

# The Role Of Mobile Phones As A Mode Of E-Learning Platforms Among The High School Students In Nakuru County At The Wake Of Covid-19 Pandemic In Kenya

James Kuria Kimani

Egerton University, Kenya

*Abstract: The e-learning mode of study in Kenya cannot be ignored especially after the Covid-19 pandemic. The main objective of this study was to establish the role of mobile phones in learning among the high school students at the wake of covid-19 pandemic. The study used qualitative design and was carried out in Nakuru County in Kenya, between May and September 2020. A total of 100 respondents were drawn from both the interior villages and the suburbs of Nakuru town. The respondents, who included form 1, 2, 3, and 4 students were randomly sampled to select the 100 interviewed. Questionnaire was used as the main tool for data collection with a total of 13 questions. Each question had choice answers to select via checkboxes with the first section gathering biographical data to determine the age, gender and education level of the respondents. Uses and Gratification Theory (UGT) was used as it adapts a functionalistic approach to communications and media, and states that media's most important role is to fulfill the needs and motivations of the audience. The findings showed that most, 69%, of students have personal mobile phones as compared to 31% of those who didn't have and that majority, 36%, of learners used WhatsApp and internet browsing applications respectively while 7% used SMS, 5% Facebook, 2% voice calls, 9% video conferencing and 5% used other applications. However, the use of SMS application as a mode of study motivated 41% only while the rest, 59%, preferred the use of other applications. Apart from learning, most, 48%, of students used phones to chat while 39% played games. 13% of those interviewed used phones in other ways. The study also identified that minority, 48%, of learners downloaded materials for learning while 52% didn't. Those who didn't download 18%, was due to small phone capacity, 13% due to lack of skills to download, 17% were not interested while the majority 52% had other reasons for not downloading the learning materials. Interestingly, most, 69%, of the students didn't use mobile phones before the outbreak of COVID-19 disease in Kenya as opposed to those 31% who used. However, majority of learners experienced poor internet connectivity. Only 35% had strong internet connectivity while 48% had fairly strong connectivity and 17% had a weak connectivity thus hampering their learning. In addition, 67% of learners knew the capacity of the mobile phone they used as opposed to 33% who didn't know. Finally, a few 13% didn't know the type/make of their mobile phones as opposed to 87% who knew. This study recommends the use of mobile phones by students and teachers in secondary schools as a mode of learning and teaching. The government of Kenya is also recommended to introduce Information Communication and Technology as a subject in the education curriculum to help equip learners with technical skills on how to use mobile gadgets in learning wherever they are. Finally, the internet service providers are also recommended to improve their connectivity across the country to enhance learners and other users' to serve without challenges.*

*Keywords: E-learning platforms, mobile phones, Covid-19, secondary schools.*

## I. INTRODUCTION

E-learning refers to learning facilitated and supported through the use of Information and Communications Technology (Jenkins and Hanson, 2003).

According to a UNESCO, 2006 report, E-learning has started to emerge in many developing countries where it is likely to have a huge potential for governments in helping to meet an increasing demand for education and address the growing decline of trained teachers.

As a result, the research study tries to unearth the role played by mobile phones as one of the modes of e-learning platforms used by high school students at this time the students are at home. The schools closure followed the outbreak of the deadly Covid-19 disease in Kenya. Consequently, the high school students have adopted various available methods of e-learning platforms as they await schools to reopen and learning return to normalcy.

## II. BACKGROUND OF STUDY

E-Learning is an ideal learning environment using modern means of information technology, through the effective integration of information technology and the curriculum to achieve a new learning style which can fully reflect the main role of the students to thoroughly reform the traditional teaching structure and the essence of education, to train large numbers of high quality personnel (Ma et al., 2008, p. 54).

According to Nsison, A., (2015), mobile phones supposedly impact educational outcomes by improving access to education while maintaining the quality of education delivered. In theory, mobile Learning increases access for those who are mobile or cannot physically attend learning institutions. It also makes education more accessible in that it enables learners to pursue their studies according to their own capacities in terms of chance (time), cost, mobility and so on.

The COVID-19 pandemic has caused the largest disruption of education in history, having already had a near universal impact on learners and teachers around the world, from pre-primary to secondary schools, technical and vocational education and training (TVET) institutions, universities, adult learning, and skills development establishments. By mid-April 2020, 94 per cent of learners worldwide were affected by the pandemic, representing 1.58 billion children and youth, from pre-primary to higher education, in 200 countries, United Nations, (2020).

United Nations, (2020), identifies that this crisis has stimulated innovation within the education sector ranging from radio and television to take-home packages.

### PROBLEM STATEMENT

Following the outbreak of COVID-19 disease in Kenya in mid-march 2020, the government of Kenya suspended teaching in all learning institutions. This was among the raft of measures undertaken to curb the spread of the disease among the learners.

As a result, numerous modes of virtual learning has emerged to help students keep focus of their studies. However, the students in question could prefer one mode of e-learning over the other due to their simplicity and efficacy. It is on the basis of this hypothesis this study is rooted to identify the role of mobile phones as a method of e-learning platforms preferred by students.

## PURPOSE OF THE STUDY

The purpose of the study is to identify the role played by mobile phones as a mode of study among the students. This would be of significant help to learners who are still at home after the government of Kenya banned the normal contact teaching following the outbreak of the Covid-19 pandemic. The research study would also be an eye opener in post Covid-19 pandemic to students on how to handle their studies in the absence of their teachers. It should be noted that students spend a lot of time at home during holidays and such an e-learning platform can assist them conduct private studies.

## RESEARCH OBJECTIVES

To examine the role played by mobile phones in learning.  
To identify the challenges involved in the use of mobile phones.

## SCOPE AND LIMITATION

The study encompasses the high school students in Nakuru County. Due to time and financial constraints of the researchers, the study is limited to mobile phones use by high school students residing within the Nakuru County.

## III. LITERATURE REVIEW

### ROLE PLAYED BY MOBILE PHONES IN LEARNING

E-learning is becoming more and more popular with learners as they can combine their learning experience together with the advancement of information technology (Hart, 1996; Lin, 2006). For instance, UNESCO (2012) discovered that the spread of using mobile phones globally and in Africa, Middle East, and World-wide has reinforced and supported teaching and learning.

According to Cui & Wang (2008), there are various applications that can be used in teaching and learning. Mobile phone applications can be used for educational practices such as SMS, GPS, camera, browsing, downloading, Bluetooth, Wi-Fi, voice calls, and gaming. SMS messages are helpful for students to learn foreign languages; they are also important for instructors to connect and communicate with their pupils.

The SMS role has also been observed by Prenskey (2004). He points out that SMS messages provide fertile learning opportunities since they can elicit the points of view of students, and can make pupils more aware of the event that happens in the class. Cheung (2008) has found that SMS totally motivates interactive class experiments.

The e-learning mode of study provides the learner more autonomy to proceed at their own pace, while their progress is monitored to assess their achievement (Rhode, 2009; Spector et al., 2008). Huang et al. (2010) points out that mobile learning applications help students study contents in a convenient way. Also, they help the students to interact with each other at any time and place.

According to Ferry (2008), mobile phones help students to access and adjust web based contents, and they make

students cooperate with others. Cui and Wang (2008), observes that mobile phones may be used to store and call data such as e-books which make teaching and learning more convenient and successful.

Khaddage (2012) discovers that using mobile phone applications help students to concentrate on their weaknesses, reduce their misconceptions, and reinforce learning.

Ferry (2008) and Cui et al. (2008) identifies some browsers that students can use to check e-mails, read books, and watch lectures at any time and place. Students and instructors can also use the browsers to download some materials via their mobile phones. Additionally, students and instructors can share and store information resources via Wi-Fi, Bluetooth, or Infrared.

#### CHALLENGES INVOLVED IN THE USE OF MOBILE PHONES

While the value of e-learning lies in its ability to train anyone, anytime, anywhere, implementing and sustaining e-learning programmes require more than merely moving education and learning online (Harris, 2002).

The fundamental obstacle to the growth of e-learning is lack of access to the necessary technology infrastructure, for without it there can be no e-learning (Naidu, 2003). According to Chaula et al. (2006), the unsuccessful adoption of e-learning in developing countries is based on solutions imported from the developed countries whose cultures differ significantly from the developing world. However, Nyerere et al. (2012) observe that the integration of ICT in education in Kenya is more recent and on a smaller scale. This is due to resource and infrastructural constraints.

Woodhill (2004), affirms that many industry experts attribute the shortcomings of e-learning to technological issues. His findings are bolstered by Jacobsen (2005), who observes the technological infrastructure as fundamental to the integration of the e-learning environment. For teachers and students alike, the ability to gain reliable access to computers and the e-learning environment is a key issue (Gebhart, 2005; Salmon, 2004). However, Butson (2003) stresses that technology is limited in helping learners to understand how to think.

Romisowski (2004) views e-learning as presenting an entirely new learning environment for students, thus requiring a different skill set to be successful. Blinco et al. (2004) affirms that e-learning's success rests on the fundamental requirement that instructors and students possess adequate technical skills to use e-learning tools effectively. Salmon (2004), ratifies that focusing training on the technological features of the e-learning system is only the first step to success; the real challenge is training for changes to pedagogy.

However, Ssekakubo et al. (2011) point out that many learners in developing countries are not exposed to many ICT Solutions. The absence or inadequacy of infrastructure is a barrier to access among students in developing countries. According to Global Internet Usage (2013), the Internet penetration rate in the developing world is 31% compared to developed world which is 77%. Internet penetration rate in Africa is merely 16%.

According to Cui et al. (2008), mobile phones did not have suitable sizes, so they hindered both instructors and students. The mobile batteries were also limited, so users cannot use them for a long time. Rana (2014) and Mtega et al. (2012) adds that few instructors and students did not know the capacity of their own mobile phones and the applications in their smart mobile phones. As a result, they only used SMS messages and calls. Shocking enough also, some did not know the type of their mobile phones. However, mobile phones had limited storage which prevented students and instructors from downloading and installing materials. The font size of the text was small, so the users faced difficulty in reading the text via mobile phones.

While computerization continues to advance in developed countries, Kenya still experience a lag in its implementation, and that continues to widen the digital and knowledge divides (Ford, 2007).

#### IV. THEORITICAL FRAMEWORK

Uses and Gratification Theory (UGT) is rooted in traditional mass communication research on how a specific media is sought and selected in order to provide their needs (Katz, Blumler, and Gurevitch, 1974 in Chiang, 2013).

The studies of Blumber and Kats (1974) are considered as an evolution in mass communication research and they can be named as the founders of the UGT. Based on their theory, people seek communication to satisfy their needs, which in turn stem from social and psychological states and conditions. In other words, their needs affect their communicative behavior (Rubin and Rubin, 1992 in Seekhiew, 2009).

"Uses and Gratification Theory" or "need seeking" is one of the theories of communications that focuses on social communications. This theory adapts a functionalistic approach to communications and media, and states that media's most important role is to fulfill the needs and motivations of the audience. Therefore, the more these needs are met, the more satisfaction is yielded (Windahl, Signitzer, and Olson, 2008).

This theory initially focuses on the motifs of the audience (Ruggiero, 2000 in Seekhiew,

2009) and then analyzes the message and social system (Sarkisian, Nikoo, Saeedian, 1997). In other words, this theory concentrates on how users seek media and to what extent they are

satisfied with its type, content, and method of use (Amiri, Noori, Basatian, 2012).

At best, receiving messages should be gratifying. The uses and gratification theory often focuses on gratifications that result from use and do not consider use as a goal. Researchers have stated two different types of gratification; "content gratification" and "process gratification". In content gratification receiving certain messages is more important, while in process gratification, participating in the "use process" is of much higher value (Windahl et al., 2008).

RESEARCH METHODOLOGY

The study used qualitative design to analyze the use of phones as a mode of e-learning platforms among the high school students. According to Kothari (2004), a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It therefore has a great bearing on the reliability of the results arrived at and as such constitutes the firm foundation of the entire edifice of the research work.

The study was carried out in Nakuru County in Kenya, between May and September 2020. A total of 100 respondents were drawn from both the interior villages and the suburbs of Nakuru town. The respondents, who included form 1, 2, 3, and 4 students were randomly sampled to select the 100 interviewed.

The study used questionnaire as the main tool for data collection with a total of 20 questions. Each question had choice answers to select via checkboxes with the first section gathering biographical data to determine the age, gender and education level of the respondents.

V. DATA PRESENTATION AND ANALYSIS

The age of learners interviewed ranged from below 15 years to above 18 years. Majority, 80%, of the students fall under the category of 16-18 years followed by 12% in the category of above 18 years while those below 15 years were only 8%.

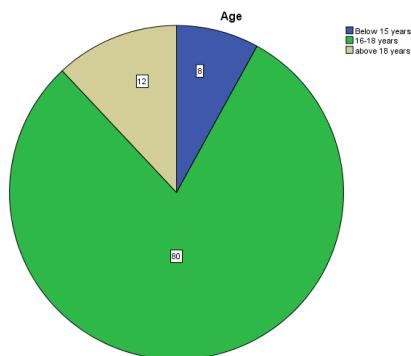


Figure 1: Age of learners

Most, 54%, of the students interviewed were male, while 46% were female as indicated in figure 2 below.

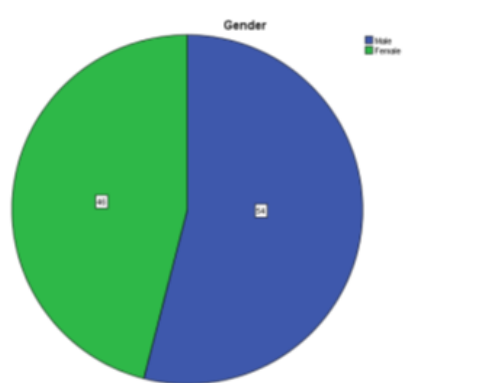


Figure 2: Gender of the interviewees

Majority, 33%, of the interviewees were form two students, followed by form three at 27%, form one at 22% and form four at 18% as indicated in figure 3 below.

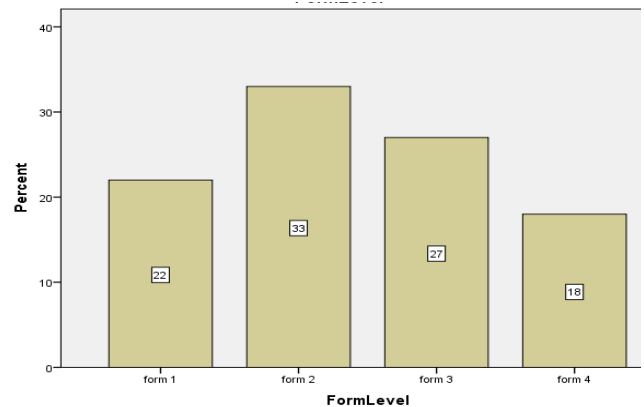


Figure 3: Educational level

Most, 69%, of students have personal mobile phones as compared to 31% of those who didn't own a mobile phone as indicated in figure 4 below. This rhymes with UNESCO (2012) study that the spread of using mobile phones globally and in Africa, Middle East, and World-wide has reinforced and supported teaching and learning.

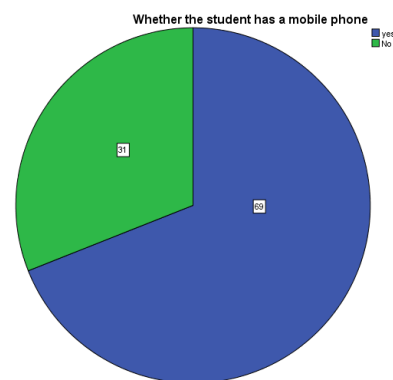


Figure 4: Students with mobile phones

Majority, 36%, of learners used WhatsApp and internet browsing applications respectively while 7% used SMS, 5% Facebook, 2% voice calls, 9% video conferencing and 5% used other applications as indicated in figure 5. The finding is in line with Cui & Wang (2008), that mobile applications like SMS, browsing, downloading, Bluetooth, Wi-Fi, voice calls, and gaming can be used in teaching and learning.

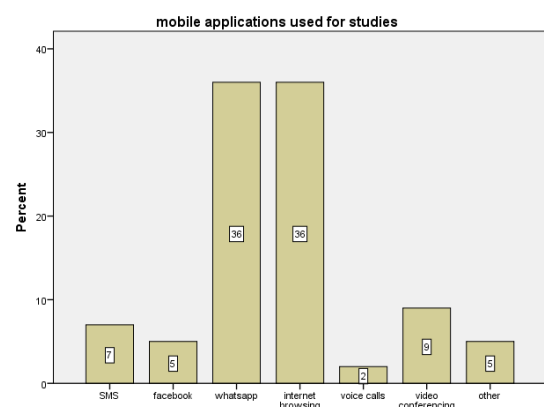


Figure 5: Mobile application used for studies

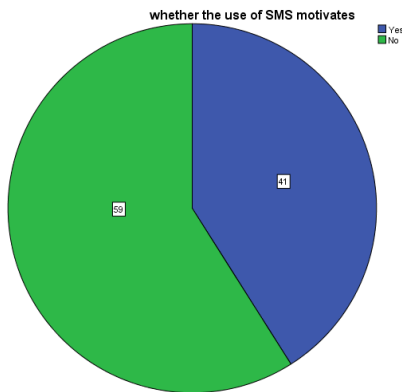


Figure 6: Motivation by use of SMS

However, the use of SMS application as a mode of study motivated 41% only. The rest, 59%, preferred the use of other applications as indicated in figure 6. The finding is opposed to Prensky (2004) that SMS messages provide fertile learning opportunities since they can elicit the points of view of students, and can make pupils more aware of the event that happens in the class. This research finding is also opposed to Cheung (2008) that SMS totally motivates interactive class experiments.

Apart from learning, students also used their phones to play games and chat with their friends. Most, 48%, used phones to chat while 39% played games. 13% of those interviewed used phones in other different ways as shown in figure 7 below. The finding is in tandem with Huang et al. (2010) that mobile learning applications help the students to interact with each other at any time and place. The findings also agrees with Ferry (2008), that mobile phones help students to access and adjust web based contents, and they make students cooperate with others.

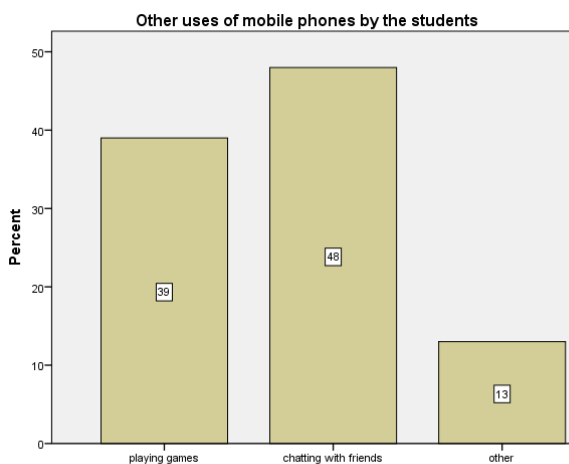


Figure 7: Other uses of mobile phones

Minority, 48%, of learners downloaded materials for learning while 52% didn't as indicated in figure 8 below.

Those who didn't download 18% suggested was due to small phone capacity, 13% due to lack of skills to download, 17% were not interested while the majority 52% had other reasons of not downloading the learning materials as indicated in figure 9 below.

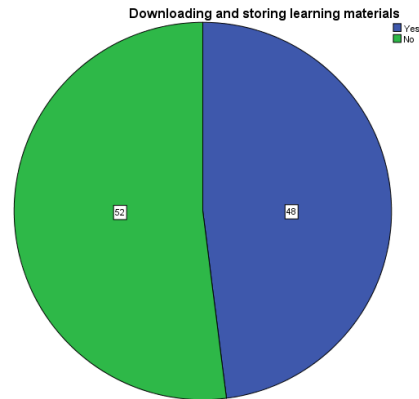


Figure 8: Downloading and storing learning materials

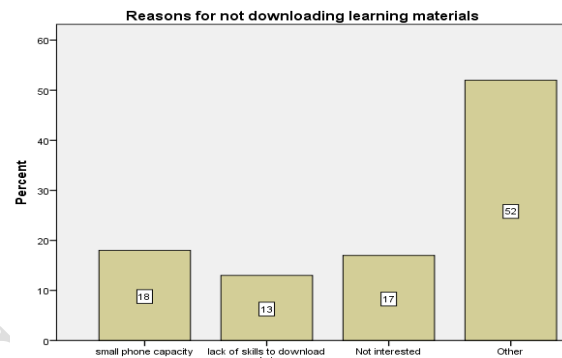


Figure 9: Reasons for not downloading learning materials

The findings above aligns with Ferry (2008) that students and instructors can also use the browsers to download some materials via their mobile phones. The study also agrees with Cui et al. (2008), that mobile phones did not have suitable sizes and thus hindered both instructors and students. The mobile batteries were also limited, so users cannot use them for a long time.

Most, 69%, of the students didn't use mobile phones before the outbreak of COVID-19 disease in Kenya as opposed to those 31% who used.

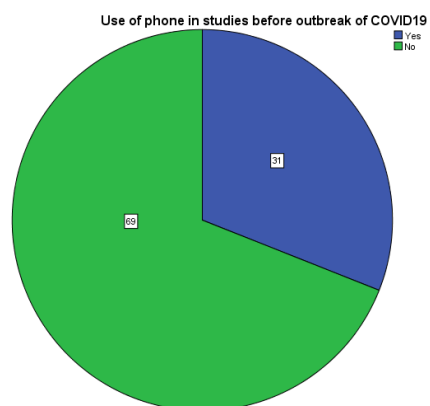


Figure 10: Use of phone in learning before COVID-19

Most learners experienced poor internet connectivity. Only 35% had strong internet connectivity. The rest 48% had fairly strong connectivity while 17% had a weak connectivity.

The finding concurs with Global Internet Usage (2013), that the Internet penetration rate in the developing world is 31% compared to developed world which is 77%. Internet penetration rate in Africa is merely 16%.

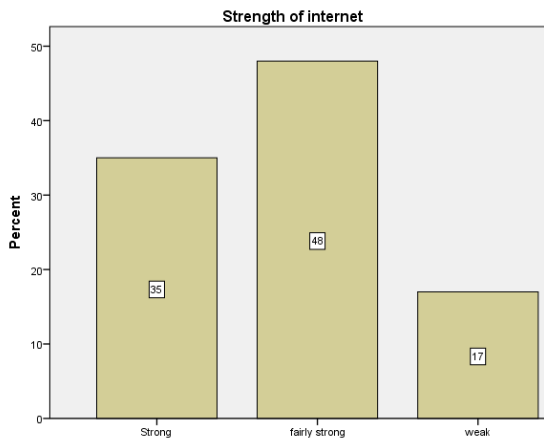


Figure 11: Strength of internet connectivity

Majority, 67%, knew the capacity of the mobile phone they used as opposed to 33% who didn't know as shown in figure 12 below. The finding agrees with Rana (2014) and Mtega et al. (2012) that few instructors and students did not know the capacity of their own mobile phones and the applications in their smart mobile phones. As a result, they only used SMS messages and calls.

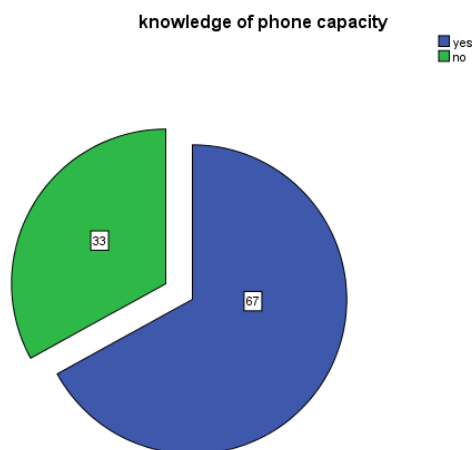


Figure 12: Knowledge of phone capacity

Additionally, a few 13% didn't know the type/make of their mobile phones as opposed to 87% who knew as shown in figure 13 below. This is in line again with Rana (2014) and Mtega et al. (2012) that some students and teachers did not know the type of their mobile phones.

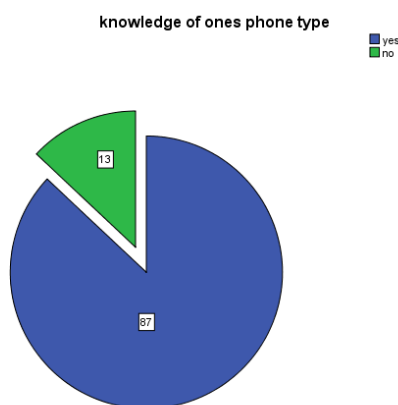


Figure 13: Knowledge of one's phone type

## VI. CONCLUSION AND RECOMMENDATION

The importance use of mobile phones as a mode of e-learning platform among the secondary school students cannot be ignored. The innovative use of mobile phones in learning has been exacerbated by the outbreak of covid 19 pandemic in the country.

However, the government of Kenya should introduce Information Communication and Technology as a course in the education curriculum. This would equip learners with technical skills on how to use e-learning platforms wherever they are. Finally, internet service providers should also improve their connectivity across the country to enhance learners and other users serve without challenges.

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