

Covid-19 Pandemic as a Catalyst to E-Learning Acceptance in 2020

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Abstract

This paper discusses the challenges that have been experienced by Kenyan public universities over the years in the implementation of e-learning and the low acceptance and adoption of e-learning. The paper further highlights on the Covid-19 Pandemic as a catalyst to e-learning widespread acceptance and adoption among Kenyan Universities and even globally. Overs the past years, Kenyan Public Universities have been making attempts of adopting e-learning as a new approach to teaching and learning, with some at preliminary stages while others at maturity levels. The implementation had been facing numerous challenges in these universities, which have since continued to impact negatively on its effective utilization. However, the confirmation of the first case of the Covid-19 pandemic in Kenya in Mid-March, 2020, which led to the government closing all schools and learning institutions, we have seen e-learning being embraced immensely by institutions of learning. This paper presents the findings from the literature review on the challenges of e-learning and the positive twist brought about by the Covid-19 pandemic. Kenyan universities including public universities have resorted to using e-learning in blended mode approach, especial to ensure that the universities' calendar dates are not greatly interfered with by this Covid-19 pandemic. The purpose of this paper was to investigate the challenges that have hindered the implementation of e-learning especially in Kenyan public universities and the catalyst role played by the Covid-19 pandemic to increase uptake of e-learning in Kenya public universities. The paper established that e-learning comes with some challenges that must be addressed by Kenyan public universities before successful implementation can be fully realized. The paper also established that the Covid-19 pandemic has positively increase e-learning uptake in Kenyan public universities.

Key words: Covid-19, e-learning; online learning; ODL; challenges; higher education; Kenya.

1. Introduction

E-learning is the learning facilitated through the use of information and communications technology. It can also be taken to mean electronically mediated asynchronous and synchronous communication to construct and confirm knowledge [1]. E-learning can

be classified into two broad categories, synchronous and asynchronous [2]. Synchronous learning uses a learning model that initiates a classroom course, lecture, and meetings using Internet technologies. In synchronous learning, the interaction brings together all the learners and the facilitators together at the same time live through the use of technologies. Asynchronous learning on the other hand is a web-based version of computer-based training, which is typically offered across an organization's local area network, and the learner can access the course at any time at his or her own pace [3]. It also known as self-paced learning.

Successful implementation of e-learning requires that numerous challenges need to be overcome when implementing e-learning in universities. For e-learning success, it is required that instructors and students possess adequate technical skills to use e-learning tools effectively [4].

E-learning is still at the young stage in most Kenyan public universities as a result of many challenges associated with implementation, which range from technological, organizational, and pedagogical challenges.

Recently, what was seen as a challenge to the Kenyan learning system leading to the closure of the learning institutions was the emergence of Covid-19. While Covid-19 is primarily affecting public health, spillover effects can already be observed in education, stemming largely from extended schools and colleges closure. This has led to many learning institutions racing to implement e-learning to enable them to cope with the academic calendars.

2. Methods and Materials

Qualitative research approach was adopted for this paper. The paper depended on secondary data that were obtained from other related studies of interests to the researchers of the paper that were published online. They were retrieved and then based on their relevance to the theme of this paper. Contents were analyzed using thematic analysis.

3. E-learning Implementation Readiness

Readiness can be defined as being prepared mentally or physically for some experience or action [5]. According to [6], e-learning readiness is the mental or physical preparedness of an organization

for some e-learning experience or action. E-learning readiness assessments help organizations to design e-learning strategies comprehensively and to implement e-learning goals effectively [7]. The assessment also provides key information to e-learning solution providers to enable them to cater to the specific needs of each learning group [8]. Successful e-learning adoption entails a coherent achievable e-learning strategy, tailored to meet each learning group needs. Therefore, e-learning readiness assessment parameters should include: infrastructural availability, access to infrastructure, manpower availability, policy, and regulatory framework [9].

4. Challenges Hindering the Implementation of E-Learning

Successful e-learning implementation involves infrastructure, technical expertise, and psychological readiness. The key e-learning infrastructure includes projectors, computers, local area network (LAN), Internet connectivity, and electronic learning resources or digital content [10]. Teachers and students who are key users of e-learning platforms should possess the necessary technical experience and skills to manage e-learning. The inadequacy of these components poses challenges of varied magnitude to e-learning implementation. Other constraints posing challenge include but not limited to; financial constraints, expensive and inadequate internet bandwidth, inadequate operational e-learning policies, and limited technical skills on e-learning and e-content development as well as teaching staff commitment.

4.1. Inadequate ICT and E-learning Infrastructure

Inadequate Information Communication and Technologies and e-learning infrastructure is one of the major challenges hindering the implementation of e-learning in Kenyan public universities. In a survey done by [11] indicated that computer laboratories were few compared to the population that was meant to use such laboratories. [12] also noted that computers and other e-learning access devices were among the most important technical components that support the successful implementation of e-learning. It is quite clear that infrastructure plays a key role in the implementation of e-learning. The infrastructure like computers, computer labs, network, and internet connectivity are inadequate in most public universities, yet they are necessary to support the high numbers of students who want to access e-learning. This poses a major challenge in the implementation of e-learning in these universities, mainly public universities. However, most public universities have since

invested resources to improve on the infrastructure, which in turn has helped them make some progress in the last few years. The institution providing e-learning, therefore, must provide adequate technological infrastructure, including network connections and computers, and technical support for both students and staff.

4.2. Financial Constraints

Financial constraints have remained one of the top challenges hindering the implementation of e-learning in Kenyan universities, especially, the public universities. It is very expensive to set up an infrastructure for e-learning, and on average, the implementation of e-learning is generally expensive for an average university at the initial startup stages. Inadequate financing of e-learning is therefore a major barrier to its successful implementation in Kenyan Universities. Though the universities in Kenya make budgetary allocation towards e-learning, however, such allocations have been in the past, so low to effectively support the e-learning activities, like training of staff on e-learning, maintenance, e-content development, Internet bandwidth, and e-learning infrastructure development. Most e-learning related projects in public universities relied on donor funding, which could be seen as a risky way to plan projects in the magnitude of e-learning. Most Kenyan universities, especially public universities, make e-learning a priority in their budgetary allocations. Budgetary restriction is a primary concern for institutions [13].

Covid-19 pandemic had triggered a number of Universities to improve on their budgetary allocation towards e-learning activities. These have been made possible through vehement of funds which were meant for other projects to the e-learning kitty. Major universities have negotiated for their staffs, low rate data bundles which they can use effectively for both Lecturer and Students. Some of the Universities have also engaged on capacity building and staff training which have been done at a lower cost or generally free.

4.3. Affordable and Adequate Internet Bandwidth Challenges.

Public universities in Kenya lack affordable and adequate Internet bandwidth, which has become one of the challenges hindering the implementation of e-learning. According to [14], e-learning requires reliable high-speed internet access and campus network. From the results of the study conducted by [15], it was evident that the range of internet bandwidth in most of the universities was less than 100Mbps which was way below the expected range of an efficient and reliable e-learning system. [16] on their part, stated that 15 Mbps to 20Mbps is

insufficient for effective internet usage in learning. However, the cost of bandwidth in most public universities has gone down following the introduction of bandwidth subsidy by the government through the Kenya Education Network (KENET) and the arrival and operationalization of the undersea backbone fiber optic cables in Kenya in the year 2012. Faster internet connectivity is therefore seen to be critical to an institution using e-learning to support teaching and learning. The E-Readiness Survey of Kenyan Universities (2013) Report by [11], established that the current price of \$160 per Mb/s was still high in comparison to developed countries.

According to [11], on average, Kenyan universities were spending only 0.5% of their total recurrent expenditures on Internet bandwidth.

Convid-19 pandemic has made it more affordable to have negotiated bandwidth through KENET in form of the introduction of google loom to enable internet accessibility to learners who are in remote areas. Individual Universities have been liaising with internet service providers for provision of affordable internet.

4.4. Operational E-learning Policies

Kenyan public universities tried to implement e-learning in their institutions without policies. Lack of operational e-learning policies is therefore a challenge hindering the implementation of e-learning in Kenyan public universities. Some of the Kenyan public universities do not have an e-learning policy and in cases where a policy exists, it's not operational. Some of these e-learning policies were not implemented by most public universities due to budgetary constraints and lack of the necessary e-learning infrastructure. Having a policy framework on e-learning is critical to the success of the implementation of e-learning in any given institution. The universities must have clearly defined strategic plans that spell out e-learning policies and implementation strategies [17]. [18] in his study established that most Kenyan public universities had no e-learning policies of any sort and in cases where it was available, it was still in draft form.

Majority of Universities which had policies and had not been operational, had to operationalize them during this Covid-19 pandemic, in order to ensure that the e-learning gets started.

The online examination policy frameworks by some universities, had to be developed and operationalized, to ensure that learning continue uninterrupted.

4.5. Technical Skills on E-learning and E-content Development

[19] in his work states that teachers' and students' perception and attitude towards technology is critical to e-learning adoption. Some of the teachers, find e-learning as a new concept to their normal way of operation, and therefore a number of them feel that technology takes control of class from them [20]. Therefore, it is necessary to examine users' technical capacity, skills, and perception towards technology to ascertain levels of e-learning readiness. This has been seen through the universities, equipping learners with the relevant skills to access and use e-learning platforms. These include the use of blended learning through the use of webinar, Zoom technologies Bigblue button and Google meet platforms.

Lack of relevant technical skills on e-learning and e-content development by the teaching staff is a challenge hindering the implementation of e-learning in public universities. This emanates from inadequate training in e-learning skills among the majority of the teaching staff. In most cases, only a few of the teaching staff have been adequately trained on e-learning skills and some have been assigned the role of e-learning champion to replicate the same skills to other teachers, yet they fail to train their colleagues. E-learning skills for lecturers and relevant e-content are critical components necessary for successful implementation of e-learning, as such, public universities need to a lot of effort on them for better e-learning implementation outcome.

Teachers require training on the technical use and operation of the e-learning environment [21]. The training should cover basic knowledge and skills for handling e-learning hardware and software, and the skills to select critically the right media in a learning process. Teachers should also be aware of the new technologies that were developed and could be integrated into the daily teaching and learning practice.

4.6. Teaching Staff Commitment to Using E-learning

Prior technical experience in information technology is necessary to enable teachers to succeed in handling e-learning programs [22]. Teachers' competency, therefore becomes an influential and critical element in the delivery of the new approach of learning (implementation of the online curriculum) which is very different from the traditional approach. Further, teachers' commitment is also a must for the success of e-learning.

Winning teachers' support and commitment is key in order to change their existing pedagogical approaches, and to provide them with training on how to integrate the new teaching technologies into

teaching [23]. Many Kenyan universities are struggling with e-learning implementation due to a lack of commitment from their teaching staff. Teaching staff and management in these universities are reading from different scripts on matters concerning e-learning.

According to [24], the three characteristics of instructors that influence student performance in an e-learning environment include: attitude towards technology, teaching style, and control of the technology. Each of these commitment factors should be taken into account in the identification of suitable teachers to implement e-learning [25].

Teacher functions in a physical classroom and online teaching environment have numerous similarities. The difference that exists is usually a consequence of teacher involvement and of the commitment of both the teacher and the institution in programming the learning process [26]. The committed teacher is required to seamlessly assimilate technology in teaching and schools have a role in ensuring this by providing resources to facilitate technology-enabled teaching. Lack of these resources are highly likely to lower the commitment of the teachers [27].

Lack of interest and commitment among the majority of the teaching staff to use e-learning in teaching in public universities is another challenge hindering the implementation of e-learning. This was attributed to a lack of motivation among the teaching staff who perceive the conversion of their courses to e-content as extra work with no additional pay. Fear of loss of jobs as a result of the implementation of e-learning was also noted as a possible cause for a lack of interest and commitment to use e-learning by the teaching staff. [28], in their work, also established that if teachers wanted to successfully use technology in their classes, they needed to possess a positive attitude towards the use of technology.

4.7. Content Development Costs

The content of e-learning is concerned with the availability of existing digital content, its format, levels of interactivity, reusability, and interoperability [29]. Kenya Institute of Curriculum Development Education (KICD), the national curriculum and research center has developed a customized Learning Management System, ELIMIKA. KICD choose the Learning Management System (LMS) because it was easy to manage and had support locally [30]. The LMS was supported by a community of experts and was always under review to meet the ever-changing technology. K.I.E has reportedly developed and rolled out digital content for Mathematics, English, Kiswahili, Chemistry, Physics, Biology, History, Agriculture, Home Science, Computer Studies and Business Studies subjects which are offered at secondary

school levels in preparation and making ready the contents for the secondary school e-learning [31]. This meant that if there was already a thinking around development of content for secondary school level curriculum, Kenyan universities had no choice, but to take up the challenge. The challenge with the secondary school e-content developed was that, the government was yet to provide details on the e-learning implementation framework [32] and some schools were also not even aware of the existence of digital content.

The duration taken in the creation of e-content is longer in terms of timeframe, thereby hindering the implementation of e-learning in Kenyan universities. Further, most teaching staff are busy with routine teaching and research tasks, thereby limiting their time to convert their courses from hard copy to e-content. The advantage of having e-content developed is that, once a course has been developed in digital format, it is easier and less time consuming to maintain and update.

Development of one complete e-learning course is yet another challenge that requires a longer period as well as resources such as computer and reliable internet connectivity [33].

5. Discussion

Learning institutions globally, are currently integrating technology into their teaching, administration, and research work due to its usefulness, especially at this time when governments have issued the closure of learning institutions.

In China according to [34], in their study “School’s Out, But Class’s On”, The Largest Online Education in the World Today: Taking China’s Practical Exploration During The COVID-19 Epidemic Prevention and Control as An Example indicated that 250 million students are studying online due to Covid-19 pandemic.

In Kenya the premature closure of all learning institutions was a direct and immediate response by the government of Kenya to take proactive measures to protect all its Citizenry, the learners by extension from possible risks of contracting Covid-19 since school environments are places where a lot of students meet, interact and touch surfaces such as desks, boards, and chairs.

[35] points out that schools are the breeding grounds and dangerous places for the spread of the virus, and a virus-like Covid-19, would uncontrollably spread in such an environment.

Students or learners as a result of Covid-19 pandemic were forced to be in their homes, yet learning is expected to continue. This is because Kenya has an academic calendar with term dates for primary and secondary schools set by Kenya's Ministry of Education, while the universities have academic calendars that they all would wish not to

greatly alter. Learning institutions have since resorted to e-learning as a remedy to ensure that learning is not greatly interfered with, and universities are racing with time to ensure that e-learning becomes effective as envisioned, in their plans for e-learning.

It is important to note that these universities had e-learning as the option to reach out to some of their potential clients, however, its implementation was still really low. It is therefore evidenced, that the outbreak of Covid-19 pandemic that has led to the closure of all learning institutions, has become a catalyst for e-learning.

In just a matter of weeks, Covid-19 has already changed how students are educated around the world. Changes which give us a glimpse at how education could change either for the better or the worse, over a long period. We have seen learning consortiums and coalitions taking shape, with diverse stakeholders, which include governments, publishers, education professionals, technology providers, and telecom network operators, coming together to utilize digital platforms as a temporary solution to this crisis brought by the pandemic.

In China, the Ministry of Education has assembled a group of diverse constituents to develop a new cloud-based online learning and broadcasting platform as well as to upgrade a suite of education infrastructure, led by the Education Ministry and Ministry of Industry and Information Technology [36].

According to [37], it is already evident that educational innovation is receiving attention beyond the typical government-funded or non-profit-backed social project. In the past decade, we have already seen far greater interest, and investment, coming from the private sector in education solutions and innovation. We have witnessed much input from Microsoft and Google in the U.S. to Samsung in Korea, and Alibaba in China.

Initiatives and inputs from various stakeholders and partners to date have been limited in scope, and relatively isolated, as a result of this, Covid-19 pandemic could just pave the way for much larger scale, cross-industry coalitions that could be formed around a common educational goal.

6. Recommendations

The authors therefore recommends that:

1. Learning institutions to reconsider the level of financial resource allocated to e-learning activities,
2. Deliberate effort be undertaken to capacity build teaching staff on e-content development,
3. Policy makers to develop policies that would help anchoring e-learning,

4. Stakeholders to work together in ensuring availability of affordable internet bandwidth,
5. Carry out advocacy within universities on the advantages of e-learning among staff to boost staff commitment, and
6. Support the technical staff through regular training that would build their technical capacity to support e-learning.

7. Conclusion

This paper raises several issues that need to be addressed for the successful implementation of e-learning in Kenyan universities and beyond.

It is evident that e-learning infrastructure alone is not adequate to support the successful implementation of e-learning. Neither do Computer laboratories be adequate in most universities. In some universities, there was no reliable internet connection to support e-learning programs most of the time as required which brought many frustrations to both the teaching staff and students. The paper also states that internet bandwidth was not sufficient in most of the universities as it is below 100Mbps. Most universities are connected to fiber optic cable though not well distributed for effective usage in e-learning. Adequate awareness had not been done by most universities concerning the available learning management systems leading to such systems being underutilized. Finally, the paper established that most universities did not have e-learning policies to guide the implementation of e-learning systems.

Covid-19 pandemic that has since led to learning institution closure globally, in just weeks, could be seen to propagate e-learning as a means of carrying on with learning. This was to ensure that learning in various institutions proceed uninterrupted [37].

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