

Original Paper

Online Classes during COVID-19 Pandemic in Higher Learning Institutions in Africa

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Abstract

During COVID-19 period students usually had to go to a physical place for learning. Nonetheless, the outbreak of the COVID-19 has birthed an array of highly creative innovations that have cut across several industries but has exposed the lack of technology in these sectors including the already fragmented education sector of African countries which needs restructuring and transforming. Many public and private Universities have had to be reactive but face steep contextual challenges in the conventional methods of creating, delivering, and capturing value in the education sector. This paper aimed to investigate online classes during the COVID-19 pandemic in different universities in Africa with a focus on five universities. The study adopted the Constructivist Theory. The research was guided by three main objectives including (1) To explore the effectiveness of online education in African Universities; (2) To assess the challenges facing online classes during COVID-19 in African universities; and (3) To determine possible strategies to curb challenges facing online education in higher learning institutions during COVID-19 and post-pandemic in Africa. The study employed a qualitative and quantitative method in data collection. The targeted population is lecture students from five Universities in African countries including Tanzania. The result of the study indicated that students learned more in less time and liked their classes more when ICT-based instruction was included. Notwithstanding, the majority of the participants demonstrated that learners in higher institutions in Africa have trouble accessing the E-learning technology system.

Keywords

COVID-19 pandemic, reshaping online learning, online teaching, online higher education, African Universities

1. Introduction and Background of the Study

Since December 2019, the world has witnessed a radical change in all spheres of life. From the time when the first case was recorded in Wuhan China, the current pandemic called Coronavirus has become the first-class topic of debate amongst individuals, public, non-government institutions, on the social media, internet and in the news around the world. Unfortunately, statistic associated with the spread of the pandemic continues to rise in many countries like the United States of America, and Canada and in other continents including Europe, and Africa (World Health Organization, 2020; New York Times, 2020). This pandemic has brought many changes across various industries and about how people live, socialize, and run daily activities (Coulthard, 2020). With the quick response from many governments around the globe, almost everything is being cancelled, shutdown, and postponed. Schools, universities, all public, and private events are being prohibited, social distancing is observed as proactive efforts put in place to contain the further outbreak and spread of the Coronavirus in more than one hundred countries of the world. For instance, following the eruption of coronavirus, China closed education institutions national-wide to avoid the spreading of the COVID-19 (Sun, Tang & Zuo, 2020). Not only in China but also by 20th March of 2020, there were more than 769 confirmed cases of coronavirus in 37 nations across Africa (Moeti, 2020). Like any other country around the globe, countries with reported cases in Africa such as Tanzania, Kenya, South Africa, and Uganda have begun to take actions and possible measures to contain the few cases by closing education institutions and by isolating the affected persons as well. Since then, millions of the students in Africa and around the globe became out of the face to face classroom by learning from home. It must be noted that with the outbreak of the virus, all things have changed, the teaching and learning practice has come into the home now. For these students to continue with their education, all classes went online, millions of students have begun learning through the internet and digital tools. For instance, during the COVID-19, Chinese universities have set to open 24,000 online program selected by the ministry of education (Ministry of Education of the Peoples Republic of China, 2020). Therefore, online education is considered as an essential tool for simplifying the teaching and learning process.

Conceptualizing Coronavirus Diseases

Coronavirus Disease is the transmittable disease which was first recorded from China on 31 December 2019 and later the disease spread in many countries across the world. (World Health Organization, 2020). This pandemic was later declared as “COVID-19” by the World Health Organization. “COVID-19” stands for Coronavirus Diseases-2019. The symptoms of COVID-19 include breathing difficulty, fatigue, coughing, sore throat and runny nose (World Health Organization, 2020). Studies and the world health organizations noted that persons with underlying health problems as well as elders are likely to suffer seriously from COVID-19 (Sun, Tang & Zuo, 2020). At the time of this study, there were no reliable treatments for COVID-19, but many researchers across the globe put their effort in finding the clinical vaccines for treating patients but personal hygiene like frequent washing of hands with running water, medicated soap and the use of hand sanitizer. Also, social distancing, wearing of

face masks and close sneezing and coughing were procedures advised to be adhered in reducing the spread of COVID-19 pandemic (World Health Organization, 2020), one of the key proactive measures to the spread of the coronavirus were Social distancing, closure of educational institutions, lockdowns in some countries like United States of America, Italy, Canada, Germany, Kenya, India, Uganda, South Africa, and Rwanda. All of these measures led to the increased use of online education to help students continue studying while home.

The concept of Online Education

Technology is a vital component of teaching and learning in the 21st era. The expanding use of technology in teaching and learning has improved methods of teaching from traditional to the most flexible methods, (Sun & Chen, 2016; Onyema & Deborah, 2019). Technology influences remote education, virtual learning, distance learning, mobile learning, cooperative learning and machine learning. Each aspect of education is adopting digital, and students, as well as education stakeholders, are challenged with the transition to online learning. The application of technologies in education increases the accessibility to learning resources such as online courses and many other programs to meet the need for distance learning (Onyema, 2019). Nguyen (2015) has defined online learning as a wide range of curriculums that practice by using the internet to facilitate instruction and provide materials as well as interactions between teachers and students or among the group of students. On the other hand, onlineeducation.com (2020) conceptualizing online education as a general way of teaching and learning online with the help of digital platforms and technology tools. Onlineeducation.com (2020) noted online teaching and learning originates from and distance learning and the development of digital technologies which facilitate instructional activities by using the internet. The success of learning online depends on digital skills, availability of educational technologies and good internet networks in the learning environment. There are many platforms or tools that educators and learners use in online learning. Some of these technologies are Zoom, WhatsApp.com, Skype.com, Youtube.com, and Google classroom (edu.google.com). The application of these technologies in education influence online learning and accessibilities of learning and teaching materials through the internet. The internet has made teaching and learning conceivable, and many educators and scholars are interested in online learning to enrich accessibility of learning resources and improve students learning, mainly in Higher learning (Page, 2010; Horn & Staker, 2011), portrayed that online learning is a form of distance education which has been a practiced in America and has become the most important aspect of distance education in recent years. The development of online learning in higher learning does not happen overnight. There are main factors that influence higher learning institutions to offer online teaching and learning. These factors including meeting the need of students for the flexible program, shortage of educators and the need for increasing students enrollment (Sun & Chen, 2016). In another way, war, economic crisis as well as the outbreak of diseases can also be considered to be a great catalyst for the expansion of online education in higher learning institutions around the world.

Statement of the problem

The outbreak of coronavirus (COVID-19) has brought many changes across several industries including the education sector. One of these changes is that the physical classroom has begun to lose its value as the place of teaching and learning. The internet, as well as the world wide web, has brought substantial changes to all areas of life from an individual, political, socially as well as economical as a source of information and learning (Nguyen, 2015). The internet has made teaching and learning conceivable, and many educators and scholars are interested in online learning to enable the accessibility of learning resources and improve students learning, mainly in Higher learning (Page, 2010). In this regard, many countries around the globe are inventing different innovations in education to help their students thrive at this historical time of coronavirus. However Tagoe (2012) noted that online learning was improving in some countries in Africa, but for the whole of the African continent, the program faces many challenges because of the insufficient infrastructure facilities such as network and computers in most universities. Also, the review of literature has shown that the efforts made by African universities in the adoption, implementation, and integration of online learning approaches in education are not effective to enable distance education to meet the intended goals. For instance, Kotua, Ilkan, and Kilic (2015) conducted a study on the growth of online education in Sub-Saharan Africa, a case study of Ghana. The study revealed that learning in Ghana has developed very little regardless of the variety of universities in the country offering virtual studies. Kotua, Ilkan, and Kilic (2015) also noted that Ghana is rated to be among the best nations which offer online education, five students out of ten have access to the internet which makes the) online learning imperfect. Kisanga and Ireson (2015) and Mikre (2011, p. 13) conducted a study in Tanzania, the study revealed that the lack of information and communication Technology policy that sets the milestone in place is the big challenge that faces online learning in developing countries. Generally, the online learning and usage of information and communication technologies in African universities is relatively little known compared to other developed countries like the United States of America, Canada, and China. Hence, this study aimed at investigating online classes during the COVID-19 pandemic in higher learning institutions in Africa to assess the intervention that put on the ground by the governments and higher learning intuitions in Africa in helping students thrive in the era of COVID-19. The current study also will help in establishing and preparing for mitigation measures and pathways to ensure continuity of education among students in higher learning institutions in Africa.

Research Objectives and questions

The main objective of the study was to investigate online classes during the COVID-19 pandemic in higher learning institutions in Africa with a focus on five universities in Africa. The study aimed:

- 1) To explore the effectiveness of online education in African Universities.
- 2) To assess the challenges facing online learning during COVID-19 in African universities.
- 3) To determine possible strategies to curb challenges facing online education in higher learning institutions during COVID-19 and post-pandemic in Africa.

Significance of the study

The study was sought to support policymakers and educational stakeholders in becoming informed users of information about online teaching and learning and its possible value in educational development and productivity. The study will provide essential knowledge in understanding (of) the possible contributions of online teaching and learning. The study also aimed at inspiring students in the utilization of online learning techniques as a vital tool to help them thrive during a difficult time like this Coronavirus. Also, the study will serve as a guideline to researchers who may wish to conduct similar research in the future

Independent Variable

Dependent variable

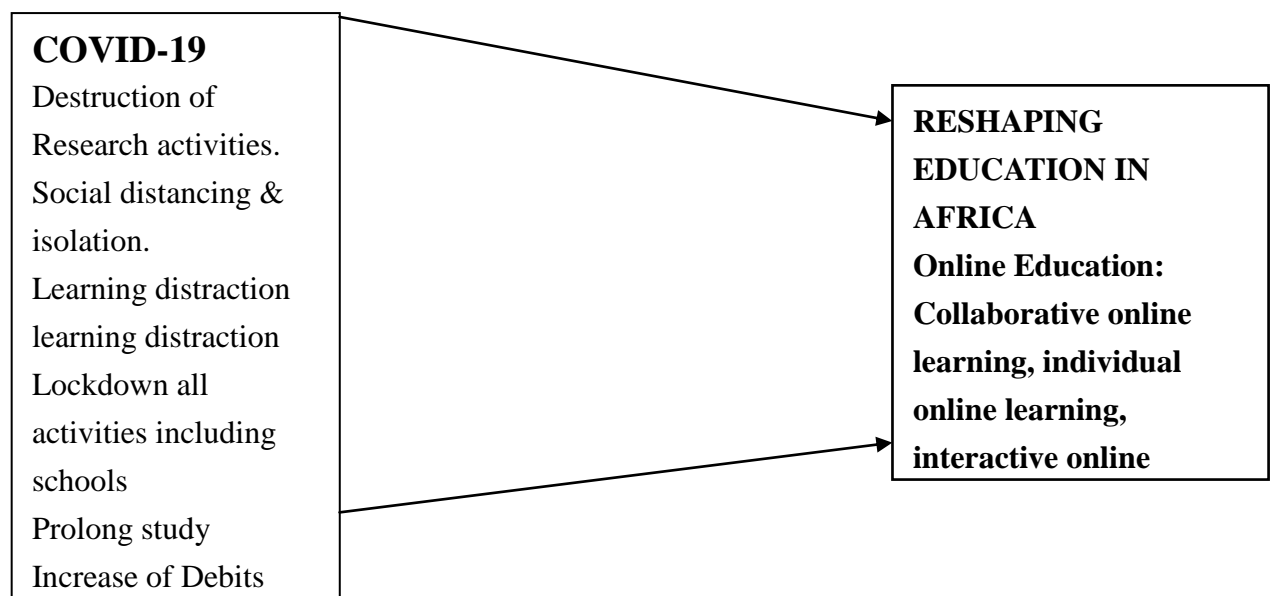


Figure 1. Conceptual Framework

Figure 1 Demonstrates the Conceptual Framework which indicates the independent and dependent variable. The Conceptual Framework shows how the outbreak of the COVID-19 pandemic has brought many changes in the education sector which led to the increased use of online education as a proactive response for higher learning to continue. The COVID-19 has reshaped the education system in African countries. This implies that if we want to succeed during and after corona pandemic we should adopt the use of online learning, we should not use traditional learning alone but both ways should go hand in hand.

Related literature review

The researcher anchored this study on constructivist theory. The theory was founded by Lev Vygotsky in 1978. Kalpana (2014) suggests two types of theories of constructivism of which one is individual learning and based on personal self-concept, belief system, and experience. Levy Vygotsky theory (1978) is very much related to the current study based on social interaction and focused on views

sharing among peers. Slavin (2006) asserted that learner-centered education is core in the teaching and learning processes. According to the constructivists' theory, the reality is a multitude of knowledge in the learners' minds and each learner is unique. Learning, therefore, should take this into consideration and allows learners to explore and use their abilities to process information to create the personalized knowledge which makes more sense to them (Woolfolk, 1995).

In general, the constructivist theory points out that individuals would construct knowledge from a new learning experience. This means that learners will grasp knowledge when students actively engage in their environment such as online learning which an active engagement kind of learning is. Online learning students would construct their understanding and knowledge of their environment. In general students are active creators of their knowledge.

Constructivism Theory is very much relevant to the current study because it encourages learners to apply new and active methodologies of learning. This can be done through the learners' interaction with peers and the environment but based on their own experience. In this regard, learning could be better defined as meaning-making rather than memorizing what was imposed by others (Nawaz, 2012). With this regard, learning could be facilitated by the inclusion of online learning and ICT in education as a way to apply the underlying principles of constructivism. According to Kalpana (2014) in the constructivist class, the environment is democratic and centered on the learner, where the curriculum is negotiated and not imposed. Learners participate freely in the creation of the knowledge either individually or through interaction with their peers or significant others or even environment but based on their prior experiences. The lecturer in this environment just guides the learners on their journey and the discovery of new experiences. Hence online learning comes in constructivism as a medium to facilitate the learning-how-to learn process by eliciting learners' curiosity which leads them into critical and analytical thinking, thereby resulting in discovery (Kharade & Thakkar, 2012). The philosophy underlying the constructivist theories aims at promoting learner's activity in online learning. The constructivist teachers encourage the students to continuously assess how the activity is helping them gain understanding. Learners in the constructivist classroom ideally become "expert learners". This gives them ever-broadening tools to keep learning. Thus this theory is very much relevant to the current study on reshaping education in Africa including Tanzania on online classes during and after COVID-19 pandemic in Higher learning institutions in Africa

The effectiveness of online education in African Universities

Africa as a continent has become one of the fastest-growing marketplaces for the internet in the world. For instance, "there are many universities which offer online education in Ghana" (Kotua, Ilkan & Kilic, 2015). On the same note, most of the private and public universities in Kenya started offering online education (Kashorda & Waema, 2014). However, studies across higher education in Africa have revealed that the implementation of online education has not been effective due to the variety of challenges associated with the policy, program development, user characteristics assessment and academic performance (Makokha & Mutisya, 2016; Kisanga, 2016). Adeyinka (2013) noted that in

Nigeria many universities offer online education but there are not enough educators and qualified professors to teach online classes because they tend to find jobs abroad where they are paid a better salary than in Africa. These challenges seem to be the reasons that hinder the success of online education in Africa which need to be solved to ensure quality provision of online learning in Africa.

Muuro (2014) conducted a study in Kenya using a descriptive survey, the study revealed that physical interaction with facilitators, face to face learning, group discussion are the stronger keys for learning than e-learning. This is to note that online learning is not liked by many students in Africa because the students need timely feedback from their educator or during group discussion. Therefore, this indicates that online education is not effective in African universities. Chawinga (2016) demonstrated that online education has a negative impact on students' academic performance because it delays the provision of assessment and feedback. With these standing points, higher learning institutions in Africa should be encouraged to develop clear and relevant policies that will help students develop skills related to online education.

Tarus (2015) conducted a study in Kenya the study demonstrated that computers and network connectivity play a vital role in the development of online education, however, there are not enough computers or funds for installing new computer labs and connectivity in African nations. In line with that (Makokha & Mutisya, 2016), supported that inadequate computer and internet facilities are the major challenges that weaken online classes in Africa. Therefore, higher learning institutions and governments need to collaborate in ensuring that there are enough computer and connectivity facilities to make the effectiveness of online education in Africa.

Challenges facing Online Learning in higher learning institutions in Africa

Doculan (2016) assessed on E-learning tool, for higher education institutions in the Philippines. The study asserted that online education can only be practised if the institution is deemed equipped. The study results indicated that the advancement of online education is to address the gaps in teaching and learning, increases productivity, and increase accessibility of education, and reduce costs. These findings are contradicting with those of Nwana (2014) who pointed out that Africa is faced with various challenges such as scarcity of videophone and teleconferencing systems, massive computer illiteracy, a problem in IT utilization, and limitations in the application of World Wide Web (www). Other factors include the opportunities for development, lack of multimedia systems, or inconsistent power supply, techno-phobia and resistance

Concerning this study, Raja (2012) looked at the challenges facing students in implementing e-learning in Hebron Palestine. The study random sample consisted of 175 students who were studying E-learning techniques and online studies. The results displayed that low level of English language of learners, shortage of computers in the schools which hindered the learner's participation in online learning which is the situation of learners in most of the universities in Tanzania after the birth of coronavirus pandemic?

The study by Nnajofofor and Achukwu (2012) examined the important challenges and implementation of E-Learning in Nigeria. The study contended that constant change in technology can have a profound effect on education. Educational institutions must provide learners with skills that are necessary for coping in the wider community. Online learning is the latest evolution in education and training. However, in some online studies conducted in developing countries, it was found that a lack of vision and support in implementing e-learning lead to disappointment with online learning and contributed to the breakdown of some projects. The previous study looked at the importance, limitations, and the implementation of online learning. The current study looked on challenges facing online learning specifically in 2020 when the Coronavirus has created a gigantic problem which has caused more than 1.6 billion of all ages to be out of schools in almost 161 countries worldwide (world bank 2020).

In addition, William and Mbobola (2018) conducted a study in the Zambian education system. The study used quantitative and qualitative approaches. The research findings showed that online learning facilities and IT infrastructure were not available in most rural schools in Zambia. On top of that Mukosa and Mweemba (2019) asserted that quality of internet in Zambia is also a huge challenge, most of the African countries have received very little knowledge in ICT and that impacts unconstructively on the addition of e-Learning in higher learning and cultural issues are still shortcomings that need to be resolved for online learning to take place. Though various studies such as; (World Bank, 2020; Gilbert, 2015) indicate that online education and e-learning reimbursement educational services providers as it enables them to widen their market beyond geographic borders. The previous study involved pupils from the primary level of education while the current study focused on challenges encountered by university learners who adapted to online learning in universities specifically in the rise of the COVID-19 pandemic. Nevertheless, the current study used university students who might bring effective and quality results because learners in the university are mature enough and they can give the needed information compared to pupils at the primary level.

Notwithstanding, Mtebe and Raphael (2018) Reviewed on E-learning research trends in Tanzania. The study used a pure quantitative paradigm. The research exposed that mobile, E-learning, online learning, and game-based learning was the least researched. The study also shows that Internet access, unskilled labour and low-speed connectivity were the key issues that affected the provision of education through online learning implementation in the country. In addition, Lwoga (2012), Tedre, Ngumbuke, and Kempainen (2010) commended that university incurs expenses due to the internet, for example, one university was paying 104 million Tanzanian Shillings while another university was paying approximately US\$ 3,100 per month for Internet connectivity.

In the same vein, Annika (2008) examines major challenges for e-learning in developing countries in Sri Lanka. The study involved 1,887 participants. The research identified various major challenges such as the lack of skilled labour. The challenge drives the need for learning and reducing the gap between the skills of the workforce and business demand. The fact that Anoka's study was done in 2008 means there is a time gap. Thus the researcher to discover if what was found by Annika will be different

or similar to the current study.

Croucher and Locke (2020) summarized evolution trends in higher education caused by COVID-19 in Australia. The study finding analyzes various challenges that could face the globe after the coronavirus, such as the retreating capacity for the governments on the planet to invest in education and research, many degrees and programs may have less attraction for students. The nature of academic work may change with greater roles played by learning designers. Moreover, withdrawing student's capacity for travelling, to commence international education in other countries because leaving their home countries for studies will be perceived as less safe due to the coronavirus. Nevertheless, the study did not specify the sample size used to collect this information.

Strategies to curb challenges facing online education in higher learning institutions during COVID-19 and post-pandemic in Africa

In relation to the current study, Murphy (2020) examined the urgent situation of E-Learning results of securitization of higher learning after pandemic pedagogy in American universities. The study used twenty-five universities around America. Murphy observed that more than 1.5 billion of learners around the globe are affected by school and university closures due to the coronavirus outburst. The study findings indicated that the traditional way of education provision which is face to face has changed to become a threat to humanity during the coronavirus. Hence the study supported the use of distance learning as a securitization theory proposed and the de-securitization method should be employed after the corona pandemic. Looking at Murphy's work used 25 universities in America the findings could bring different results if they could use various universities from different countries.

Nevertheless, the UNESCO international institute for Latin America and the Caribbean (IESALC) (2020) evaluated the situation of the coronavirus and higher education. The resulting findings displayed that higher education system acted uniformly; during the coronavirus, the education systems globally have experienced tremendous change, by being close down in all level of education from kindergarten to university. Hence colleges, universities, and other forms of learning do not have to continue offering physical interaction education systems alone. Besides, some learners will discontinue complete from traditional learning or return to classrooms. The current study focuses on strategies to curb challenges facing online education in higher learning during the coronavirus and post-pandemic.

In Georgia, Basilaia and Kvavadze (2020) looked on the transition to online education schools during the SARS-COV-2 Coronavirus. The study used private schools with a sample of 950 learners and a case study was adopted to facilitate data collections. The findings demonstrated that after the pandemic in 2020 will force a generation of new laws regulations, platforms, and solutions for future cases when the global population will be more advanced than at present. Moreover, Distance learning such as online portal, TV school and Microsoft teams for public schools and alternatives such as Zoom, Slack and Google meet, Edu page platform can be used for online education. Nevertheless, Basilaia and Kvavadze used private schools the result findings could be different if they could use both private schools and public schools to strengthen the findings.

The reviewed literature indicates that very few studies online learning have been carried out in African Universities especially in the context of public universities. This study will, therefore, bridge the gap that exists in the current knowledge on online classes during COVID-19 pandemic in Higher learning institutions in Africa: A focus of Universities in Tanzania context by adding onto the lake of knowledge on the topic. Tanzania has students from within Tanzania and some are the international students. Where there is a similarity in results, we have done triangulation with the literature review. The results from this study will serve as a vital reference for extra research by academicians and researchers at both national and worldwide.

2. Methods

2.1 Research Design

According to Creswell (2014), a mixed approach has various designs such as convergent parallel and explanatory sequential. In this study, the researchers employed a convergent parallel mixed method. In this design, the researchers typically collect both forms of data approximately, simultaneously or concurrently. A mixed-methods approach was adopted in the current study to understand the study phenomenon. Particularly, since studies on online learning have been done quantitatively, and qualitatively we strongly believe that the approach will strengthen each other (Creswell, 2014). The adoption of these methods would help to ensure the generalizability of the data.

2.1.1 Area of Study

The study was conducted in Africa which has both public and private universities that can represent African general.

2.1.2 Targeted Population

The target population of this study comprised of 5 Universities which were purposely chosen as a case study. The sample involved 140 participants whereby 70 were male and 70 were female. These students and lecturers were selected from a variety of departments by simple random sampling.

2.1.3 Instrument of Collecting Data

Data were collected concurrently. Quantitative data and qualitative data at the same time, this means that the researchers went to the field once collected data by using a questionnaire and thereafter, data was collected by using an interview guide

The first methods used in getting data were through interviews. Ten lecturers took part in interviews. Each interview lasted for 25 minutes. Each interview was organized through phone calls to the University that were involved in the study. The researchers asked participants if they were interested to use Zoom during interview sessions. The participants agreed to carry out the interviews by using Zoom and one of the researchers recorded the data that were mentioned by the participants. The aim of the interview was to obtain personal opinions to help the study of online classes in Africa during the COVID-19 pandemic.

The second technique to gather information from the respondents was questionnaire. Since there are 5 universities involve in the study the researchers' sampled 26 students from each university giving a total of 130 participants. The questionnaire was vital in this study because they collect data directly from the respondents. They speed up the process of data analysis as all the participants were asked the same questions. They are less expensive and offer greater anonymity.

2.1.4 Validity and Reliability

Leung (2015) defined validity in qualitative research as appropriateness of the tools, process, and data (p. 325). According to Magigi (2015) validity is the degree to which instrument measures what is supposed to measure, while reliability is a measure of the degree to which result is consistent in giving the same results after repeated trials (Magigi, 2015). In the current study, the researcher checked validity by exposing questionnaires to the experts in the research department while reliability was checked by using Cronbach's Alfa. The result of the testing reliability coefficient was 0.80 and was between the standard reliability coefficient value between 0 and 1, the researcher, therefore, concluded that the questionnaire was reliable for data collection. The research was piloted in an ethical means. Consent was sought from the students and the lecturers who took part in the study and they were assured of privacy regarding their opinions and view. Also, the researchers independently analyzed the data collected from the field to further improve the validity of the analysis

2.1.5 Data Analysis

Yin (2011) defines data analysis as the process of taking notes about action and vivid images from the problem under study. It involves classification or examination of the collected data from questionnaires and interviews to make a conclusion. The data collected from an interview were presented both in qualitative and quantitative methods based on objectives which made it possible to draw an analysis of the results. Generally, Qualitative data were divided into categories and themes while Data from closed-ended items in the questionnaires were analyzed using descriptive statistics and inferential statistics and the variables presented in frequencies, percentages, frequency tables, charts, and inferential statistics. Data were analyzed separately and merged at the end of the study.

3. Results and Discussion

The results and discussion of the research findings were presented based on the objectives of the study as follows.

The effectiveness of online education in African Universities

The findings from university students were negative since the majority of them pointed out that online education in Africa universities are not effective. To evaluate the effectiveness of the online education in African universities, the researchers asked the students to respond to open questions by indicating yes if the answer is correct and no if the statement is incorrect. The responses are presented in Table 1.

Table 1. Evaluation Framework of Online Education in African Universities

Questions for evaluating the effectiveness of online Education	Yes		No	
	Frequency	Per cent	Frequency	Per cent
Is online education effective and is improving the education status and development potential of the students in your college?	10	7.1%	130	92.9%
Do you have sufficient facilities, electricity, network and computers for implementing online education in your area?	30	21.4%	110	78.6%
Is the school policy developed to fit online learning?	24	17.1%	116	82.9%
Do you get any sufficient financial support to help you for data?	60	42.9%	80	57.1%
Have you attended a seminar or workshop to equip you with digital skills? Did you like the trainers and facilitators	40	28.6%	100	71.4%

Source: Field data 2020.

Evaluation of the effectiveness of online education, networks and computers for online education.

Table 1 above the students were asked to respond to the open questions which were designed to evaluate the effectiveness of online education, network connectivity, and availability of computers facilities for distance or online learning. The results findings were obtained that only 7.1 percent of university students agreed that online education in their college is effective and is improving the education status and development potential of the students while 92.9 percent of the university students noted that online learning was not effective and did not improve the education status and development potential of the students. Also, 21.4 percent only agreed to have sufficient facilities and computers for implementing online education in their area but 78.6 percent of respondents were strongly disagreed to have sufficient facilities and computers for implementing online education in your areas. The respondents through interview pointed out that online education was not effective in and not liked by the students. Lectures identified that students learn better in a face to face classroom where they can discuss with their peers. During the interviews, the respondents pointed out that:

“From my experience as a lecturer, online education is not effective in our university because of poor internet connection and online learning is very expensive” (Interview, 20 May 2020).

“Only a few faculty implement online and distance learning also not all of our students poses computers. This has made us teach them in a physical classroom” (interview, 21 May 2020).

In relation to what has been said by the majority of the lecturers, four of the lecturers responded that: “Online education in our college is not effective because it does not even improve the status of our students, therefore, students should be taught in a group to allow interaction and cooperation among them than using distance learning” (Interview, 21 May 2020).

The findings have shown that online education is not effective and does not improve the development potential of learners. This finding concurs to what was found by Makokha and Mutisya (2016) who noted that inadequate computers and internet facilities are the major challenges that weaken the online classes in Africa.

Evaluation of school policy in ensuring online education

During the survey, the students were asked the open question to say yes or no to the question. The question was “Is the school policy developed to fit online learning?” (Table 1). Shows the results of the findings that only 17.1 percent of the students agreed that the school policy in their universities is being effective to support online education while 82.9 percent of the students indicated that the school policy in their universities does not support online education. This was also identified during the interview session when the majority of the interviewees noted that,

“the school policy in our university support face to face interaction, no online education due to the poor internet, the internet is so expensive and we have no computer expertise to support online education” (23 May 2020).

Two of interviewee pointed out that, “although the school policy in our university allow distance learning, our students cannot afford to buy internet and that’s why we even cannot offer online education” (Interview, 23 May 2020).

Six of interviewees noted that “Some of students are living in the areas where there is no electricity and most of them have no smartphones or computers. Hence we cannot accept the school policy that aims to offer distance and online education” (Interview, 23 May 2020).

Therefore the findings from the participants prove that school policy is the problem toward implementing online education in some universities in Africa. This is because some universities have good facilities to allow distance or online learning but the policy does not allow to implement online education. The above findings look similar to William and Mbobola (2018) who lamented that online learning facilities, such as policy and IT infrastructure were not available in most rural schools in Zambia.

Evaluation of financial support for online education

During the survey, the students were asked another question to find out if they have support for ensuring online learning. The question stated “Do you get any sufficient financial support to help you with online education?” Findings in Table 1 indicate that 42.9 percent of the university students who participated in the study noted that they have financial support to help them access to online education. This support includes finance for buying computers, smartphones data and for paying electricity. 57.1 of the respondent expressed the lack of sufficient support to afford the expenses of online education.

The study identified that many university students were not able to afford for online education. This can be noted that many African students are supported by the government through the loans board. The government provide them with only school fees and no more. One of interviewees described that:

“A large percent of our students have no any source of income, their guardians and parents only pay their school fee but they cannot give enough money for other activities like buying laptops, mobile phones and even money for going to watch educational platforms in town” (Interview, 20 May 2020).

“From my experience, our university does not pay us enough and the university offers only internet but no computers, the internet itself sometimes doesn’t work. It’s difficult even to skype or to do emails with the students, that’s why we prefer to teach in a physical classroom” (Interview, 23 May 2020).

Majority of the interviewees expressed that ... “we can teach in the cooperative, face to face classroom which is manageable for every student and lecture because online educations so expensive”.

The result findings show that lack of financial support is the threat in the development of online education or distance education. Annika (2008) proves that fund is the major challenges for e-learning in developing countries. Many universities do not give support to their students and lecturers. Hence the lack of financial support weaken the implementation of online education in African universities.

Evaluation of workshop and seminar training on the implementation of online education

Also, Table 1 indicates that a large number of university students in Africa have not gotten training in the implementation of online education. The findings show that 28.6 percent of students attended workshops and seminar to learn digital skills for online education. 71.4 percent of the respondents did not attend workshops and seminar to learn digital skills for online education. This reveals that online education is not effective in African universities since the learners have not gotten enough knowledge for learning online. The findings were obtained through interview were as following.

“I have attended six workshops related to online learning, I have experience about it but my students have no digital skills” (Interview, 20 May 2020).

Majority of the interviewees said that: “It is difficult to run online education because of that. The university also has not established any conference to help these students gain skills related to online education” (Interview, 20 May 2020).

Five respondents noted that “to teach online is difficult although I know that internet is the best thing for getting materials and learning but it comes difficulty for me when it comes to making a video, a youtube account and even participate in an online conference” (Interview, 23 May 2020). This is in line with the study by Nnaji for and Achukwu (2012) who contented, that many educational institutions have not provided learners with scientific skills that are necessary for coping in the wider community to support in implementing e-learning. The lack of digital skills lead to a disappointment of online learning and contributed to the breakdown of some projects.

Challenges facing online learning during COVID-19 in African universities

The study further sought to establish, Challenges facing online learning during COVID-19 in African universities. Therefore students and lecturers were required to indicate various online challenges encountered during COVID-19 as indicated in Figure 2.

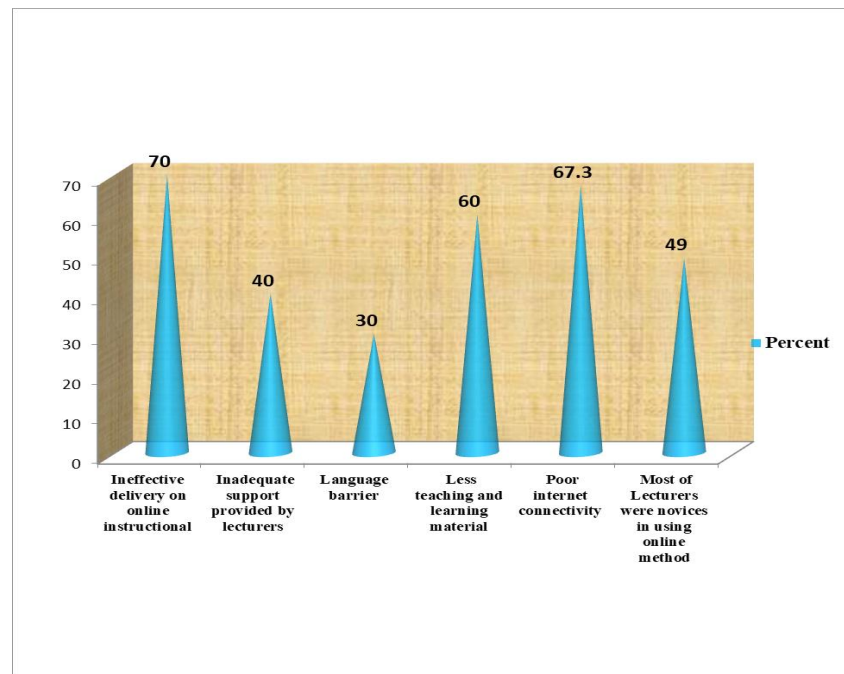


Figure 2. Challenges Face Universities in African Universities during COVID-19

Figure 2 illustrates the findings from students in various universities during COVID-19 pandemic in Africa. The majority of Students in African universities are encountered with many problems in attaining online education. The results shows that 70.0 percent of the participants voiced out that there is ineffective of delivery of online instructions while 67.3 percent asserted that there is poor internet connectivity which hinders the provision of online education and a total of 60 percent of respondents stated that inadequate teaching and learning resources is another obstacle which hinders online learning in African universities. Nevertheless it was revealed that 49.0 percent of lecturers have no skills on provision of online program. A total of 40.0 percent of the respondents cited that there is poor support in provision of online teaching however, 30.0 percent of the participants commended that English language is another challenge causes learners not to grasp online learning.

The research findings in figure two implies that there are many online challenges encountered by higher learners in an academic environment. Moreover it showed that most of lecturers in African countries have been providing teaching and learning procedure in the traditional way that is face to face. Nevertheless, the outbreak of COVID-19 was unanticipated situation hence it forced some of higher learning in Africa and Tanzania to launch live online programs of a total of 55788 postgraduate and 1,999 graduate online courses in order to make sure the usual learning proceeds. This situation was

disruptive change to budge all the existing courses online in a matter of weeks. People were not prepared for; while some have rejection from change. However all changes need a strategic planning or forecasting and preparation for various things such as finance, lesson plan, technology support, unreliable internet access, lack of technology skills to engage in digital learning, teaching and learning material, this situation has seen in most of African countries.

Moreover COVID-19 brought a very high confusion to learners, lecturers and the whole system of education and some universities are still waiting for God's mercy if the situation will be back to normal. Majority of the learners and lecturers were not prepared for the change hence there were some disagreement with the universities learners and university management and some of them were novices for the online teaching, lecturers and even learners had no skills on how to run online programs. Online learning cannot be operated if there is no internet connectivity looking at the real situation of African countries. Internet is one of the main challenges which delays the development of the countries. In the contrary COVID-19 has made the university learners to accommodate the change, since the system of education has somehow changed the way of teaching and learning. Notwithstanding the high confusion brought by the evolution of COVID-19 has caused negative challenges to higher learning in the other hand it brought positive change to African countries such as: Hygiene washing hands always, Economically, employment adaptation of online teaching, tutorials this finding is similar to an interviewee who narrated that:

“The outbreak of COVID-19 has brought positive and negative things to African countries and the world at large. Individual people have been creative for example today some people are making sanitizers, face masks, instead of importing from other countries things are now made within our place hence we are getting money Employment is another thing is that those people who are making Sanitizers, and face masks have been self-employed. Discovery of herbal medicine such as ‘nyungu, Jifukize’ in Tanzania” (interview 20th May, 2020).

The interview implies that COVID-19 has brought challenges to the world including African countries. Most of the countries has been affected economically, political, and socially however these countries has tremendous changed the way of performing various duties such as almost all universities have adapted on line teaching even though there are some challenges on how to run online programs.

Nevertheless universities in Africa such as Dar es Salaam University, Dodoma University, St. Augustine University in Tanzania, Lilongwe in Malawi, Kenyatta University conducted a defense of Master and PhD research dissertations presentation which was done online. The study reveals that challenges of corona virus would not make universities in African countries to restrain from provision of education. Even though there many issues which interrupt the teaching and learning using technological. On the other hand, online teaching is perhaps one of the strongest factor for shaping the educational system today specifically during and after COVID-19 pandemic.

Possible strategies to curb challenges facing online education in higher learning

University learners were passionate to give their responses to the question what possible strategies to curb challenges encountered online education in higher learning institutions during and after corona virus as illustrates in Figure 3.

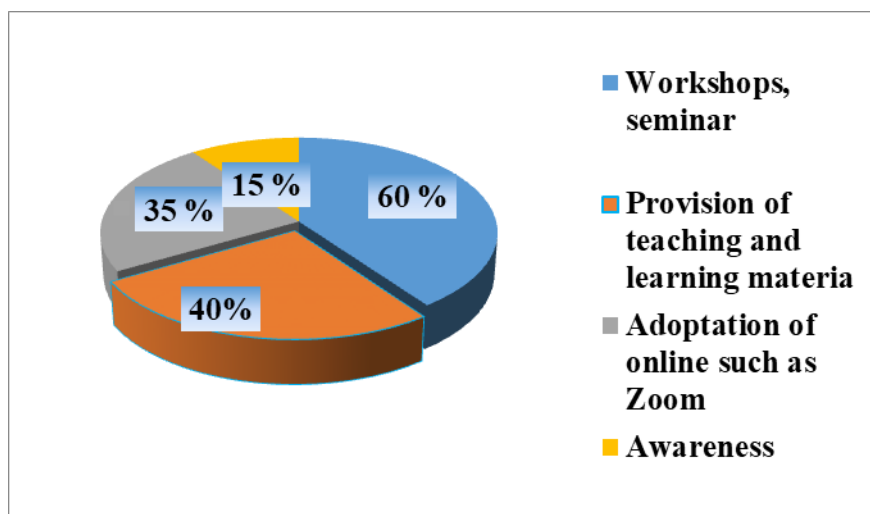


Figure 3. Possible Strategies to Curb Challenges during COVID-19 (n=100)

Responses from university Students

Majority 60 percent of the participants indicated that seminars, workshops should be provided always so as to bring awareness to learners and lecturers; while 40 percent of the respondents pointed out that learning and teaching resources such as computers, tablets internet connectivity, a total of 50 percent of participants asserted that the provision of original programs such as Zoom, Noodle tools, Google classroom, WhatsApp, and others from the industry should be made available. This finding indicates that there is no growth as far as online program development if awareness, funds, provision of teaching and learning material, seminars, workshops and further studies would not be available.

Globally, COVID-19 lockdown has had its challenges for economic, political, social, specifically to university learning. For instance in the issue of Tanzanian, Rwandan, Ugandan, and South African students, in all level of education stayed home almost three months although in the middle of May online learning for students who supposed to sit for exams was delivered through Television, Radios, Noodle Tools and zoom all this was to consolidate the knowledge acquired before the closure of schools. However these methods of teaching were not effective to the students in remote area. For instance in June first the president of United Republic of Tanzania Dr. John Pombe Magufuli pronounced that all higher learning universities in Tanzania should be reopened and students working and non-working staff need to abide to the recommendations from WHO such as change in human behavior, global Health and others is required to end the ongoing pandemic to live in post COVID-19 Now all schools were reopened the health people were highly monitoring, learners and lecturers had to

abide distancing themselves, during the presses of teaching and learning.

Most of the universities in Africa need to increase speed of technology level in the classroom by providing hardware such as tablets and computers, so as to enhance internet connectivity, and implementing programs considered to perk up computer literacy for both lecturers and learners. For lecturers to achieve effective use of online teaching, they must experience a paradigm shift from the lecturer centered classroom to the student-centered classroom, in same vain (Kalpana, 2014) commended that in the constructivist class, Learners would be creative and the process of teaching and learning is decentralized. This finding is in agreement with one of the interviewee who claimed that:

“Online teaching is very crucial today we have to adapt it whether we like it or not and this learning connects students with the world the learners are directly interacting with the world, they become globalized students and the whole process of learning should be centered” (Interviewee 23 May 2020).

This implies that education is not an inland or for an individual but it is human right it needs to be provided all the time and to all who want it. Hence learners should be given chance to acquire education even during and after COVID-19. This also meant that African countries need to adopt online program so as to enhance learning to their people. On top of this after corona virus African countries should continue to use both techniques of teaching that is Traditional way or face to face method of teaching and online teaching. This paradigm shift would improve learning in all levels of education in African countries.

4. Conclusion

The focus of the study was to investigate the effectiveness of online education in Higher learning Institutions in Africa during COVID-19 pandemic. The study focused on students' experiences on online education and the tool used to implementing online education in five African universities. The findings revealed that the learners had positive attitude towards online education however, the majority of students and lecturers noted that online education is not effective in African universities and is not liked by the majority of students and lecturers because of the inadequate of computers, lack of fund, insufficient facilities, shortage of electricity, poor network, inadequate skills and the policies were not supportive enough to implement online education in African universities.

5. Recommendations

The study strongly made the following recommendations with the aim of providing measures for reshaping education in Africa during COVID-19 pandemic in Higher learning Institutions in Africa. The administrators should adopt policies and practice that are effective to both students and lecturers to enhance interactive learning.

The governments should obtain funds for resources via non-traditional sources (e.g., crowd funding, grants); exploit the expertise of master teachers in professional learning communities; request training on newly adopted educational software directly from software companies; and ensure that adequate technical, administrative, and peer support is available to teachers during the implementation of online program.

Online technology should be adapted by all schools starting from primary level to higher learning.

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