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Abstract

Education is an integral part of human society, its importance in life cannot be ignored as lack of education gives birth to numerous social problems like poor health, internal conflict, poor living standards and many more, education helps people to find a better solution to their problems. Education lets people realize the true value of contribution and help become the backbone of the society. Innovation and creativity can only occur when people are skilled enough to know how to operate with different technologies. Since the first case of the novel coronavirus (COVID-19) was announced in Kenya, many aspects of society and the education sector have been dramatically affected. On March 15th 2020, the Kenyan government closed all learning institutions countrywide to contain the spread of the virus. As the numbers of those infected by coronavirus rose to over 8,000, the ministry of education announced on July 7th that, the 2020 school calendar year will be considered lost due to COVID-19 restrictions. The purpose of this study was therefore to determine the effect of Covid-19 pandemic on the education systems in Kenya. The study was anchored on Classical Liberal Theory of Equal Opportunities. Mixed method design which involved a combination of both quantitative and qualitative approaches was adopted. In quantitative the study used a survey research design, specifically the study adopted a cross-sectional survey research design. Cross-sectional survey design involves collecting data from a large group of people of different stages of growth at one point in time. The target population for this study included teachers, students and parents. The sample size for the study comprised of 100 teachers, 25 parents and 100 students who were purposively selected across the country. This study used both questionnaire and interview guide to collect primary data. The questionnaires were served to teachers and students online using Google forms while interview guide was administered to the parents using online Google forms as well. The quantitative data collected was analyzed using SPSS. Quantitative analysis involved the use of descriptive analysis, while qualitative data was analyzed using content analysis. The results were presented on tables. The findings revealed

that Covid-19 had seriously affected learning among students in Kenya. The study found that the effects of Covid-19 were so severe that some teachers and parents lost their jobs or source of livelihoods. Most of the students were not able to access online learning due to lack of electricity, lack of learning materials and some were forced to relocate to the country side. The study hence concluded that as a result of the challenges presented by the coronavirus and the likely impact of future pandemics the government's ability to ensure continuation of learning will depend on the ability to swiftly harness available technology, provide adequate infrastructure and mobilize stakeholders to prepare alternative learning programmes. The study concludes that as a result of the emergence of Covid-19 pandemic, teaching and learning activities in all learning institutions in Kenya just like other parts of the world have severely been disrupted. The worst hit learners are the primary and secondary school candidates who should sit for their national examinations at the end of 2020. Based on the conclusion the study recommended that there is need for the government through the ministry of education together with all the stakeholders in education sector in Kenya to navigate through challenges presented by Covid-19 to ensure continued access to provision of quality, equitable and inclusive education during and after the pandemic. Effective implementation of the proposed interventions by education managers and stakeholders will ensure uninterrupted learning in educational institutions in future. This study in addition recommends that it is important to ensure that the Ministry of Education, parents and teachers support vulnerable students to ensure they are not exploited and that no learning loss occurs even as schools delay re-full opening until January 2021 despite grades 4, class 8 and form 4s being back in schools already.

Keywords: Covid-19, Pandemic, Education system, Students, teachers, Parents, Kenya.

1.1 Background of the Study

The children of today are gearing up to become adult citizens of tomorrow and the growth is parallel to the future of our country reflected through quality of the present education system (Bago, Ouédraogo, Akakpo, Lompo & Ouédraogo, 2020). According to Deb (2018), a school must stimulate curiosity in the young, impressionable minds and equip them with tools to be better human beings. It is widely accepted that the learning process is instrumental in shaping one's personality and the way he/she deals with situations of life. The shift of thoughts from bookish knowledge to knowledge of life, in schools, has brought forth a sea of change (Morrison, Kim, Connor & Grammer, 2019). People have warmed up to the idea of education being the key to a well-rounded development instead of just a mean to acquire degrees and monetary success in life. Education must facilitate the cultivation of a healthy thought process and groom our cognitive abilities (Maniar, 2019). In the present competitive world, education is a basic necessity for human beings after food, clothes and shelter. Education is an important aspect that plays a huge role in the modern, industrialized world. People need a good education to be able to survive in this competitive world. Kathula and Munyao define Education as that which is supposed to give the recipient an intelligent approach to life, a search for truth, a sound sense of judgement, an appreciation of beauty, rhythm and order that is, an awakening of an aesthetic sense, a deep concern for the welfare of humanity, a great sense of responsibility coupled with sincere devotion to work in the service of one's country (MUA University, 2020).

Modern society is based on people who have high living standards and knowledge which allows them to implement better solutions to their problems (Sodiq, Baloch, Khan, Sezer, Mahmoud, Jama & Abdelaal, 2019). Education is an integral part of human society, its importance in life cannot be ignored as lack of education gives birth to numerous social problems like poor health, internal conflict, poor living standards and many more (Mohanty, 2019). It helps people to find a better solution to their problems. Education lets people realize the true value of contribution and help become the backbone of the society. Innovation and creativity can only occur when people are skilled enough to know how to operate with different technologies. According to Michura (2019), educated people always find a solution to their problems with the help of better techniques. The Constitution of Kenya, in Article 53 (1) (b) state that every child has a right to free and compulsory basic education and Article 55 (a) the State shall take measures, including affirmative action programmes, to ensure that the youth access relevant education and training.

The Corona Virus Disease was first detected in, China Wuhan in December 2019. China had reported 83,878 infected cases and 4636 deaths. As at 30th January 2020, World Health Organization (WHO) declared the Corona Virus outbreak a Public Health Emergency of Global Concern. The COVID-19 has since continued to spread across the world with immediate and long term social economic effects on national economies and their individual citizens. As at 28th April 2020 globally the pandemic had infected over 3.04 million people with over 211,305 deaths and with slightly over 895,261 confirmed recovered cases. United States of America was leading with over 988,469 infected cases, 56,253 death cases and 111,583 recoveries. Italy had 199,414 infected cases, 26,977 deaths and 66,624 recoveries. UK had 158,348 infections, 21,157 deaths and 809 recoveries. Spain reported 229,422 infected cases, 23,521 deaths and 120,832 recoveries. In Africa the first COVID19 cases were reported by the beginning of February 2020. As at 28th April 2020, Africa had reported 33,389 cases. South Africa had reported 4,793 infected cases, 90 deaths and 1,473 recoveries. Egypt had reported 4,782, infections, 337 deaths and 1,236 recoveries. Ghana had reported 1,550 infections, 11 deaths and 155 recoveries. Nigeria had reported 1,337 infections, 40 deaths and 255 recoveries. Tanzania reported 299 infections, 10 deaths and 48 recoveries. Uganda had 79 infected cases, 0 deaths and 47 recoveries while Rwanda had 207 infections, 0 deaths and 93 recoveries (Nation Media Newsplex Team, April 29th, 2020).

On 13 March, 2020 the first case of Covid-19 in Kenya a 27-year-old Kenyan woman who traveled from the US via London, was confirmed. The Kenyan government identified and isolated a number of people who had come into contact with the first case (Brand, Aziza, Kombe, Agoti, Hilton, Rock & Barasa, 2020). On 15 March 2020, President Uhuru Kenyatta directed that a number of measures be taken to curb COVID-19, some of those measures included; dust to down curfew beginning from 7 pm to 5 am, secession of movement in and out of the Counties of Nairobi, Mombasa, Kilifi and Kwale and mandatory quarantine of suspected cases. The emergence of Covid-19 gas completely transformed the landscape dramatically over the last three months in Kenya with the most prolonged lockdown that the present generation can remember. Declared on March 15, 2020, the lockdown ensured that thousands of people living in the cities of Nairobi and Mombasa were effectively confined to home, except when they ventured out, armed with a self-attested affidavit, to stock up on essentials or if they were offering essential services (Oxford Analytica, 2020). During the same time, all educational institutions were closed down under the

directive of His Excellency the President of the Republic of Kenya. The institutions at all levels were then tasked with looking for alternative ways and means of ensuring that learning continues remotely.

The COVID-19 pandemic has affected educational systems worldwide, leading to the near-total closures of schools, universities and colleges (Sintema, 2020). Most governments around the world have temporarily closed educational institutions in an attempt to contain the spread of COVID-19. As of 27 July 2020, approximately 1.725 billion learners had been affected due to school closures in response to the pandemic. According to UNICEF (2020), 106 countries are currently implementing nationwide closures and 55 are implementing local closures, impacting about 98.6 percent of the world's student population. 48 countries' schools are currently open. On 23 March 2020, Cambridge International Examinations (CIE) released a statement announcing the cancellation of Cambridge IGCSE, Cambridge O Level, Cambridge International AS & A Level, Cambridge AICE Diploma and Cambridge Pre-U examinations for the May/June 2020 series across all countries (Ogunode, 2020). International Baccalaureate exams have also been cancelled. In addition, Advanced Placement Exams, SAT administrations and ACT administrations have been moved online and cancelled. School closures impact not only students, teachers and families but have far-reaching economic and societal consequences.

In Africa, most activities from social, political and economic stalled due to Coronavirus outbreak (Jacob, Abigeal & Lydia, 2020). The African Union CDC officials stated that the coronavirus epidemic as an existential war for the continent. In the education sector, the situation has never been the same again with over 1, 268,164,088 (72%) of learners out of their institutions in over 177 countries in April 2020. These institutional closures, alongside hashtags like, #lockdown, social distancing and #stay at home requires new innovative approaches to conceptualize. Some of the strategies and approaches which are being used in availing education to the learners has been through homeschooling, radio, the television, remote learning, online learning, distance learning, blended learning, gamification and the like. The position of remote learning is still bleak in Africa as compared to other countries as less than 25 per cent of low-income countries currently provide any type of remote learning, and of these, the majority are using TV and radio. In contrast, in the developed world close to 90 per cent are providing remote learning opportunities with almost all offering services being offered online (Chidambaram, 2020).

In adapting and adopting new learning and teaching paradigms, the education sector had to leverage the assets of home-based learning as they stay and work at home, rather than trying to recreate school (Bryson & Andres, 2020). The remote mode of learning is capable of bringing private meaningful learning experiences that can connect to learners' home environment, interest and local identities and also use the available devices in the home environment. It may come with its merits and demerits. According to Mulenga and Marbán (2020), as the instructor is not immediately present in front of the class as learners in Kenya are used to, some necessary adjustments had to be done by the education institutions and the learners (pupils/students). In higher education, especially universities, existing policies had to be re-drafted to include online learning pedagogy as an emergency pedagogy. The new teaching approaches received mixed feelings from policy makers, service providers, students and other stakeholders, but to save on time and normalize the situation, strategies were set and remote learning implemented in most

educational institutions (Aborode, Anifowoshe, Ayodele, Iretiayo & David, 2020). Learning continued both in synchronous and asynchronous modes and institutions were able to cope with the termly and semester requirements alongside providing reading resources remotely as done by the University of Nairobi through utilization of electronic resources with thousands of learning resources available remotely. These initiatives were lauded by majority of education stakeholders as remote learning and home schooling concepts have been embraced at relevant levels.

In the wake of Covid-19 pandemic, the Ministry of Education in Kenya launched a number of steps designed to promote continuity in learning, which included education programming that is broadcasted via television and radio as well as on YouTube (Masaviru, 2020). In partnership with the Kenya Publishers Association, the government made electronic copies of textbooks available for free on the Kenya Education Cloud for all students. The Government of Kenya, through the Kenya Civil Aviation Authority and in partnership with Telkom Kenya, also deployed Google's Loon Balloons carrying 4G base stations over Kenyan airspace. However, while these are noble measures designed to make sure that no student is left behind, it remains true that access to these services is patchy and that many children have been unable to benefit, in both urban and rural areas. The abrupt closure of learning institutions in Kenya on March 15, 2020 in response to COVID-19 disrupting nearly 17 million learners countrywide (Lugonzo, 2020).

The social and economic costs could not be borne evenly, however, with devastating consequences for marginalized learners. This is especially the case for girls in rural, marginalized communities like the Maasai, Samburu, Turkana, Pokot, Marakwet, and Sabaot, and in coastal regions; refugee children in Kakuma and Dadaab refugee camps; and children with disabilities. Since schools closed in Kenya, the ministry of education and other agencies have indicated that learners should undertake online learning or technology-mediated learning on TV, radio, ed-tech apps, and mobile phones. While such learning may take place in urban areas, for many marginalized children in remote villages including refugee children in camps as well as those living with various disabilities learning during COVID-19 school closures is a deep challenge (Mehall, 2020). Learning mediated through ed-tech remains out of reach for many disadvantaged children due to connectivity challenges. In remote parts of Kajiado, Narok, Samburu, Turkana, and Kilifi counties, for example, electricity does not reach households, excluding children from online learning. Additionally, smartphones are beyond the reach of most rural communities. Even when adults have smartphones, tensions around privacy and kids' unsupervised internet use render access for learning nonexistent (Yusuf, 2020). In cases where electricity and technology do exist, the cost of the internet is prohibitive, such disadvantages present challenges for rural families and learners who must compete with their more privileged peers during national examinations. For rural children of parents with low literacy levels and limited education resources, this risk of learning loss is heightened (Sheridan, Banzer, Pradzinski & Wen, 2020). Not only are these parents frustrated at having to homeschool without adequate preparation, they also cannot reinforce their children's learning. Intermittent online learning is not effective for students already behind, and radio learning cannot replace classroom learning as it is intended to supplement knowledge that children already have.

1.2 Statement of the Problem

Since the first case of the novel coronavirus (COVID-19) was announced in Kenya, many aspects of society and the education sector have been dramatically affected. On March 15th 2020, the Kenyan government closed all learning institutions countrywide to contain the spread of the virus. As the numbers of those infected by coronavirus rose to over 8,000, the ministry of education announced on July 7th that, the 2020 school calendar year will be considered lost due to COVID-19 restrictions. This announcement has repercussions for over 17 million students across the country whose learning has been thrown into limbo threatening the loss of education gains and the implementation of a new competency based curriculum (Simba, Sinha, Mburugu, Agweyu, Emadau, Akech & English, 2020). It is more five months since the government announced the closure of schools as a measure to contain the spread of Covid-19. As a result of the decision, a total of 91,591 learning institutions both public and private were closed, disrupting the school calendar and affecting the learners. Also impacted were learners with special needs (Mbogo, 2020). Given the challenges presented by the coronavirus and the likely impact of future pandemics our ability to ensure continuation of learning will depend on the ability to swiftly harness available technology, provide adequate infrastructure and mobilize stakeholders to prepare alternative learning programmes. The education sector worldwide has greatly been impacted negatively by corona virus crisis, the republic of Kenya included. This is because teaching and learning activities in all learning institutions have severely been disrupted. The worst hit learners are the primary and secondary school candidates who should sit for their national examinations at the end of 2020.

The Ministry of Education estimates that there are 16,528,313 learners out of school, from early childhood development education to tertiary students. With less than 10% of learners having access to digital learning materials such computers, iPads, and laptops, while only 18% have access to learning through the internet and 26% have access to electricity in rural areas showing glaring disparities in home learning (Al-Samarrai, Gangwar & Gala, 2020). The situation is far worse when it comes to public schools indeed COVID19 has disrupted the education sector landscape limiting students' ability to access learning across the country. In Kenya, school choice is correlated to income level, and public schools differ from private schools in many aspects including the kinds of students that attend them, teacher to student ratios, infrastructure, and funding (Simba, Sinha, Mburugu, Agweyu, Emadau, Akech & English, 2020). The overall effect of these differences means that public schools students are disadvantaged compared to their counterparts. Indeed, even where remote learning opportunities are available, uptake will be low from students in public schools as result of poor infrastructure. Opportunities to learn at home for these students are also limited due to lack of conducive learning environment as many come from households that live in single rooms, and in which there is limited literacy and capacity to hire private tutors. Moreover, while the school closures are necessary to prevent the spread of the virus, the vast majority of students will lose momentum and direction as schools are employing a reactive approach to learning. This approach relies heavily on the role of parents, but there was no proper transition from teachers to parents to enable them to shoulder the burden.

The pandemic will also exacerbate spatial inequalities, with the exception of access to radio which penetrates rural areas more effectively than urban ones, access to computers, televisions, and the

internet is considerably lower in rural contexts. These existing divides will be further entrenched if rural learners fall behind their urban counterparts, negatively impacting on their future earning potential. Despite government efforts, then, the school closures are deepening educational inequality. It is evident that rich families are better prepared to cope with the challenges posed by the crisis and sustain their children's learning at home. They have access to the Internet and can afford to pay for virtual tutors. All this means that when schooling restarts, disadvantaged children will find themselves even further behind their peers. For students with learning disabilities, and those living in remote areas, the situation is bleak. Besides missed learning opportunities, students from poor backgrounds are also losing access to the meals that are made available by World Food Programme (WFP) and the Government of Kenya through The School Feeding Program that was initiated in 2009. It is estimated that in 2018 the government provided access to daily meals to 1.5 million children in 4,000 public schools across the country all of whom are currently deprived of this service.

Learners' learning outcomes are likely to be affected. Unplanned Institutional closures negatively affect learners' learning outcomes (UNESCO, 2020a). Being in School provides vital learning and when institutions abruptly close, learners and youths are dispossessed chances for growth and development. The drawbacks are disproportionate for economically poor learners who tend to have less educational chances outside school (UNESCO, 2020b). When institutions close, parents are frequently asked to enable the learning of their learners at home and often struggle to accomplish this duty. This is particularly true for parents with limited resources and knowledge. Co-curricular activities scheduled for first term in the Kenyan schools calendar like drama, athletics and ball games were interrupted mid-way and stopped as schools were closed abruptly and indefinitely. Play is crucial in as far as learning is concerned. Gergen (2012) submits that it is only by means of play that the intellect of humanity is uncovered. By means of play learners are able to explore, create experiment, adapt, learn, communicate, socialize, and learn problem solving techniques. Further play permits learners to build and have extension of their skills and knowledge in the process of interaction with others, environment, and own on their own. The COVID-19 pandemic has laid bare how education in Kenya could evolve and the urgent need to accelerate the Kenyan government's digital learning program renamed "digischool". This study therefore sought to determine the effect of Covid-19 pandemic on the education system in Kenya.

1.3 Research Objective

To determine the effect of Covid-19 pandemic on the education systems in Kenya.

1.4 Research Question

What is the effect of Covid-19 pandemic on the education system in Kenya?

2.0 Literature Review

2.1 Theoretical Review

Classical Liberal Theory of Equal Opportunities

This study was underpinned by the Classical Liberal Theory of Equal Opportunities. This theory was proposed by Locke (1688). This theory was advocated by Sherman and Wood (1992) cited by

Njeru and Orodho (2003) who advances the perspective of the need for equal opportunities in education for every learner. The classical Liberal Theory of Equal Opportunities affirms that every learner is born having some amount of ability which to some bigger margin is congenital and cannot be substantively altered (Brodrick, 2020). Therefore, education systems and structures ought to be structured in a manner that removes challenges of any form (social, economic, political, geographic, gender etc.) that prevent ingenious learners from lesser economic upbringings from taking full gain of innate talents, which fast-track them to social promotion. The Classical Liberal Theory insinuates that social mobility would be stimulated by equal opportunity of educational structures. According to this theory, education systems and structures ought to be planned with a view to eliminating obstacles or challenges of any form for instance, challenges based on socio-cultural, socio-economic and ecological factors, and institution-based dynamics which inhibit students from gaining from their innate talents (Martin, 2020). The education delivered to marginalized and vulnerable students would accelerate them to social promotion as education is a great equalizer.

The outbreak of pandemics like COVID-19 and related infectious ailments, which send schools to unexpected prolonged closures, pause a lot of challenges to marginalized and vulnerable learners. While the parents for learners from well to do backgrounds afford good meals, decent accommodation, best medication and robust digital gadgets to continue learning from the comforts of their homesteads, the contrast for the disadvantaged learners is true (Malechwanzi, 2020). Hence, for access and equity concern, it virtually becomes incredible to disregard the premise that uneven involvement in education will finally complicate the status of the underprivileged and the susceptible learners (Njeru & Orodho, 2003). The classical liberal theory was established to be appropriate for this study as COVID-19 pandemic challenges affected more the poor, marginalized and vulnerable parents and guardians consequently the effect trickled down to their children who cannot afford to provide the basic necessities both at home and school. The situation was worsened by the digital divide; as the fortunate learners were being taught through radio, TV, You-tube, among other digital gadgets, the less fortunate were busy labouring to put a meal on the table hence not having equal opportunity to education.

Equal opportunity is a stipulation that all people should be treated similarly, unhampered by artificial barriers or prejudices except when a particular distinctions can be explicitly justified (Drylie, 2020). Rural areas and informal settlements in urban centres in Kenya are areas that are sometimes neglected by the central governments in terms of equal opportunities for online learning which has become the new normal as a result of Covid-19 pandemic leading to exclusion in terms of continued learning online and this impact negatively on education. Socio-economic factors such as family income level, parents' level of education, adequacy of learning and teaching materials or resources and occupation, all influence the quality and availability of education as well as the ability of education to improve life circumstances. Inequalities in wealth distribution and quality of life are increasing in the rural areas and this makes it almost impossible for school going children in the rural areas to access online learning. This theory is however relevant to the study as availability of resources is aimed at giving children from poor households an opportunity to participate in online learning to cope with their counterparts in urban areas. Thus, by ensuring rural areas have

electricity and strong internet, the government will have removed some economic barriers which makes it difficult for learners in the rural areas to take part in online learning.

2.2 Empirical Review

Onyema, Eucheria and Obafemi (2020) while examining impact of coronavirus pandemic on education revealed that COVID-19 has adverse effects on education including, learning disruptions, and decreased access to education and research facilities, Job losses and increased student debts. The findings also show that many educators and students relied on technology to ensure continued learning online during the Coronavirus pandemic. However, online education was hindered by poor infrastructures including, network, power, inaccessibility and unavailability issues and poor digital skills. Data were collected through structured questionnaires administered to 200 respondents that consist of teachers, students, parents, and policy makers selected from different countries. The collected data were analyzed using STATA/Regression. The study further revealed that some of the identified effects include; learning disruption, limited access to learning facilities such as laboratories, job losses in the education sector, increase in students' debts, reduced funding for education, research constraints, and loss of learning interests among learners. The finding is in line with earlier assertion by Onyema (2020) that Coronavirus pandemic created multiple problems for education sector leading to decreased education opportunities for underprivileged learners and those in rural areas. The study underscored the damaging effects of COVID-19 on education sector and the need for all educational institutions, educators, and learners to adopt technology, and improve their digital skills in line with the emerging global trends and realities in education.

A study by Mhlana and Moloi (2020) showed that Coronavirus disrupted educational activities and tends to reduce educational opportunities for disadvantaged people. It displaced students and teachers and created multiple barriers in teaching and learning. The study indicates that COVID-19 lockdowns has the tendency to increase school debts and pressure on parents and educational institutions. This is in line with the assertion by Ben, Mathew, and Kristen (2010) that school closure can add stressors to students who are already contending with challenges associated with urban poverty. The finding recognizes the need for technology in education particularly in times of emergencies. This is in line with an earlier assertion by Onyema (2019), that integration of emerging technologies in education is no longer a choice, but a need for all educators considering the changing learning environment, demands for flexibility in methodology, and the need to enhance creativity and innovations in learning. The study would contribute to the growing knowledge on Coronavirus effect on education sector and the need for technology in education.

In South Africa, Mhlana and Moloi (2020) assessed the relationship between COVID-19 and the Digital Transformation of Education. The study sought to gauge the impact of COVID-19 pandemic in unleashing digital transformation in the education sector in South Africa. In order to gauge the impact, the study tracked the rate at which the fourth industrial revolution (4IR) tools were used by various institutions during the COVID-19 lockdown. Data were obtained from secondary sources, mainly newspaper articles, magazines and peer-reviewed journals. The findings revealed that, in South Africa during the lockdown, a variety of 4IR tools were unleashed from primary education to higher and tertiary education where educational activities switched to

remote learning (online learning). These observations point to the fact that South Africa generally has, some pockets of excellence to drive the education sector into the 4IR, which has the potential to increase access. Access to education, particularly at a higher education level, has always been a challenge due to a limited number of spaces available. Much as this pandemic has brought with it massive human suffering across the globe, there is an opportunity to assess successes and failures of deployed technologies, costs associated with them, and scaling these technologies to improve access.

Ngwacho (2020) examined the COVID-19 Pandemic Impact on Kenyan Education Sector focusing on Learner Challenges and Mitigations. The study was a theoretical review based which relied on review of secondary data material to discuss the challenges and mitigations for COVID-19 in the Kenyan education sector, with specific reference to learners. The study findings revealed that the inability of the schools to finance school related expenditure such as school kits, meals, learning materials had been severely compromised with the pandemic. With the Government adopting remote teaching to support distance learning and online education delivered through radio and television and internet, learners from poor, vulnerable and marginalized household had no access to these mediums of learning further worsening inequality in access and quality of education. The study recommended that there was need to navigate through these challenges to ensure continued access to provision of quality, equitable and inclusive education during and after the pandemic. Effective implementation of the proposed interventions by education managers and stakeholders will ensure uninterrupted learning in educational institutions in future.

While evaluating the impact of Covid-19 on education in Kenya Njenga (2020) indicated that with close to 10,000 private primary and secondary schools in Kenya, the closures present unique challenges for these schools as they solely rely on school fees to run their operations unlike public schools which receive state funding. This means their teachers will go for a further six months with no pay. As a result, over 300,000 teachers are now at home. While some private schools have turned to online classes to generate income in order to survive, schools serving low income communities are at special risk. Others will require financial assistance to sustain their basic requirements during the closure. The study also pointed out that to keep the learners engaged, and mitigate loss of essential learning time, the government of Kenya through the Kenya Institute of Curriculum Development (KICD) has stepped up measures to facilitate learning through different platforms such as the Kenya Education Cloud, TV, radio, ed-tech apps, and mobile phones. These modes of learning though effective may only benefit a few students who have access at home to computers, smart phones, and the appropriate technology. For the vast majority of students, learning will be interrupted due to lack of access to electricity, internet connectivity, and digital technology. This may further widen the education inequality gap, in equity, access and quality of education. The study recommended that it is important to ensure that the Ministry of Education, parents and teachers support vulnerable students to ensure they are not exploited and that no learning loss occurs even as schools delay re-opening until January 2021.

3.0 Research Methodology

This study employed mixed design which involved a combination of both quantitative and qualitative approach. Inquantitative the study used a survey research design, specifically adopted a cross-sectional survey research design. Cross-sectional survey design involves collecting data from a large group of people of different stages of growth at one point in time. The target population for this study included teachers, students and parents. The sample size for the study was made up of 100 teachers, 25 parents and 100 students who were purposively selected across the country. This study used both questionnaire and interview guide to collect primary data. The questionnaires were served to teachers and students while interview guide was administered to the parents. The quantitative data collected was analyzed using SPSS. Quantitative analysis involved the use of descriptive analysis, while qualitative data was analyzed using content analysis.

4.0 Analysis and Discussion of Findings

4.1 Demographic Characteristics

The sample size for the study was 225 respondents made up of 100 teachers, 100 students and 25 parents. Out of the 225 respondents, 60 students, 55 teachers and 21 parents took part in the study representing response rates of 60%, 55% and 84% for students, teachers and parents respectively. The results indicated that most of the students (71.7%) were male while the other 28.3% were female. Regarding the gender distribution of teachers, 61.8% were male teachers while the remaining 38.2% were female teachers. The study found that 68.3% of the students had their school fee being paid by their fathers, 28.3% indicated that their mothers were paying their school fees, while 3.4% others indicated their school fee was being paid by their guardians. Most of the teachers were from public schools (94.5%), while 5.5% were private school teachers.

4.2 Results and Discussion

The students were asked to indicate if Covid-19 pandemic had affected their academic studies. All the students who took part in the study indicated Covid-19 pandemic had seriously affected their academic studies. Majority of them indicated that, because of Covid-19 they had lost a lot of time they could have used to cover part of the syllabus. Some of the students indicated that as a result of Covid-19, their parents had lost jobs and some had been forced to relocate to the countryside from urban areas where they were studying making life even more difficult for them since they had to learn to adjust to the new environment. When Covid-19 struck, the government was forced to close schools and introduced online learning. When asked if they were taking part in online learning, most of the students (56.7%) indicated that they were taking online learning, while 43.3% indicated they were not participating in online learning introduced by the government as presented in Figure 1.



Figure1: Participation in Online Learning

When asked to indicate how they were managing online learning, 30% of the students who were participation in online learning indicated that they were managing very well since they had well planned timetable which guided how they studied with the help of their teachers. However, majority (70%) indicated that they were not gaining much from online learning since they were not learning new concepts. The commonly faced challenges by the students while taking online classes included boredom, distractions, power interruptions, poor internet connections and lack of concentration.

Table1: Effect of Covid-19 on Students Learning

	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided	Mean	Std. Dev
I have forgotten most of what I learnt in term one before schools were closed	21.7%	38.3%	25.0%	11.7%	3.3%	2.367	1.057
The closing of schools for a long time is likely to affect my performance	40.0%	41.7%	6.7%	0.0%	11.6%	2.017	1.242
My school was closed due to effect of Covid-19	80.0%	10.0%	3.3%	3.3%	3.4%	1.400	0.960
My parents lost their jobs and we had to relocate to the village	5.0%	6.7%	48.3%	36.7%	3.3%	3.267	0.841

The results in Table 1 indicated that most of the students (60%) had forgotten most of what they had learnt in term one before schools were closed, 81.7% feared that the closure of schools for a long time would negatively impact their academic performance. Additionally, the results show that most (90%) of the students had their schools permanently closed due to effect of Covid-19 and therefore they would be forced to look for new schools when schools next open and more so to start syllabus from where they had stopped. Majority of the students (85%) disagreed with statement that their parents had lost their jobs and that they had to relocate to the village. These findings imply that much as most of the students were lucky their parents did not lose their jobs and did not relocate to the village, their academics was seriously affected by Covid-19.

Table 2: Effect of Covid-19 on Online Learning

	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided	Mean	Std Dev.
Unavailability and inaccessibility of internet has made online learning impossible for me	35.0%	21.7%	33.3%	6.7%	3.3%	2.217	1.106
I have no digital skills so I cannot adopt online learning	10.0%	11.7%	56.7%	18.3%	3.3%	2.933	0.918
There is no electricity where I live making online learning an impossibility for me	16.7%	3.3%	33.3%	41.7%	5.0%	3.150	1.147
The government has not provided enough facilities to aid online learning so I have not been studying online	38.3%	36.7%	10.0%	10.0%	5.0%	2.067	1.163
My parents lack basic training on online learning so they cannot give me the guidance I need	5.0%	6.7%	45.0%	38.3%	5.0%	3.317	0.873
My parents cannot afford to buy me bundles for online studies	13.3%	10.0%	36.7%	36.7%	3.3%	3.067	1.071

Based on the results in Table 2, unavailability and inaccessibility of internet had made online learning impossible for most of the students (56.7%), 21.7% indicated that they lacked digital skills and therefore could not adopt online learning effectively. The results also show that 20% of the students had no access to electricity and so could not participate in online studies. They indicated that the lack of access to energy greatly reduces the teaching resources and classroom materials. Without electricity, they were not able to make copies of school assignments or connect to the Internet to research what activities or materials are available online. They also could not access online resources, such as videos and other multimedia sources, in their classrooms as valuable methods for instruction. As a result, students were unable to access the learning materials their teachers shared online and were not able to complete their online assignments in time. The study also found that most of the students (75%) especially those residing at the countryside believed the government was not providing enough facilities to aid online learning therefore they could not participate in online learning like their colleagues in urban areas. Further, the study found that 11.7% of the students could not take part in online learning because their parents had no basic training in online learning so they could not offer them any guidance with regards to online learning. Whereas 23.3% said their parents could not afford to buy for them data bundles for online learning.

Teachers were asked to indicate how Covid-19 pandemic had affected them as teachers and based on the results 20% indicated that the pandemic had brought about serious idleness, so much expenditure, loss of lives and stigma. Five point five (5.5) percent of the teachers indicated that Covid-19 pandemic had crippled them financially, 3.6% of the teachers felt the pandemic had disorganized their personal plans, 7.7% indicated that the pandemic had disrupted school system, forcing them to stay at home abruptly which was unplanned for. Additionally, 9.1% of the teachers indicated that the pandemic disrupted the academic calendar, 8.5% of the teachers were concerned about the fact that the pandemic had created a very big gap between them and their pupils/students for 7 months running without interacting with them since according to them their pupils/students were their core business. A quarter (25%) of the teachers indicated that the pandemic had affected them negatively since their kids would have to repeat class despite being candidate who should have been sitting for their final examination.

Table 3: Effect of Covid-19 on Teachers

	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided	Mean	Std. Dev.
As a result of Covid-19, I was forced to take a pay-cut	5.4%	0.0%	49.1%	45.5%	0.0%	3.345	0.751
The school I was teaching at closed shop due to effect of Covid-19	41.8%	21.8%	5.5%	23.6%	7.3%	2.327	1.415
I was forced to relocate to the village after schools were closed because I had nothing to do at the work station	30.9%	29.1%	32.7%	7.3%	0.0%	2.164	0.958
I was evicted from my residents for failing to pay rent after losing my teaching Job	0.0%	0.0%	56.4%	43.6%	0.0%	3.436	0.501

Most of the teachers (94.6%) indicated they did not take pay cuts, while 5.4% were forced to take pay cuts as a result of Covid-19 pandemic. Most of the teachers (63.6%) indicated that the schools in which they were teaching before Covid-19 emerged had been shut down completely and some would have to look for another job station, 60% of the teachers were forced to relocate to the village since they had lost their jobs work centers and had no means of survival where they were working as no school activities were ongoing. Fortunately, none of the teachers indicated were evicted by their landlords, the ones that relocated to the village acted on their own free will not because they were evicted.

Table 4: Teachers Opinion on Online Learning

	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided	Mean	Std. Dev.
Unavailability and inaccessibility of internet has made online learning impossible in Kenya	41.8%	34.5%	16.4%	7.3%	0.0%	1.891	0.936
Most of the teachers have poor digital skills so they cannot adopt online teaching system	29.1%	40.0%	23.6%	7.3%	0.0%	2.091	0.908
Most parts of the Country are not connected to electricity making online learning an impossibility	32.7%	41.8%	25.50	0.0%	0.0%	1.927	0.766
The government has not provided enough facilities to aid online learning	65.5%	27.3%	7.2%	0.0%	0.0%	1.418	0.629
Online leaning is poorly funded	69.1%	25.5%	0.0%	0.0%	5.4%	1.473	0.959

Most of the teachers (76.3%) indicated that unavailability and inaccessibility of internet has made online learning impossible in Kenya, 69.1% believed most of the teachers had poor digital skills so they could not adopt online teaching system, 74.5% others indicated that most parts of the country are not connected to electricity making online learning an impossibility, 92.8% of the teachers were of the opinion that the government had not provided enough facilities to aid online learning making online learning an impossibility, while 94.6% of the teachers were convinced online leaning was poorly funded by the government and that made impossible to implement online learning during Covid-19 pandemic. This triangulated and concurred with the students' feedback on online learning.

Finally parents were asked to indicate some of the challenges they were facing as parents after the schools were closed because of Covid-19 pandemic. Most of the parents indicated that they were unable to control their children when it comes to home learning and affordability of online learning, others indicated that the challenges they were facing included; lack of digital learning tools, luck of someone to supervise the online lessons at home as parents are out for work, financial constraint was another, challenge of ensuring the safety of the children and inability to supervise the children due to work related commitments therefore not having enough activities to keep children busy.

5.0 Conclusions

Based on the findings, this study concludes that Covid-19 brought about numerous challenges to the education sector in Kenya and both primary and secondary were affected in equal measure. The study also concludes that as a result of the challenges presented by the coronavirus and the likely impact of future pandemics the government's ability to ensure continuation of learning will depend on the ability to swiftly harness available technology, provide adequate infrastructure and mobilize stakeholders to prepare alternative learning programmes. The study concludes that as a result of the emergence of Covid-19 pandemic, teaching and learning activities in all learning institutions in Kenya just like other parts of the world have severely been disrupted. The worst hit learners are the primary and secondary school candidates who should sit for their national examinations at the end of 2020. This study further concludes that some of the major effects of Covid-19 on the education sector in Kenya include; learning disruption, limited access to learning facilities such as laboratories, job losses in the education sector especially those teaching in private schools, increase in pregnancy among female students as indicated by some parents, reduced funding for education, research constraints, and loss of learning interests among learners.

This study underscores the damaging effects of COVID-19 on education sector in Kenya and the need for all educational institutions, educators, and learners to adopt technology and improve their digital skills in line with the emerging global trends and realities in education. Finally, the study concludes that the inability of the schools both private and public to finance school related expenditure such as student's meals, learning materials and even pay teachers, has been severely compromised with the pandemic. With the Government adopting remote teaching to support distance learning and online education delivered through radio and television and internet, learners from poor, vulnerable and marginalized household have no access to these mediums of learning further worsening inequality in access and quality of education which then calls from the government and all the stakeholders in the education sector to come up with avenues that will ensure all the pupils are able to access online learning regardless of where they live. The study will contribute to the growing body of knowledge on Coronavirus effect on education sector in Kenya and the need for technology in education to facilitate online learning.

6.0 Recommendation

Based on the findings and conclusions made, the study recommends that there is need for the government through the ministry of education together with all the stakeholders in education sector in Kenya to navigate through challenges presented by Covid-19 to ensure continued access to provision of quality, equitable and inclusive education during and after the pandemic. Effective implementation of the proposed interventions by education managers and stakeholders will ensure uninterrupted learning in educational institutions in future. This study in addition recommends that it is important to ensure that the Ministry of Education, parents and teachers support vulnerable students to ensure they are not exploited and that no learning loss occurs even as schools delay re-full opening until January 2021 despite grades 4, class 8 and form 4s being back in schools already. The study has established that opportunities for students to learn at home for some students is limited due to lack of conducive learning environment as many come from households that live in single rooms, and in which there is limited literacy and capacity to hire private tutors. Moreover,

while the school closures are necessary to prevent the spread of the virus, the vast majority of students will lose momentum and direction as schools are employing a reactive approach to learning. The study hence recommends that the government should ensure every Kenyan school going child is given equal opportunity to access learning online. Finally, it is important for learners, teachers and parents to be cognizant of the prescience and types of cyber threats that pupils may fall prey to when studying online. This study recommends that to ensure learners do not fall prey to online predators, the following should be observed; proper sensitization about their existence, setting up of strong and unique passwords in accessing devices and changing them regularly, installing of appropriate anti-virus software and firewalls protection and ensure that they are regularly updated, ensure backing up of important documents regularly and use of parental controls to filter the search content on internet enabled devices (this may help block inappropriate sites such as pornographic sites) when students are participating in online learning.

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