

# Effect of Socioeconomic and Technology Response on Education in Kenya During the Covid-19 Pandemic

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## ABSTRACT

The social and economic effects of COVID-19 will be severe. Schools have a particularly important role to play. Coronavirus-related disruption can give educators time to rethink the sector. Technology has stepped into the breach and will continue to play a key role in educating future generations. With students being able to gain access to knowledge and even learn a technical skill, through a few clicks on their phones, tablets and computers. This may mean that the role of educators will need to move towards facilitating young people's development as contributing members of society. The move toward universal internet would help prepare educators to provide education under future health emergencies-not to mention the many broader benefits, such as equalizing economic opportunity in the information age. Digital technologies are playing a critical role in the global fight against the COVID-19 pandemic. Media, and especially social media, can also be used to educate students about the virus itself and to teach basic hygiene and debunk myths and misinformation. Considering the impacts of the national lockdown on behavioural change, the significant socio-economic inequity and a lack of cash, food and access to chronic medication among the poor posed great threats in education. This research will enable government policy groups to develop a more targeted and effective approach in addressing the effects of the pandemic on education.

**Keywords:** Online Education, social media, Corona Virus (COVID-19).

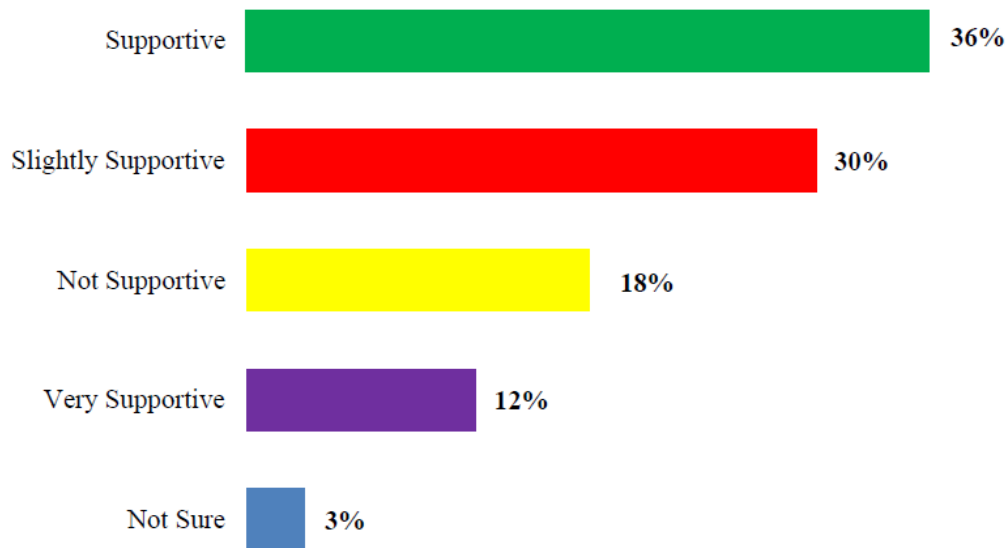
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## INTRODUCTION

In January 2020 the World Health Organization (WHO) declared the outbreak of a new coronavirus disease (COVID-19) and in March 2020, WHO made the assessment on the spread of COVID-19 and characterized it as a pandemic. Efforts to stop the covid-19 pandemics led to school and institution closures which led to unprecedented disruption of education. Solutions on how to keep learning in from disruption have become a major challenge to the global education community. Schools, universities and other educational institutions closed in most countries, affecting almost 90% of the global student population (UNESCO, 2020). Kenya made an effort to ensure continuity of learning through alternative delivery modalities. The effectiveness of reaching the Kenyan's more than 15 million students affected by school closures has

remained a point of concern.

School closures in Kenya during the spread of COVID-19 made learners excluded from the learning process which led to prolonged social isolation, on both the education system and on the school community. School closures come with many consequences, such as loss of education and learning; some adolescents dropping out of school permanently in order to work or care for sick relatives; increase in risks of sexual exploitation and abuse, early marriage and teenage pregnancy; reduction of social interactions between peers; and interruption of other school-based services, including school lunches, menstrual hygiene services and the distribution of nutrition supplements. Marginalized children, including adolescents, lack access to distance learning and digital learning platforms and resources.



**Figure 1:** Parental /Guardian support during COVID-19 crisis towards students education.

The Kenya Ministry of Education used an integrated approach that leverages synergies between online, television and radio channels, to ensure that distance learning is achieved. UNESCO stated in the Education 2030 Incheon Declaration and Framework for Action that countries should “provide alternative modes of learning and education for children and adolescents who are not in school at both the primary and secondary levels and put in place equivalency and bridging programmes, recognized and accredited by the state, to ensure flexible learning in both formal and non-formal settings, including in emergency situations”. The Ministry of Education has launched an initiative providing flexible online learning to over 15 million students from their homes. In online learning, learners can interact directly with the learning content that they find in multiple formats (e.g., video, audio, document, etc.). Additionally, they can also choose to have their own learning sequenced, directed, and evaluated with the assistance of a teacher. This interaction can take place within a community of inquiry, using a variety of internet-based synchronous and asynchronous activities (video, audio, computer conferencing, chats, or virtual world interaction). These synchronous and asynchronous online environments will promote the development of social and collaborative skills, as well as personal relationships among participants (Huang et al., 2020).

This study aims to examine the effect of socioeconomic and technology on education in Kenya during the coronavirus (Covid-19) pandemic.

## METHODOLOGY

A total sample size of Six hundred (600) parents and

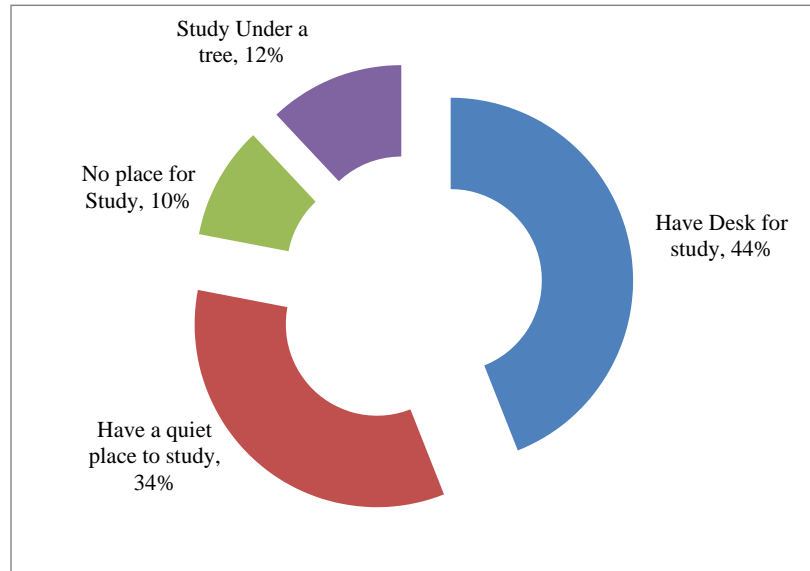
guardians were randomly selected. The questionnaire for the data collection was administered. 429 questionnaires were retrieved from the study (giving a response rate of 71.5%) and descriptive statistics was then used to profile the responses from respondents.

## RESULTS AND DISCUSSION

### Home environment and online learning

With schools closed, parents have had to take up the role of being both parent and teacher. The COVID-19 period presents the opportunity for parents to be engaged in the lives of their children. Parents are adapting to a new routine, doing their best to help children and support their learning while dealing with other demands. Parents create a supportive, nurturing environment to help children cope with crises and feel comfortable enough to learn. They do so by creating and communicating daily routines to promote a sense of predictability and stability. There are home environmental factors such as Parent's level of education, occupation and socioeconomic status, family size and type and motivation and possession of certain facilities at home among others influence the student's academic performance. From the study, half of the parents are supportive of the education of their children during the COVID-19 crisis as shown in Figure 1. The study revealed that a majority of the parents (12% very supportive; 36% support and 30% slightly support ) to their children's academic while at home.

Schools provide safeguarding, supervision and a good studying environment, closure increases the economic burden of families using daycare or their reliance on



**Figure 2:** Study environment at home.

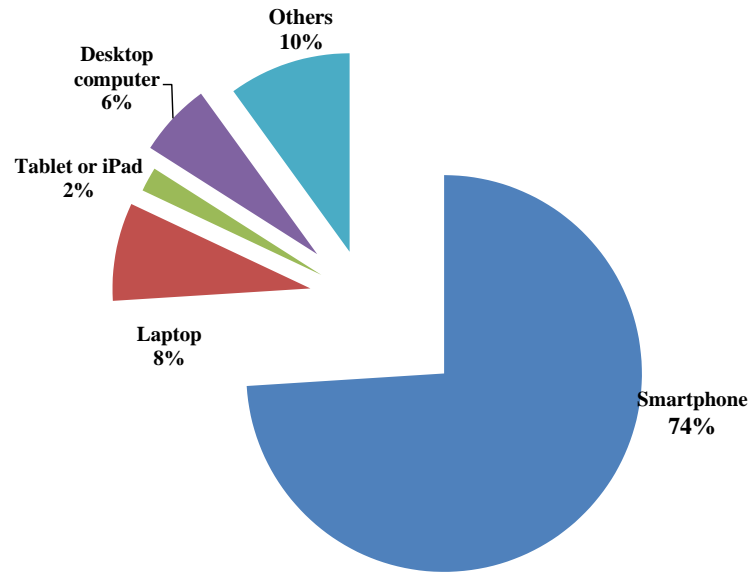
vulnerable older relatives. Working parents might leave children unsupervised or forgo employment to stay at home with them. Learning is the interaction between a learner and the environment if the environment is favourable, the learner feels easy to learn and gets fully concentrated on their studies. Many studies revealed that there is a positive relationship between the home environment and academic achievement (Komal and Sarika, 2019). There is a significant correlation between home environment on academic achievement of higher secondary students. Home environment, parental expectation, parental involvement, academic stimulation and parental encouragement significantly affect secondary school students on their academic achievement. In the study of Komal and Sarika (2019), a positive significant correlation between home environment and academic achievement of the students. In this study, different homes provide different studying environments as shown in Figure 2. The study revealed that 44% of the parents provide a desk for study, 34% have a quiet place for study, 12% study under a tree, and 10% have no place for study.

Prolonged school closure and home confinement during a disease outbreak might have negative effects on children's physical and mental health (Brazendale et al., 2017; Brooks et al., 2020). Studie results shows that when children are out of school, they are physically less active, have much longer screen time, irregular sleep patterns, and less favourable diets, resulting in weight gain and a loss of cardiorespiratory fitness (Brazendale et al., 2017; Wang et al, 2020). Such negative effects on health are likely to be much worse when children are confined to their homes without outdoor activities and interaction with same-aged friends during the outbreak. World Health Organization (WHO) affirms this is the process of enabling people to increase control over and

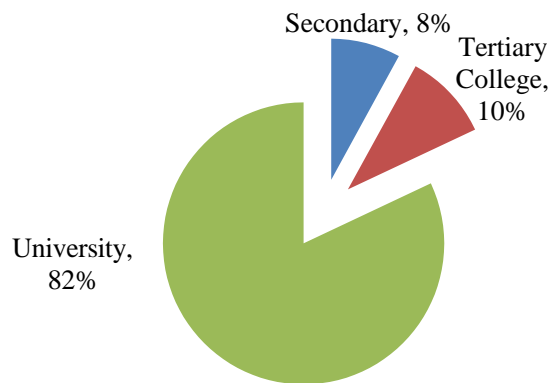
to improve their health has defined health promotion. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions (WHO, Health Promotion, 2016). Health promotion in a school setting involves educating the children about health-related matters that reflect on health more holistically. These activities aim at strengthening its capacity for learning and leading a healthy life. Figure 3 shows the device students use more frequently to access the internet while at home and some could be a health hazard.

Parental level of education determines the social class to which the home could be classified. A higher parental level of education brings higher-paid occupation that places parents in the upper class thereby allowing investing more in children's education which facilitates and enhances the academic performance of the children. Figure 4 shows the education level for parents in the study. Majority of the parents have a University education level, university-educated parents understand the role of individual differences among their children and this helps them to accommodate and encourage their children. Thus, encouraging children motivates them to improve their effort in their academic pursuits. As a result, children stand a better chance to be motivated by parents and that aids their academic performance.

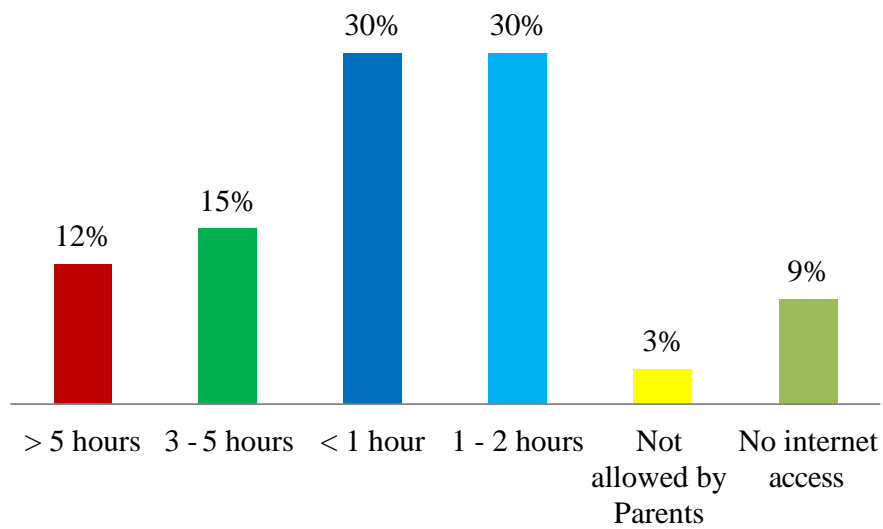
Unmonitored and unrestricted screen time and use of social media can have major consequences. Social media addiction not only affects the brain and internal emotions but the physical state as well. Indeed a number of studies including but not limited to the study of Kuppuswamy and Shankar (2010), Osharive (2015), Maya (2015), among others have revealed unequivocally that social media can be problematic to students' academic life if caution is not taken in its usage. Figure 5 shows the time student spends during the COVID-19



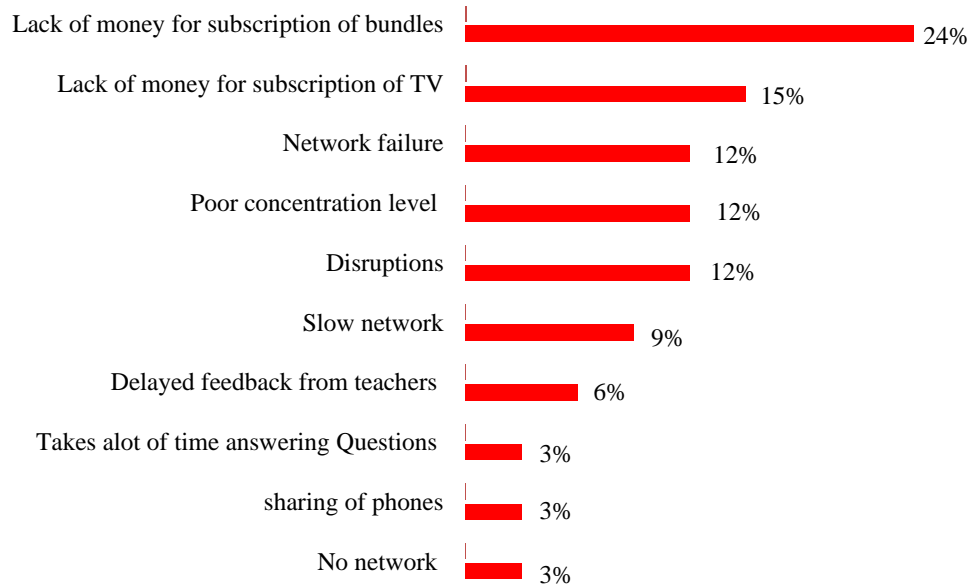
**Figure 3:** Device students use more frequently to access the internet.



**Figure 4:** Education level for parents in the study.



**Figure 5:** Time students spent on the social media during COVID-19 Crisis by students.



**Figure 6:** Challenges faced students in online learning.

While at home.

### **Utilization and perceived challenges of online collaborative learning tools which are available in e-learning platforms**

Access to distance learning through digital technologies is highly unequal. The issue of access to the internet and digital platforms is particularly pertinent in Africa, where less than a third of the population has access to broadband connectivity (<https://www.internetworldstats.com/stats1.htm>). The obstacles that hinder access and retention in the e-learning programme offered to students by the government are shown in Figure 6.

Majority of the respondents (24%) cited lack of money for subscription of bundles, the cost of internet via cellular phone is quite high, (15%) felt that Lack of money for subscription of TV was another challenge, (6%) cited lack of instructor's contact and delayed feedback from teachers as an instructional challenge. These instructional challenges erode the effectiveness of the online programme as learners may not be well-grounded in their areas. Lack of internet connectivity and slow internet was cited as a challenge by (24%), the signal is quite poor or nonexistent. This may erode the expected cost-effectiveness advantage of online platform.

Students can access the online classes and other education materials during the COVID-19 crisis. For access to be meaningful, it must also be affordable for students and teachers, students must acquire digital literacy and other skills required to make the best use of it. In addition, teachers and students need to be able to find and use locally relevant content. Telco companies in Kenya offer free internet access to students learning

through the e-learning Platforms during the COVID-19 crisis. Figures 7 -9 show the reliability of the Network used by students to download learning material.

Some internet-enabled tools in Kenya ensuring learning from home continues include national public cloud-based education platform by KICD, Longhorn e-learning platform; this platform has comprehensive notes, quizzes and exam guides drawn from top examiners for both primary and secondary school goers, including interactive CBC and Google Classroom; Google Classroom is a free web service, developed by Google to be used by schools. The online application, which can be used both on smartphone devices and computers, simplifies interactions between teachers and students in real-time. VIDEO LINK; classes are on a video basis where the students can see their teacher, something essential in the learning process. Parents are encouraged to check homework and be part of the children's learning. Ubongo Kids; is an interactive education platform that uses cartoons to teach foundational concepts in subjects such as math, science as well as problem-solving skills to children, particularly those in kindergarten and lower primary level. The application is available on the play store and Apple Store in both English and Kiswahili. Kytabu; is a platform that has digitized hundreds of textbooks required for primary and secondary schools, as well as learning games, a virtual classroom for in-class chats and some past tests and exams. eLimu; this application is available on the Play Store and Apple Store offers access to textbooks which can be useful for revision and learning purposes for children at home. National Geographic Kids; National Geographic Kids is a children's magazine published by the National Geographic Society and is available online. It offers informative lessons or texts on subjects such as

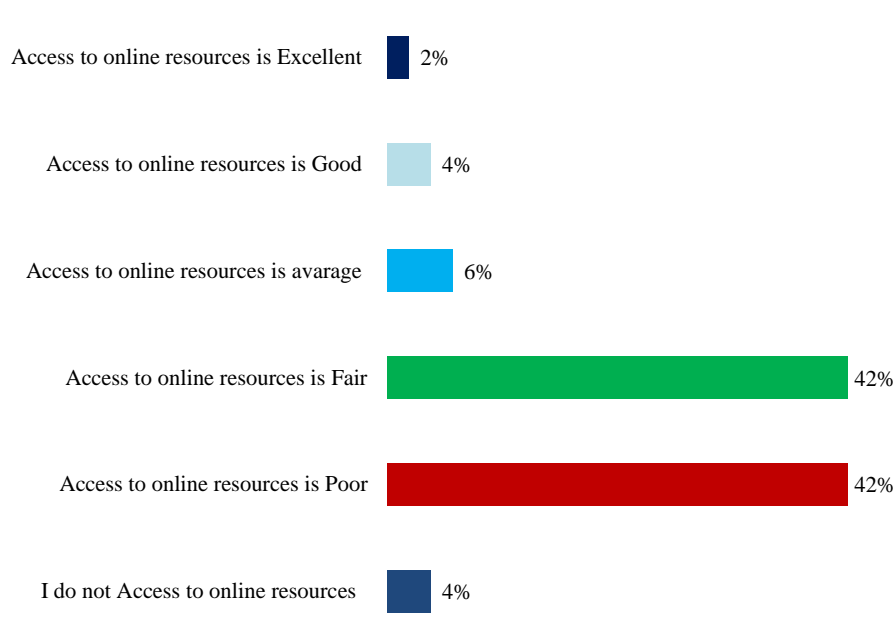


Figure 7: Download and use of free and open resources for teaching and learning.

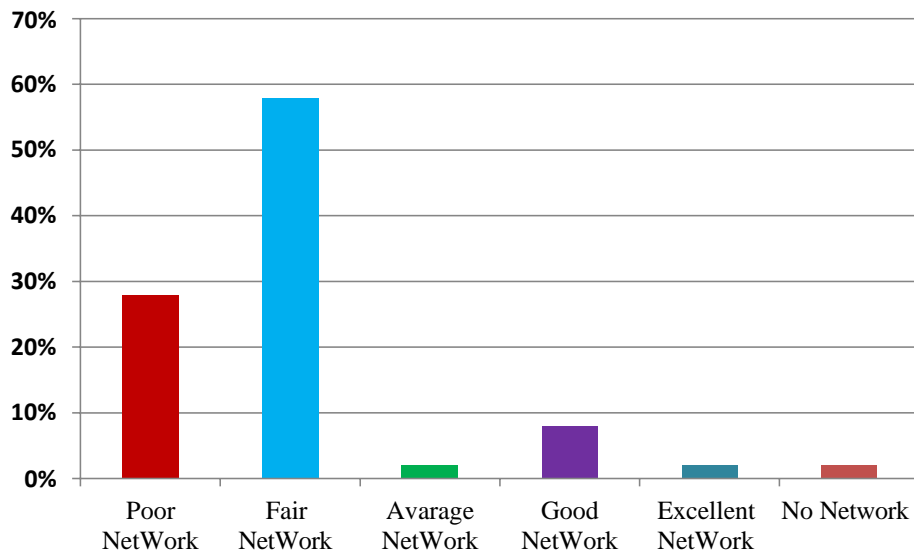


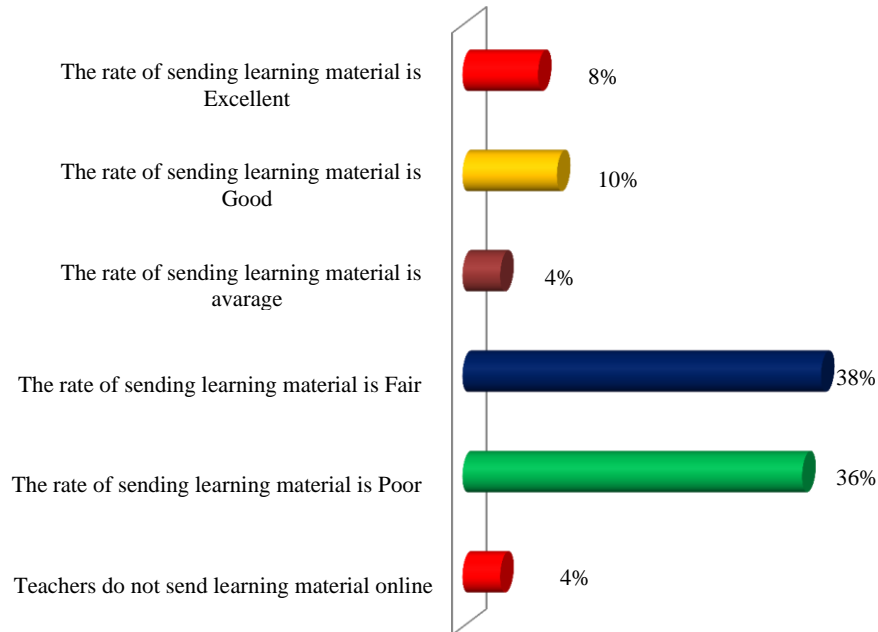
Figure 8: Network bandwidth/Speed of internet downloads by Students.

science, math, english, history, geography, art and animals.

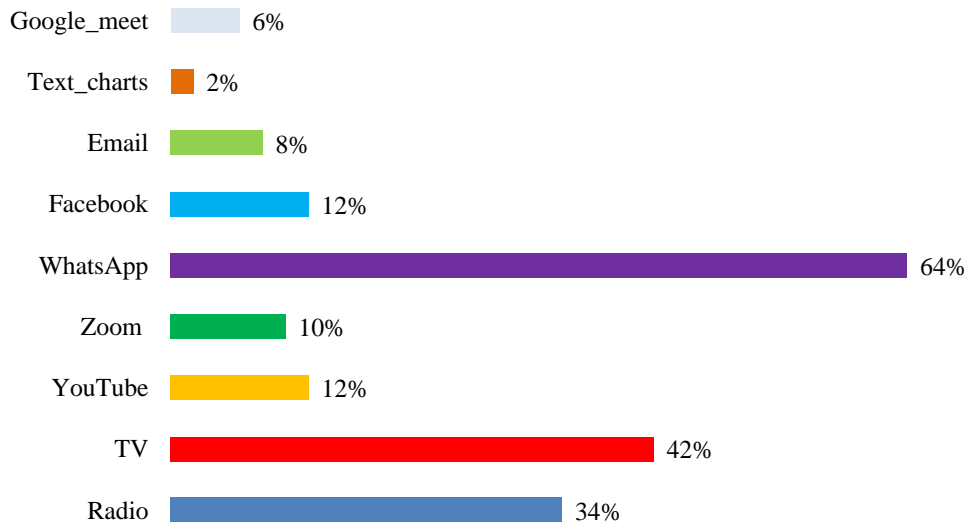
Hundreds of digital education tools have been created with the purpose of giving autonomy to the student, improving the administration of academic processes, encouraging collaboration, and facilitating communication between teachers and learners. The Digital platform that is under-utilized and which can provide new impetus for digital education in Africa is WhatsApp. WhatsApp is primarily a communication application but shares a number of features with social media applications. In the prevailing situation of the COVID-19 pandemic, WhatsApp can enrich the learning

experience and make it relatively easy for teachers to make contact with learners at their own convenience. WhatsApp is cost-effective and easy to use, giving it a competitive advantage over the other social network platforms as seen in Figure 10.

WhatsApp is also considered a safe application due to the inclusion of end-to-end encryption (E2EE) protocol. Teachers request students who study at home to write their answers to the assignment on pieces of paper. Students then take photos of their completed answer sheets and send them to their instructors via WhatsApp. Instructors' grading and comments are then manually added to the photos of the answer sheets. WhatsApp



**Figure 9:** The rate of Teachers sending learning material to students.



**Figure 10:** Mode of delivery of the online material for students during COVID-19 crisis.

users can check if messages have been received properly and read by the receiver when two blue marks appear next to the sent information. The instructor can also use WhatsApp for one-on-one text exchanges to address individual students' expectations and needs. In most cases students can contact their course teachers via WhatsApp regardless of time differences, physical distance, or office working hours and this can reduce delays in feedback. Teachers can create online collaborative groups; however, WhatsApp groups limit the number of users, which may prevent the formation of

groups of learners exceeding 256.

There is no doubt that the Internet has immense potential to improve the quality of education, which is one of the pillars of sustainable development. Access to the Internet opens doorways to a wealth of information, knowledge, and educational resources, increasing opportunities for learning in and beyond the classroom. Reliable network infrastructure is crucial to support different activities, such as synchronous cyber-teaching using video conferencing, asynchronous cyber-learning by accessing or downloading digital learning resources,

and collaboration with peers via social software. In order to support the "Disrupted Classes, Undisrupted Learning" during the novel coronavirus outbreak, the Government of Kenya granted approvals to Google Loon, in partnership with Telkom Kenya to ensure universal 4G data coverage is available throughout the country. Loon balloons are designed to extend connectivity by traveling on the edge of space, delivering internet connection to people in rural and underdeveloped parts of the world.

The key principles to be observed for Effective communication through online learning are accessibility, flexibility and transparency (Sheninger, 2014). The immediate objection to online education is equitable access. Access to the necessary ICT infrastructure is one of the most important issues that come into focus in the assessment of how developing countries have progressed in e-learning. Many students do not have computers or Internet access at home. How could they participate in an online class? Even if students did have access to the essential technology, would they have the skills necessary to use it? Technological elements, as well as computer skills, are important success factors for social interaction, social communication and learning outcomes (Herrera and Mendoza, 2011; Wataluk, 2012; Yu and Richardson, 2015). Many students are first-generation, which means there is no academic support at home. Computer experience including perceived self-efficacy, enjoyment, and usefulness of using e-learning also plays a role (Liaw and Huang, 2011).

Lee and McLoughlin (2010) defined flexible learning as a "set of educational approaches and systems concerned with providing learners with increased choice, convenience, and personalization to suit their needs. In particular, flexible learning provides learners with choices about where, when, and how learning occurs, by using a range of technologies to support the teaching and learning process." With the development of information and communication technologies, new learning modes have appeared that can open more opportunities for flexible learning, such as open learning. Open learning aims to make learners more self-determined and independent, while teachers became learning facilitators (Wiki, 2019). Flexible learning has been further extended beyond the dimension of delivery to cover flexible pedagogy (Gordon, 2014; Ryan and Tilbury, 2013). Gardon (2014) and Ryan and Tilbury (2013) believed that flexibility is not only an attribute of students but also a feature of educational strategies at the institution level. Therefore, flexible learning requires learners to be more skilled at self-regulation in terms of goal setting, self-monitoring and making adjustments and instructors to promote active learning so that learning in such situations can be engaging and effective (Collis, 1998). China, Wuhan City, during the period of COVID-19, the self-inquiry course offered encouraged students to select the topics based on their interests and strength. This was accomplished by creating products in the formats student prefer, such as a regular letter,

posters, brochures, videos, songs or dances to salute the front-line heroes who fight against the novel Coronavirus (Huang et al., 2020).

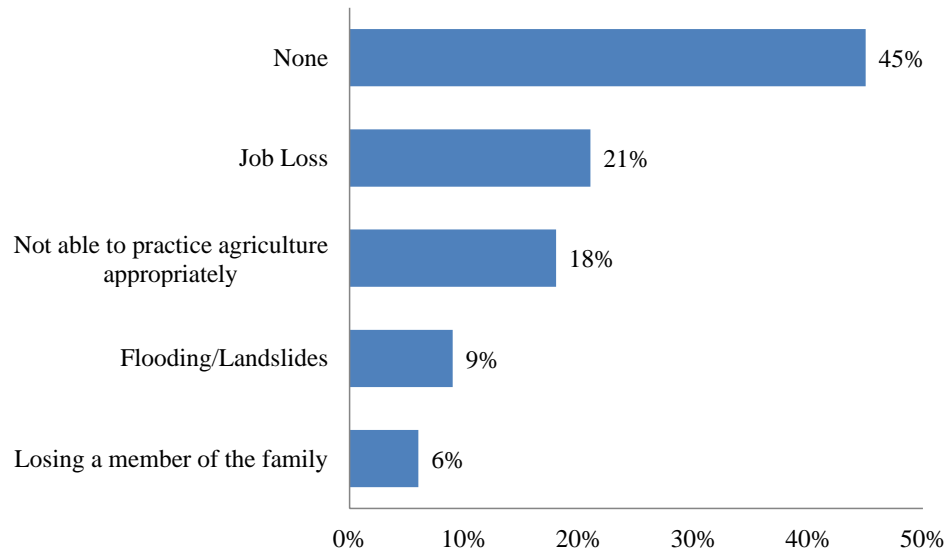
Motivation and attitudes towards online is the key determinants for successful online learning (Lineham et al., 2011). Student attitudes are influenced by the quality and perceived ease of use of e-learning courses, functionality of e-learning platforms, and the level of student computer skills (Aixia and Wang, 2011). Positive student attitudes and behaviors towards e-learning are critical to their e-learning readiness and acceptance (Lim et al., 2008; Selim, 2007). According to Deb (2011) the physical separation between the learner and the instructor tends to create a feeling of isolation on the part of the learner leading to negative attitudes. Selim (2007) stated users who were very familiar with web technologies and the skills needed to use computer and mobile devices for instruction to develop positive attitudes. On the other hand, students who were not skilled in ICT became anxious about the use of computers, had lower expectations from educational technology, and they did not believe in the benefits of e-learning. Chen and Huang (2012) stated that understanding student attitudes can help expand e-learning system functions and meet student needs, which should further increase the impact of learning and enhance satisfaction with the learning process.

### **Social-Economic effect of COVID-19 to education**

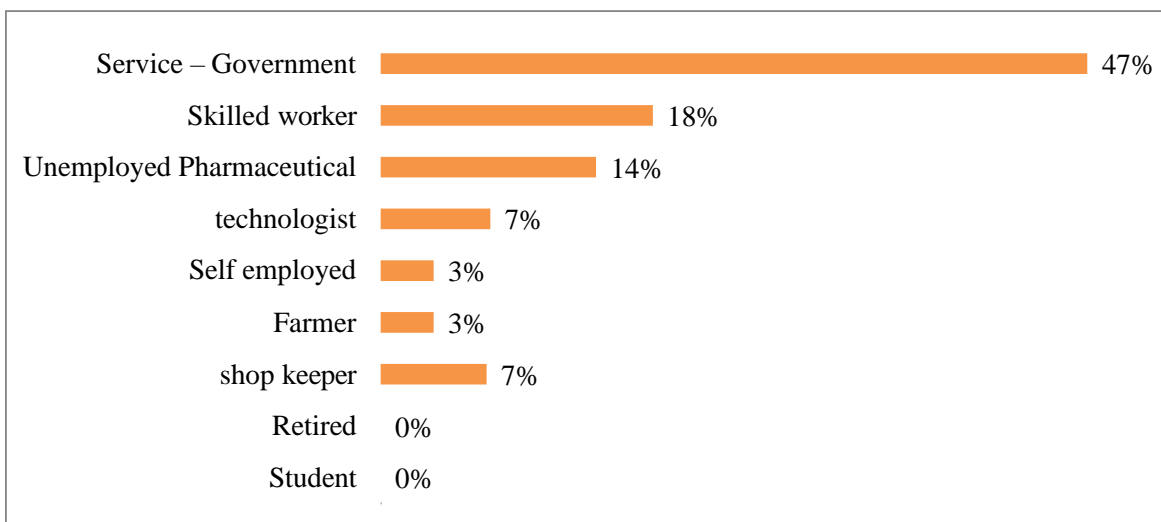
According to the 2019 Kenya Population and Housing Census there are about 19.5 million poor people in Kenya; with 14 million, 1.3 million and 4.2 million living in rural areas, peri-urban and core-urban and informal settlements, respectively. The COVID-19 pandemic will exacerbate poverty. The Kenya National Bureau of Statistics (KNBS) estimates that unemployment stands at 14.2% amongst youth aged 20-24 years. The formal sector currently generates about 20% of the jobs required to absorb the labour force which is growing at 2.9% per annum. People living in or near poverty often lack disposable cash and cannot easily stockpile food in times of pandemics. Hunger, malnutrition, pneumonia and other forms of health-related shocks and stresses compound vulnerability to the COVID-19 pandemic and contribute to a vicious cycle of disease, destitution and death. The coronavirus pandemic would increase poverty, inequality and unemployment due to its adverse impact on people's jobs and livelihoods in the key sectors of the economy.

The study revealed that 21% of the parents had lost their jobs, 18% had problem in practicing Agriculture effectively, 6% lost a member of the family and 9% were affected by flooding and slides (Figure 11). Broadly speaking, permanent job losses in three buckets: jobs lost due to COVID- induced demand shifts, jobs formerly at marginal firms that don't survive the pandemic and lockdown, and jobs lost due to the intra-industry reallocation triggered by the pandemic and post-

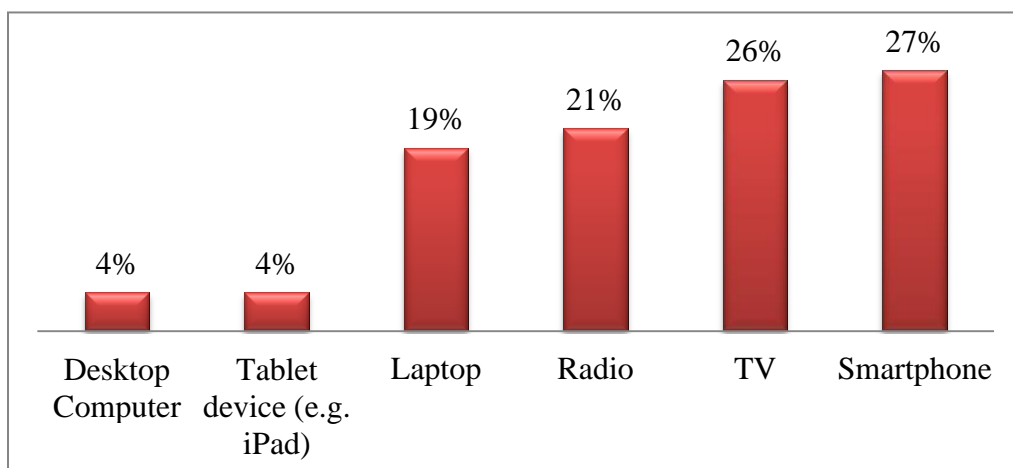




**Figure 11:** Economic effect of COVID -19 and other Natural Calamities.



**Figure 12:** Parent and Guardian Occupation in the study.



**Figure 13:** Devices owned by the parents.

pandemic concerns about the transmission of infectious diseases (Bandiera et al., 2019). One of the main potential avenues by which parental job loss may affect the educational outcomes of students is via an income effect. Job loss may, however, have other effects on families in addition to income losses, including loss of self-esteem, lower mental health, changes in attitudes toward risk, even marriage breakdown and substance abuse. These additional effects may directly influence the educational outcomes of the student.

Parental income is an indicator for social and economic resources that is available to the student. Moreover, parental education is an indicator of parent's income because income and education are highly correlated. Occupational measures produce information about the social and economic status of a household in that they represent information not only about the income and education required for an occupation but also about the prestige and culture of a given socioeconomic stratum (Selcuk, 2005). Figure 12 represents parent and guardian occupation in the study. Home resources are not used as commonly as the other main indicators. In recent years, however, researchers have emphasized the significance of various home resources as indicators. Resources include household possessions such as books, Electronic (Figure 13) and a study room as well as the availability of educational services after school (Selcuk, 2005).

## CONCLUSION

It is clear from the results of the study that to enhance the uptake of online programmes by students, there is a need to institute learner support mechanisms to address the instructional and individual challenges. Digital technologies are playing a critical role in the global fight against the COVID-19 pandemic. Media, and especially social media, can also be used to educate students about the virus itself and teach basic hygiene and debunking myths and misinformation. It is without doubt that social media is and will remain an important tool in human life as far as communication is concerned. The nature of social media as a useful servant but a dangerous master" and a two-edge sword, despite the benefits that students can harness from social media networks such as sharing of information, building relationships, partaking in group discussions from far and near and among others, there is to some extent addiction and distraction of attention caused by the use of social media which could have serious consequences on the academic performance of the students. Social media in many African countries has been awash with speculation, false and misleading information on Covid-19. Schools need to give accurate information on the virus while debunking myths and misinformation. Access to the Internet, with sufficient bandwidth, is essential for the development of an information society. Lack of

broadband connectivity is preventing widespread use of the Internet in education. For access to be meaningful, it must also be affordable for individuals. The success of online education will be measured by educational outcomes.

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