

The Use of Technology for Learning during the Covid-19 Pandemic Season: A Case of Rural Schools in Kenya

Dr. Judy Makira
University of Embu
Centre for Women Empowerment in Technology

Eunice Owino
Co-founder
Centre for Women Empowerment in Technology

Abstract:- This study sought to investigate the use of technology for learning during the COVID-19 pandemic. Descriptive survey research design was employed in the study. Participants were primary school children and parents from the rural areas of Muranga, Homabay and Migori. Findings revealed that the radio was the most commonly used technological device followed by the television. Challenges faced by learners included lack of time to study, electricity failure, radio and television usage conflict and lack of internet connectivity. Further, findings showed that despite Kenyan government measures to beef up technology related learning during the COVID Break, little was going on in the ground in the rural areas. The study recommend more sensitization, improvement of reliable electricity as well as creation of simple apps to make learners in the rural areas access educational materials easily.

Keywords:- Technology, COVID-19 Break.

I. INTRODUCTION

COVID 19 global pandemic has swept across the globe in the recent months. Education has been hit particularly hard by the pandemic. 1.723 billion learners worldwide have been affected. According to UNESCO monitoring report [12] 191 countries have implemented nationwide closures and 5 have implanted local closures, impacting about 98.4 percent of the world's student population. In Kenya, the situation is no different. On 15th March, 2020, the Kenyan government abruptly closed schools and colleges nationwide in response to COVID-19, disrupting nearly 17 million learners. To mitigate the impact of school closures, institutions are trying to come up with innovative and multi-modal approaches to deliver learning in a new environment. The whole world is adjusting to a new reality. COVID 19 has brought home the reality that education technology that delivers content and engages students and teachers has never been more important. Large scale national efforts to utilize technology in support of learning during the COVID-19 are emerging and evolving quickly.

Prior to the pandemic, the Kenyan government had made great steps in ensuring that technology is integrated into the education system. With the Ministry of Education continuously providing technological equipment, content and

teachers' training [6]. Since schools closed in Kenya, the Ministry of Education and other agencies have indicated that learners should undertake learning through technology. The Ministry of Education has launched a COVID-19 National Education Response Committee, tasked with exploring the possible strategies of sustaining teaching and learning in the education sector. The plan is to strengthen teaching and learning to the over 15 million learners in Kenya under the basic education in primary and secondary schools during the COVID-19 pandemic. Despite these initiatives, there have been concerns about the accessibility of these educational opportunities to children in the rural areas of Kenya, most of which are faced with challenges of infrastructure and technology accessibility. Against this background, this study sort to investigate how technology was being used for learning in the rural areas of Kenya during the CIVID pandemic break.

II. OBJECTIVES

This study investigated the use of technology for learning during the COVID-19 pandemic. The specific objectives were to:

1. Examine the technological devices used by the learners during the COVID pandemic season and the learners feelings towards technology in learning
2. Investigate the challenges of using the technological devices during the COVID pandemic season
3. Analyze the implementation of the elearning policy by the ministry during the COVID pandemic season

III. METHOD

The study adopted a descriptive survey in order to investigate how technology was being used for learning during the COVID 19 break. The design was suitable for capturing varied opinions and views and allowing the generalization of findings to all the rural schools in Kenya. [4].

IV. PARTICIPANTS

Participants for this study were primary school children and parents from the rural areas of Muranga, Homabay and Migori Counties. The sample consisted of 90, class seven and eight pupils and 20 parents from rural public primary schools.

V. REVIEW OF RELATED LITERATURE

Literature related to this study was thematically reviewed. The themes were: Technology assisted learning, technology adoption in the rural schools in Kenya and the COVID-19 pandemic situation

A) *Technology assisted learning in Kenya*

With the suspension of face to face teaching, technology aided learning is rapidly becoming the norm. Many countries are racing to utilize technology in support of remote learning, distance education and online learning during the COVID-19 pandemic period. Kenya is not left behind; in 2016 the Government of Kenya rolled out the Digital Literacy Programme (DLP) whose vision is to make sure every pupil in Kenya is prepared for today's digital world, and to transform learning in Kenya into a 21st Century education system. The programme led by the Ministry of Information, Communication and Technology and is executed through a multi stakeholder programme introduced the pupils of lower primary to digital literacy. It is worth noting that the implementation on the ground is slowly penetrating, some schools have never received the standard one laptop nor their teachers trained. Reference[1] expound that "The digital learning (DL) Skills are being implemented at various levels in the schools ranging from needing support – developing - exemplary. Most schools have not yet reached the level of proficient or exemplary"

In this pandemic time, The Ministry of Education has launched a COVID-19 National Education Response Committee, tasked with exploring the possible strategies of sustaining teaching and learning in the education sector. The plan is to strengthen teaching and learning to the over 15 million learners in Kenya under the basic education in primary and secondary schools during the COVID-19 pandemic. The Ministry of Education has enhanced several platforms to deliver educational programs: Radio, television and internet have been tapped to bridge the gap. Several media houses air education programs like Kenya Television Network (KTN), Edu Channel TV, Kenya Broadcasting Corporation (KBC), Citizen TV. This has been enhanced by Kenya Institute for Curriculum Development (KICD) which prepares the curriculum and schedules for these remote learning. KICD likewise hosts digital learning resources from Kenya Education Cloud thus learners can access such resources online.

On the other hand Telkom Kenya has been working on enhancing internet connectivity in the rural areas. In the recent past Telkom Kenya has activated its rural 4G mobile service using balloons from Google's sister company Loon. The Internet-enabled balloon covers a large area—roughly 30 times greater than a ground-based system thus Loon can provide service to traditionally hard-to-reach or underserved regions. Loon's balloons work by beaming Internet connectivity from ground stations to a balloon 20 kilometers overhead. The signal is then sent across multiple balloons, creating a network of floating cell sites that deliver connectivity directly to a user's phone handset, router, or

dongle. More so, the balloons carry two radio transceivers – one which transmits internet connectivity to a user's phone, acting essentially as a cell phone tower, and another, connecting the balloons together and to internet infrastructure on the ground from which it picks up the connection to serve to users. All these are new and are yet to enhance learning using technology in the rural remote areas of Kenya.

In addition, according to [2], there are other forms of mobile learning popularly known as M-Learning that are used in the cities and major towns of Kenya. The popular mobile phone provider; Safaricom has partnered with several companies like Eneza Education which has 'Shupavu291' platform for learning with education content. Longhorn Publishers and Viusasa is also supporting primary and secondary school learners with free access to educational e-content. Their content is in both Swahili and English through the Safaricom network. All these are some of the digitally aided programs Kenya is exploring during this COVID-19 period.

B) *Technology adoption in the rural schools in Kenya*

Since the first case of COVID-19 in Kenya; the government gave measures to curb the spread of the virus, one of them was the closure of schools. Ministry of Education in Kenya has announced that learners will remain at home until January 2021. Since the closure of school in March 2020 the ministry has strengthened learning through technologies such as radio, television and internet. According to [9], learning in remote rural areas is proving to be a challenge. There is lack of well-defined infrastructure systems such as electricity, lack of internet connectivity, lack of technological devices search computers, smartphones, televisions and lack of reasonable and relevant devices to facilitate the learning process.

For students, attitude change is still needed; some from nomadic communities are notable to be moving from one place to another in search of green pasture and water for animals. While those in rich fertile lands attend to the farm until late hours and attending to household chores including taking care of family members. The rural children whose parents have low literacy level have very minimal supervision from them. The parents are unable to reinforce their children's learning. More so, the popular mode of learning in the rural areas is projected to be Radios, but the radios cannot replace classroom learning as it is intended to supplement knowledge acquisition for learners.

Reference [7] says that the children in emergency areas face unique challenges. Most girls are likely to be used to cushion family's income which exposes them to sexual exploitation and gender based violence leading to teenage pregnancies, sexual transmitted diseases among others. Likewise the children are also involved in child-labour for earning. While nearly all the learners have been affected by the closure of schools due to COVID-19, the rural children have exacerbated already existing inequalities coming with a host of unintended consequences. All this means that Kenya will not be able to meet Sustainable Development Goal 4,

which commits all nations to ensure that, among other ambitious targets, “all girls and boys complete free, equitable and quality primary and secondary education.” Thus very critical drastic e-learning measures needs to be put in place to respond to the needs of the children in the remote rural areas of Kenya.

C) The COVID-19 pandemic situation

The COVID-19 pandemic is the greatest global health challenge in the recent past. Since its emergence in Wuhan China in December 2019, COVID-19 has spread to nearly every continent, with over 10 million infections globally and over half million deaths to date. The virus has literally shut down the world, lockdowns, secession of movement, social distancing, hand washing, suspension of local and international travels, closure of schools are now the new normal. The cause of coronavirus has been identified as a novel coronavirus (2019-nCoV), or in short COVID-19. World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern (PHEI) and on 11th March 2020 WHO declared COVID-19 a pandemic. The pandemic has created devastating socio-economic and political crises in virtually all the sectors, education is not left behind.

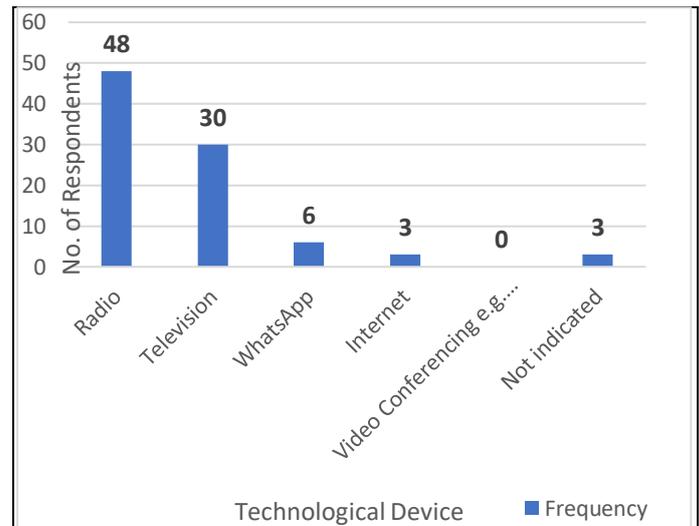
In the recent webinar series carried out by UNESCO, it was noted that 7 percent of countries surveyed have already reopened their schools and many others (close to 90%) are planning to do so as soon as situations permit. In Kenya the pandemic has magnified the unpreparedness in the education sector. The Cabinet Secretary for Education recently issued a statement on the new school dates, declaring the 2020 school calendar to be null and void due to COVID-19 thus the estimated resumption of learning will be in January 2021.

The above give great lessons learnt during the COVID-19 crisis on the education sector in Kenya. The Ministry of Education through its emergence response team came up with short, mid and long term plans. But emphasis should be place to those learners in the transition points as they have higher risk of dropping out, this will minimize learning gaps and inequality within the education system

VI. FINDINGS

The first objective was to examine the technological devices used by the learners during the COVID 19 pandemic period. The participants were required to tick the technological device that they used most for learning. The findings are presented in table 1.1:

Table 1.1: Technological devices used for learning during the COVID Pandemic break



The radio was the most mentioned devices, followed by the television. No one mentioned zoom while 3 participants did not tick any device.

In an open-ended question, the participants were further asked if they owned phones and how they were using them to access learning opportunities. A good number answered in the affirmative and explained that they used the phone to access the radio, to ask their fellow pupils questions and to access WhatsApp. No participant said that they were accessing the internet through the phone.

The participants were asked how they felt about the technology that they had been using. Those who had mentioned the radio expressed that the radio was available in their homes. They did not need electricity since most used batteries. They added that there were radio programmed radio lessons that they could easily listen to and all these helped them continue with their learning even during the corona break. Further, they said that the radio had helped them improve on their listening skills. Those who mentioned the television explained that with the television, they could listen and watch at the same time and this made the lessons interesting. They added that they relied mainly on television educational programmes organized by local media houses. It also came out that the learners appreciated the radios and televisions since there were others who could not afford a TV or even radio. Those who mentioned whatsapp said that they were exchanging notes and revision materials using whatsapp groups that they had formed with other learners from neighboring schools. The respondents who had not indicated any technological device said that they were entirely using books for their private studies during the COVID Pandemic break since they had no access to any other technological device.

The second objective of this study was to investigate the challenges of using the technological devices during the COVID pandemic season. Each participant was required to write down only one major challenge. The findings are captured on table 1.2

Table 1.2 Challenges of using technological devices

Challenge	Frequency	Percentage
Lack of reliable electricity	34	37.8
Lack of ample time	21	23.3
Family conflict in technology usage	17	18.9
Lack of opportunities to ask questions	10	11.1
Internet challenges	5	5.6
Inappropriate content on whatsapp	3	3.3
Total	90	100

In their explanations of these challenges, the respondents said that due to lack of electricity, they were using solar panels in their homes which could not re-charge during the non-sunny days. Others explained that electricity blackouts were common, disrupting the programmes that were aired on fixed times. The ones who cited family conflict explained that at times, the parents wanted to watch news when the educational programmes were going on. Another percentage cited time-related challenges, explaining that some radio and television programmes were aired during the day when they were expected to be helping in working in the farms. Findings also revealed that the learners had no opportunities to ask questions during the radio and television programmes, as cited, thus:

When watching an educational programme on television or listening on the radio, I cannot ask a question if something is not clear the way we normally do during our classroom lessons

In an interview, the parents were asked about the kind of learning that was going on during the COVID break. Findings revealed that there was basically no learning going on. One parent explained, thus:

Our children are not learning at all. They help with household chores and tend to animals and farming. The girls mostly do household chores like: fetching water from the river which is a distance, looking for firewood, going to the market and cooking. The children also help to cushion family in terms of family needs like selling produce in the market

Further, they also noted that the male children have also gone ahead to fend for themselves with manual jobs offered in the village like helping others in weeding for pay, going fishing for sale, burning charcoal and other jobs like in building sites

Some of the male adolescence children have migrated to the lake to work as “joboya” fishermen and send some money home weekly for subsistence to the old guardians they are staying with, majority being orphans. It also came out from the parents’ interview that due to frustrations and hopelessness, the female learners had already entered into early marriages and a good number were already pregnant.

The other objective of this study was to analyze the implementation of the eLearning policy by the ministry during the COVID pandemic season. COVID 19 global pandemic has swept across the globe in the recent months. Education has been hit particularly hard by the pandemic. On 15th March, 2020, the Kenyan government abruptly closed schools and colleges nationwide in response to COVID-19, disrupting nearly 17 million learners. In this pandemic time, The Ministry of Education has launched a COVID-19 National Education Response Committee, tasked with exploring the possible strategies of sustaining teaching and learning in the education sector. The plan is to strengthen teaching and learning to the over 15 million learners in Kenya under the basic education in primary and secondary schools during the COVID-19 pandemic. The Ministry of Education has enhanced several platforms to deliver educational programs: Radio, television and internet have been tapped to bridge the gap. Several media houses air education programs like Kenya Television Network (KTN), Edu Channel TV, Kenya Broadcasting Corporation (KBC), Citizen TV. This has been enhanced by Kenya Institute for Curriculum Development (KICD) which prepares the curriculum and schedules for these remote learning.

Findings from this study, however, reveal a different picture on the ground. Despite all the measures the Kenyan government has put in place to ensure that learning is going on during the COVID break, the study revealed a different situation in the rural areas. For instance, even with the availability of the radio as a simple technological device, using it for learning is hampered by many other problems like electricity, lack of time, competition for the gadget in the family among others. The television, which offers a multi-channel approach to learning was only accessible by a few learners. The learners have not been exposed to web conferencing facilities like zoom and internet problem affects those who would want to use it. Further, the study showed that due to lack of control, the learners who were using apps like WhatsApp were exposed to inappropriate content set to the groups. Parents on their part expressed that there was no learning going on since their children were engaged in helping their parents in doing chores to supplement their incomes, as captured in the voice below:

Our children are not learning at all. They help with household chores and tending to animals and farming. The girls mostly do household chores like: fetching water from the river which is a distance, looking for firewood, going to the market and cooking. The children also help to cushion family in terms of family needs provision like selling produce in the market. The male children have also gone ahead to fend for themselves with manual jobs offered in the

village like helping others in weeding for pay, going fishing for sale and other jobs like in building sites

VII. CONCLUSION

Based on the findings, the study made the following conclusions:

1. The radio and the television are popular technological devices that can be tapped to enhance teaching and learning during the COVID break.
2. Electricity connectivity is a major challenge facing learners in the rural areas of Kenya.
3. Family factor is a major factor in ensuring that pupils continue to learn during the COVI 19 break.
4. Despite learners having access to simple phones, they are not aware of how they can tap them to access educational materials
5. The government of Kenya has put in place appropriate policies to ensure that learning is going on.

VIII. RECOMMENDATIONS

Based on the above conclusions, the study makes the following recommendations:

1. Measures should be taken to sensitize people on how to popularize the use of the radio and television to make learning more accessible to children in the rural areas.
2. Electricity should be made more efficient to enhance learning in the rural areas of Kenya during the COVID 19 break.
3. Sensitization of parents on the need to keep learners engaged academically during the COVID 19 break
4. Training the pupils on how they can use their phones to access educational materials
5. Developing simplified and affordable learning management systems(LMS) ideal for learners in the rural areas.

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