors

Prior experience in the use of E-learning Platforms

Prior to the COVID-19 pandemic, E-learning was growing approximately 15.4% yearly in educational institutions around the world without uncertainties or pressure on those institutions or on students (Alqahtani, 2020) Worldwide students and instructors in institutions of higher learning had prior experience on the use of E-Learning platforms even before COVID-19 pandemic. Zou, Li and Jin (2021) have defined e-readiness as a measure of students' inclination toward online delivery modes versus face to face instruction, their competence and tendency to utilize electronic communication, and their ability to undertake self-directed learning. The expertise of learners in information and communication technologies, an external variable linked to Davis model is an influencing factor of their opinion about the adoption of the E-Learning technology in teaching and learning.

Need for self Directed Learning

Rana, Ardichvili and Polesello (2016) defined self-directed learning, as a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. Learner control, which is also an important factor in online learning readiness, is defined as the degree to which a learner can direct his or her own learning experience and process.

E-Learning enables learners to take responsibility for their learning and build self-knowledge and self confidence. E-Learning in schools can promote collaborative, active and lifelong learning, increase students' motivation, offer better access to information and shared working resources, deepen understanding, help students think and communicate creatively. E-Learning in education focuses on the needs of individual learners rather than on the instructors', or educational institutions' needs. E-Learning helps in eliminating barriers that have the potential of hindering participation including the fear of talking to other learners. E-Learning also motivates student's interaction with each other, as well as the exchange of different point of views. E-Learning eases communication and improves the relationships that sustain learning.

Types of E-Learning

A study by Al-atabi & Al-noori, (2020) indicates that some educational scientists have identified types of e-Learning according to learning tools, while others have chosen to focus on different metrics such as synchronicity and learning content. There are 10 easily distinguishable types of e-learning. These are:- 1. Computer Managed Learning (CML). 2. Computer Assisted Instruction (CAI). 3. Synchronous Online Learning. 4. Asynchronous Online Learning. 5. Fixed E-Learning. 6. Adaptive E-Learning. 7. Linear E-Learning. 8. Interactive Online Learning. 9. Individual Online Learning. 10. Collaborative Online Learning.

Alternatively, some educational scientists have chosen to classify E-Learning types more simply by identify just two primary types of e-learning: computer-based e-Learning and internet-based e-Learning. This method of classification could be seen as more accurate because it differentiates E-Learning from online learning.(Al-atabi & Al-noori, 2020)

E-Learning Platforms

E-Learning platforms represent a system, which provides integrated support for six different activities: creation, organization, delivery, communication, collaboration and assessment. In a technical perspective, there are different types of Learner Management Systems (LMS), some of them representing commercial solutions (such as Blackboard/WebCT) and others open-source solutions (such as Moodle).

Various terms are used to describe educational computer applications, such as e-Learning systems, Learning Management Systems (LMS), Course Management System (CMS) or even Virtual Learning Environment (VLE). By use of these systems, learners can access courses contents in various formats (text, image, sound), as well as interact with educators /or colleagues, via message boards, forums, chats, video-conference or other types of communication tools (Sánchez & Hueros, 2010). These platforms provide a set of configurable features, in order to allow the creation of online courses, pages of subjects, work groups and learning communities (Paulsen, 2003). In addition to the pedagogical dimension, these systems have a set of features for registering, monitoring and evaluation activities of students and teachers, enabling the contents' management via Internet.

Benefits of Adopting E-Learning as a Method of Content Delivery

The adoption of e-Learning in education by institutions of higher learning has several benefits, and advantages. E-Learning is considered among the best methods of education. Several studies and authors have provided benefits and advantages derived from the adoption of E-Learning technologies into institutions of learning (Wentling et al. 2000; Marc, 2002 Nichols, 2003, Klein and Ware, 2003; Hameed et al, 2008; Algahtani, 2011) .The implementation of E-Learning technologies into institutions of higher learning as listed below:-

2) E-Learning Focuses on the Needs of the Learners

According to Takalani (2008), E-Learning enables learners to take responsibility for their learning and build self-knowledge and self confidence. E-Learning allows learners to think about course material more critically and reflectively, leading to deeper understanding of the course content (Kemp & Grieve, 2014). E-Learning has the ability to focus on the needs of individual learners rather than on the instructors', or educational institutions' needs whereby learners can study at their own pace (Singh & Thurman, 2019) unlike the traditional, educator-centered model of teaching where the lecturer transmits knowledge to students

3) E-Learning provides opportunities for Relations between Learners

E-Learning provides opportunities for relations between learners by the use of discussion forums eliminating barriers that have the potential of hindering participation including the fear of talking to other learners. E-Learning motivates students to interact with other, as well as exchange and respect different point of views. E-Learning eases communication and also improves the relationships that sustain learning. Wagner et al (2008) note that eLearning makes available extra prospects for interactivity between students and teachers during content delivery. Other studies have shown that adoption and use of E-Learning in schools can promote collaborative, active and lifelong learning, increase students' motivation, offer better access to information and shared working resources, deepen understanding, help students think and communicate creatively (Khan, Hasan & Clement, 2012)

4) Improved Interaction between the Learners and Educators

The interaction between educators and Learners has improved by asynchronous and synchronous tools such as e-mail, forums, chats, videoconferences (Bestiantono et al., 2020; Marioni et al., 2020). Online

classrooms make the student-teacher relationship more formal and less personal. This can reduce the chances of nepotism and favouritism that might occur otherwise in the traditional classroom, and hence this can motivate institutions to adopt more e-learning technologies (Awan, Afshan and Memon, 2021)E-Learning helps eliminate barriers that have the potential of hindering participation, including the fear of talking to other learners and motivates student interaction with one another, as well as exchange and respect different point of views. E-learning creates on-line communities of practice. The internet can bring learners, teachers, specialist communities, experts, practitioners and interest groups together to share ideas and good practice. It can provide an individualized learning experience for all learners, including those who are disadvantaged, disabled, exceptionally gifted, have special curriculum or learning needs or who are remote or away from their usual place of learning (Babu, 2018)

5) E-Learning is Flexible

The most evident advantage of E-learning is that, it allows flexibility and open learning for the students hence, giving them the time to attend to other things such as working and so forth. In addition, the increased demand for off campus or distance learning is likely to create a larger geographical market especially for small institutions of higher learning through online education systems (Babu,2018). Dhawan,(2020) study points out that e-Learning is more flexible compared to face- to -face traditional teaching because learners are able to study from anywhere, at any time hence convenience for both educators and learners despite being separated both in time and space.

6) E-Learning is Cost effective

The studies by Chitra & Raj, (2018) and Ferri et al., (2020) point out that E-Learningis cost effective compared to face-to face learning for both students and institutions of higher learning. There is no need for students or learners to travel to go to classes nor pay

accommodation fee saving significant amount of money. Also E-Learning eliminates renting of premises by institutions of higher learning since learning is not physical hence saving money. E Learning is cost effective as compared to traditional forms of learning.

7) E-Learning tools for tracking students activities

The Learning Management System (LMS) is the core of the entire e-learning process along with technology, content, and services (Alowayr & Badii, 2014). LMS allows instructors to track the completion status of any activity the learner is supposed to undertake (Wambua & Maake, 2021) Completion Tracking is a feature in Moodle LMS that allows both the learner and the instructor to see a progress bar indicating the extent to which certain topics have been covered. LMS has conditional activities feature that allows the course instructor to restrict access to some activities or resources until some conditions have been met by the students (Wambua & Maake, 2021)

Enhanced Teaching Quality

Awan et al., (2021) point out that e-learning is more student-centered, compared to face-to-face learning, which is more teacher-centered, as it does not focus exclusively on instructions and guidelines coming from teachers, but it is individually adjustable to the student. Arkorful & Abaidoo, (2015) study has indicated that university students who have been enrolled on e-learning courses outperform those being taught via the face-to-face mode. In a study by Awan et al., (2021) shows that the adoption of ICT tools in the teaching practices increases the students' learning output, equips students with 21st-century skills of digital literacy, aids in teachers' training, makes the course interesting, and prepares students well for competing in the global marketplace of information-rich society (Sayaf, Alqahtani and Al-Rahmi, 2021) In addition, incorporating ICT tools in delivering lectures aid teachers in adopting innovative teaching practices and simultaneously enhances learners' curiosity and understanding, resulting in improved learning

capacities and personal development (Akçayır et al., 2016; Al Shuaili et al., 2020). It is believed that for some specific courses, it is challenging to keep students motivated by just delivering lectures in a traditional teaching style. In this way, sometimes, these courses are criticized as overly theoretical, uncreative, and non-innovative. Thus students find it boring and difficult to develop understanding to the level they should do. Therefore, in such instances, it becomes essential and beneficial to aid the lectures with advanced ICT instruments such as gamification, simulations, scenography, and problem-solving and simulating practices (Erdmann & Torres Marín, 2019; Gerbic, 2011).

II. CONCLUSION

Adoption of E-Learning by institutions of higher learning has numerous benefits and advantages. From the reviewed literature successful adoption of E-Learning is dependent on the extent to which the needs and concerns of the stakeholder groups involved are addressed that is learners and instructors. E-Learning policies should be developed by institutions of higher learning to guide provision of relevant infrastructure for efficient access to E-Learning resources. Institutions of higher learning should carry out capacity building by creating awareness and training of users. Change management should be carried out to ensure that E-Learning systems are widely accepted. Continuous technical support to learners and instructors should be availed readily to counter any technical hitch that may arise. Institutions of higher learning which are not ready for a full E-Learning experience should adopt blended learning.

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