SCHOOL ENVIRONMENT BASED FACTORS INFLUENCING EDUCATIONAL INEQUALITY IN SECONDARY SCHOOLS IN RARIEDA SUB-COUNTY IN THE WAKE OF THE COVID-19 PANDEMIC

BY

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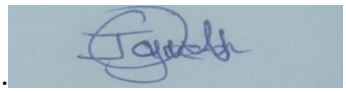
DECLARATION

This research project is my original work and has not been presented for a degree at any institution.

Signature.  …… Date…20 -11-2023……

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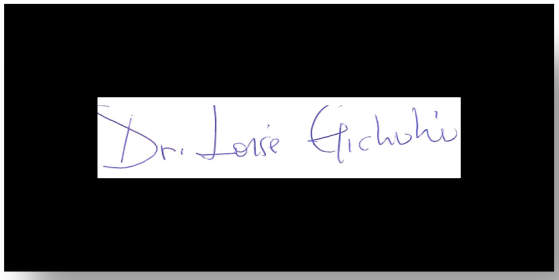
This research project has been submitted for examination with our approval as university supervisors.



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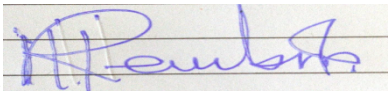
Signature: ……  Date: …20-11-2023……

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DEDICATION

I dedicate this work to my wife Monicah, my parents, Mr. Aloice Odindo Onyinge and Mrs. Eunice Akinyi Odindo, my brothers Francis, Ben, David, Oscar, Dan and my niece Evans.

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ABBREVIATIONS AND ACRONYMS

COVID-19	Coronavirus 2019
ICT	Information Communication Technology.
ILO	The International Labour Organization
ITU	International Telecommunication Union
KBC	The Kenya Broadcasting Corporation
KICD	The Kenya Institute of Curriculum Development
KIE	Kenya Industrial Estates
KNBS	Kenya National Bureau of Statistics
MoE	Ministry of Education
NACOSTI	National Commission for Science, Technology & Innovation
RoK	Republic of Kenya
SMS	Short Message Service
SPSS	Statistical Package for the Social Sciences
UNESCO	United Nations Educational, Scientific, and Cultural Organization.
UNICEF	The United Nations International Children's Emergency Fund
WHO	World Health Organization.

ABSTRACT

This study sought to do an investigation on school environment-based factors that influenced educational inequality in secondary schools in the Rarieda sub-county in the wake of the COVID-19 pandemic. The study had four main goals: to find out how parental or guardian support affects educational inequality; to find out how access to remote learning affects educational inequality; and to find out how ICT infrastructure affects educational inequality in Rarieda Sub-County in the wake of the COVID-19 pandemic. This research paper used Bourdieu's theory of social and cultural reproduction together with the Classical Liberal theory of equal opportunities. The study applied a design of descriptive research. The targeted population comprised of 60 school heads, 1200 teachers, 2000 parents, and 6,000 learners. The tools used to collect data were focused group discussions, interviews and the use of questionnaires. Validity of the instruments was checked by the help of supervisors from the university of Nairobi. The method of test-retest was used to ensure that the instruments were reliable. In data analysis, descriptive and inferential statistics were used. From the study, it was found that many parts of the Rarieda sub-county are not properly connected to electricity. This, together with poverty issues, posed a major challenge to remote learning. This study concludes that contextualization of educational programs during times of education emergencies is necessary in the fight against educational inequality. In the recommendations, a thorough campaign and training ought to be done by the Kenya's Ministry of Education to ensure that teachers are digitally literate and use ICT in teaching and learning. The study also recommends that remote learning interventions amidst any pandemic ought to be contextualized (education in context) for effective and efficient learning; otherwise, they can create educational inequality. Moreover, the entire system of educational institutions ought to be well endored with ICT infrastructure and resources. Interconnection is also necessary in all departments within schools for effectiveness and efficiency of work. Finally, it is necessary for the Ministry of education to employ at least one ICT specialist in all secondary schools to assist teachers, learners and administrators on matters to do with ICT

CHAPTER ONE

INTRODUCTION

1.1Background to the study

The first case of COVID-19 was reported in China's Wuhan City in the month of December 2019. Thereafter, the virus spread to over 114 countries within a very short span of time. WHO officially pronounced Coronavirus a pandemic on the 11th day of March 2020.This lethal disease spread within the entire world, posing both short-term and prolonged social and eonomic impacts on countries and individuals. The disease affected all facets of life, education included. Learning for at least 1.7 billion learners was disrupted worldwide. In their tireless attempt to curb the spread of the disease, nations and states diverted more funds to the health sector.

The pandemic impacted the systems of education across the entire world, this led to almost a total closure of all learning institutions (Sintema, 2020). Almost all the learning institutions were temporarily closed by governments following the measures to curb the spread of COVD-19. An approximate of 1.73 billion learners were affected by the closure of schools as of 27th July, 2020. UNICEF (2020) indicates that 106 countries implemented a total closure while 55 countries implemented local closures, impacting a percentage of around 98.6 of the entire population of learners in the world. The Cambridge International Examinations cancelled all their examinations for June/July 2020 on 23rd March, 2020 (Ogunode, 2020).

The International Baccalaureate examinations were as well cancelled. Moreover, Advanced Placement Exams, ACT administrations and SAT administrations were cancelled and relocated online. The closure of learning institutions not only impacted students, teachers and families but also posed adverse social and economic implications. The government of Kenya announced that all schools, universities, together with colleges be closed between March 16 and March 20, 2020, to stop the spread of the coronavirus in educational institutions after the Ministry of Health confirmed the first case of COVID-19 on the 13TH day of March 2020, in Nairobi.

The lockdowns and closures of schools affected learners, teachers, and households, as well as adversely impacted the world's economy. The closure of schools due to the coronavirus pandemic led to a plethora of economic and social issues, such as remote learning, food shortages, housing, access to health care, disability, internet, and housing services. Olingo (2020) posits that the closure of businesses and schools also led to the loss of jobs and incomes, and physical and psychological problems due to isolation and confinement at home, as well as negatively impacting the economy. The effect was not proportionate; it was more serious for the less privileged children and their households.

Most of the socio-economic and political activities in Africa came to a stop during the period of COVID-19 pandemic (Jacob, Abigael and Lydia, 2020). CDC officials together with the African Union (AU) proclaimed that the COVID-19 pandemic is a war for the entire continent. Within the education sector, over 72 percent of learners were out of their learning institutions in about

177 countries by April, 2020. The closures of these learning institutions, together with the hashtags such as #stay at home, #quarantine, #lockdown #social distance, and # regularly wash hands, require current strategies and techniques to conceptualize. A number of these methods and techniques that were being applied to continue with learning amidst the pandemic include but not limited to use of online platforms, television channels, Radio, video conferencing and discussion boards. The situation of learning remotely in African countries remains desolate in comparison to other developed countries. According to Chidambaram (2020), only about 25 percent of developing countries organized remote learning programs, of which the majority were only using radio and television. On the other hand, almost all the developed countries were able to provide remote leaning digitally, with nearly all services being provided online.

To readjust and embrace the then new normal and paradigm shift on teaching and learning, the sector of education had to looked for ways of exploiting the available remote learning resources to continue learning while at home (Bryson and Andres, 2020). Remote learning programs are able to create individualized, significant adventures in learning and connect to learners' home-based environment and interests as well as using the available digital resources at home. Remote learning has its advantages and disadvantages. According to Mulenga and Marban (2020), the teacher is not always in the vicinity as in the physical classrooms, as is the customary for Kenyan students, the educational institutions and the learners (pupils or students) had to make some necessary

adjustments. In the universities and other higher educational institutions, the existing policies had to be modified to incorporate online teaching methods. These new teaching and learning methods were subjected to diverse opinions of policy makers, learners, teachers, parents and other education stakeholders, however, the strategies were rolled out and applied and remote learning effected most learning institutions (Aborode, Anifowoshe, Ayodele, Iretiayo, & David, 2020).

UNESCO, together with many governments around the world advocating for the use of diverse remote learning platforms by educational institutions, holds that this would enable teachers to reach learners remotely and reduce educational interruption during the period that schools were temporarily closed. The remote learning proposal already had many challenging issues (UNESCO, 2020a). Lockdowns and the closure of schools posed unmatched challenges to governments in making sure there was continued learning (Chang & Yano, 2020). Many nations worldwide have embraced divergent measures of dealing with the emergency in education. To avoid the disruption of learning amidst COVID-19, the program of learning, that is, ‘Schools Out, But Classes On', became predominant worldwide.

Amidst coronavirus pandemic, the government of Kenya through the Ministry of Education, initiated measures to continue with learning remotely. In this respect, different remote learning programs were rolled out, which included mostly the use of televisions, radios and online platforms (Masaviru,2020). The government of the republic of Kenya partnered with the Association of Kenya

Publishers and produced electronic copies of textbooks and availed free of charge on the Kenya Education Cloud for all learners. In collaboration with the Kenya Civil Aviation Authority, together with the Telkom Kenya, the Kenyan government also did set up Google's Loon balloons with 4G network over the airspace of the country. Despite these worthy measures intended to ensure no learner is lagging behind, a number of children have been unable to access these noble services. The temporary closure of all the learning institutions in Kenya as from the 15th day of March 2020, disrupted close to 17 million learners across the country (Lugonzo, 2020)

The government of Kenya rolled out an educational program to help in the continuation of learning even as schools were closed. The Ministry of Education came up with a remote learning program where teaching and learning are relayed through the use of technology, such as online platforms, discussion boards, video conferencing, radio, and television. This was to make sure that learning in the country was not entirely interrupted while the learners were at home. However, there were a lot of new challenges that came along with it (MoE, 2020). The extended lockdowns and closures of schools posed long-term consequences for many learners. Most affected were the vulnerable and marginalized children. These children were already experiencing hard times in their attempts to access education, and some were even on the verge of dropping out. Such learners may include those whose parents and guardians may have lost their source of income as a result of retrenchment from jobs or the closure of casual jobs and businesses. Moreover, the adversely impacted also include

learners from informal settlements, those in slum settlements in urban centers, those in remote rural areas, asylum seekers together with refugees, and learners with disabilities. The Kenyan constitution has a provision for the right to education for every child in Kenya, despite any prevailing situation. Therefore, this calls for equity in education. This research aims to investigate school environment-based factors influencing educational inequalities in the Rarieda sub-county amidst the coronavirus pandemic. In the Rarieda sub-county, the predominant economic activities are fishing and small-scale farming. Therefore, people spend most of their time on farms, lakes, or beaches. The connectivity of electricity in the Rarieda sub-county is very low, and this affects remote learning since the remote learning devices use power. The many challenges might have caused educational inequalities.

1.2 Statement of the Problem

The worldwide lockdowns as a result of the coronavirus pandemic disrupted traditional classroom education. The measures to curb the spread of coronavirus resulted to the temporary closure of schools in the entire world, the majority lasting at least 12 weeks. Governments rolled out remote learning programs to continue with education amidst the pandemic. The strategy of remote learning (during the pandemic) started in China; this was referred to as 'School's out, but class's on'. This was later adopted globally to continue learning without much disruption (Zhou et al., 2020). In many developing nations, pupils and students depend heavily on their facilities and resources to help them with remote learning through various online platforms, television channels, and some

radio stations. Moreover, the instructors, such as the teaching staff, tutors, and lecturers, had to adapt to new teaching methodologies that the majority were not trained in.

The sector of education was majorly impacted and millions of children remained in their residences following the closure of learning institutions. These issues affect people all over the world, but they are particularly bad for poor students and their families, particularly those who reside in informal settlements in cities, in difficult-to-reach regions, poverty stricken rural areas, internally displaced persons (IDPs), as well as refugees. To make sure that everyone can get fair, high-quality education, training, and research that encourages lifelong learning, these problems need to be addressed.

There were also bigger differences in accessibility of radio, which reached majority of rural place even much better compared to urban areas during the pandemic. In rural areas, the possession of laptops, computers, televisions, and the access to internet is much lower. Equity implications will remain for a generation if the learners from rural and marginalized areas are left lagging behind their counterparts in urban areas. The closure of schools amidst the pandemic seems to have deepened inequalities in education, despite the concerted efforts of the government. Well-off families were able to deal with the challenges of the pandemic better, and maintain their children's remote learning. They could afford good internet and were able to hire virtual tutors for their children. This signifies that after resumption of physical learning, disadvantaged children were further left lagging behind their counterparts.

The situation became very bleak for learners with disabilities as well as those residing in marginalized and remote regions. Aside from the learning opportunities missed, learners from poverty-stricken backgrounds were also missing access to meals from the School Feeding Program that was started in 2009 by the Kenyan government in collaboration with the World Food Programme.

The abrupt closure of learning institutions adversely impacted students' academic performance (UNESCO, 2020a). Schools are source of essential learning, therefore, the closure of learning institutions denied children the opportunities for vital growth and development. These shortcomings were not proportionate for poor students, who possess fewer remote learning chances when schools are closed (UNESCO, 2020b). Parents with inadequate resources and knowledge normally struggle to support their children's learning at home when schools are closed. Coronavirus disclosed how the Kenya's education system could advance and the immediate need to speed up the digital learning program in Kenya.

Comparatively, the effects of coronavirus fell differently on education in developing and developed countries. The challenges brought about by COVID-19 were more severe in developing countries. Even within developing countries, there is still a wide rural-urban divide. Being a citizen of a third-world country, learning remotely in the COVID-19 pandemic, residing in remote rural areas, coming from a poverty-stricken family, and being a person with a disability has different levels of inequality in social and economic facets of life. Specifically,

most learners in many rural areas with the inability to access remote learning resources or who lack parental support and the commitment to personal learning while at home were more disadvantaged. Even within the Republic of Kenya, there exists a wide rural-urban divide. This is evident in terms of the access to remote learning tools and skills in ICT and the disparity in infrastructural development such as power supply and network connectivity.

This research seeks to determine school environment-based factors influencing educational inequality in secondary schools in Rarieda sub-county during coronavirus pandemic. Rarieda sub-county is one of those remote areas in Kenya that are economically crumbling. Most households in the sub-county are surviving from hand to mouth on meagre incomes hard-earned from peasant farming and fishing. The lockdowns further worsened the economic status of the Rarieda sub-county. The nationwide closure of schools almost brought learning to a total standstill in Rarieda since electricity is a challenge and very few households could afford remote learning resources. Remote learning interventions amidst the COVID-19 pandemic ought to be contextualized for effective learning.

1.3 Purpose of the study

This study intends to examine school environment-based factors influencing educational inequality in secondary schools in the Rarieda sub-county during COVID-19 pandemic.

1.4 Objectives

1. To assess the influence of the availability of digital learning tools on educational inequality in secondary schools in the Rarieda sub-county amidst the Covid-19 pandemic.
2. To investigate the influence of parental or guardians' support on educational inequality in secondary schools in the Rarieda sub-county amidst the COVID-19 pandemic.
3. To assess the influence of access to remote learning on educational inequality in secondary schools in the Rarieda sub-county amidst the COVID-19 pandemic.
4. To investigate the influence of ICT infrastructure on educational inequality in secondary schools in the Rarieda sub-county amidst the COVID-19 pandemic.

1.5 Research questions

1. How does the availability of digital learning tools influence educational inequality in secondary schools in Rarieda Sub-County amidst the COVID-19 pandemic?
2. In what ways does parental or guardians' support influence educational inequality in secondary schools in Rarieda Sub-County amidst the COVID-19 pandemic?

3. How does access to remote learning influence educational inequality in secondary schools in Rarieda Sub-County amidst the COVID-19 pandemic?
4. How does ICT infrastructure influence educational inequality in secondary schools in the Rarieda sub-county amidst the COVID-19 pandemic?

1.6 Significance of the study

This research sought to examine school environment-based factors influencing educational inequality in secondary schools in the Rarieda sub-county amidst the COVID-19 pandemic. Contextualization of education is necessary when rolling out effective programs of remote teaching and learning in the wake of any pandemic. The outcomes of this study can be useful to governments and other national and international organizations to consider different contexts to make remote learning more effective and efficient during periods of emergency, such as the coronavirus pandemic. This may help in coining solutions to and better remedies for emergencies in education. The study lays the foundation for future studies to be conducted surrounding educational inequalities during the pandemic.

This theoretical study is important because it will help the education sector and other stakeholders get ready for and respond to infectious diseases like coronavirus and many others. This will allow teaching and learning to proceed

and the system of education to move with ease after the coronavirus pandemic and any other problems that may come up.

1.7 Limitations of the study

This study, just like others, has several limitations that should be noted. Since the study was conducted on public schools' employees, the drawback is that generalizing this study to other public schools may not be appropriate. This is due to organizational differences, work involved, and government policy implementation, among other issues, in conflict with the appropriateness and relevance of other public university operations. Administering the questionnaires might be biased as the responses of the respondents were used for analysis. Their responses might have depended on their perceptions and opinions as well as how they felt about the question at hand (Nelson, 2006).

1.8 Delimitation of the study

The study focuses on the school environment-based factors influencing educational inequality in secondary schools in the Rarieda sub-county in the wake of the COVID-19 pandemic. The study covers the period between March and December 2020; this was the period when learning institutions were closed in response to ways of curbing the spread of COVID-19. During this period, remote learning became predominant to maintain learning continuity even in the absence of brick-and-mortar classroom learning. This study is qualitative research. The study focused on the public secondary school learners within the

Rarieda sub-county. The respondents in this study included school heads, teachers, parents, and learners.

1.9 Assumptions of the study

This study made the following assumptions:

1. The research respondents cooperated and gave truthful information about their experiences with respect to the study's test items.
2. The public schools that were sampled for this research represented all the public secondary schools in the Rarieda sub-county.

1.10 Definition of significant terms

Education

Education refers to the formal and systematic transmission and acquisition of the programmed content by the Ministry of Education.

Equity and Equality: Equality refers to fairness in the distribution of resources or in giving support despite the disparities; it's equal treatment. Equity, on the other hand, is justness, that is, giving support to everyone according to their needs.

Educational inequality: In this study, educational inequality is referred to as the unequal distribution of educational resources which results in inequality in educational opportunities and educational achievement.

ICT instructional materials refer to the electronic aids that are used in teaching and learning, such as computers, audiovisuals, and digital devices.

ICT integration can be defined as the application of ICT to strengthen, complement and expand skills in education

Infrastructure refers to a consolidated system comprising of resources used in provision of various ICT services.

1.11 The organization of the study chapters

This study was is organized into the following chapters:

Chapter one details the background information of the study, contextualization of the research problem, the significance of the study, the objectives of the study, the research questions, the importance of the research, the study's limitations, delimitations, assumptions of the study as well as some key terms that were used in the study. The second chapter captures a detailed review of related literature from previous studies. It comprises a review of the empirical literature, theoretical framework, conceptual framework, and a summary of the reviewed literature. Chapter there entails the methodology together with the research methods that the study used. It also talks about the research design, the population that will be studied, the sample size that will be used, the sampling procedures, the research tools that will be employed in data collection, the tools that will be used to test validity and reliability, the steps that will be taken during the research, and the methods that will be used for analysis and data

management. Chapter four entails data presentation, the interpretation and discussion of findings. The chapter entails a presentation of the collected data as per the objectives and research questions of the study. This chapter also entails the analysis of the collected data and how the data is interpreted for the purpose of making inferences. Chapter five finally entails a presentation of summary, the conclusions, the recommendations from the study and suggestions for further study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter details the review of related literature from previous studies. This includes a review of the empirical and theoretical literature together with the conceptual frameworks. It captures also a summary of this literature review, indicating the gaps captured from the previous studies reviewed.

2.2. Empirical review

2.2.1. Inequality and its application to Education

Education can be referred to as a lifelong process of transmission and acquisition of useful knowledge, practical skills, acceptable values, ethics, and desired attitudes focused on enhancing and sustaining the productivity, efficiency and effectiveness of human capital. The attainment of equity in education in terms of access to education, quality, and outcomes of educatio has continued to be a challenge for many years. Equity in education has been a lifelong objective of states and nations globally; however, concerted efforts have often been unsuccessful. Factors that have often perpetuated educational inequalities may include, but are not limited to, politics, educational attainment opportunities, culture, gender, disabilities, language, natural disasters, social class, religion, and socioeconomic status (Bijeesh, 2017).

According to Grisay (1984), principles of equality in education include the principle of equality of access, the natural equality principle, the principle of

equality of achievement, the post-modern principle, and the principle of equality of achievement. This paper focuses on inequalities due to rural-urban disparities and socioeconomic status in terms of access to remote learning materials, access to distance learning while at home, ICT infrastructure, and parental support for children learning remotely amidst the COVID-19 pandemic.

2.2.2. Requirements for remote learning

Students, teachers, and parents require various materials for effective remote learning. First, there is the need for digital learning and teaching devices such as tablets, computers, smartphones, televisions, and radios. Teachers and learners should be able to afford and easily access the devices to enhance remote teaching and learning. Well-developed, strong, and reliable network connectivity is also key in remote learning since most digital learning gadgets require good network connectivity (Brown, 2017).

Some learners, teachers, parents, or guardians may have access to these digital learning devices but lack the skills to operate them. Digital literacy is, therefore, another necessary requirement. Instructors need ICT skills to help with the new online teaching methodologies. Moreover, parents and learners also require basic skills in operating digital devices for effective learning remotely. So, there needs to be a well-thought-out plan to help students and teachers learn more about the latest technological trends and how to use them to improve online learning (Firat, 2016).

An affordable and reliable power supply (electricity) is also very key to remote learning. Almost all remote learning devices require electricity to function. Electric power supply in rural residences within Kenya is still lacking as compared to urban centers, where there is a reliable supply of power. Rural electrification needs to be enhanced for effective remote learning in such areas.

Finally, most learners' concentration span is very low; this is even more reduced when they learn remotely while at home. Therefore, suitable e-learning resources such as animations, videos, and games are necessary to lure the learners' interest and maintain their attention (Hutt, 2017).

2.2.3 Digital Learning Tools and Educational Inequality

The closure of schools in March 2020 started as a temporary precaution in response to the measures to curb the spread of the coronavirus; however, it paved a way for a new normal that people had to cope with. Learners who were in their final year of study had no alternative but to finish school remotely, more so the ones who were in colleges and universities. There was a wide disparity in access to e-learning materials and other remote learning resources required for the continuation of learning at home while schools are closed (Meyer, 2022).

Access to the digital resources as well as other remote learning resources needed in the continuation of learning during the period when schools were closed was desperately unequal. Learners who had inadequate or totally no access to remote learning materials at home, lacked means to effectively support their remote learning during this pandemic. Provision of a variety of remote learning

materials and enhancing access to good internet connectivity for schools and every learner is necessary. Robert Jenkins, the Chief of Education in UNICEF, said, “A crisis already existed in learning even before the attack by coronavirus. Now we are staring at more divisive and intensified crisis in education.” The learning materials that are commonly used to support remote learning include the Internet, television, radio, smartphones, and electricity, among others (Lynch & Dembo, 2014).

2.2.3.1 Internet

According to UNICEF (2020), those who have access to the Internet are less than half of the entire world’s population. The research further indicates that 73% of the 127 reporting countries are governments making use of online platforms for e-learning during the period of temporary school closures. Not as much as a quarter of Africa’s population can access stable internet. The data collected by UNICEF from fourteen countries indicates that schoolchildren who have access to the internet in their homes tend to acquire better foundational skills in reading than those who lack internet access at home (Kör, 2021).

2.2.3.2 Television sets

This is one of the major channels that many governments use to provide education remotely. In Kenya, educational programs were mostly relayed through EDU TV channels. However, there is a huge disparity in access to televisions. Children from families residing in urban centers are twice as likely

to access a television set compared to children living in rural areas (UNICEF, 2020).

2.2.3.3 Radio

This is another platform that was commonly used by countries to provide education while schools remained closed. There is a wide disparity in ownership of radios in various locations. According to the UNICEF Global Tracker on Education Response (May,2020), just about one-fifth of households in Southern Asia have access to radio. Comparatively, in Latin America, three-quarters of households have access to a radio. Access to radio programs has been a challenge for many households in Kenya. In Kenya, 56.7% of households owned a radio in 2019, whereas 43.3% had no access to radio programs. In terms of area of residence, the analysis shows that rural areas have higher access to radio compared to urban areas at 58.5% and 54.4%, respectively (Jacobs, Renandya, & Power, 2021).

2.2.3.4 Smartphones

This is widely used in many countries. At least half of the world's countries have access to mobile phones (UNICEF 2020). Mobile phones are widely used in almost all sectors of the economy. Smartphones are one of the ICT gadgets that facilitate e-learning activities. Smart Insights (2016) points out that 90% of online time is spent using mobile apps. The majority of the Kenyan population owns mobile phones; however, the ownership of phones by households in Kenya varies by region and socio-economic level of people.

2.2.4. Parental Support and Educational Inequality

According to Pinquart (2016), parental practices in child-rearing in general, and moreso the involvement of parents in schooling (Barger, 2019) have a significant effect on students' achievement in academics. The involvement of parents in schooling can be referred to as the commitment of resources in terms of money, time, and energy to improve the academic achievement of a child. There are two broad forms of parental involvement; that is, home-based and school-based involvement (Barger, 2019). The home-based parental involvement covers various aspects such as advising and talking with children in matters school, motivating them in their academic endeavors, and assisting them with their academic assignments (Pomerantaz & Grolnick, 2017). School-based parental involvement consists mostly of parents' direct contact with the school. The distance-learning of primary school teachers during the period of closure of schools was conducted mostly by giving assignments, which they had to work on while at home (Weber, 2021). It is, therefore, justifiable to put a significant focus on parental involvement in remote learning which is conceptually the same as involvement in homework.

Despite being children from rural households, poverty also poses severe challenges to children's educational attainment. The majority of rural people in Kenya, especially in the Rarieda sub-county, are peasant farmers who mostly use their children's labor on the farms. The temporary closure of schools, therefore, provided a lucrative chance for parents in rural areas to put into use the free labor of their children. On the other hand, parents from urban

households had the opportunity to monitor their children and guide them to study. However, poor guidance culture from parents in rural areas led many students to use their free time playing instead of studying. According to a 2018 ILO study in Ethiopia, children between the ages of 7 and 14 attend school with an average attendance rate of 82% in urban centers and 57% in rural places. The closure of schools due to coronavirus affected female students more than their male counterparts, as they spent more of their free time attending to house chores such as cooking, caring for the babies, and doing laundry, among other duties (ILO, 2018).

A family's financial security also plays a critical role in parental support for their children's remote learning and how they make educational decisions and choices. The social and economic status of a family affects these educational choices, and parental education levels have a greater impact. Nelson (2009) argues that parents who never made it to tertiary levels of education (universities and colleges) have limited knowledge about the socio-economic benefits of tertiary education. Therefore, the majority of such parents prefer their children to work instead of going to school.

A parent's level of education dictates their support and involvement in the education of their children. Parents who are not well educated always transfer to teachers the whole responsibility of education. Parental involvement in education comprises a variety of tasks, such as supervising the social setting of their children and their interactions with others (Rizwan, Shahid, Shafiq, Tabassum, Bari, and Umer, 2013).

2.2.5. Accessing Remote Learning and Educational Inequality

Access to remote learning differs when we compare rural and urban areas. An evaluation report on the utilization of radio programs by KIE (2012) indicates that the utilization of radio programs declined from 84% in 2005 to 56% in 2008 and later to 23% in 2013. This implies that the usage of radio programs in schools is low, and consequently, their utilization at home is even lower because there is no teacher supervision or initiative.

The KICD has been running TV programs for teaching students from primary to secondary schools through KBC and EDU television channels. Research on ICT Inequalities and E-Learning in the Wake of COVID-19 in Kenya by Mutegi (2020) indicates that just about 26% of rural families own TVs, whereas 62.5% of urban households own televisions. This shows that learners from rural areas are more disadvantaged in terms of access to television educational programs.

Ngwacho (2020) conducted research on the impact of COVID-19 pandemic on the Kenyan education sector with emphasis on the challenges and mitigations. The study reviewed secondary data resources to discuss effects and mitigations for coronavirus in the education sector of Kenya, with reference to learners.

The study discovered that the pandemic had severely hampered the schools' ability to pay for school-related expenses like school kits, meals, and instructional materials.

2.2.6 ICT Infrastructure and Educational Inequality

Mhlanga and Moloi (2020) conducted a study which showed that COVID-19 pandemic interfered with educational activities, leading to even more frustration of educational opportunities for the disadvantaged learners. Many teachers and learners we displaced and multiple barriers to teaching and learning were created. According to the study, the lockdowns increased school debts, leading to pressure in schools and on parents. Similarly, Mathew, Kristen and Ben (2020) argue that the closure of schools can aggravate stress to learners who are already struggling with poverty of urban areas. The study found out that technology in education is very necessary, moreso at times of emergency. This supports what Onyema (2019) said earlier: incorporation of modern technology in teaching and learning is not a choice anymore. It is, therefore, a must for all teachers because the environment of teaching and learning is changing, teachers need to be able to adapt their methods, and students need to be able to learn in new and creative ways. This study would play a part to the increasing knowledge on the effect of COVID-19 on the sector of education, and the necessity of new technology in teaching and learning.

Mhlanga and Moloi (2020) assessed the interrelation between COVID-19 and the digital transformation of education in South Africa. Their study focused on gauging the effects of coronavirus on unleashing the transformation of technology in the sector of education in South Africa. The study monitored the rate at which various institutions applied the resources of the Fourth Industrial Revolution (4IR) amidst COVID-19 in order to assess its effects. The study used

secondary sourced data such as magazines, newspaper articles, and journals. The study found out that, during the lockdown in South Africa, different 4IR resources were unleashed from primary to higher and tertiary education, where teaching and learning switched entirely to remote learning.

Access to education, more so at higher education levels, has always been a challenge due to the limited number of spaces available. The COVID-19 pandemic brought massive human suffering across the globe (UNESCO, 2020a). There is an opportunity to assess the successes and failures of deployed technologies, the costs associated with them, and scale these technologies to improve access.

2.3 Theoretical framework

The study used Bourdieu's theory of social and cultural reproduction together with the Classical theory of equal opportunity. The theory of social and cultural reproduction by Bourdieu comprises socio-economic and cultural capital.

According to Bourdieu, social capital represents the relationship and interconnection of institutions; economic capital refers to assets with monetary value; and cultural capital refers to educational attainment. Bourdieu (1998) indicates that all three forms of capital are interconnected, such that the absence of one disadvantage the others.

With respect to the digital divide, an inadequate or total lack of material wealth (economic capital) automatically leads to a lack of access to the internet, which

the pandemic has made very necessary for access to education (cultural capital). Educated individuals possess high levels of digital literacy, enabling them to make better and more productive use of the Internet (Correa, 2015; Hargittai & Hinnant, 2008). The scholars, Ullah & Ali (2018), posit that a child in prestigious private schools is advantaged in that their parents are actively involved in their education, they can access good private tutors, and most are digitally literate and have access to virtual learning resources.

Bourdieu's theory of social and cultural reproduction is significantly applicable in this research paper. The theory helps in understanding the digital and educational inequalities in Kenya in the wake of the COVID-19 pandemic. According to DiMaggio (1982), those who are well-endowed with economic capital in the form of material wealth inherited from their parents are more likely to access education as a form of cultural capital. Learners from wealthy backgrounds have the opportunity to acquire more cultural capital (education) than others (Bourdieu and Passeron, 1977). This study intends to investigate factors influencing educational inequality in Rarieda due to remote learning in COVID-19. The unequal access to digital and other remote learning resources by regions, social and economic backgrounds, and household-based endowments tends to shape learners' remote learning in the wake of the COVID-19 pandemic in Kenya.

The classical liberal theory of equal opportunity further supported Bourdieu's theory of social and cultural reproduction in the study. Sherman and Wood coined the term "classical liberal theory of equal opportunities," which promotes

equal opportunities for all students in the educational system. Liberalism as a policy takes into consideration equality and individual liberty as the most important goals; it gives attention to individual rights together with equality of opportunity (Bannister, 1989).

The theory points out that every learner has some level of innate ability that cannot be easily and largely altered. Every system of education should, therefore, be structured in a way that eliminates any form of challenge, such as gender-based challenges, socio-economic challenges, political challenges, and geographical challenges, among others. Such challenges may limit learners from poor economic backgrounds from achieving the full potential of their innate talents, which improves their social development.

According to classical liberal theory, equity in educational structures promotes social mobility. The system and structures of education ought to be planned with the intention of doing away with all forms of challenges, for example, socio-economic, socio-cultural, geographical, ecological, and institution-based challenges. According to Dorrien (2001), liberalism discourages discrimination and supports the upholding of basic rights such as the right to education for every child. Education is the only key that can open the doors of marginalized and vulnerable children and sail them to social promotion.

Therefore, in terms of access and equity, it's illogical to disregard the fact that inequality in education will later complicate the social status of disadvantaged and vulnerable learners (Njeri & Orodho, 2003). While the fortunate and most

learners from rural areas were remotely learning through televisions, radio, and other e-learning devices, the learners in rural parts of Kenya could not afford the basic necessities for remote learning. This shows the unequal opportunity for education.

2.4 Conceptual Framework

This study intends to investigate factors influencing educational inequalities in secondary schools in the Rarieda sub-county in the wake of the COVID-19 pandemic. The dependent variable is educational inequality, which the study links to various independent variables. The main independent variables of interest to this study include access to digital learning materials amidst the COVID-19 pandemic, parental support for children's learning at home remotely, access to remote learning resources, and ICT infrastructure during the COVID-19 pandemic. The intervening variable that may affect educational inequality in the wake of the COVID-19 pandemic is family background, which involves but is not limited to the parents or guardians' level of education, the economic status of parents, family size, and cultural and religious beliefs, as illustrated in the figure below.

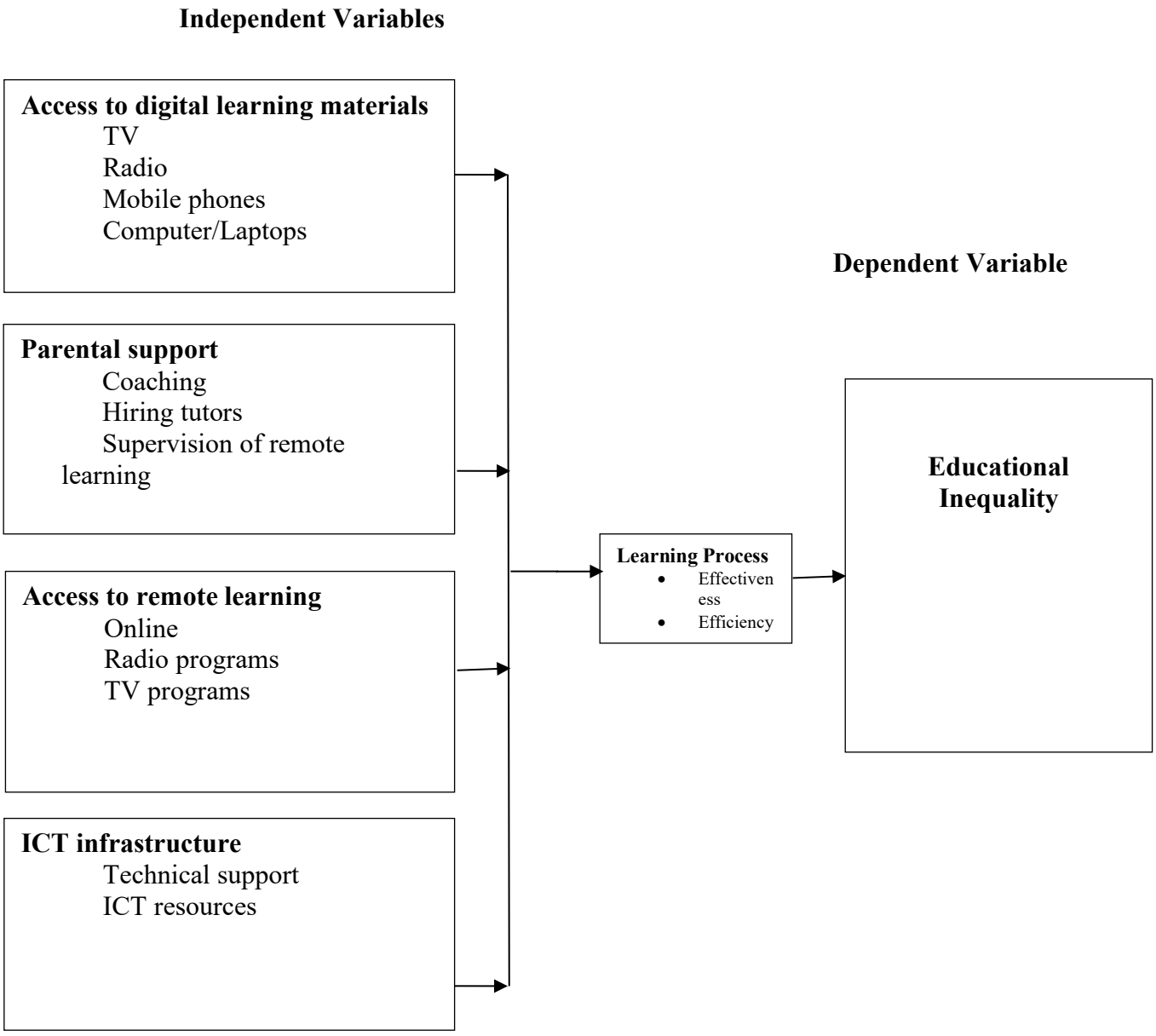

Figure 2.1: The Conceptual Framework of the Study

2.5 Summary of Literature Review

The measures to contain the spread of COVID-19 disease resulted in the unexpected and prolonged temporal closure of schools, which caused a wide range of challenges for many learners, especially the vulnerable and marginalized. The closure of schools brought about remote learning for the

continuation of learning amidst the pandemic. The COVID-19 pandemic revealed how the Republic of Kenya was not prepared for remote learning. This was due to the inadequacy of e-learning resources and other remote learning support materials within the country.

Equity in education has been a major challenge and lifelong objective of almost all nations globally; however, concerted efforts have often been unsuccessful. Factors that have always perpetuated educational inequalities may include, but are not limited to, politics, geographical divide, educational attainment opportunities, culture, gender, disabilities, language, natural disasters, social class, religion, socioeconomic status, etc. The needs for remote learning and teaching may include, but are not limited to, digital gadgets such as tablets, computers, smartphones, televisions, and radios; digital literacy for learners' teachers and parents; a reliable supply of electricity; and proper parental support, among others. There was unequal access to the digital tools and other remote learning materials needed to continue learning while schools were closed.

Parents from urban households had the opportunity to monitor their children and guide them to study compared to parents from rural areas who possessed a poor guidance culture, which resulted in many rural students either doing home chores or using their free time to play instead of studying. Litheko (2012) observed that many parents from rural areas have very little interest in the education of their children. Moreover, unequal access to e-learning resources

also exists between rural and urban learners in terms of the distribution of digital learning devices, internet connectivity, and digital literacy.

Herein, most of the reviewed literature expounds on the effects of the COVID-19 pandemic on the economy and its impacts on adolescents. The scholarly works reviewed have not touched on factors influencing inequality in education amidst the COVID-19 pandemic. This research, therefore, is focused on factors influencing educational inequality in secondary schools in the Rarieda sub-county in the wake of COVID-19. Therefore, the researcher intends to fill this gap in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter details the methodology and the research methods employed in the study. It comprises of the research design, targeted population, sampling procedure and sample size, research instruments, reliability and validity of the instruments, data collection methods, data analysis and ethical considerations that the study employed.

3.2 Research design

Research design can be defined as a blueprint or a master-plan that outlines the methods, data collection procedures, and analysis of the required information. This research applied a triangulation design that comprises both qualitative and quantitative methods. According to Creswell (2014), quantitative research involves the collection of numerical data that is quantifiable from the respondents. Questionnaires were used to collect quantitative data. Moreover, interviews and focus group discussions were scheduled to collect qualitative information from the respondents, with the focus being on the respondents' experiences, opinions, feelings, knowledge, and input.

This study applied both a case study and a diagnostic research design. A case study deeply concentrates on a full contextual analysis of events and their interrelationships. It relies more on qualitative data from the respondents. A

diagnostic study determines the frequency of the occurrence of something or its correlation with something else.

3.3 Target Population

The respondents included school heads, teachers, parents, and secondary school students within the Rarieda sub-county. In this study, a population of 9260 respondents was targeted; this involved 60 school heads, 1200 teachers, 2000 parents, and 6000 learners, as captured in Table 3.1 below.

Table 3.1: Target population of the study

Respondents	**Population targeted**
School heads	60
Teachers	1200
Parents	2000
Learners	6000
Grand total	**9260**

3.4 Sample size and sampling procedure

The study adopted Yamane's formula to obtain a good sample size that is adequate with respect to its goals.

Below is the formula.

$$No = \frac{N}{1 + N(e^2)}$$

No. represents the sample size with a 95% confidence level.

N represents the total population targeted.

e represents a 5% level of precision.

Therefore, the required sample size was:

$$No = \frac{9260}{1 + 9260(0.05)^2}$$

$$No = 383$$

To make sure that the samples were all the same, the researcher used stratified sampling, which has six levels for each of the six zones in the Rarieda sub-county. In each zone, purposive sampling, stratified sampling, and simple random sampling were used in the selection of the proportionate number of respondents. All six zones were proportionately represented. This procedure allowed the researcher to obtain a sample of six school heads, 50 teachers, 83 parents, and 248 learners, as shown in Table 3.2.

Table 3.2: Sampling Matrix

Respondents	Targeted population	Proportion	Sample size	Techniques of sampling
School Heads	60	10/100*60	6	Purposive sampling
Teachers	1200	1200/9260*383	50	Stratified sampling
Parents	2000	2000/9260*383	83	Simple random sampling
Learners	6000	6000/9260*383	248	Purposive sampling
Total	**9266**		**387**	

Purposive sampling, and stratified sampling and simple random sampling were used in getting the samples. Purposive sampling is non-probability sampling, where the researcher decides which particular respondents to select. Purposive sampling is done based on the researcher's judgement, depending on the needs of the study. It relies entirely on selecting information-rich respondents to gain a deeper understanding of the situation when random sampling is not possible. Simple random sampling was used because it gives everyone in the target population an equal chance of being chosen. Stratified sampling, on the other hand, was used because it lets the researcher find out important things about a population through a sample (Mweshi & Sakyi, 2020). Stratified and simple random sampling was used in the sampling of the schools. Public secondary schools in the Rarieda sub-county were stratified into three categories: sub-county schools, county schools, and extra-county schools. Simple random and

purposive sampling were then employed in the selection of two schools from every stratum. Two extra-county schools (one girls' school and one boys' school), two mixed-county schools, and two mixed-sub-county schools were selected to take part in the study. In the sampling of the sub-county schools, stratified and simple random sampling were used.

All the principals from the sampled schools were chosen to take part in the study. Stratified sampling was used in the selection of teachers to be included in the study. Names of the teachers were written on pieces of paper placed in boxes based on school category and were picked as follows: nine teachers were chosen from each extra-county school, eight teachers from each county school, and eight teachers from each sub-county school to take part in the study.

Purposive sampling was used in the selection of students from the chosen schools. From every school, 41 students were chosen to take part in the study. The forty-one students per school were randomly picked from every form, with a minimum of ten students per form. Simple random sampling was used in the selection of parents to participate in the study. A maximum of fourteen parents were selected from every zone in Rarieda sub-county. Parents were randomly chosen from each zone depending on their availability and willingness to participate in the study.

3.5 Research Instruments

Research instruments refer to the tools employed in the study to get data about the predetermined research goals and objectives. In this study, the researcher used questionnaires for the learners and teachers, scheduled interviews for head teachers, and conducted focus group discussions with parents.

3.5.1 Questionnaire for Teachers and Learners

Self-designed questionnaires with closed-ended questions were used to collect data from learners and teachers. This was quantitative data. Morse (2010) explains that questionnaires are research tools that comprise a variety of well-designed questions intended for the collection of data from study respondents. The questionnaires were divided into five sections, that is, sections A, B, C, D, and E. Sections B, C, D, and E were designed to gather information from the respondents with respect to the three study objectives of the research. The respondent's demographic details were to be gathered in the first section.

3.5.2 Interview guide for the head teachers

An interview refers to a conversation for gathering information. In qualitative research, the interview comprises an interviewer, who moderates and coordinates the process of the conversation and asks predetermined questions, and an interviewee, who responds to those questions based on their knowledge and experience. Interviews can be conducted face-to-face or over the telephone. The internet is also emerging as a tool for interviewing using virtual platforms

such as video conferencing, Google Meet, Zoom, etc. This study adopted a face-to-face interview. The selected head teachers were interviewed in their various schools within their offices.

Interviews are very appropriate when there is a need to collect in-depth information on people's opinions, thoughts, experiences, and feelings. Interviews are necessary when the test items relate to issues that require complex questioning and considerable probing. Face-to-face interviews are suitable for a small sample size and also when the target population can communicate through face-to-face conversations better than they can communicate through writing or phone conversations. This study used open-ended questions to collect qualitative data from the head teachers. The questions were drawn from the goals and objectives of the study. The interview was well structured. The structured interview helps the researcher ask goal-oriented questions to gather relevant and reliable information from the interviewed respondents (Kothari, 2005).

3.5.3 Focus Group Discussions for Parents

The focused group discussion method brings together a small group of individuals—usually 6 to 12 respondents—to discuss topics related to the study objectives. Focus group discussion uses the social dynamics of the group to stimulate respondents to reveal underlying opinions, attitudes, and reasons for their behavior. If well facilitated, it can be helpful in finding out the 'how' and 'why' of human behavior. A focus group discussion is a good way to gather

together people from similar backgrounds or experiences to discuss a specific topic of interest. A moderator leads the participants' group in a lively and organic discussion by introducing topics for discussion and assisting the group.

This study organized focus group discussions for the parents in groups of nine. The moderator defined and clarified the concepts to be discussed. The questions from the study agenda were kept open-ended, and the moderator probed into the respondents some useful thoughts that were not anticipated.

3.5.4 Validity of the Research Instruments

The researcher sought the help of the research supervisors and other education experts in economics and planning to do an analysis of the generated test items and assess the gathered responses to evaluate content validity, ensuring that the questions provided the information that was required in line with the research objectives. The questions found inappropriate with respect to the research objectives were excluded from the research instruments, and other relevant questions were generated. Content validity is evaluated using experts to assess the validity of the questions (Creswell, 2014). At the end of the scheduled interviews, the responses were transcribed and returned to the interviewed respondents for cross-checking and confirmation of the generated interpretations. This ensured the proper validity of the interpretations. Validity is important because it makes sure that the results from all of the research tools can be used to draw conclusions from the sample and trustworthy conclusions about the whole population.

3.6. Piloting of Research Instruments

The sample to be used in a pilot study ought to be 10% of the actual study sample (Kothari, 2005). In this case, a pilot sample size of 38 respondents will be used.

Piloting helped in checking whether the research instruments and the test items were suitable and in assessing the relevance and credibility of the required information. It also checks if the test items in the research instruments are clear and relevant to the study objectives. The responses from the piloting were used for earlier testing of the validity and reliability of the research instruments before the actual study. Piloting helped in the early identification of problems and/or challenges that the respondents may come across, for instance, misinterpretations of questions. The entire group of 38 respondents captured for piloting was excluded from the actual study.

3.6.1 Reliability of the Research Instruments

The results from the pilot study were critically and thoroughly assessed by the researcher and a panel of experts to check if they were reliable. Kothari (2005) indicates that a research instrument is considered reliable if it generates results that are consistent. The use of the split-half technique aided in evaluating the items' reliability. The 38 respondents from the pilot sample were examined thereafter; the responses were divided into two groups referred to as 'halves.' The reliability index between the 'halves' was then established using the Cronbach's alpha method. There is a higher degree of consistency as the

Cronbach Alpha coefficient approaches 1. The Cronbach's alpha coefficient obtained from the pilot study was +0.88 from the principals' interviews, +0.80 from the learners' questionnaires, +0.77 from the teachers' questionnaires, and +0.75 from the parents' interviews. The research instruments were therefore considered reliable and appropriate.

3.7 Data Collection Procedure

The researcher got an introductory letter from the School of Postgraduate Studies at the University of Nairobi and an authorization letter and research permit from the National Commission for Science, Technology, and Innovation (NACOSTI).

A letter of authorization was taken from the Sub-County Director of Education of Rarieda, together with a letter from the office of the County Commissioner. The above letters gave the researcher permission to carry out the research within the Rarieda sub-county. The researcher then booked appointments with the sampled respondents and carried out a pilot study before the actual one.

3.8 Data Analysis

After the data is collected, it should be processed and analyzed with respect to the outline laid out for the purpose of the study (Kothari, 2005). The analysis of the data started with editing, that is, keenly checking the collected data to detect errors and omissions and correct them. The responses were carefully examined and scrutinized to ensure the accuracy and consistency of the collected data.

The classification of data based on prevalent themes came after the editing process. These common themes were placed into groups. Codding was then done to the data from closed-ended test items. A statistical frequency distribution table was then generated to show the trend of the findings.

The qualitative data from the interview schedules was processed, and the analysis was done thematically in line with the research objectives. The qualitative data was presented in narrative form (explanations and interpretations), and inferences were made deductively.

A variety of descriptive statistical methods, such as percentages, mean, mode, and standard deviation, were employed in the analysis of quantitative data. With the help of SPSS version 23, a linear regression analysis was used to draw inferences. Quantitative results were finally presented in the form of well-designed charts and statistical tables.

3.9 Ethical Considerations

This details how the informed consent of respondents is obtained, ensuring privacy and confidentiality of the information from the participants and maintaining their anonymity.

The goals, purpose, and nature of this research were disclosed and well explained to the respondents. The procedure that the researcher intended to follow in data collection was also well explained to the respondents, and they willingly participated in this research.

The responses from the respondents that lean more towards their personal lives were kept highly confidential. The respondents were guaranteed no leakage of their private information to unauthorized persons. The collected data was solely used for the outlined research purposes, and no such data was given to a third party. For anonymity purposes, the respondents' identities were not revealed to anyone for any reason whatsoever.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter details the presentation, interpretation and discussion of the findings of the study. The study sought to examine school environment-based factors influencing educational inequality in secondary schools in Rarieda sub-county amidst COVID-19 pandemic. The study specifically looked at how availability of remote learning tools affects educational inequality, how parental or guardians' support affects educational inequality, how access to remote learning affects educational inequality, and how ICT infrastructure affects educational inequality in the Rarieda Sub-County during the COVID-19 pandemic. Chapter four herein, presents the response rate, the nature of demographic data for the teachers and learners, data presentation, the analysis of data, and discussion of findings.

The collection of data was done using questionnaires, a focused group discussion guide, and an interview guide; the questionnaires were administered to sampled teachers and learners, whereas interviews were scheduled to collect data from head teachers and a focused group guide for parents. Data was analyzed by use of descriptive statistics which includes, mean, mode, frequency distribution tables, percentages and standard deviations. Statistical tables and graphs were applied in data presentation. The discussion of the research findings was presented in continuous prose.

The respondents for the study were learners, parents, teachers and head teachers. The response rate for the study is presented in Table 4.1 below.

Table 4. 1

Response Rate

Respondents' category	**Number administered**	**Number returned**	**Percentage returned**
School heads	6	6	100
Teachers	50	38	76
Learners	248	204	82

The response rate for the school heads was 100 percent, while the questionnaire return rate for teachers was 76 percent. The participation rate for the learners was at 82 percent. Kothari (2008) recommends a response rate more than half the sample size.

The researcher managed to visit the schools in person and gave out the questionnaires to teachers and learners, and thereafter collected them. This justifies the high response rate recorded for teachers and learners. Some teachers, however, failed to fill out the questionnaires in good time due to their busy schedules and assignments outside of school. A few teachers, however, did not manage to fill in the questionnaires because they had tight schedules and other commitments outside school.

4.2 Demographic information

Demographic information presents the nature of each respondent in terms of gender, age, highest educational attainment and the duration of stay in service. The outcome from this demographic information was necessary in examining the suitability of the respondents to engage in the study since they had the chance to associate with the variables of the study. Questionnaires were used to gather the demographic information for learners and teachers.

4.2.1 Gender Distribution of Respondents

This research found it necessary to gather the distribution of gender among teachers and learners to determine participation of females and males in investigating the factors influencing educational inequality in the Rarieda sub-county. Table 4.2 below shows the study's distribution of gender among teachers and learners.

Table 4.2

Gender Distribution

	Teachers		**Learners**	
Gender	F	%	F	%
Male	27	71%	122	59.8%
Female	11	29%	82	40.2%

The table above shows that the majority of teachers and learners were males, whereas females were the minority. In line with the above data, females were marginalized and, therefore, most of them did not participate in the investigation of factors influencing educational inequality in the Rarieda sub-county amidst the COVID-19 pandemic.

4.3 Availability of Digital Learning Tools and Educational Inequality

The study's first objective was to assess the influence of the availability of digital learning tools on educational inequality in secondary schools in Rarieda sub-county amidst the COVID-19 pandemic. The study used descriptive statistics in the analysis where standard deviation and mean were used to tell the measures of dispersion and central tendency, respectively.

4.3.1 Learners' Response

The study sought to determine the learners' views on the availability of digital learning tools and educational inequality in Rarieda Sub-County amidst the COVID-19 pandemic. Table 4.3 below presents the learners' responses.

Table 4.3

Learners' Response to the Availability of Digital Learning Tools

	SA		A		UD		D		SD			
Statements	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**Mean**	**Stdv**
Radio	40	20	100	49	-	-	63	31	-	-	3.79	0.98
Television	51	25	41	20	-	-	82	40	30	15	3.59	1.35
Computer/ Laptop	-	-	40	20	-	-	164	80	-	-	2.39	0.79
Smartphone	-	-	81	40	-	-	-	-	123	60	2.19	1.47
Tablet	-	-	41	20	-	-	122	60	41	20	2.20	0.98

(n=204, Average Mean=2.83)

Table 4.3 indicates that 140 (68.6%) of the learners' agreed that radio was used for remote learning (M = 3.79, SD = 0.98). From this, it is evident that radio

was the predominant remote learning tool. This was followed by 92 (45%) of the learners indicating that television was being used for digital learning. This may infer that the majority of learners were not able to benefit from television programs as most households do not possess televisions (M = 3.59, SD = 1.35). Moreover, only 40 (20%) of the learners' affirmed that computers and laptops were also used in digital learning (M = 2.39, SD = 0.79). Moreover, 81 (40%) of the learners acknowledged thar the smartphone was very crucial for successful digital learning (M = 2.19, SD = 1.47). From the learners' responses, it may be inferred that radio was the most available remote learning tool. Televisions, computers, laptops, smartphones, and tablets were not possessed by the majority of households.

4.3.2 Teachers' Response

In the open-ended questions, teachers were asked whether they had any digital learning resources that could be utilized for remote learning and teaching during the pandemic. The study established that only 38% of the teachers had the requisite digital learning tools. The findings infer that not all teachers were equipped with digital learning tools, implying that there was educational inequality in the Rarieda sub-county amidst the coronavirus pandemic.

Teachers were also interrogated to give examples of the digital learning resources that were mostly used in remote teaching and learning during the pandemic. The majority of teachers stated that they had radios as the main digital learning tools used during the pandemic. This implies that other digital

learning tools like laptops and desktop computers were not in use, which could have affected educational equality during the COVID-19 pandemic.

Teacher online planforms and forums insist that the implementation of new technologies in lesson planning remains a tiresome work. One of the predominant reasons highlighted by teachers for not implementing modern technologies was that the majority of teachers are comfortable with their current lesson planning. The drive for effective classroom teaching is highly influenced by a teacher's motivation for their learners to learn effectively and efficiently. There is no motivation for a teacher to change a current lesson plan if it meets the needs of their learners. Teachers normally spend a lot of time making lesson plans that will capture learners' interest and attention for effective and exiting learning. In the already tight schedules of work, creating these lesson plans again would mean more additional work for the teacher.

In the open-ended questions, teachers were probed to mention the challenges related to the installation and usage of the above-mentioned digital tools at school. In response, the effective and efficient use of technology in teaching and learning is highly influenced by the teachers' beliefs and attitudes. Teachers' beliefs and attitude towards integration of modern technology in education will automatically influence their implementation of technology in educational pedagogy. Technology is now majorly integrated in education; therefore, the biggest concern is how to best implemented it in teaching and learning process.

Ertmer et al. (2012) stated that inadequate digital literacy among instructors is the major reason for improper implementation of technology in teaching and learning. Expansion of professional training and development in technology became one of the major policy recommendations for the National Education Association (NEA, 2008). NEA 2008 reports that teachers have continuously developed confidence in applying current technology in classroom instruction; that is, doing internet search, using projectors to display video clips and notes, and doing analysis of students' results. Despite these improvements, technology is dynamic and is costly changing, therefore, it is very prudent that teachers should constantly continue updating their ICT skills. Suppose more teachers with ICT skills are hired to help in the current technology in education, numerous modern technologies would still continue to develop and they would still need constant professional development and training to keep updating their ICT skills. Professional training and development would remain a major barrier to implementation of technology in education if the necessary resources to provide constant technological training remains a challenge.

4.3.3 Headteachers' Response

In the open-ended questions, school heads were probed to mention some of the challenges linked to the installation and usage of the above-mentioned digital tools at school. Undoubtably, there exist many reasons that can make a teacher to recoil from the use of new technology in classroom instruction, but the moment teachers start integrating new technology in lesson planning, they have to decide on the best technologies to apply. There are numerous internet

platforms, and virtual learner engagement environment that teachers can choo from; therefore, making a decision on the ones to use in enhancing learners experience in tandem with the curricula remains a big challenge. At times teachers may find a technology but the programs are not effective in enhancing students' learning experiences.

There are so many advertised technologies claiming to be good in improving the academic abilities of learners, but many of them are false. Teachers, therefore have additional task of verifying the best technologies to use in classroom instruction. If possible, the choice of good technologies to use in classroom instruction should be made by the curricula developers, this may relieve teachers in terms of time and effort used in evaluating technologies. Many teachers may see the integration of technology in education as something being imposed on them, but in real sense technology make teaching and learning very easy and enjoyable (Langat, 2015).

A 2008 survey by NEA-AFT disclosed that about two-thirds of teachers have a feeling that their training was sufficient in terms of skills in ICT such as using technology in research, and in administrative purposes. The survey found out that a few teachers claimed that the training was only appropriate in terms of instructional goals such as; ICT integration in teaching and learning (55.7%), analyzing learners' academic progress (57.6&), and designing schemes of work and lesson plans (45.6%).

Given limited budgets for professional development at the institutional level, schools should verify that their chosen training focuses on technology for student instruction. With the scarce resources for professional development and training at school level, schools ought to focus their training on technology for classroom instruction.

4.3.4 Parents' Response

In the open-ended questions, parents were asked to state challenges related to the installation and usage of the above-mentioned digital tools at school. In response:

It takes time to adopt a modern technology in education system. For technology to be adopted in the entire school system, teachers have to be extensively supported by trained ICT professionals. This will not only need more funding at school level, but those creating educational technologies also need to put more focus on user support. A good support from those creating educational technologies and other school employees, can help teachers get access to quality and relevant technological resource for classroom instruction (P. Opudo, personal communication, July 10, 2023).

4.4 Parental/Guardians' Support and Educational Inequality

The second objective of the study was to the influence of parental or guardians' support on educational inequality in secondary schools in Rarieda Sub-County amidst the COVID-19 pandemic. The study used descriptive statistics in the

analysis where standard deviation and mean were used to tell the measures of dispersion and central tendency, respectively.

4.4.1 Learners' Responses

This study sought to establish the perspective of the learners on the influence of parental or guardians' support on educational inequality in secondary schools in the Rarieda sub-county amidst the COVID-19 pandemic. Responses of the learners are captured in Table 4.4 below.

Table 4.4

Learners' Response to Parental/Guardians' Support for Educational Inequality

	NO		**R**		**O**		**VO**			
Statements	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**Mean**	**Std v**
TV Programs	21	10	81	40	40	20	62	30	2.70	1.01
Radio Programs	21	10	40	20	123	60	20	10	2.69	.78
Online learning	41	20	41	20	61	30	61	30	2.69	1.10
(n=204, Average Mean=2.69)										

Table 4.4 indicates that only 81 (40%) agreed that with the support of parents or guardians, they watch educational TV programs (M = 2.70, SD = 1.01). This may also be an indication that most households do not possess televisions.

Further, 123 (60%) of the learners indicated that they listen to educational programs often. Moreover, only 61 (30%) of the learners indicated that, with the support of parents or guardians, they were able to engage in remote learning through online platforms. It may be inferred that there was low parental or guardian support for students' remote learning amidst the COVID-19 pandemic. Parental or guardian support is a factor that may have contributed to educational inequality.

4.4.2 Teachers response

In open-ended questions teachers were asked about some of the issues experienced in supporting learners' learning remotely. In response:

Major challenges of remote learning arose from technical issues in terms of unreliable electricity, poor internet connectivity, faulty software and inadequate relevant digital devices. More challenges also came from inadequate digital literacy as many parents, teachers and learners displayed inadequate skills in operating digital gadgets like computers and laptops. The reliability and strength of internet also plays a major role in how fast a student attends to virtual classes. Therefore, for effective and efficient remote teaching and learning, accessing a high-speed internet connection is necessary for a flawless online learning experience (J. Otieno, personal communication, July 10, 2023).

Many teachers also concluded that the poor connectivity of electricity in the area was also a major challenge.

4.4.3 Parents' Response

Parents were asked whether they were available and able to monitor learners' adherence to the remote learning sessions or programs offered. In response:

COVID-19 made things so difficult and parents were out there in their day-to-day hustle to make ends meet. Most parents were not available, but even if they were, remote learning needs some basic ICT skills which many parents, and students do not possess. The insufficient ICT skills make it very difficult for students to use virtual learning platforms (E. Akinyi, personal communication, July 10, 2023).

Virtual learning platforms require more teacher-parent interaction, however, parental commitment to the academic success of their children goes a notch above this communication. COVID-19 resulted into a change in role of parents with respect to their children's remote learning. The role of parents shifted to more of a teacher in their children's remote learning. As opposed to the traditional classroom learning, this role was totally a new experience to parents.

Many parents spelt out that their roles changed in terms of trying to support, instruct and evaluate their children. They were both a teacher and a parent. A few parents were able to support their children in terms of facilitating instruction, evaluating their children's progress, reporting the progress and

consolidating the instructional ideas together with other interventions recommended by the virtual teacher. However, majority of parents clearly indicated that they never managed to support nor supervise their children's remote learning since they were tightly held up in their daily struggles to make ends meet.

According to Barger (2019), parental child-rearing methods and their involvement in a child's education do affect a child's academic outcome. Parental involvement in education refers to the devotion of resources, both monetary and non-monetary, to a child's education. Parental involvement comprises two major forms: school-based and home-based involvement (Barger, 2019).

One of the parents shared her perspective:

The virtual teacher makes you aware of the support and interventions you can offer as far as your child's academic progress is concerned. When you have some challenges concerning the virtual lessons, you can always can them and they can help. Personally, remote learning pushed me to be closer to my child, support and motivate him towards academic progress (E. Gumbo, personal communication, July 8, 2023).

Similarly, another parent shared her opinion as follows:

Basically, I became both a parent and a teacher. Doing parental role and at the same time helping as an instructor. My child being young and his reading level

is low, I had to help because he can't do everything alone. (A. Agnes, personal communication, July 12, 2023).

Finally, another parent offered the following perspective:

I am a peasant farmer who has to work on the farm for at least 7 hours a day. Honestly, the closure of schools presented a good opportunity to use the children to help on the farm but did not make it possible to engage and support them in remote learning. I knew i was to help them in remote learning…but you know, the economic pressure couldn't let be there and support their remote learning (T. Owino, personal communication, July 8, 2023).

The home-based parental involvement covers various aspects such as advising and talking with children in matters school, motivating them in their academic endeavors, and assisting them with their academic assignments (Pomerantaz & Grolnick, 2017). School-based parental involvement consists mostly of parents' direct contact with the school. The distance-learning of primary school teachers during the period of closure of schools was conducted mostly by giving assignments, which they had to work on while at home (Weber, 2021). It is, therefore, justifiable to put a significant focus on parental involvement in remote learning which is conceptually the same as involvement in homework.

In an open-ended questions parents were asked to state some of the challenges experienced in supporting learners' learning remotely. In response:

The shift from physical classroom to virtual learning can be very challenging, many students take time to cope with the change. Our children who have been used to traditional classroom learning find virtual learning platforms hard. The content delivered may be the same but the rate of understanding differs when online platforms are used (A. Oduor, personal communication, July 5, 2023).

In traditional classroom learning, students get a conducive environment where they learn from both their teachers and peers. Virtual learning, as opposed to physical classroom learning, learners who do not comprehend a concept may find it hard to get further assistance since they are not close to their teachers and peers. The physical detachment from peers may also be a demotivating factor to many students (J. Ogolla, personal communication, July 8, 2023).

Finally, another parent offered the following perspective: *Personally, the major challenge I experienced was getting the time to be with my children and support them in their remote learning. Having lost my job due to the pandemic, I had to be out the whole day hocking masks, and sometimes I used to involve my son, who was in Form Two then, to assist me in the same hustle. Things were so tough on my side—very rough—that I did not manage to significantly support them in their remote learning. (Monica O., personal communication, July 8, 2023)*

Another challenge of online learning is the ease with which one can deviate from the learning platform to social media platforms or even to listen to music. These distractions, especially social media, waste a lot of time and reduce the

learners' concentration thereby reducing the effectiveness of remote learning. In order to stay away from these distractions, one requires discipline, a strong sense of commitment and focus to the learning goals (Pomerantaz & Grolnick, 2017).

4.5 Access to Remote Learning and Educational Inequality

In the third objective, the study sought to assess the influence of access to remote learning on educational inequality in secondary schools in the Rarieda sub-county in the wake of the COVID-19 pandemic. The study used descriptive statistics in the analysis where standard deviation and mean were used to tell the measures of dispersion and central tendency, respectively.

4.5.1 Learners' Responses

The study sought to determine the learners' views on access to remote learning and educational inequality in Rarieda Sub-County amidst the COVID-19 pandemic. Table 4.5 below presents the learners' responses.

Table 4.5

Learners' Response to Access to Remote Learning and Educational Inequality

	NO		R		O		VO			
Statements	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**Mean**	**Std v**
Helping with online learning	60	30	61	30	62	30	21	10	3.00	0.77
Hiring tutors	92	45	42	21	50	25	20	10	2.48	0.92

Coaching	81	40	101	50	22	11	-	-	2.11	1.05
Supervision	123	60	21	10	60	29	-	-	1.69	0.89
(n=204, Average Mean=2.69)										

Table 4.5 indicates that only 62 (30%) of the learners agreed that helping with online learning was often done (M = 3.00, SD = 0.77). Further, 50 (25%) of the learners agreed that hiring tutors is done often (M = 2.48, SD = 0.92). However, 22 (11%) of learners indicated that coaching is often needed (M = 2.11, SD = 1.05).

4.5.2 Teacher's Response

Teachers were asked about challenges experienced by learners in accessing remote learning during the pandemic. In response:

COVID-19 made everything worse, in all facets of life. It was a tough period since the challenges that came with remote learning made it hard to prepare the candidates well for the exams, and the scarcity of digital learning tools also limited our efforts. Actually, studying is not easy even in normal circumstances, and remote learning at home due to coronavirus made it worse. It was very hard to effectively engage in remote learning amidst the pandemic; just a few families are fortunate enough to have a good shelter, reliable and relevant digital devices, and a good internet connectivity (T. Ogutu, personal communication, July 6, 2023).

The impact of coronavirus made me feel always scared. COVD-19 robbed me of a very close friend. Even with the digital devices to conduct remote learning,

I couldn't do it effectively due to the stress of trying to cope with the coronavirus (C. Akinyi, personal communication, July 8, 2023).

The problem was finances, as I didn't have enough money for data bundles. I really tried my best to find a way so that I could take part in our virtual classes. We were not able to conduct practical activities online, such as laboratory activities, and research (T. Otieno, personal communication, July 8, 2023).

Some learners, teachers, parents, or guardians may have access to these digital learning devices but lack the skills to operate them. Digital literacy is, therefore, another necessary requirement. Instructors need ICT skills to help with the new online teaching methodologies. Moreover, parents and learners also require basic skills in operating digital devices for effective learning remotely. Therefore, a well-planned initiative is needed to enhance learners' and instructors' technological knowledge with respect to the trending methods and approaches to enhancing online learning effectively (Firat, 2016).

4.5.3 Headteachers' Response

School heads were asked about challenges experienced by learners in accessing remote learning during the pandemic. In response:

Learners experienced many challenges in the attempt to access remote learning during the pandemic. The magnitude of these challenges differed from one learner to another, due to the interplay of different factors. The challenges were experienced in terms of limited digital learning devices, detachment from

teachers and peers, poor internet connection and mostly low parental support to their children's remote learning. During COVID-19 pandemic, the lockdowns, the social and economic background of learners intensified the challenges experienced by learners (T. Amollo, personal communication, July 8, 2023).

Many head-teachers also explained that minimal parental support for learners learning remotely, inadequate e-learning devices, and poor network connectivity were some of the challenges experienced by learners in accessing remote learning during the pandemic.

Students, teachers, and parents require various materials for effective learning remotely. First, there is the need for digital learning and teaching devices such as tablets, computers, smartphones, televisions, and radios. The devices should be easily accessed and afforded by learners and teachers to enhance remote learning. Well-developed, strong, and reliable network connectivity is also key in remote learning since most digital learning gadgets require good network connectivity (Brown, 2017).

4.6 ICT Infrastructure and Educational Inequality

In the fourth objective, this research sought to assess the influence of ICT infrastructure on educational inequality in secondary schools in the Rarieda sub-county in the wake of the COVID-19 pandemic. The study used descriptive statistics in the analysis where standard deviation and mean were used to show the measures of dispersion and central tendency, respectively.

4.6.1 Learners' Responses

The study sought to determine the learners' views the influence of ICT infrastructure on educational inequality in Rarieda Sub-County amidst the COVID-19 pandemic. Table 4.6 below presents the learners' responses.

Table 4:6

Learners' Response to ICT Infrastructure and Educational Inequality

	NO		R		O		VO			
Statements	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**Mean**	**Std v**
Technical support	51	25	55	27	81	40	17	8	2.70	1.01
ICT resources	64	31	40	20	41	20	59	29	2.69	.78
Network availability	40	20	82	40	82	40	-	-	2.69	1.10

(n=204, Average Mean=2.69)

Table 4.6 indicates that 81 (40%) suggest there is technical support often (M = 2.70, SD = 1.01). This may also be inferred that majority of learners have not trained on digital learning tools. Further, 59 (29%) of the learners agreed that ICT resources are provided very often (M = 2.69, SD = 0.78). Finally, only 82 (49%) of learners indicated that the network was often available.

4.6.2 Headteachers' Response

School heads were asked to suggest other ways that ICT infrastructure can improve ICT integration. In response:

ICT potential can only be acquired if teachers and lecturers at all levels of education comprehend well the challenges that they face, describe the role of ICT in education and as well strategize for their suitable integration in teaching and learning. Through this, educators recognize immense potentiality of ICT integration teaching and learning (G. Wasonga, personal communication, July 8, 2023).

The many challenges facing educators in their attempt to integrate ICT in their pedagogy are both personal and professional. The teacher is at the center of implementation of ICT in education and not the technology itself. Improved teacher attitude in use of ICT in education together with good ICT infrastructure such as proper ICT skills, good internet connectivity and proper ICT devices can result into enormous improvement of ICT integration in education (V. Otieno, personal communication, July 8, 2023).

Teacher professional development and training should put more focus in helping teachers integrate ICT in teaching and learning. The current teacher professional development tactics should divert course in line with ICT integration into the curriculum. According to the findings of this study, for real ICT integration in curriculum and pedagogy to occur, there must be focus on teachers' complete understanding of this, and how the curriculum goals can be supported by technology and the influence of ICT in pedagogy.

School heads were asked to describe how the availability infrastructure can improve the integration of ICT in education.

In response, *the ICT integration in education supports the development of teachers' and students' ICT skills which enhances teachers' pedagogy and students' creativity (J. Opondo, personal communication, July 9, 2023).*

Moreover, ICT can also offer teachers a chance to acquire various educational resources from the internet (Chapman, 2003).

Basically, ICT infrastructure has essential influence on education. Learning institutions have gone through advanced changes in education through ICT integration in education. In this respect, Onyema (2019) asserts that integration of ICT in teaching and learning is nowadays more of a need than a choice for all teachers, with regards to the dynamic nature of learning environment, needs for flexible pedagogy, and the demands to improve creativity and innovation in education.

CHAPTER FIVE

SUMMARY, CONCLUSION AND, RECCOMMENDATIONS

5.1 Introduction

This study sought to determine school environment-based factors influencing educational inequality in secondary schools in the Rarieda sub-county in the wake of COVID-19 pandemic. This chapter details the summary, discussion of findings, conclusion, recommendations from the study findings and suggestions for further research.

5.2 Summary of the study

This study examined the research variables to investigate school environment-based factors influencing educational inequality in secondary schools in the Rarieda Sub-County amidst COVID-19 pandemic. The four study variables are as follows: to assess the influence of the availability of digital learning tools on educational inequality; to examine the influence of parental or guardians' support on educational inequality; to assess the influence of access to remote learning on educational inequality; and to determine the influence of ICT infrastructure on educational inequality in the Rarieda Sub-County amidst the COVID-19 pandemic. The research was guided by Bourdieu's theory of social and cultural reproduction together with the Classical Liberal theory of equal opportunity by Sherman and Wood (1989). The study's conceptual framework outlines the interrelationship between the independent and the dependent variables. A descriptive research design was used in the study.

The study targeted a population of 60 school heads, 1200 teachers, 2000 parents, and 6,000 learners in Rarieda Sub-County. The study used stratified sampling to get the sample schools to take part in the study. The sample size comprised of 6 school heads, 50 teachers, 83 parents, and 248 learners, adding to 387 respondents.

Reliability of the research tool was done using the test-retest method. Validity was determined by the help and advice of the supervisors from the University of Nairobi. The study used purposive sampling to select the school heads, teachers and students. Simple random sampling was used to sample parents. The analysis of data was done by use of SPSS version 23.0 due to its efficiency and effectiveness in the analysis of large amounts of data. The findings from the study were summarized chronologically in the following subsections.

5.2.1 Influence of the Availability of Digital Learning Tools on Educational Inequality in Rarieda Sub-County Amidst the COVID-19 Pandemic

The study's first objective was to investigate the influence of the availability of digital learning tools on educational inequality in secondary schools in the Rarieda sub-county amidst the COVID-19 pandemic. It was found that 140 (68.6%) of the learners' agreed that radio is available (M = 3.79, D = 0.98). This may also be an indication that radio was the most prevalent remote learning tool. This was followed by 92 (45%) of the learners who indicated that television was available as a digital learning tool. This may infer that the majority of learners were not able to benefit from television programs, as most households do not

possess televisions. Less than 40% of learners agreed that smartphones and laptops were available for remote learning. It may be inferred that the availability of digital learning tools influenced educational inequality in Rarieda Sub-County during the pandemic (M = 3.59, SD = 1.35).

5.2.2 Influence of Parental/Guardians' Support on Educational Inequality in Rarieda Sub-County Amidst the COVID-19 Pandemic

The second objective of the study was to investigate the influence of parental or guardians' support on educational inequality in Rarieda Sub-County amidst the COVID-19 pandemic. It was found that only 81 (40%) agreed that with the support of parents or guardians, they watched educational TV programs (M = 2.70, SD = 1.01). This may also be an indication that most households do not possess televisions. Further, 123 (60%) of the learners indicated that they listen to educational programs often. Moreover, only 61 (30%) of the learners indicated that, with the support of parents or guardians, they were able to engage in remote learning through online platforms. It may be inferred that there was low parental or guardian support for students' remote learning amidst the COVID-19 pandemic. Parental or guardian support is, therefore, a factor that may have contributed to educational inequality.

In the focused group discussions with parents, many parents agreed that they did not get the time to physically supervise and support their children's learning remotely. This might have widened educational inequality in Rarieda sub-county.

5.2.3 Influence of Access to Remote Learning on Educational Inequality in Rarieda Sub-County Amidst the COVID-19 Pandemic

The third objective of the study was to investigate the influence of access to remote learning on educational inequality in the Rarieda Sub-County amidst the COVID-19 pandemic. It was found that only 62 (30%) of the learners agreed that helping with online learning is often important (M = 3.00, SD = 0.77). Further, 50 (25%) of the learners agreed that hiring tutors is done often (M = 2.48, SD = 0.92). Again, only 22 (11%) of the learners indicated that coaching is often used (M = 2.11, SD = 1.05). It may be inferred that remote learning was not adequately assessed during the pandemic, which influenced educational inequality.

Moreover, many teachers indicated that it was really hard to have virtual classes amidst the coronavirus pandemic. Just a few families were fortunate enough to have good shelter, relevant devices, reliable power, and a good network connection. Some learners, teachers, parents, or guardians had access to these digital learning devices but lacked the skills to operate them. In the scheduled interview with head teachers, they explained that minimal parental support for learners learning remotely, inadequate proper e-learning devices, poor network connectivity, and unreliable electricity were some of the challenges experienced by learners in accessing remote learning during the pandemic.

Learning remotely during the pandemic was not significantly accessible in Rarieda sub-county. This might have increased educational inequality within the Rarieda sub-county.

5.2.4 Influence of ICT Infrastructure on Educational Inequality in Rarieda Sub-County Amidst the COVID-19 Pandemic

The study's fourth objective was to investigate the influence of ICT infrastructure on educational inequality in the Rarieda Sub-County amidst the COVID-19 pandemic. It was found that 81 (40%) suggest there is technical support often (M = 2.70, SD = 1.01). This may also be an indication that most of the learners did not have the necessary digital literacy. Further, 59 (29%) of the learners indicated that ICT resources are not provided very often (M = 2.69, SD = 0.78).

5.3 Conclusion

Below are the conclusions that were drawn from the research objectives and findings:

This study concludes that, with respect to the study findings and inferences from the same, there is a need to come up with policies and strategies that encourage the use of ICT in education in all public secondary schools. The Kenyan government should prioritize training teachers in ICT and equipping schools with ICT resources for better integration of ICT in education, which has become very necessary in times of emergencies.

5.4 Recommendation

Below are the recommendations that were derived from the objectives and the findings of this study:

From this study, it can be recommended that all public secondary schools be properly connected to ICT for efficient integration of modern technology in teaching and learning. The study also recommends proper linkage of all departments within the schools for smooth running of schools. The Kenyan government should make concerted efforts to at least one ICT expert in each school to support and train schools in matters ICT. Learning institutions need to appeal to NGOs, philanthropists and other private organizations to help in provision of ICT resources in schools.

The study also recommends that the Kenya's Ministry of Education should engage in deep campaign to make teachers properly comprehend and appreciate the use of ICT in teaching and learning. To improve pedagogy and learners progress, all teachers need to include ICT in classroom instruction.

The study also recommends that remote learning interventions amidst any pandemic ought to be contextualized (education in context) for effective and efficient learning; otherwise, they can create educational inequality.

5.5 Suggestions for further studies

This research recommends that more studies need to be done in the following areas:

1. Further research needs to be done to investigate factors influencing educational inequality in marginalized areas and in other sub-counties.
2. More research ought to be done in determining the differences in the management of ICT resources as compared to non-ICT resources in learning institutions.
3. More studies should be done about educational inequality during times of emergencies such as pandemics, wars etc.

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APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

Jared Ogutu Odindo

P.O BOX 338

Bondo

C/O Department of Education Management, Policy and Curriculum Studies, University of Nairobi, P.O. Box 30179-00100 Nairobi

RE: PERMISSION TO COLLECT DATA

I am a student pursuing a master's degree course in Economics of Education at the University of Nairobi. The research is based on school environment-based factors influencing educational inequality in rural Kenya in the wake of Covid-19 pandemic – a case study of Rarieda sub-county. I humbly ask for your time to help in this study by filling in the attached questionnaire. Your privacy and confidentiality will be highly maintained and this information will not be leaked to any unauthorized person for any reason whatsoever.

Yours faithfully,

Jared Ogutu Odindo

APPENDIX II: QUESTIONNAIRE FOR LEARNERS

This researcher is a student pursuing a master's degree course in Economics of Education at the University of Nairobi. The research is based on school environment-based factors influencing educational inequality in rural Kenya in the wake of the COVID-19 pandemic—a case study of the Rarieda sub-county. I humbly ask for your time to help in this study by filling out this questionnaire. Your privacy and confidentiality will be highly maintained, and this information will not be leaked to any unauthorized person for any reason whatsoever.

Section A: Personal Details

Please fill in the spaces provided by ticking against your most appropriate answer.

1. Gender: Male Female

Current level of education: primary secondary

Section B: Access to digital learning tools during the pandemic

2. Were you able to access any digital learning tool that could be used for remote learning during the period of school closure due to the COVID-19 pandemic?

   Yes

   No

If not, write reasons why.

……..

……

3. Please tick against the digital learning tool(s) that you commonly used in remote learning during the pandemic

Radio

Computer/Laptop

Tablet

Television

Smartphone

4. Please rate (by using a tick) the extent to which you were using these digital learning tools in remote learning.

Key: SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, SD-Strongly Disagree

Digital Learning tools	SA 5	A 4	U 3	D 2	SD 1
Radio					
Television					
Computer/Laptop					
Smartphone					
Tablet					

Section C: Access to remote learning during the pandemic

5. Please rate the extent to which you were able to access remote learning through the following learning platforms.

Remote learning platforms	Very often 4	Often 3	Rarely 2	Not often 1
TV Programs				
Radio Programs				
Online learning				

Section D: Parental/Guardian's support in remote learning

6. Please rate the extent to which you were getting parental/Guardians' support in remote learning.

Test items	Very often 4	Often 3	Rarely 2	Not often 1
Helping in online learning				
Hiring tutors				
Coaching				
Supervision				

Section F: ICT Infrastructure

7. Please rate the extent to which you were using ICT infrastructure in learning

Test items	Very often 4	Often 3	Rarely 2	Not often 1
Technical support				
ICT resources				
Network availability				

APPENDIX III: INTERVIEW GUIDE FOR HEADTEACHERS

Section A: Availability of digital learning tools to the learner

1. Did your school possess any digital learning tool that could be used in remote teaching and learning during the pandemic? If yes, give examples. If not, why?
2. What are the challenges related to the installation and usage of the above-mentioned digital tools at school?

Section B: Parental/Guardians' support to children's learning at home

1. Were the parents/guardians available and able to monitor learners' adherence to the remote learning sessions or programs offered?
2. Were the parents able to assess the extent of learning achievement attained by a learner through the use of remote learning programs? If yes, how? If not, why?
3. What are some of the challenges experienced in the support to learners' learning remotely?

Section C: Access to remote learning during the pandemic

1. Were the learners able to access remote learning during the pandemic? If yes, how? If not, why?
2. What are some of the challenges experienced by learners in access to remote learning during the pandemic?

Section D: ICT Infrastructure and Educational Inequality

1. Suggest other ways that ICT infrastructure can improve ICT integration
2. Describe how availability of ICT infrastructure can improve ICT integration in teaching and learning.

APPENDIX IV: FOCUS GROUP DISCUSSION FOR PARENTS.

Section A: Availability of digital learning tools to the learner

1. Did your household possess any digital learning tool that could be used in remote learning during the pandemic? If yes, give examples. If not, why?
2. What were some of the challenges related to the usage of the above-mentioned digital tools at school?

Section B: Parental/Guardians' support to children's learning at home

1. Were you available and able to monitor learners' adherence to the remote learning sessions or programs offered? If not, why?
2. If you were available, were you able to assess the extent of learning achievement attained by a learner through the use of remote learning programs? If yes, how? If not, why?
3. What are some of the challenges experienced in the support to learners' learning remotely?

Section C: Access to remote learning during the pandemic

1. Were the learners able to access remote learning during the pandemic?
2. What are some of the challenges experienced by learners in access to remote learning during the pandemic?

APPENDIX V: QUESTIONNAIRE FOR TEACHERS

Section A: Personal Details

Please fill in the spaces provided by ticking against your most appropriate answer.

Gender:

Male Female

Section B: Availability of digital learning tools to the learner

1. Did your school possess any digital learning tool that could be used in remote teaching and learning during the pandemic?

   Yes No

   If yes, write examples

   ……

   ……

   ……

   If no, write reasons why?

   ……..……

   ……

   ……

2. What are some of the challenges related to the installation and usage of the above-mentioned digital tools at school?

   …….....

   .....……

   ……

……

……

Section C: Access to remote learning during the pandemic

1. Were the learners able to access remote learning during the pandemic? Yes

   No

   If yes, how?

   ……

   ……

   ……

   If no, what could be some of the reasons why?

   ……..……

   ……

   ……

   ……

   ……

2. What are other challenges experienced by learners in access to remote learning during the pandemic?

   ……

   …….....

   .....……

   ……

   ……

Section D: ICT Infrastructure and Educational Inequality

1. Suggest other ways that ICT infrastructure can improve ICT integration

   ……

   ……

   ……

   ……

2. Describe how availability of ICT infrastructure can improve ICT integration

   ……

   ……

   ……

   ……

   ……

APPENDIX VI: QUESTIONNAIRE FOR TEACHERS

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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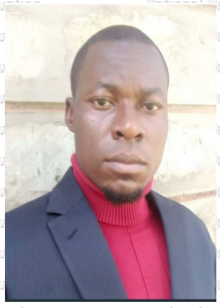

This is to Certify that Mr.. Jared Ogutu Odindo of University of Nairobi, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Siaya on the topic: FACTORS INFLUENCING EDUCATIONAL INEQUALITY IN RARIEDA SUB-COUNTY IN THE WAKE OF COVID-19 PANDEMIC for the period ending : 31/May/2024.

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