

**EFFECTS OF COVID-19-RELATED SCHOOL CLOSURES ON PUPILS'
ACADEMIC PERFORMANCE IN PUBLIC PRIMARY SCHOOLS IN VIHIGA SUB-
COUNTY, VIHIGA COUNTY, KENYA**

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**A Research Project Submitted in Partial Fulfilment of the Requirements for the
Award of Master's Degree in Education in Emergencies, University of Nairobi**

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DECLARATION

This project is my original work and it has not been presented for a degree in any other University.

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



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DEDICATION

I dedicate this project to my mother, Juliet Shibuko for her constant material and financial support throughout the project. I also dedicate it to my wife, Sophy Atieno Odhiambo for her love and encouragement during my master's degree program. May God bless them all abundantly.

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ABSTRACT

Life around the world has been significantly disrupted by the corona virus. The impact of the pandemic has been felt by different sectors including the education sector. The pandemic, like any other, had a wide-ranging impact on education. Government decisions have been directed toward a common goal of reducing the spread of the virus by instituting socializing regulations. Many countries suspended face-to-face teaching. This study intended to ascertain how the academic performance of children in public primary schools in Vihiga Sub-County, Vihiga County, Kenya, was impacted by school closures related to COVID-19, determine how pupils' lesson attendance in public primary schools in Vihiga Sub-County, Vihiga County has been impacted by the shutdown of schools due to the COVID-19 pandemic, determine how students' self-guided study has been affected due to COVID-19 pandemic in public primary schools in Vihiga Sub-County, Vihiga County, and determine the effects of the COVID-19 pandemic-related school closure on students' performance in continuous assessment tests in public primary schools in Vihiga Sub-County, Vihiga County. The research used a descriptive survey design, and 145 participants, who included head teachers, class 8 teachers, class 8 students, and Sub County MoE officials, were handed questionnaires using the Likert scale. The respondents were randomly picked for the study and the data was analyzed using SPSS 23. The research revealed that it was difficult for the students to learn well at home. It was found that the pandemic had endangered students' education since many of them lacked the necessary skills for self-directed study. The studies established that the emergence of COVID-19 pandemic had a significant detrimental impact on learners' academic performance, particularly those who attend public primary schools in rural and low-income areas. At the same time, precise actions that could lessen these harmful impacts were identified. Most learners have been out of the classroom for more than roughly half duration of a typical school year due to school closures. Given the extent to which school-based instructional time have been lost with the reopening of schools, determining the true degree of learning losses and implementing corrective actions are essential to prevent the establishment of medium and long-term educational issues. While there may be a high possibility to continue ceding decisions about syllabus coverage and appraisal tests to teachers, the study recommends a more diverse approach, including consideration of accelerated learning and additive remote strategies, as well as prospective endeavors to shore up as much learning time as possible.

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LIST OF ABBREVIATIONS AND ACRONYMS

ALNAP	Active Learning Network for Accountability and Performance
EiE	Education in Emergencies
GCSE	General Certificate of Secondary Education
HRW	Human Rights Watch
ICT	Information and Communication Technology
KCPE	Kenya Certificate of Primary Education
KICD	Kenya Institute of Curriculum Development
KNBS	Kenya National Bureau of Statistics
MoE	Ministry of Education

MoH	Ministry of Health
SPSS	Statistical Package for the Social Sciences
ToCs	Theory of Changes
UK	United Kingdom
UNDG	United Nations Development Group
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNOCHA	United Nation’s Office for the Coordination of Humanitarian Affairs

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The COVID-19 outbreak has interrupted the regular operations and results of the educational system, which was already under pressure in many ways before the pandemic's appearance. The extent to which this affects each learner varies according on their location, age, family history, and access to substitute learning alternatives during the pandemic, among other factors. The countrywide lock-downs as a response to COVID-19 mitigation have completely disrupted traditional schooling in most countries, with the majority of them lasting at least 2 months. The majority of instructional activities were conducted face-to-face in most educational institutions before the closure of those institutions (Garcia & Weiss, 2020). Millions of learners have lost out on equal learning because of the school closings. Around 1.6 billion learners' academic pursuit had been disrupted by the closure of schools in more than 190 nations by the end of March 2020, which corresponds to an estimated 90% of the world's population (Qing zhang *et al.*, 2021).

There is rising indication that remote learning efforts are ineffective. For instance, Grade 5 pupils in isolated schools in Sao Paolo, Brazil, learnt over 75% less and had a 2.5 times higher dropout rate. According to newly available statistics on learning loss, pupils in rural Karnataka, India, are estimated to have lost a full year of learning, while Grade 4 students in South Africa lost at least 62% of a year of learning as a result of closing schools. It is more challenging for teachers to help most pupils catch up, especially the most marginalized ones, due to different learning levels in the classroom when education inequality has increased across and within countries as a result of COVID-19 (UNICEF, 2020).

Half of schools in the OECD member states had already been closed for at least three months by the end of June 2020. The closure was done as an effort of halting the pandemic (Schleicher, 2020). Despite the variety and breadth of emergency education initiatives,

according to national and international estimates (Maldonado and De Witte, 2020; Dorn *et al.*, 2020; World Bank Group, 2020), the gap between students appears to be widening. Other research have found that following prolonged leave from school or forcible interruption, students' talents, knowledge, and engagement are likely to deteriorate (Gibbs *et al.*, 2019; Jaume&Willén, 2019; Kuhfeld & Tarasawa, 2020).

Projections and statistical models suggest a grim situation, even if the full effects of the pandemic that led to the closure of schools may not be apparent for several years. A prospective analysis conducted by Kuhfeld *et al.* (2020) used data that was collected from 5 million pupils in Grades 3 through 8. They predict that pupils might have made 32–37% less reading gain when they return to class in the fall of 2020 than they would have in a usual school year. For arithmetic, losses are predicted to range between 50 and 63 percent, which is an even greater prognosis.

Students with low educational backgrounds whose parents do not speak the language of teaching, as well as those who have special needs or disabilities that call for specialized care, suffer additional difficulties as a result of remote learning during the corona virus pandemic . Additionally, pupils in rural or isolated areas with insufficient digital infrastructure may suffer from reliance on digital education (World Bank Group, 2020; OECD, 2020).

Low socio-economic backgrounds may also act as a disadvantage to students since their homes may be less suitable to learning, they may have less access to digital tools, and they may be more susceptible to the pandemic's negative effects on their health and finances. For other pupils, the combination of these vulnerabilities makes learning deficits even worse. While it is urgent to close these disparities, educational systems also need to think about ways to help students who live in less favourable learning settings at home with more adaptable methods of instruction.

The corona virus outbreak is having a substantial impact on people's health as well as how they school, engage, and socialize. One significant issue as a result of the COVID-19 pandemic is how to replace an educational system that is based on physical education. To stop the virus's spread, almost 91% of all enrolled students worldwide have stopped attending classes.

Closings of schools will affect all pupils in general, but the most vulnerable students will be most affected. Low-income and special needs students in public primary schools will suffer the most due to lack of access to supplemental services like school lunches, in-school counseling for social and emotional issues, and opportunities for physical education which are all important for their academic well-being. They run the risk of getting further behind and isolated with the school doors locked. Between April and August 2020, a research by Human Rights Watch (HRW) took place in nine African countries including Kenya, found that the COVID-19 pandemic prevented vulnerable children from accessing quality education and thus exacerbated inequalities (Human Rights Watch, 2020). Kenya had recorded 64, 588 corona virus cases as of November 11 2020, with 1,154 fatalities (John Hopkins University, 2020).

Kenya is still dealing with the pandemics after effects despite governmental efforts and strict measures to stop the spread of the virus's (BBC, 2020). The situation of children is especially concerning because their intrinsic right to education, which is guaranteed by Article 53(1) of the Kenyan Constitution (Constitution of the Republic of Kenya, 2010), is more threatened than ever. The access by young people to high quality education has significantly been limited by the pandemic. In a nation characterized by a sizable population of impoverished youngsters the pandemic has placed them at risk of more serious human rights violations.

Kenya had a well-functioning educational system before the COVID-19 pandemic. The academic session in all public primary schools in Kenya begins in January and ends in December. Each term consists of three consecutive months of training and one month off. The courses were created to be finished in no more than nine months. The one-month break before the start of another hectic three months would be used by teachers and students to rest and recharge.

On March 15, 2020, the MoE in an unprecedented move declared the closure of all educational institutions countrywide as a response to the first COVID-19 pandemic wave. This resulted in learning programs across the nation being scrambled. The national examinations for Class 8 and Form 4 which were hitherto administered in October and November were postponed and the academic calendar was scrapped for the first time in Kenyan school history. This announcement had an impact on more than 17 million learners nationwide, whose education has been put in jeopardy, endangering academic continuity and the introduction of a new education system commonly known as Competency-Based Curriculum (CBC) (Simba, Sinha, Mburugu, Agweyu, Emadau, Akech & English 2020).

According to Parsitau *et al.*, (2020) girls and learners in the remote and marginalized rural public schools in Kenya are likely to face devastating consequences as a result of the COVID-19 pandemic. The limited educational resources available and the potential risk of sexual exploitation for girls from these areas put them at a disadvantage. The closure has also impacted negatively on learners with special needs (Mbogo, 2020). Most research done have discovered that there was a reduction in the duration of instructional time offered by tutors working on the national syllabus on which learners were eventually to be tested on.

Onyema, Eucheria&Obafemi (2020) while investigating the consequences of the corona virus pandemic on education, it became clear that the emergence COVID-19 pandemic has severely impacted on academics.

According to Tibebe (2020), girls from rural and low socio-economic households in Ethiopia are particularly vulnerable to learning loss due to a higher possibility of sexual exploitation, early marriage and work, all of which have a negative impact on their potential for future learning. In addition, many parents of students in Ethiopia and many other Global South nations lack literacy, which makes them less inclined to offer adequate support to their children's education (Iyer, *et al.*, 2020; Kim and Rose, 2020).

Cases of family violence and molestation are on the rise, and research has shown that the perpetrators are commonly found at home or in the neighborhood. The result is mental distraction and a potential threat to the students (Ravichandran & Shah, 2020). With students now experiencing home schooling during the COVID-19 pandemic, the home environment is not necessarily safe and uniformly conducive for all standards and socioeconomic conditions. There have been reports of students dropping out or opting out of school in Bhutan. The main reason for the high dropout rate is the long break caused by schools closing during the corona virus pandemic .New data in Kenya show that there has been an increase in sexual activity among teenagers, child labor, and pregnancy due to the aggravating circumstances brought on by COVID-19 (Kenya Citizen News TV, 2020).Prior to the COVID-19 outbreak, UNICEF estimated that Kenya's primary school drop-out rate was 21%, and the organization has warned that a protracted closure could make the issue worse because it puts adolescent students at risk of sex abuse, HIV, teenage pregnancies, and a general decline in academic performance if intervention measures are not implemented right away by the government and education stakeholders. (Odhiambo, 2020).

Teachers in Kenya's public primary schools are concerned that the pandemic could cause students to score poorly in the KCPE exams. During the nearly 10-month school closure, learning opportunities and resources were severely limited, especially in rural and impoverished regions where remote learning options were virtually nonexistent. Additionally, students face the problem of unsafe and unsupportive home environments, which results in the majority of learners returning to school with physical and psychological difficulties as well as trauma that needs immediate attention. This means that wasted learning time is not the only problem that students face. With rates as high as 22%, Kenya has experienced an unprecedented rise in unintended adolescent pregnancies during the pandemic. This suggests that many students have been pregnant, which means they have less time for independent study. Many of these affected students were mostly forced to drop out of school due to the additional burden of child care.(Citizen TV 2010, Kakenya Dream.org 2021).

Ngwacho (2020) explored the COVID-19 pandemic's effects on Kenya's educational system with a focus on challenges and solutions for students. The COVID-19 outbreak, according to every study participant, had in one way or another impacted on academic performance. Most of them said that COVID-19 had taken time away from them that they could have used to finish some of the curriculum. Some of the learners in the study claimed that some of their providers had lost their jobs while others had to move from the cities where they were attending school to the country side as a result of the COVID-19 pandemic. As such, their life had become much more difficult as they had to adjust to their new surroundings. The government was compelled to close all educational institutions and offer online classes when COVID-19 occurred. A Majority of learners (56.7%) affirmed taking part, while 43.3% said they were not taking part in online education being offered by MoE.

After engaging in activities that were not scholastic in nature, pupils' morale and motivation to return to class may have been affected. Researchers have also discovered that certain pupils' academic performance, as measured by their outcomes on standardized tests, has declined since the start of the COVID-19 pandemic. In a 2017 study conducted on 15% of all Dutch schools, researchers looked at variances in reading comprehension, math, and spelling results among kids aged 7 to 11. No significant changes were found in the outcomes of the twice-yearly examinations between 2017 and 2019, but in 2020, when COVID-19 emerged, students' total scores in academic aptitude dropped by three percentile points.(Engzell, P. *et al.*, 2020).

Table 1.1: Cumulative Data on KCPE performance in Vihiga Sub County 2017-2020

YEAR	MEAN SCORE(KCPE)
2017	255.83
2018	254.89
2019	255.17
2020	244.95

No. of public primary schools – 75 No of teachers 714

Number of learners in public primary schools 24,471

Source Ministry of Education, Vihiga County

Table 1 above indicates that Vihiga Sub County learners in class 8 have consistently been performing averagely with a persistent average mean score for the last three years prior to the COVID-19 pandemic which saw a slight drop in their performance in KCPE results. The below average performance by pupils in public primary schools in Vihiga Sub-County maybe a possible indication of the effects of COVID-19-related school closures on pupils' academic performance.

Although technology can help with some of the effects of school closures, it however, cannot make up for the value of in-person interactions between children and instructors. Additionally, many children have the limited access to supplementary technologies, which makes it more difficult to fully utilize the learning technology during school closures. One of the most effective interventions used to mitigate the impact of COVID-19 is the closure of schools during the pandemic. However, mathematical model and empirical analysis of reactive closures of schools in past pandemics indicate that there is a 25% reduction in the total number of cases in the community in addition to delays in the peak of the pandemic by a week or two (Erika & Nicholas, 2020).

The strain on students, instructors, and parents has intensified as a result of the corona virus-related school closings, especially for those who lack adequate digital infrastructure, skills, education, and resources for continuing their education. It puts more of a strain on parents to battle to provide for their families as well as ensure their children are learning through strict supervision. Long-term closures of schools brought on by the COVID-19 pandemic lengthen pupils' time in school, undermine their academic aspirations, and upset the schedule of educational institutions. Prolonged school closures may raise the dropout rate due to lack of interest by children in addition to lack of resources. Without proper management, protracted school closures might raise crime levels because idleness breeds negative peer pressure and youth participation in criminal activity (Kwabena W. N., & Boateng B., 2020I).

There is limited research on the effect COVID-19 on the education system (Bao, 2020; Sintema, 2020; Yan, 2020). Identifying the gap, the aim of the current research is to explore the challenges persisting throughout the educational domain due to pandemic outbreak with respect to context of Kenya and the developing countries as a whole who have similar conditions as Kenya. The results of the study was aimed at notifying the stakeholders

including parents, schools and other education stakeholders on the consequences of closing down educational institutions due to emergence of corona virus.

1.2 Statement of the Problem

The COVID-19 outbreak has significantly impacted educational systems worldwide, causing total interruptions in learning in classrooms (Sintema, 2020). By July 27, 2020, the pandemic's influence on school closures had affected about 1.725 billion pupils. The corona virus crisis has had a serious adverse effect on the educational sector worldwide, including the Republic of Kenya. This study aims to investigate how students' academic performance in public primary schools in Vihiga Sub County, Vihiga County, Kenya, is affected by school closures connected to COVID-19 pandemic . Vihiga Sub County has 75 public primary schools both set in the urban and rural setting which was ideal for this study (Vihiga Sub County Education office, Vihiga County, 2021).

Public schools have been adversely affected by the situation; COVID19 had also disrupted the education sector landscape thus limiting students' access to learning across the country especially in public primary schools which are poorly equipped to deal with emergencies in education. In Kenya, the choice of school a student attends is directly linked to income level, and there is a wide range of differences between public and private schools in a variety of ways, including the students who attend, teacher-to-pupil ratios, infrastructure, and financial support (Simba, Sinha, Mburugu, Agweyu, Emadau, Akech& English, 2020).

The overall effect of these differences is that that public schools students tends to be at a disadvantage compared to their counterparts. For example, in the event that remote learning opportunities are available, low uptake of students will be experienced in public schools as result of poor infrastructure. The students are also limited in terms of opportunities to learn at home due to lack of conducive learning environment. Most of these students come from single room households characterized by limited literacy and capacity to hire private tutors.

Moreover, as it was necessary to close the schools to prevent the spread of the virus, the vast majority of students did lose momentum and direction as schools were employing a reactive approach to continue learning in the course of the pandemic outbreak. This approach heavily relied on the role of parents, but there was lack of proper transition from teachers to parents to enable the students shoulder the burden. Few studies had looked at the effects of COVID-19 on the academic performance of public primary schools, which was the main goal of this study. Most researches on academic performance during COVID-19 had only dealt on tertiary institutions.

The study also investigated how policymakers could improve resilience in emergencies in education in general, as well as to ensure smooth educational pathways that would enable each student to reach their own individual potential. In the short term, this necessitates addressing gaps that have been created by the pandemic as soon as possible; in the long run, systems must strengthen learner resilience. The researcher investigated how policymakers and education stakeholders could in future design and implement policies that take into account these two challenges concurrently, that is, implement effective remedial measures and build students' pliability.

1.3 Purpose of the study

The aim of this study was to establish the effects of COVID-19-related school closures on pupils' academic performance in public primary schools in Vihiga Sub-County, Vihiga County, Kenya

1.4 Objectives of the study

The study was guided by the following objectives:

- i. To ascertain the effect of school closure due to COVID-19 pandemic on syllabus coverage by learners in public primary schools in Vihiga Sub-County, Vihiga County.
- ii. To determine how pupils' lesson attendance in public primary schools in Vihiga Sub-County, Vihiga County has been impacted by the shutdown of schools due to the COVID-19 pandemic.
- iii. To determine how students' self-guided study has been affected due to COVID-19 pandemic in public primary schools in Vihiga Sub-County, Vihiga County.
- iv. To determine the effects of the COVID-19 pandemic-related school closure on students' performance in continuous assessment tests in public primary schools in Vihiga Sub-County, Vihiga County.

1.5 Research questions

The following four research questions served as the study's guidelines:

- i. To what extent had the school closure due to COVID-19 pandemic affected syllabus coverage in public primary schools in Vihiga Sub-County?
- ii. To what extent had the unprecedented school closure due to COVID-19 pandemic affected learners' lesson attendance in public primary schools in Vihiga Sub-County?
- iii. How has the extended school closure due to COVID -19 pandemic affected learners' self-guided study in public primary schools in Vihiga Sub-County?
- iv. How has the school closure due to COVID-19 pandemic affected learners' continuous assessment tests performance in public primary schools in Vihiga Sub-County?

1.6 Significance of the study

The researcher focused on how learners' academic performance in public primary schools in Vihiga sub-

County and on the education industry as a whole had been impacted by school closure due to the emergence COVID-19 pandemic.

The researcher aimed to contribute to the body of knowledge on education in emergencies with a focus on Vihiga Sub-County in Kenya. The researcher hopes that this will serve as a source for future researchers, the Ministry of Health and other education stakeholders who might wish to conduct additional study. This study can be used in terms of preparedness during emergencies and the education sector can be well-placed to continue with education programmes with minimal interference.

1.7 Basic Assumptions of the Study

The following presumptions served as the study's foundation:

- i. That the participants knew how the emergence COVID-19 pandemic had a bearing on the pupils' academic performance.
- ii. The respondents were informed that the COVID-19 pandemic had a negative influence on students' learning ability and this had affected their academic performance in KCPE examinations
- iii. That the respondents were honest, knowledgeable and truthful in providing the required information.

1.8 Limitations of the Study

Research limitations are factors that could negatively affect the findings but are out of the researcher's control (Mugenda & Mugenda, 2003).

- i. The research only involved public primary schools; therefore, it was not possible to generalize the research findings to private primary schools. Data from private primary schools was not collected as the research only centered on public primary schools.
- ii. The COVID-19 pandemic presented difficulties in data collecting because of laws that forbade personal contact. As a result, all COVID-19 protocols were strictly adhered to.

1.9 Delimitations of the study

The study was carried out in Vihiga Sub-public County's public primary schools. Head teachers, class teachers, MoE Sub-County officers, and pupils from the chosen primary schools participated in the study because they had first-hand experience of how closures caused by the COVID-19 pandemic affect academic performance.

The scope of this study was restricted to looking at how education interruptions due to COVID-19 affected students' academic performance in public primary schools, as well as how well they performed on tests of continuous assessment and in self-guided study. Therefore, the aim of this research was to establish how these variables impacted on academic performance in public primary schools.

Teachers who oversee the learning process, students who saw declines in their academic performance, and head teachers who oversaw school administration and were responsible of making sure that instruction continued during the COVID-19 Pandemic provided information for this study. The study only looked at pupils in class 8 because most schools have solid and accurate records of KCPE and continuous assessment tests both before and after the emergence of the COVID-19 pandemic.

Since it's possible that the conditions in the public primary schools in the study area are different from those in other schools across the nation, the results of this study do not necessarily apply to other public schools or private primary schools in the country.

1.10 Definitions of Operational Terms

Below are the operational definitions of the terminology that applied to this study:

Academic performance: the evaluation of students' performance in numerous academic fields.

Access: Opportunities learners are given to acquire education

Continuous Assessment Test: A type of educational test that assesses a student's progress during a learning activity.

COVID-19: A disease caused by a new strain of corona virus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease.

Intervention: These include all the elements that aid in reducing the difficulties the COVID-19 pandemic presents for students' academic achievement owing to extended school closures.

Learner: Someone who is attempting to learn or develop a talent by study, practice, or instruction

Lesson /Class Attendance: The act of being present at or attending a class or a lesson

Mitigation: Lessening or minimizing the effects of an adverse event

Pandemic: A disease outbreak that spreads across countries or continents

Self-Guided Study: A learning strategy that gives pupils control over their own education (diagnosis learning needs, identify learning goals, select learning strategies, and evaluate learning performances and outcomes)

Syllabus: A summary or outline of the key ideas presented in a work, lecture, or study course.

1.11 Organization of the study

The study was divided into four components. Section one of the study contained the background information, problem description, purpose and objectives, research questions, significance of the investigation, constraints and delimitations, underlying study assumptions, and definitions of essential terms.

Section two discussed the extent to which school shut down due to COVID-19 pandemic affected syllabus coverage in public primary schools in Vihiga Sub County ;how an unprecedented school closure due to COVID-19 pandemic affected learners' lesson attendance; how the extended school shut down due to COVID-19 pandemic affected learners' self-guided study in public primary schools Vihiga Sub County and how the school shut down due to COVID-19 pandemic had affected pupils' performance in continuous tests in public primary schools in Vihiga Sub County. The section also discussed in details the theoretical framework and conceptual framework upon which this study was anchored on.

The third portion included the research technique, which was broken down into the following categories: study design, target population, sampling and sampling processes, research instrument, validity and reliability of the instruments, methods for data collection, and methodologies for data analysis. In Section 4, a list of the references used in the study is presented. Section 5 contained a list of the appendices used in this study.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction

This research's goal was to investigate how the shutdown of public primary schools in Vihiga Sub-County, Vihiga County, Kenya due to the COVID-19 outbreak had affected learners' overall academic performance. An examination of previous research on the subject is presented in this section. The results of similar experiments conducted by other researchers are included. In accordance with the study's objectives, the literature review was arranged according to themes and variables. It also looks at the philosophical and theoretical foundations that the study was built upon.

2.2 COVID-19 pandemic and Learners' academic performance

Since March 13, 2020, schools all over the country were abruptly closed when the nation first recorded its COVID-19 case and have stayed closed ever since. Most year groups' students will have to repeat the 2020 school year in 2021 (Njenga, 2020). Over 18 million students in Kenya were impacted by the closure of schools, and as a result the government created a COVID-19 response plan (Kenya Basic Education COVID-19 Emergency Response Plan).

Kenya's Vision 2030 National Development Goals, whose objective was to provide all children with a high-quality education, may be hampered by school shut downs caused by the corona outbreak (Ngwacho, 2020). The decade long action plan aims to address and put into action the Sustainable Development Goals (UNGA, 2015), protecting the right to education in the process. The government through its "digischool" initiative, had stressed digital literacy which aims to provide all pupils with the digital capabilities essential to flourish in the current world, under this framework and prior to the COVID-19 virus spreading over the world (ICT Authority of Kenya)

Marginalized and vulnerable students are especially at a disadvantage with the closure of schools as a result of the spread of pandemics like COVID-19 and other infectious diseases. While students from wealthy backgrounds are provided with healthy meals, modest housing, quality medical care, and top of the art digital devices to ensure their children can continue learning while in the house, the opposite is true for students from low socio-economic backgrounds. Because of this, it practically becomes impossible to ignore the idea that differences in education involvement will ultimately worsen the situation of the disadvantaged and the vulnerable students (Njeru&Orodho, 2003).

Because students complete their assignments and examinations at home it becomes difficult for teachers and tutors to determine the legitimacy of the work and if there is actual learning taking place. Additionally, most of the parents have taken up the work of mentoring and assisting their children in learning, although there is a significant difference in the volume and quality of the assistance offered. Researchers should also look at the area of student grading no there is no appropriate guidelines established or applied. According to Kaffenberger, (2021) even brief school closures could cause considerable medium-term learning loss. Unplanned emergency school closures have a severe impact on students' academic performance .When schools unexpectedly close, students lose out on opportunities for growth and development since essential learning takes place in the classroom (UNESCO, 2020).

To fully appreciate how the emergence of COVID -19 pandemic had profoundly affected learning, the study compared the impact of school closures with regard to data already gathered about school closures and estimated lost instructional time during summer learning loss, teacher strikes, reforms, or natural catastrophes (Eyles *et al.*, 2020; Frenette *et al.*, 2020; Kuhfeld *et al.*, 2020; Maldonado & De Witte, 2021; Tugun *et al.*, 2020).

A study was carried out to see how school closures affected primary school standardized tests administered in the Flemish region of Dutch-speaking Belgium in the 2020 academic year. In three of the five evaluated categories, the 2020 batch showed significant learning losses when compared to the previous batch, with school-average mathematics scores falling by 0.17 standard deviation and school-average Dutch scores falling by 0.19 standard deviation in reading, writing, and language respectively.

Researchers discovered that academic performance, that was measured using standardized test scores, had declined among some pupils since the outbreak of the COVID-19 pandemic. Researchers also examined differences in scores in reading comprehension, math, and spelling among students aged 7-11 years in a sample of 15% of all schools in the Netherlands from 2017 to 2020. There was no significant difference in scores on the twice-yearly tests from 2017 to 2019, but when the COVID-19 pandemic began in 2020, students' overall scores in math, spelling, and reading dropped by three percentile points. (Engzell, P. *et al.*, 2020). The majority of the literature during COVID-19 mainly focused post-secondary students with limited research on the impact of COVID-19 on primary school academic performance, especially in public primary schools, which is the primary objective of this research.

The magnitude of the impact described appears to be the result of a loss of learning and a loss of progress rather than merely a loss of progress (Maldonado & De Witte, 2021). Instead of only lost progress, the high impact sizes indicated seem to be the product of learning loss and lost learning progress (Maldonado & De Witte, 2021). According to numerous researches, the pandemic has had a detrimental effect on Nigeria's educational system, particularly student performance (Mahdy, 2020; Oyinloye, 2020).

2.3 COVID-19 Pandemic and Syllabus Coverage

The curriculum disruption due to COVID-19 pandemic could take a while to recover from, but it also has long-term effects, such as the possibility that some pupils may not be in a position to return to school, even after the infection outbreak has subsided. One of COVID-19's most important consequences on students is the lack of direct physical contact with teachers during online teaching. According to the most reliable studies, pupils' test scores have dropped by between six and ten percent of a standard deviation, or between one and two months' worth of learning, as a result of missed opportunities to engage with the syllabus.

From the study, an estimated (98 per cent) of teachers reported that their pupils were behind. On average, this amounted to three months behind in their curriculum coverage in terms of what they would normally expect them to have covered as reported by the teachers (Royal Society DELVE Initiative, 2020; EEF, 2020). Online learning and teaching have temporarily replaced traditional education. However, students in remote areas and those from poor households have been deprived access to reliable internet and technology.

Continuous learning is hampered by a lack of consistent internet coverage or limited access to technology, particularly for pupils from poor homes. UNESCO (2020) advised the use of online educational platforms or the use of open education applications, and any other platforms that schools and teachers can use to interact with students remotely and reduce the disruption of learning due to Corona virus pandemic.

The interruption of the curriculum caused by the COVID-19 epidemic could take a very long time to recover from. The pandemic has led to a shift in the contexts in which curricula are implemented and delivered, in addition to the use of platforms and the need to handle situations in a different way from how the curriculum was originally developed.

The closing of the schools has had a significant impact on instructional and learning time, which will ultimately impair how well students learn (Garca& Weiss, 2020).

Traditionally, majority of learners receive their official education in schools. The decrease in instructional time provided by teachers in conformity with the national curriculum against which students were ultimately graded is projected to result in increased learning losses (Andrew *et al.*, 2020). In late March 2020, Malawian schools, just like Kenya were forced to close as part of efforts to stop the spread of COVID-19. This forced nearly six million students of school age to stay at home. The government of Malawi is receiving assistance from UNICEF in creating learning continuity programs and changing the curriculum. In South Africa, the grade 12 curriculum has not been shortened, but rather rearranged with fewer tests given in schools. At first, trimming was considered to be a short-term solution for 2020, with a restoration to the standard curriculum scheduled for 2021 (Zhdanov *et al.*, 2022).

It seems more likely than ever that learners will fall behind in their coursework the longer schools are closed. Learners who are 24 million strong are at risk of missing out. According to a recent UNESCO report, the impact of school closings will cause more than 100 million students to not have the minimal reading talent level. In order to quantify and reduce learning losses and stop the drop out of vulnerable students, teachers need help and training in understanding curricula and assessment methodologies. Lost instructional time is now quantified in months rather than days or weeks. Globally, total or temporary shutdowns have resulted in an average loss of almost an entire academic year (UNESCO, 2020).

Many nations turned to online education as a substitute as a result of the corona's emergence. Though it provides a simple way to continue learning and engage in pedagogical procedures, online learning requires ongoing assistance from both educators and parents. Kenya, like the

rest of the globe, was forced to introduce online learning quickly, and this was done first without ascertaining how well-prepared teachers and parents were to implement and accept it. The Radio Educations Program was established by the Ministry of Education to provide daily programming for the core academic areas included in elementary and secondary school curriculum. The Kenya National Bureau of Statistics (KNBS) reports that radio ownership is at 58.5% in rural households and 54.4% in urban households, respectively. As such, it's going to be difficult to access educational materials via radio. In addition, because the school shut down was unexpected, it is a difficult work for the Ministry of Education to provide radio programming on the entire curriculum for all classes in a short amount of time. As a result, it is definitely certain that online learning was not well-conceptualized and hence poorly implemented in Kenya.

Learners had free access to electronic textbooks on the Kenya Education Cloud because of the MoE's collaboration with the Kenya Publishers Association to maintain curriculum coverage. The Kenyan government collaborated with Telkom Kenya and the Kenya Civil Aviation Authority, which deployed Google's Loon Balloons equipped with 4G base stations throughout Kenyan skies. Even though these were commendable programs designed to ensure that no learner is left behind, many pupils from low income families both in urban and rural areas were unable to participate, as a result of limited access to internet.

Despite prior government commitments to give all children with technology, as of 2016, 50% of Kenyans lacked access to the Internet (United Nations Economic and Social Council, 2016), and pupils frequently lack access to the Internet, laptops, or Internet-enabled smart phones necessary for them to do their academic assignments or even continue learning digitally while at home during the prolonged school shutdowns due to the emergence of corona virus pandemic (Human Rights Watch, 2020). The cost of Internet data coupled with

this lack of access worsens in more up country areas, resulting in a digital gap that denies the vast majority of Kenyan pupils to access online education (Ngwacho, 2020).

Even where students have access to the Internet, dependable technology for remote learning programs is lacking since instructors are unfamiliar with distance learning and the country has not had enough time to get ready for its rigors (Tembey, Lara *et al.*, 2021). The Education Cloud from the Kenya Institute of Curriculum Development (KICD) is a good first step. To increase access to essential school materials, this KICD is attempting to centralize education and instruction; yet, the content is only useful to the small number of people who have exposure to it (Njenga, 2020). Learners with the capability of accessing the internet have also acknowledged that the expense of browsing makes them selective about the information they access and peruse, lessening the impact of the resources made available (Human Rights Watch, 2020).

2.4 COVID -19 pandemic and learners' lesson attendance

There is strong evidence that absences have a detrimental impact on test results at the end of the year. Similar effect sizes were reported in primary and secondary schools across numerous studies that employed a value-added paradigm. Students' arithmetic test scores can drop by 0.06 to 0.08 SDs when they skip 10 school days; the effect sizes for ELA scores were slightly smaller (Aucejo& Romano, 2016; Gershenson, Jackowitz, &Brannegan, 2017; Liu, Lee, &Gershenson, 2019). Studies that included either an infection with the flu or seasons characterized by snow days as an instrumental variable for absences tended to produce considerably bigger estimates (Aucejo& Romano, 2016; Goodman, 2014), largely because of the specific variation utilized to calculate the impact of absences.

The Corona virus pandemic may have a considerable sway on learners' educational show as a result of school attendance problems (SAPs). The discontinuation of COVID-19 schools is

predicted to result in a spike in dropout rates and low student attendance. According to estimates, the COVID-19 may have had a similar effect on Nepal's educational system to the Ebola pandemic, which markedly exacerbated dropout rates in West African schools (Giannini & Albrechtsen, 2020). Drop-outs are likely to increase the longer schools are shut down and school absences may happen more (Buckler *et al.*, 2020).

In general, the more time students take to resume studies, the harder it becomes for them to consider themselves to be students. It becomes even more difficult and challenging to re-enroll and re-engage in school (both practically and psychologically). It is likely that some pupils will need to work to assist their family financially because some parents may not be in a position to afford to send their children to school. It is thought that rural areas were in worse condition. Rural parents could be reluctant to re-enroll their children in school because they would prefer to have them continue to assist with farming and livestock management instead (Tiruneh, 2020).

The COVID-19 has changed how students study throughout the world, and for many, going to school has not even been an option. Kenya's schools have already reopened, although some students have been prevented from going back because of socio-economic issues like lost household income, childbirth, or marriage. Other students began working in farms and trade around the same time because they had little money and nothing else to do, which may have led to the increased rates of absenteeism this year. Although the reason why students did not return to class has not yet been identified, it has been reported that it might be because girls got married or became pregnant during the nine-month shutdown period (Daily Nation 2020).

Despite the corona pandemic various aspects have made making estimates of its impact on achievement problematic. There exist similarities between the current and previous scenarios on reasons why children quit school that can guide us assess the possible scale of the

epidemic's impact. To be more specific, current research on school closure effects as a result of weather-related issues, like those brought on by Hurricane Katrina in New Orleans, and school absenteeism can provide an overview of how school closures due to Corona virus will most definitely affect learners' academic accomplishments.

According to Goodman (2014), a single significant snow day-related absence decreased students' arithmetic test performance by 0.05 SDs. The literature on absenteeism also revealed that the detrimental consequences of absences were linear, meaning that regardless of how many absences a student had already racked up, each subsequent absence caused a comparable loss in learning (Gershenson *et al.*, 2017; Liu *et al.*, 2019). It is also questionable whether virtual training, even when properly organized and taking place prior to the Corona crisis is as effective as in-person learning. In prior comparisons, both online and in-person learning have had uneven results. Majority of studies have found that attending online schooling had a negative impact, with students there performing between 0.1 and 0.4 SDs worse than those in traditional public schools (Ahn&McEachin, 2017; Gill *et al.*, 2015; Woodworth *et al.*, 2015).

Given erstwhile prejudices which girls are already subjected to such as severe educational barriers like forced early child marriages and female genital mutilation (FGM), are now at risk of being vulnerable to sexual abuse, exploitation, and child trafficking (Odhiambo, 2020). Schools have traditionally provided "safe havens" for a girl, which means that if they do not attend school, they are more vulnerable to sexual abuse and violence, child marriage and exploitation (Odhiambo, 2020).

As schools open and close in accordance with the viral trajectory, attendance habits may be shifted, and some students may entirely withdraw from their studies and interaction with their peers as a result of the economic and health effects of the pandemic. As a result, new

susceptible youngsters will likely be created. This could result in higher rates of early and high school graduation, especially among underprivileged pupils (Di Pietro *et al.*, 2020).

Learner dropout rates typically increase as a result of abrupt closure of institutions, and a lack of effort to ensure that all students are back in class after the closures are finished. When there are prolonged closures, this is particularly true. Underprivileged, low-socioeconomic or homeless adolescents are more likely to skip school after the barriers are lifted, leading to a lifetime of wasted opportunities (UNESCO, 2020).

2.5 COVID-19 pandemic and Learners' self-guided study

Although the adoption of distance learning is significant in ensuring the continuity of education, students are at risk learning loss during the lockdown, despite the fact that adopting distant learning is essential to ensuring the continuation of education after the physical closure of schools. There are a number of defenses that may be made for this. First, research suggests that kids who are confined to a school tend to spend less time in class than those who attend classes regularly. Second, a lot of students who are kept at home because of COVID-19 could experience worry and anxiety, which could impair their ability to focus on their academic work.

Furthermore, the actual closing of the school and the lack of in-person interaction may reduce the incentives of pupils to participate in educational activities. According to "conservative" projections, pupils in France, Italy, and Germany will experience a weekly learning loss of 0.82 to 2.3% of a standard deviation. Such a loss shows the drop in exam scores that pupils would experience if they invested little time in learning than they usually do when they are in school. The indicated learning loss for the entire test for a test with a mean of 500 and a standard deviation of 100

Most of a learner's formal education is carried out in the classroom. Learners may spend less time learning if schools are closed and learning is shifted to a remote site (Di Pietro *et al.*, 2020). (Many people worry that students are not devoting enough time to learning activities (Education Development Trust, 2020). The majority of students had not achieved 50% in nearly all of the subjects tested when the Kenya National Examinations Council released the KCPE results in early February 2021, suggesting that they had missed some instructional time as a result of the protracted school shut down to stop the spread of Corona virus. Urban counties performed significantly better than rural counties, displaying clear regional variations between the two. The amount of time that pupils spend at home studying varies greatly. Several students reported that an astounding lack of homework was not completed at home while the school was in lockdown most spent 2 hours or less each day). Less than a third of students, however, claimed to spend five hours or more a day studying (Huber & Helm, 2020).

Instead of boosting students' ability for self-management, initiative, and motivation in addition to parental control over learning time, the corona virus pandemic actually decreased teacher control over active learning time. In order to discuss the potential effect of school closings on students' academic performance and learning in Ghana, Owusu-Fordjour, Koomson, & Hanson (2020) undertook a descriptive survey. On 214 students, a questionnaire with an 11-item Likert scale was administered. The results showed that pupils could not really learn effectively at home, making the online learning method extremely ineffective. Furthermore, parents were really not in any way assisting their children in using the online learning network or from fully monitoring their learning at home. It was determined that COVID-19 had a detrimental effect on student learning because the majority of kids were unable to learn on their own.

In addition, the vast majority of pupils had no knowledge of technology and restricted access to the internet. Research conducted during the shutdown in France and Italy revealed that students spent a lot of time passive screens rather than in class (Champeaux *et al.*, 2020). Learning loss could result from fewer learning hours (Di Pietro *et al.*, 2020). Studies on the time pupils spent on different activities during the school day predict that compared to data from 2014-2015 May 2020, learning time will be shorter than any other instance spent in and out of school. (Andrew *et al.*, 2010) This percentage is around half of what a prior survey predicted, showing that actual learning losses are far greater than predicted. (Green, 2020).

In Kenya's public primary schools, the majority of learners come from underprivileged and low-income homes, and they could be expected to perform household and family tasks while at home. As a result, they may have less time to study at home, which could affect their academic performance. Recent local figures showed that there was a higher rate of teenage pregnancy, child labor, and minors engaging in prostitution due to the aggravating conditions brought on by COVID-19 (Kenya Citizen News TV, 2020).

Owing to the closure of schools due to the corona virus catastrophe, risky behaviors like increased substance misuse, peer pressure, early marriages, and adolescent pregnancies have occurred (Areba, 2020). The number of students exposed to pornographic materials has increased due to longer school closure time and the lack of access to education resources available to poor households. Rape and incest are also on the rise, as are drug and alcohol abuse, gender-based violence, school dropout, child labor, and sacrilege (UNESCO, 2020). There have also been incidents of youths joining gangs to steal and break laws, while others have been found to have ended up taking their own lives in some parts of Kenya. When teaching and learning resume all these consequences could result in student absenteeism and low progression rates.

Learning loss is another effect of the lock downs and restrictions that were enacted by the authorities in reaction to the Corona pandemic. It is however, not clear how much learning will be lost in the long-term emergency closures if children experience learning loss during regular extended school breaks. This danger of learning loss is increased for children in rural areas whose parents have low reading skills and few educational resources. These parents are not only dissatisfied with having to home school their children without appropriate planning, but also because they are unable to support their students' learning. Since broadcast learning is meant to augment children's existing knowledge, intermittent online learning is ineffective for pupils who are already behind lagging in their studies.

In-person learning significantly contributes to the growth and development of learners and youths and when institutions close abruptly the students are denied this vital opportunity. The drawbacks are felt more by students from low-socioeconomic background as they have limited educational chances outside school (UNESCO, 2020b). When institutions close, it is the duty of the parents to ensure the students continue with the learning process in their homes which some parents may not be in a position to do. This is particularly true for parents with financial difficulties and limited resources and knowledge.

Students lack individualized and specialized attention when teachers are absent from the classroom for an unknown amount of time. When teachers and pupils interact socially, the teachers' focus is always on them. Additionally, student collaboration has been impeded by the corona virus pandemic. This is because students are unable to engage in team work with their peers through approaches like team teaching, peer teaching, and group discussions, among others. The majority of those affected by this interruption are less privileged, vulnerable, marginalized, special needs, and poor learners whose residences are mostly situated in hard-to-reach areas, such as urban slums, remote rural areas, and Refugee

settlements. Therefore, it is urgent and crucial to tackle the issues the corona virus has caused with pupils' social relationships in Kenyan academic institutions.

2.6 COVID-19 Pandemic and Learners' Continuous Assessment Performance

Since continuous assessment tests are a crucial component of a successful education since they give students a forward impetus every student who was enrolled in a course of study was evaluated in some way. The COVID-19 outbreak is expected to have a detrimental effect on students' academic performance on exams administered for both year-end and internal assessments since there will be reduced contact hours for students and no contact with teachers when studying or comprehending. The impact of the COVID-19 on students' performance on national exams was investigated by researchers in Zambia using a mixed-methods approach. Researchers employed a mixed-methods technique to examine how the COVID-19 affected students' performance on national exams. In preparation for the 2020 national exams, they conducted a survey on the topics of mathematics, science, and design and technology.

A research administered survey was used to interview the academics and heads of departments. The study revealed that COVID-19 has had an adverse effect on the overall academic performance of pupils; this was discovered when the concept was explored. Furthermore, the results of the study further suggest that, if the COVID-19 outbreak is not contained soon, failure rate is likely to increase further in public primary schools in continuous assessment tests. This is because the abrupt closure of schools unexpectedly unsettled the academic calendar (Sintema, 2020).

Some students' academic performance has declined since the onset of the covid-19 outbreak, according to test results. Between 2017 and 2020, surveys looked at variations in understanding, knowledge, math, and spelling scores among pupils aged 7 to 11 in a sample of 15% of all Dutch schools. The performance of pupils on the twice-yearly exams did not

differ significantly from 2017 to 2019. However, in 2020, when the COVID-19 pandemic began, children's aggregate scores in reading, spelling, and arithmetic dropped by three percentile points. (Engzell, P. *et al.*, 2014).

Examinations and assessment are significantly impacted by the switch from in-person instruction to digital learning. Depending with the nature of the course and the assessment style, it may be problematic to administer online assessments and evaluations. As such, teachers have to change their testing method as a way of accommodating the online format. Additionally, teachers have a challenge of ensuring students online course are kept on track with zero plagiarism on online tests (Basilaia&Kvavadze, 2020). In a real world setting, it is not practicable to administer tests in a lab or online.

It is also important to note that students with limited internet access will have difficulties in completing tests and evaluations (Sahu, 2020). According to Osman (2020), both teachers and students face a challenge in terms of analyzing and evaluating students' performance online. Importantly, the challenge is enhanced in teaching practicum, technical abilities, and the assessment of practical skills. According to reports by UNESCO, students, instructors, and parents in nations with dependable ICT infrastructure and internet connectivity, experience difficulties with a quick shift to online learning (UNESCO, 2020). To offer online learning efficiently, students, parents, and teachers also need training, but this support is especially scarce in impoverished developing nations.

2.7 Theoretical Framework

The Theory of Change (TOC) upon which this research is anchored on is covered in this section).It is simply a collection of hypotheses "that explain both the intermediate steps leading to a long-term objective and the relationships between these steps and the outcomes of an intervention or program" (Anderson 2004).In order to generate significant results in

areas like access, quality, and welfare as the most crucial intervening components or variables in improving academic performance to learners in emergency situations, this research has structured the idea in terms of "what works."

In order to successfully mitigate the disruptions brought on by the COVID-19 pandemic, which has compromised the quality of learning due to the prolonged school closures, theory of change provided the conceptual framework of the overall effects of school closure due to COVID-19 pandemic on pupils' academic performance in public primary schools in Vihiga Sub-County, Vihiga County, Kenya.

The underlying premise of the concept is that disasters and conflicts disrupt or destabilize education because they destroy infrastructure, force people to relocate, and, in some instances, entirely shut down access to education within a region or country. The interventions, which occur in the form of programs, aim to improve student academic performance by introducing intervening variables for the short and long periods. This will help to lessen the consequences of school shut downs brought about by the COVID-19 pandemic. The goal of this research is to enhance students' academic performance by providing them with access to and delivery of high-quality instruction.

The independent variables for this research were thought to have been successfully captured by the study's objectives. The subsequent goal of the intervention programs is to offer various sorts of educational help. The tactics (intervening factors) implemented by the government, school administrators, and education stakeholders for learning continuity in the face of school closure due to COVID-19 pandemic determine the capacity of schools to improve quality learning. These techniques for this study included the utilization of ICT and online classes, KICDs, continuous lesson curriculum broadcast across the entire nation via radio and TV, Shortening school terms, reducing curriculum requirements, changing how continuous

assessments are conducted, and conducting a thorough "back to school" campaign for students who may have dropped out, particularly those from low-income families and girls.

Remedial classes are also being offered to students who are underachieving and quality assurance and standards tests are being done on student attendance and syllabus coverage.

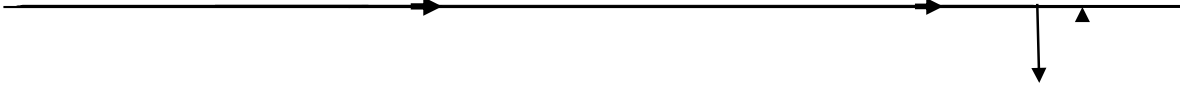
Due to the closure of the physical school and the introduction of online learning, students are increasingly spending less time studying and are less motivated to learn (Di Pietro *et al.*, 2020). The COVID-19-related school closure may not have the same impact on all students. During COVID-19, students from low socio-economic backgrounds suffered compared with students from privileged backgrounds (Di Pietro *et al.*, 2020).

Most nations have been attempting to urge parents and schools to support students' home learning through online learning to slow the spread of COVID-19 (UNESCO, 2020). Most governments have introduced lessons on radio and television that can be accessible at home by students. Children, families, and teachers in underdeveloped nations experience challenges as a result of the school closure. Children with poor learning motivation and students from low-income families have suffered the most during the corona virus pandemic.

Due to the reliance on their parents, the youngsters tend to require assistance in their educational activities, internet use, and use of digital tools and applications (Tzifopoulos, 2020). Students from underprivileged families who lack access to technology are also suffering (Tiruneh, 2020). Before the Corona virus, students in urban and rural locations, as well as students from families with greater and lower socioeconomic standing, had unequal access to high-quality education. The disparities between students could get worse if schools closed (Owusu-Fordjour *et al.*, 2015). Students from low-income households and remote locations have no access to technology, the internet, or educational materials (Di Pietro *et al.*, 2020).

2.8 Conceptual Framework

The researcher developed a conceptual framework, which is shown in figure 2.1, to illustrate the relationships between the study variables. The Figure depicts the dependent, intervening, and independent variables for this inquiry. The conceptual framework for this study concentrated on how the closure of primary schools in Vihiga Sub-County, Vihiga County, Kenya owing to the COVID-19 outbreak affects pupils' academic performance. The goal of the study was to ascertain whether there was a relationship between the intervening educational strategies and approaches, the independent variables (the study's aims), and the dependent variable (students' academic performance).



**Independent
variables**

Figure 2.1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section describes the study's methodology. It specifically outlines the research concept, the target population, the sampling strategy and sample size, the instrumentation, the methods for gathering and analyzing data, and ethical concerns. The main strategy used in this study was a review of the evidence that was available regarding the effect of COVID-19 on aspects of overall learner academic performance, self-study by students during school closures, curriculum coverage, and teaching, learning, and continuous assessment testing.

3.2 Research Design

An outline of the methods used to gather and analyze the empirical data necessary to address a research issue is called a research design (Prabhat & Mishra, 2015). The study employed a descriptive research methodology to examine the academic performance of pupils in public primary schools in Vihiga Sub County to determine how school closures caused by the COVID-19 pandemic influenced pupils' academic performance.

The method was deemed suitable for this research because it enabled the researcher to collect qualitative and quantitative data to describe the consequences of public primary school shut down due to the COVID-19 pandemic on the academic performance of pupils. Thanks to the descriptive survey methodology, the researcher was also able to reach a wider population and cover a larger geographic area by utilizing a sample that was representative of all the students enrolled in public primary schools in Vihiga Sub County.

3.3 Target Population

A population, according to Saravanel (1992), is a collection of all units that share a particular set of attributes from which the sample aims to infer. Class 8 pupils and teachers from Vihiga

Sub County public schools comprised majority of participants in this study. Data that was collected from the Vihiga County Education Office showed that, Vihiga Sub County had 24471 students, 75 public primary schools, 714 instructors (including 75 head teachers), and 640 teachers (Vihiga County Education Office, 2021).

Class eight learners were selected per school for the study through purposeful sampling. The academic performance of learners in class eight was assessed before and after the shutdown of schools due to emergence of COVID-19 pandemic.

3.4 Sample size and Sampling Technique

A sample is a small representation of the wider studied population (Kothari, 1990). It represents the general public in some way. Simple random sample methods and stratified sampling methods were used to identify the participants who took part in the study. Two categories of respondents' teachers and students—were created. The Sub County Education Office and the school administration each gave a sampling frame that included a list of the teachers and pupils in the selected schools. The Yamane formula (1967) was used to determine was sample size for the teachers as indicated below:

$$n = \frac{N}{1 + Ne^2}$$

Where:

n=sample size; N= Target population; and e=Marginal error

Given: N= 714; Standard confidence level is 95%, for better accuracy which was gave a margin error of 0.05. Therefore, the Sample size for teachers is calculated as follows:

$$n=714 /1+714(0.05)^2 = 65 \text{ Head teachers and teachers}$$

13 of the 75 public primary schools in the Vihiga Sub-County were chosen at random. There were 150 teachers, 780 students, and 13 head teachers in this group. 13 head teachers were purposefully selected from the sampled schools since the researcher wishes to work with

different schools. On the other hand, Mugenda and Mugenda (2003) observed that the study required at least 30% of the population the researcher therefore selected 52 teachers in the sample. Four teachers were chosen at random from each sampled school, resulting in a sample size of 52. According to Kothari (1994) a sample of 10% from the accessible population of 780 respondents is adequate for a descriptive survey design study; six students were systematically random sampled from each school while the 78 students represented 10% of their population. To identify the teachers and students who participated in the study, stratified and straightforward random sampling techniques were utilised.

Table 3.1: Sampling of respondents

Sub-groups	Number of respondents	
Head teachers	13	13
Teachers	52 (4from each school)	52
Class 8 learners	78(6 learners from each school)	78
MoE Sub-County Officers	2	2
Total respondents		145

3.5 Research Instruments

A questionnaire and an interview schedule was used in this study to collect information from teachers in the public primary schools in Vihiga Sub County. Structured questionnaires were deployed. As a result, there was a stronger response and easier to write down and analyze data. The study employed self-administered questionnaires. An in-depth interview with the head teachers of the selected public primary schools and MoE officers was conducted in order to collect a comprehensive qualitative data on how the closure of the schools as a result of the COVID-19 pandemic affected the academic performance of students in public primary

schools in Vihiga Sub County. The questionnaires were written in basic language that made it easy for respondents to complete.

3.6 Validity of the Research Instruments

The extent to which an instrument measures what it purports to measure is referred to as validity (Kathuri *et al.*, 1993). It is concerned with how accurately the methods used to acquire the study's data match the objectives of the inquiry. According to Hayes (2000), a data gathering tool's validity can be demonstrated by putting it up for expert review.

The Department of Curriculum Studies and Education in Emergencies at the University of Nairobi's other lecturers, who verified the conceptual validity of the instruments by evaluating the questionnaire items for clarity, readability, and comprehensiveness to see if they truly measured the study variables. In order to ensure that only items that capture the desired objectives are included in the final questionnaire, feedback from the supervisors was used to develop the questionnaire.

3.7 Reliability of the Study Instruments

The level of consistency that a research tool produces after numerous trials is known as its reliability (Mugenda & Mugenda, 2003). In order to determine whether the developed questionnaire would yield the expected results, the questionnaires were pre-tested using Cronbach Alpha at least two schools that were chosen at random because of their similarity to the schools in the study group.

The dependability of the data tools was assessed using the Cronbach Alpha technique. This approach is better suited to assessing the internal consistency of a questionnaire or other instrument that allows for multiple replies on a Likert scale. With the help of the SPSS Statistics Reliability Analysis Function, the Cronbach's alpha was calculated. The instruments

produced a reliability coefficient of 0.7 or higher, hence were deemed to be Reliable. The formulae for calculating the Cronbach Alpha Method:

$$\alpha = \frac{N\bar{c}}{\bar{v} + (N - 1)\bar{c}}$$

Where: α = Cronbach Alpha reliability coefficient; N=Number of Items; \bar{c} =Average Inter-Items Covariance among the items; and \bar{v} =Average Variance

The researcher analyzed the academic performance of learners in terms of grades before and after the onset of COVID-19 pandemic among other study variables as stated in the objectives of the study. The study organized qualitative data, coded it and categorized it for proper interpretation. Qualitative data was organized, coded and categorized for proper interpretation. Cases of qualitative data and variables were analyzed by the researcher to illustrate themes and make comparisons and contrasts.

3.8 Methods of Data Collection

Before gathering any information from the sampled population, the researcher first requested the University of Nairobi for an introduction letter and the National Council of Science and Technology for legal clearance. The Vihiga County Commissioner's Office and the County Director of Education Office subsequently gave their approval for the conduct of the research. These are thoughtfully constructed written instruments for a series of subjects to which respondents are typically requested to respond in writing. The tool is used in research to saves time and collects data from a huge sample.

The study used a combination of both closed-ended and open-ended questions (Orodho&Kombo, 2002). The open-ended survey was characterized by respondents providing an explanation or their own perspective. On the contrary, the closed-ended surveys was characterized by the respondents providing a "Yes" or "No" response. The aim of the

surveys was to get adequate data with the use of the shortest time possible. As such, to address a specific study objective, each item in the questionnaire was specified appropriately (Mugenda & Mugenda, 2003). The respondents for the questionnaires were head teachers, standard eight class teachers and class eight pupils. Primary data was acquired from respondents. Secondary data was acquired from school records submitted by school heads and the Sub County Education Office, such as sub county cumulative results in the past three years prior to the emergence of corona virus and records post pandemic era , internal continuous assessments tests results , pupils register, Scheme of work, lesson plan and progress record.

The researcher used questionnaires due to the diversity of the respondents, some were instructors and learners from the different public primary schools and therefore it was challenging to conduct individual interviews with each of them. Questionnaires were designed for class 8 learners, head teachers of the targeted schools, Sub-County Education Officers and class teachers. The study collected and used both quantitative and qualitative data on school performance before and after the emergence corona pandemic, syllabus coverage, lesson attendance by learners, self-guided study by learners among others. Using existing materials and the Stam Guide (2015), an interview guide was built. Prior to the commencement of the study, the researcher required the respondent's to append their signatures to a consent letter to ensure that they agreed to a voluntary involvement in the research interview.

3.9 Data Analysis Techniques

The analysis of the field data was done using both quantitative and qualitative techniques. The acquired data were analysed using descriptive statistical methods. In order to produce descriptive statistics like frequencies, mean, median, percentages and standard deviations, the Statistical Package for Social Sciences (SPSS) Version 25 data analyser was used.

To analyze the significance of the association between the effects of COVID-19-related school closures on students' academic performance in public primary schools in Vihiga Sub-County, learners' lesson attendance; learners' self-guided study; learners' syllabus covered; and learners' academic performance on continuous assessments tests, Pearson correlation coefficient was utilized. The impact of COVID-19-related school closures on students' academic performance in public primary schools was predicted using regression analysis. The equation was expressed as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where: Y = Academic performance; α = constant (coefficient of intercept); X_1 = Learners' lesson attendance X_2 = Learners' self-guided study; X_3 = Learners' syllabus coverage =; X_4 = Learners' academic performance in continuous assessments; and $\beta_1 \dots \beta_4$ = regression coefficient of three variables. The significance level is high as the P-value is less than 0.05 which is approximately 5%.

The researcher utilised thematic analysis to analyse qualitative data, identifying emergent patterns and themes depending on the research objectives. Qualitative information was offered in the form of exact quotes and narratives.

3.10 Ethical Considerations

Each participant received information regarding the study, the procedure, any risks involved, potential benefits, and a copy of the consent form to review and sign as confirmation of their willingness to take part in the study. On the consent form, the researcher made a notation that they would gather data about the participants' schools. In the consent form, he also informed the participants that they could leave the research at any time by contacting him by phone or email and that doing so would not have any detrimental effects. Through the informed

consent procedure, participants received assurances of confidentiality, which encouraged them to provide thorough and sincere answers to interview questions (Nelson, 2016).

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section elaborated the research's finding in accordance with the objectives, providing insight into the data analysis and reporting on the results' interpretations. The general approach employed involves the use of tables, charts, and graphs to illustrate the research's conclusions. The chapter concentrated on the questionnaire as the primary method of data collection and based its conclusions on the parameters established by the questionnaire.

The SPSS for Windows version 25 was used to evaluate the data gathered from respondents. During the COVID-19 crisis, teachers, decision-makers, families, and students are in unfamiliar ground. With regard to ensuring that there was unlimited access to learning resources by all students including, teaching, online materials, and active schools. Despite these initiatives, most of the parents with children enrolled in schools worry that the interruptions brought on by the corona virus pandemic school closures will cause their children to lag behind intellectually (Horowitz, 2020).

The goal of this study was to develop an in-depth understanding and projection of how school closure due to the COVID-19 pandemic could affect learners' academic growth and success in the current school year 2019–20 and the following 2020–21. We report these findings as preliminary estimates of the possible adverse effects anticipated due to prolonged school closures because our assumptions, while based on current literature, are predicated on those outcomes.

In this study, the researcher created a variety of potential outcomes for the rates of learning loss as a result of the prolonged school closure when pupils were not receiving their regular physical learning. These predictions can aid in preparing parents, teachers, and other

stakeholders for the level of variation in pupils' academic accomplishment to be anticipated when classes resume, as well as in the course of the subsequent academic years.

4.2 Questionnaire return rate

Table 4:1 below shows 92% of the head teachers, 60% of teachers, 82% of the learners and 100% of the MoE officers filled in the questionnaires and returned them for analysis.

Table 4.1: Questionnaire return rate

Target respondent	Sample size	Responses	Return rate %
Head teachers	13	12	92
Class 8 teachers	52	35	60
Class 8 learners	78	64	82
Sub-County MoE officials	2	2	100

Source: Field Data, 2022

The study recorded a high overall questionnaire return rate for all respondents who were targeted being above 80% in all cases. Mugenda & Mugenda (2003) state that a return rate between 60 and 80 percent is regarded as being "very satisfactory," whereas a return rate of 80 percent or above is regarded as being "completely satisfactory." A satisfactory questionnaire return rate is crucial in order to prevent study assumptions and any bias that may be exposed by a low return rate. A return percentage of under 60% is regarded as "barely acceptable."

4.3 Respondents' response on syllabus coverage

4.3.1 Head teachers' response

Table 4.2: Head teachers' Response on syllabus coverage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	11	91.7	91.7	91.7
	Strongly Disagree	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

As can be seen in table 4.2 above, 91.7% of the head teachers who were interviewed indicated that their schools' syllabus coverage had been significantly impacted by the shutdown of schools owing to the COVID-19 pandemic. Even though the MoE had created alternate forms of instruction to maintain continuity, education was all but impossible without electricity, access to TV and radio, and most definitely without internet learning resources. Access to printed learning materials was exceedingly challenging because of the learners' geographic separation from the schools.

4.3.2 Learners Response on Syllabus Coverage during COVID-19 Pandemic

Class 8 Learners were asked to indicate if their academic performance and syllabus coverage was affected by the emergence of COVID-19 pandemic and subsequent shutting down of schools. The following table represents these findings:

Table 4.3: Learners’ response on syllabus coverage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	29	43.3	45.3	45.3
	Little bit	32	47.8	50.0	95.3
	Very much	3	4.5	4.7	100.0
	Total	64	95.5	100.0	
Missing	System	3	4.5		
Total		67	100.0		

4.3.3 Class 8 teachers’ response on syllabus coverage

As shown in table 4.4 below, class 8 teachers were interrogated to state how the COVID-19 pandemic had impacted on their ability to cover the syllabus. 54.3 percent of the teachers replied that the sudden closure of the schools during the first term and the subsequent closure for 10 months without communication with the students, who they believed to be their core duty, had an adverse effect on their ability to cover the syllabus.

The class teachers responded that just 66% of the required curriculum was generally covered in the 2019–20 academic year. More than half (54.3%) of teachers believed that the existing learning gap between students who are disadvantaged and their counterparts had increased in the previous year, while the remaining teachers believe that there was a reduction in the gap. From the teacher’s evaluation, on average there was an increase in the gap between disadvantaged pupils and their counterparts.

Table 4.4: Class8 teachers’ response on syllabus coverage

		Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	13	37.1	37.1	37.1
	Little bit	19	54.3	54.3	91.4
	Very Much	3	8.6	8.6	100.0
	Total	35	100.0	100.0	

Class 8 learners’ response on effect of COVID on syllabus coverage

About 52.3% of pupils surveyed concurred that their capacity to effectively cover the curriculum had been seriously hampered by the COVID-19 pandemic, which caused extended school shutdowns. In the course of the pandemic, accessibility and availability problems prevented further instruction. Similar to this, the majority of students acquire their formal education in schools. Students spent less time studying when schools were closed and instruction was moved online.

Significant reversals in academic progress occurred as a result of the decrease in pedagogical time provided by teachers with regard to the syllabus against which pupils would ultimately be evaluated. A majority of them mentioned that COVID-19 had cost them a considerable amount of time that they could have used to complete parts of the curriculum. The findings also reveal that most students' schools were close down indefinitely due to COVID-19, forcing them to look for other schools when those doors reopen and, more importantly, to resume their studies where they left off, as highlighted in table 4.5 below.

Table 4.5: Learners’ response on syllabus coverage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	29	43.3	45.3	45.3
	Little bit	32	47.8	50.0	95.3
	Very much	3	4.5	4.7	100.0
	Total	64	95.5	100.0	
Missing	System	3	4.5		
Total		67	100.0		

4.3.4 Sub-County MoE Officers’ response on syllabus coverage

According to the Sub-County MoE, the COVID-19 virus had affected education resulting to the complete closure of schools. All Vihiga sub-county MoE officers (100%) in their responses indicated that most public primary schools and learners were not able to adequately continue covering the syllabus despite the government coming up with online and radio teaching programs because of high poverty levels within Vihiga sub county hence most learners most could not access the alternative learning and teaching methods set up by the government

4.4 Respondents’ response on lesson attendance**4.4.1 Class 8 teachers’ response on lesson attendance**

Table 4.6 below shows that, the majority of class 8 teachers (71.4%) were concerned that the COVID-19 outbreak had significantly in a negative way impacted pupils' attendance in class because absenteeism was apparently high when schools reopened. Nearly all schools provided attendance information for Terms 1-3, which was used in this analysis. This information pertains to 85 to 95% of the pupils enrolled in public primary schools in Vihiga Sub County. Even in the years when COVID-19 had no impact, there was a difference in the

rate of school attendance, with Term 1 recording a higher rate than Term 2. As a result, the study compared attendance patterns from before 2020 when COVID was not a factor in order to evaluate the new consequences of COVID-19.

Table 4.6: Class8 teachers’ response on lesson attendance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	9	25.7	25.7	25.7
	little bit	16	45.7	45.7	71.4
	very much	10	28.6	28.6	100.0
	Total	35	100.0	100.0	

4.4.2 Class 8 learners’ response on lesson attendance

After participating in extracurricular activities that were not necessarily academic in nature, pupils' willingness to return to school and morale may have been considerably lowered, according to 57.8% of the pupils. A number of socio-economic, cultural, and educational factors such child labour; poverty, pregnancy, and early marriage were mentioned as causes for dropping out of school. The students' feedback are captured in Table 4.7 below:

Table 4.7: Class8 learners’ response on lesson attendance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	55.2	57.8	57.8
	No	27	40.3	42.2	100.0
	Total	64	95.5	100.0	
Missing	System	3	4.5		
Total		67	100.0		

4.4.3 Sub-County MoE Officers’ response on lesson attendance

The sub county officers in Vihiga sub-county MoE reported that the COVID -19 related school closures had made most of the learners forget about their studies as they engaged in household chores, child labor such as cattle herding, mining, and other distractions that

interfered with their education and school attendance in particular the MoE officials responses are shown in the table below.

Table 4.7: Sub County MoE Officers response on lesson attendance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	100	100.0	100.0
	No	0		000.0	000.0
	Total	2	100	100.0	
Missing	System	0	0		
Total		2	100.0		

4.5 Respondents' response on self-guided study

4.5.1 Class 8 Learners response on self-guided study

Pupils in class 8 were questioned about their ability to study online and offline during the prolonged school closure. As seen in Figure 4.1 below, only 3.3% of students claimed they had the time to study, but an astounding 90.2% claimed that the absence of smart phones and data stopped them from engaging and continuing with their studies

Figure 4.1: Reason learners did not study during school's shut down

Due to the aforementioned causes, pupils were not studying, which indicates that they were not participating in academic activities. Since there wasn't much activity during the first several months of the pandemic, most students were at leisure and had time to engage in vices. Additionally, the learners' learning was lost as a result of skipping classes for nearly six months.

According to the majority of respondents, primary school pupils are the most probable to be distressed by school shutdowns since they were not able to engage in self- learning without the guidance of a grown person. The reason given was that; it was difficult to find a quiet study room. Furthermore, learners from the rural areas were affected with the problem of having to work in their homes, some in their farms, while others were married off early. This was particularly true for the female pupils.

4.5.2 Sub-County MoE Officers' response on self-guided study

The sub county officers in Vihiga sub-county MoE reported that the COVID-19 related school closures had made most of the learners forget about their studies as they engaged in household chores, child labor such as farming , mining, and other distractions that interfered with their self-guided studies and academic continuity.

4.6 Respondents' response on academic performance due COVID-19 pandemic

4.6.1 Schools' mean scores before and after COVID-19 pandemic

Significant learning losses are expected to be caused by the decrease in instructional time, which was allocated by teachers in accordance with the syllabus, which served as the ultimate yardstick for student evaluation. This demonstrated that the school shut downs caused by corona pandemic, which resulted in lackluster performance in K.C.P.E., had a detrimental impact on learners' academic output. The table below shows the mean scores of class 8

students from 2018 to 2021, and the data analysis revealed that the time proceeding to the onset of corona outbreak the average scores of the pupils were. In the table below, the mean score of students from the sampled schools is shown before, during, and after the COVID-19 pandemic's emergence as illustrated in the table 4.8 below:

Table 4.8: Schools’ mean scores before and after COVID-19 pandemic

Year	Above 250 Marks	Below 250 Marks	Total %
2018	72.4	27.6	100
2019	31	69	100
2020	55.2	44.8	100
2021	62.1	37.9	100

Source: Field data, 2022

Table 4.8 above reveals that before the COVID-19 pandemic emerged, the majority of students (72.4%) performed above average, followed by students who performed below average (27.6%), and when the COVID-19 pandemic set in, only students (31%) scored above 250 marks, meaning that the overall mean grade was average.

Due to the prolonged school closures brought on by the COVID-19 pandemic, it is evident that the overall performance was poor.

4.6.2 Learners’ response on academic performance

Learners were asked to write a response on the effects COVID-19 on their academic work. The majority of the learners (57.8%) said the corona pandemic had a significant blow on their academic work. The majority of them claimed that COVID-19 had cost them valuable time that they could have utilized to finish some of the coursework. The closing of the schools has

had a severe impact on instructional and learning time, which has hindered student learning performance.

According to table 4.9 below, the majority of students said they had the schools shut down had obliterated what they had covered in term one prior to schools closure and were worried that it would negatively affect their academic performance. Table 4.9 below indicates their response.

Table 4.9: Learners’ response on academic performance due to COVID-19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	55.2	57.8	57.8
	No	27	40.3	42.2	100.0
	Total	64	95.5	100.0	
Missing	System	3	4.5		
Total		67	100.0		

4.6.3 Class 8 teachers’ response on COVID -19 pandemic on academic performance

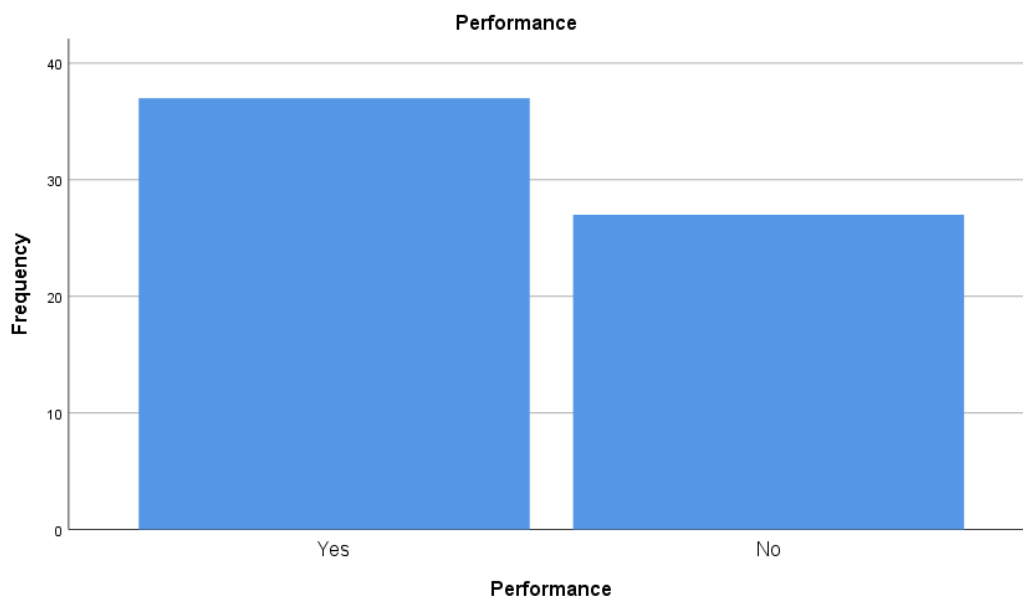


Figure 4.3: Class 8 teachers’ response on academic performance

The majority of class 8 teachers, as shown in figure 4.3 above, claimed that the corona virus's emergence had disrupted and confused the educational system and compelled them to unexpectedly stay at home. The teachers also brought up the interruption to the academic schedule. Because they saw their pupils as their top responsibility, the teachers were concerned that the virus had led to a substantial disconnect between them and their student for ten months in a row.

The majority of class 8 teachers who were surveyed claimed that the pandemic had interrupted the educational system and forced them to unexpectedly stay at home, which was unanticipated. The teachers claimed that the pandemic had badly impacted on their ability to impart knowledge and that their students would have to repeat lessons even though they were candidates who should have been taking their final exams.

4.6.4 Head teachers' response learners on academic performance

Table 4.10 below shows that the majority of Head Teachers in this study (83.3%) all indicated that COVID-19 had a negative consequence on the educational sector in Vihiga Sub County. They indicated this was mostly caused by the decrease in student contact hours and the unavailability of technologies that supported e-learning that pupils could have used to interact with their teachers when KICD started online programs.

Table4.10: Head teachers' response on academic performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	10	83.3	83.3	83.3
	No	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

4.6.5 Sub-County MoE Officers' response on academic performance

The MoE officials in the sub county stated in their responses that most learners' academic performance had significantly dropped as per the sub county's academic records taken before and after the emergence of the pandemic. The sub county MoE responses are shown in the table below.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	2	100.0	100.0	100.0
	No	0	100.0	100.0	000.0
	Total	2	100.0	100.0	100.0

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on the summary of the study, findings of the study, conclusions, recommendations and suggestions for further research.

5.2 Summary of the study

The major objective of the study was to find out how the schools closure due to COVID-19 influenced the academic performance of pupils in public primary schools in Vihiga Sub-County.

5.3 Summary of the findings

The study's concludes that the majority of pupils had been negatively impacted by the abrupt and prolonged shutdown of primary schools in Vihiga Sub County due to the COVID-19 pandemic.

This was demonstrated by the students' inability to complete their course work, poor academic performance, low class attendance, and high rates of absenteeism from school. Data also showed that even after the MoE implemented alternative teaching strategies, such as online classes, the pupils were still unable to complete their schoolwork. According to this study's findings, students have a hard time comprehending some ideas and studying on their own, which renders the online class system useless.

This outcome is consistent with other studies' results that online learning has not been successful in helping students learn and comprehend concepts. Furthermore, the same study shows that online courses did not provide the students with any value because they could not access the internet, which is a problem for many students in Kenya and other developing countries. The results of our survey found out that students felt they had limited access to the internet and thus could not access online classes which were consistent with the findings of this study.

5.4 Conclusions

Not only have students in Kenya been impacted by the COVID-19 pandemic, but also others all across the world. Over the years, education in developing countries has faced many challenges. This study has produced many useful findings that might be applied to future research, but it could have produced more accurate and broadly applicable findings if it had been carried out in a wider sample size, including a variety of fields and public primary schools across Kenya.

A deeper understanding of the issues we raised and a clearer presentation of the viewpoint of parents and instructors as well as students may have been achieved with more thorough investigation. As we get ready for an era when COVID-19 becomes a part of our everyday life, stakeholders must now create significant activities. It is evident that countries that do not embrace Education in Emergencies and by extension, e-learning, would not be able to survive in the future.

As infectious diseases like COVID-19 have shown, it is critical to plan ahead to anticipate seamless learning in these situations. As such, learning will not be impaired and the students' academic achievements will not be affected. Furthermore, there will be minimum disturbance to the school system as possible.

The MoE should also provide continuing education through an alternative learning platform as soon as possible. It is imperative to take measures to dispel any concerns that may arise as a result of the established procedures if the MoE hopes to be able to guarantee continued learning and give students access to a high-quality education characterized by fairness and inclusivity both during and after the COVID19 crisis.

The COVID-19 outbreak has shown us that both teachers and students should be trained on effective use of online learning resources. One way that teachers and students can improve teaching and learning after the COVID-19 pandemic is to continue using the available online tools and resources when regular begin. The unheard-of number of schools that had to close due to the Corona virus serves as a learning lesson in addition to a warning to the scholarly world , especially those who have not yet embraced or adopted developing learning tools that facilitate online or distant learning. In order to survive the post Corona virus era, actors in the education pedagogy sphere must create solid strategies. The conclusions of this study are crucial in filling a gap in the literature on emergencies in education, but they can also be helpful in formulating policies and designing programs that will benefit Vihiga sub county and the nation as a whole in the wake of COVID-19 pandemic.

5.5 Recommendations

The study's analysis, conclusions, and discussions revealed that COVID-19 has had a disastrous impact on the educational system, particularly on students' academic performance.

The study's recommendations were as follows:

- That even if schools take some time to fully reopen, it's crucial to make sure that parents, teachers, and the Ministry of Education offer support to students identified as vulnerable to prevent drop in academic performance and learning loss.
- The Schools head teachers and the teaching staff should develop strategies to ensure all the scheme work for the term is covered before students sit for internal continuous assessment tests.
- The study found that some pupils' possibilities to learn at home are constrained since their homes lack a conducive learning environment and many of them come from low-literacy or financially challenged households that cannot afford private tutors. Additionally, even

if the virus must be stopped from spreading, most pupils will lose momentum and direction because schools will only be teaching in a reactionary manner. The report suggests that the government makes sure that every Kenyan pupil in public primary school is provided an equal opportunity to attend online learning.

- The pandemic has forced most schools in different parts of the world to switch to e-learning. Governments are thus tasked with enhancing network coverage, connectivity and infrastructure in both urban and rural locations. The MoE should scale up educational technology in addition to constructing ICT infrastructures, zero-rating educational materials on the internet, enhance digital training, teaching and learning, offer free online learning resources, mobile learning, radio and television teaching, and digital teaching.
- In order to curb school absenteeism when classes restart when the pandemic is over, schools should develop tactics and techniques to make up for lost learning by preparing students, parents, and teachers as well as enhancing the accessibility of distance learning.
- When schools are reopened, the education system should create and put into place certain evidence-based measures that are meant to make it easier to recoup the lost academic time. It may take age's for pupils from humble and illiterate guardians to make up the lost time when they return to school due to short of support during the educational institutions shut down. When schools reopen, some learners from low incomes may elect not to attend because they must toil as day laborers to support their families.
- Teachers may not always be instructing learners physically all the time after the corona virus pandemic elapsed; therefore the educational system needs to come up with ideas on how to encourage students and teachers to respond to the disturbance on education

effectively and efficiently. Therefore, the educational system must be ready for everyone to quickly and easily transition to alternate learning platforms in case of emergency.

- Even with the digital mitigating measures the MoE put in place to plug the gap left by the unexpected closure of educational institutions, there is still likelihood that learning only had a little impact on education. The needy are more prone to drop behind their wealthy counterparts. Comprehensive evaluations should be carried out as soon as classes start up again in order to pinpoint any outstanding learning gaps and offer guidance on remedial teaching and learning opportunities so that all pupils may promptly compensate for lost instructional time.
- The most outstanding positive and favorable impact of corona virus pandemic on education has been the near global adoption of digital learning by most countries in their pursuits to continue offering learning to their students in the course of the pandemic. To ensure that no pupil is disadvantaged, governments, counties, and schools must act quickly to incorporate a suitable learning or technology-enabled component into the syllabus.
- To ensure that education is not disrupted in the event of a future crisis, governments should develop, disseminate, and broadly consult on crisis management plans. In order to increase community involvement in the educational process and ensure that they are prepared and eager to assist in any subsequent emergencies impacting the educational system, schools should think about reviewing their contacts with parents and other stakeholders.
- By integrating online learning into the school curriculum, the government will be able to ensure continuity of syllabus coverage and education by learners. The government ought to work closely with telecom companies like Safaricom and Airtel, among

others, to subsidize internet packages and build online learning applications directly into smart phones in both urban and rural sections of the country; this will improve education and ensure continuity of learning even in times of calamities.

5.5 Suggestions for further studies

More studies should be done in private primary schools and higher learning institutions to ascertain the effects of COVID-19 on learners' lesson attendance, academic performance, and continuous assessment tests before and after the pandemic. It would be helpful to do a study in other counties for comparison purposes to examine the effects of COVID-19 in the field of education, particularly in public primary schools in Kenya.

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APPENDICES

Appendix I: Survey Questionnaire

Introduction

My name is Shibuko Klein Calvin, a Master's student at University of Nairobi. I am carrying out a research on Effects of COVID-19 related school closures on Pupils' Academic Performance in Public Primary Schools in Vihiga Sub-County, Vihiga County, Kenya for academic research

You are kindly requested to provide answers to these questions honestly and precisely as possible. Please do not write your name or that of your school anywhere on the questionnaire. Please put a tick (✓) where appropriate or fill in the required information on the spaces provided.

Your views and responses are highly appreciated and will be held in confidence and used for academic purposes only. The outcome of this discussion will be useful for stake holders and policy makers in the education sector in designing relevant intervention measures for future education in emergencies.

If you agree to respond to the questionnaire, please sign below:

Appendix II: Questionnaire for Head-Teachers

Introduction

Section A: Personal Information /Demographics

1. Name of Sub-County _____
2. Name of school _____
3. Gender Male [] Female []
4. How many years have you been teaching in this School?
Less than 1 year () 1-5years () 6-10 years ()
1. Indicate your level of agreement with the statements Effects of COVID-19 related school closures on Pupils' Academic Performance in Public Primary Schools in Vihiga Sub-County, Vihiga County, Kenya for academic research
(Where SA = Strongly Agree, A = Agree N=Neutral, D= Disagree, and SD = Strongly Disagree)

Statements	SD	D	N	A	SA
1.School closure due to COVID -19 pandemic affected syllabus coverage in your school					
2.Learners' and teachers' attendance was affected due to emergence of COVID -19 pandemic					
3. School closures due COVID -19 pandemic affected self-guided of learners while they were at home					
4.Learners' performance in CATs and KCPE was affected by the closure due to emergence of COVID-19 pandemic					
5.Teachers are still able to adequately manage and supervise learners during the long closures due to COVID-19 pandemic. in class					

Section B: Enrollment and Admission

- (a) Was the number of pupils in your school affected by the emergence of COVID-19 pandemic?
Yes [] No []

(b) If yes in (a) above briefly explain

.....

Section C: Pupils’ continuous assessment and academic performance before and after emergence of COVID-19 pandemic

(a) If you compare, was the average academic performance of your school in the last 2 years before and after, affected by the emergence of COVID-19 pandemic?

Yes [] No []

(b) If the answer to the question (c) above is ‘Yes’ please explain briefly.

.....
.....

(b) Was the quality of education in your school affected by the closure due to COVID-19 pandemic? Yes [] No []

(c) If your answer to (e) above is ‘Yes’ please briefly explain

.....
.....

Section D: School’s Preparedness for education in emergencies

(a) Prior to the emergence of COVID-19 pandemic was your school adequately prepared for any emergencies in education? Rate the preparedness of your school by ticking (√) below phrases that best describes your opinion.

Quite adequate [] Adequate [] Inadequate [] Quite inadequate []

(b) Briefly explain how after the reopening of schools the measures your school put in place for any future emergencies in education.

.....
.....

How would you rate your school’s preparedness for any future emergencies in education?

Quite adequate [] Adequate [] Inadequate [] Quite inadequate []

Thank you for your cooperation and answering the questions.

Appendix III: Questionnaire for Class 8 Teachers

Section A: Personal Information /Demographics

1. Name of school _____

2. Class _____

3. Gender Male [] Female []

Section B: Learners' Readmission and School Attendance

a) Did all learners report back to class after the closure and reopening of schools due to COVID-19 pandemic?

Yes [] No []

b) If Yes in (a) above briefly explain

.....
.....

c) Was the re-enrollment and readmission of learners in your class affected by the extended closure of schools due to COVID-19 pandemic?

Yes [] No []

(c) If yes above in (c) above briefly explain.

.....
.....

SECTION C

Pupils' Continuous Assessment and Academic Performance before and after emergence of COVID-19 pandemic

(a) Please indicate the mean score for Std 8 KCPE results in the last three years before the emergence of COVID -19 pandemic in the table provided below:

Year	2018	2019
No. of candidates		
School mean score		
School mean grade		

(b) Please indicate the mean score for Std 8 KCPE results after the emergence of COVID -19 pandemic in the table provided

Year	2020	2021
No. of candidates		
School mean score		
School mean grade		

(c) What method was used to monitor pupils' academic performance after the emergence of

COVID-19 (tick all applicable?)

Continuous Assessment Tests (CATs) []

End of term exams []

Attendance of lessons []

Any other (specify)

.....
.....

(d) Do you think the closure of school due to COVID-19 has affected pupils' performance in KCPE in your school?

Not at all [] Little bit [] very much []

(e) Please explain briefly your response in (d) above

.....
.....

(f) How school closure due to COVID-19 pandemic compromised the quality of education given to your learners?

Not at all [] Little bit [] Very much []

(g) Briefly explain how and why the quality of education in your school has been affected or compromised due to the closure of the school due to COVID- 19pandemic.

(h) How did school closure due to COVID-19 pandemic affect learners' lesson and class attendance?

Not at all [] Little bit [] Very much []

(i) Please briefly explain how class and lesson attendance by learners was affected

.....
.....
.....

(j) Due to the prolonged closure and academic disruption due to COVID-19 pandemic where you able to properly and adequately able cover the syllabus in all subjects well?

Not at all [] Little bit [] Very much []

(k) What measures as a teacher did you put in place to at least cover the syllabus and ensure that there was learning continuity despite school closure. Please briefly explain.

.....
.....
.....

Thank you for your cooperation and answering the questions.

Appendix IV: Questionnaire for STD 8 Learners

Section A: Personal Information/Demographics

Gender

Male []

Female []

Name of school _____

Section B

Academic performance before and after the emergence of COVID-19 pandemic

a) Do you think your academic performance was affected by the school closure due to COVID-19 pandemic?

Yes []

No []

b) If yes (b) above ,briefly explain

.....
.....

Section C

Learners' class and lesson attendance post COVID-19 pandemic

a) Have all your class mates resumed school since school reopened?

Yes []

No []

b) Have you and your class mates been attending classes and lessons regularly since reopening of schools?

Yes []

No []

c) If 'No' b above please briefly explain why

.....

Were you able to fully concentrate and do self study while at home?

Not at all []

Little bit []

Very much []

d) Briefly explain reasons for your response in (d) above..

.....
.....

g) Were you able to fully cover the syllabus in view of the school closure due to COVID -19 pandemic?

Not at all []

Little bit []

Very much []

e) Briefly explain reasons for your response in (g) above.

.....
.....

Thank you for your co-operation and answering the questions.

Appendix VI: Questionnaire for Sub-County Education Officers

Respondent details

- 1. Male ____ Female ____
- 2. Age: _____
- 3. Level of education: _____
- 4. Position/Role(s)_____
- 5. Name of Sub-county where you work _____
- 6. Name of school _____

Instructions

We request you to share with us how COVID -19 pandemic has affected academic performance in your Sub-County. Please tick (√) the appropriate answer

Any other, please describe

- i. How difficult is it for you to continue giving proper education in the midst of the emergence of the COVID-19 pandemic

Not at all [] Little bit [] Very much []

- ii. Please describe the nature of difficulties faced by your sub county /school/learners due to the emergence of COVID-19 pandemic in the following areas

(a) Syllabus coverage

.....
.....

(b) Learners’ self –guided study in the course of school closure due to covid-19 pandemic

.....
.....

(c) Learners’ school and lesson attendance after the reopening of the school

.....
.....

(d) Learners’ performance in continuous assessment tests after the closures due to COVID-19 pandemic

.....
.....

VI. What mitigation measures have you put in place to the above mentioned challenges?

.....
.....

Appendix VII: Observation Schedule

1. Name of school _____

2. Division/ Zone _____

Item	Comment
Headmaster	
School time table	
Teachers register	
Black book	
Students permission book	
School academic performance records pre and post COVID-19	
Class teacher	
Scheme of work, lesson plan and progress record	
Pupils' register school attendance pre and post COVID-19	
Learners	
Homework and assignments books	
Class / lesson attendance	
Student concentration	
Record of Number of learners pre and post COVID-19 per class and in school in general	
Record Learners' academic performance pre and post COVID-19 pandemic	

10. Teacher ability to help disadvantaged learners

Very Good [] Good [] Fair [] Poor []

11. Level of class attendance\

Very Good [] Good [] Fair [] Poor []

12. Learners' academic performance

Very Good [] Good [] Fair [] Poor []

Questionnaire for key informants

1. What is the impact of the long closure of schools on the education sector in general?
2. In particular, how has the long closure of schools affected the education of girls and boys in Kenya?
3. When schools reopened in October 2020, did all learners report back to school?
4. What are some of the reasons for the drop out of either boys or girls?
5. How would you rate the performance of your learners in CATs after the closure and reopening of school due to Covid-19 pandemic?
6. Did you conduct online teaching during the long closure? If not, why?
7. Was your school prepared for the eventual opening of? If yes, how ready are you? If not, what are the reasons for lack of preparedness?

Thank you for your time, do you have any questions for me?

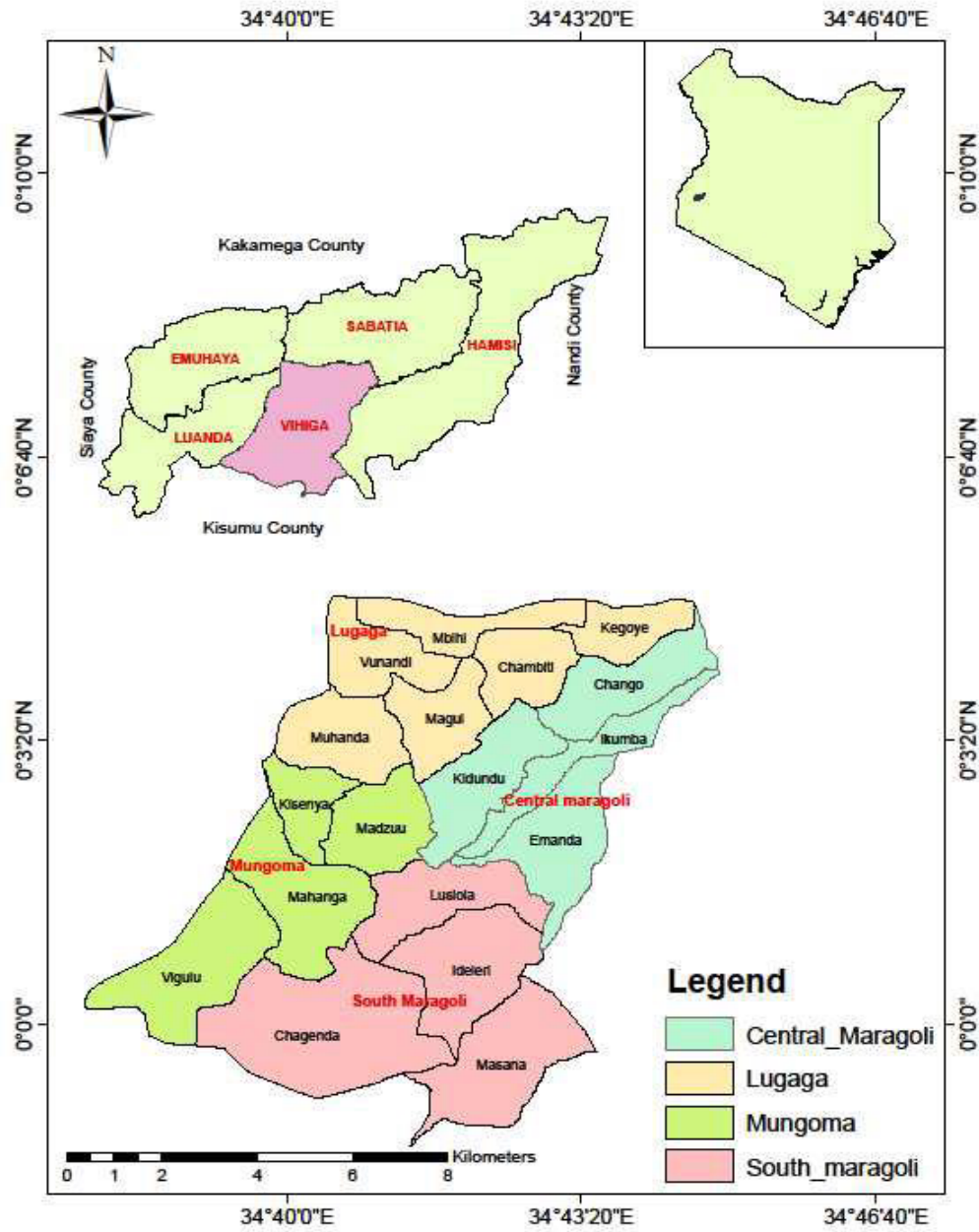
Appendix VIII: List of public primary schools in Vihiga Sub County

County	Sub county	Name of school
1.	VIHIGA	BUSAMO FRIENDS
2.	VIHIGA	CHAMBALE
3.	VIHIGA	CHAMBITI
4.	VIHIGA	CHANDA ADC
5.	VIHIGA	CHANDOLO SALVATION ARMY
6.	VIHIGA	CHANDUGUNYI
7.	VIHIGA	CHANGO
8.	VIHIGA	CHANZEYWE
9.	VIHIGA	CHANZUVU
10.	VIHIGA	CHAVAVO
11.	VIHIGA	CHAVUGAMI
12.	VIHIGA	DOWN HOME
13.	VIHIGA	EMANDA
14.	VIHIGA	EMBAGA
15.	VIHIGA	ENANGA
16.	VIHIGA	FRIENDS PRIMARY SCHOOL GIVOGI
17.	VIHIGA	GAVALAGI
18.	VIHIGA	GILWADZI
19.	VIHIGA	HAMASANA
20.	VIHIGA	HAMBALE
21.	VIHIGA	IDAVAGA
22.	VIHIGA	IDELERI
23.	VIHIGA	IDUKU
24.	VIHIGA	IGAKALA
25.	VIHIGA	IHYAGALO
26.	VIHIGA	IKUMBA
27.	VIHIGA	INAVI
28.	VIHIGA	INDULU
29.	VIHIGA	INGIDI
30.	VIHIGA	INYANZA
31.	VIHIGA	ISAKU ADC
32.	VIHIGA	ITENGI
33.	VIHIGA	KEDOHI PIR
34.	VIHIGA	KEGENDIROVA
35.	VIHIGA	KEGOYE FRIENDS
36.	VIHIGA	KERONGO
37.	VIHIGA	KIDINYE
38.	VIHIGA	KIDUNDU
39.	VIHIGA	KIGADAHI
40.	VIHIGA	KISIENYA PRIMARY SCHOOL
41.	VIHIGA	KISINGILU
42.	VIHIGA	KITULU
43.	VIHIGA	KITUMBA
44.	VIHIGA	LUSAVASAVI
45.	VIHIGA	LWANGELLE

46.	VIHIGA	LYAMAGALE
47.	VIHIGA	LYAMIDI
48.	VIHIGA	MADIRA
49.	VIHIGA	MADZUGI
50.	VIHIGA	MADZUU
51.	VIHIGA	MAGAKA
52.	VIHIGA	MAGUI
53.	VIHIGA	MAHANGA
54.	VIHIGA	MALINDI ADC PRIMARY
55.	VIHIGA	MASANA
56.	VIHIGA	MATAGALU
57.	VIHIGA	MATSIGULU
58.	VIHIGA	MBIHI
59.	VIHIGA	MKOMBOZI
60.	VIHIGA	MOSES AKARANGA
61.	VIHIGA	MUHANDA
62.	VIHIGA	MUKULI
63.	VIHIGA	MUSUNGUTI
64.	VIHIGA	MWOKI
65.	VIHIGA	NAVUHI
66.	VIHIGA	VALIANT JUNIOR SCHOOL
67.	VIHIGA	VIGETSE S A
68.	VIHIGA	VIGINA
69.	VIHIGA	VIHIGA
70.	VIHIGA	VISIRU
71.	VIHIGA	VUMALE
72.	VIHIGA	VUNANDI PRIMARY
73.	VIHIGA	WAMAGE
74.	VIHIGA	WOMULALU
75.	VIHIGA	WOMULALU FRIENDS SPECIAL

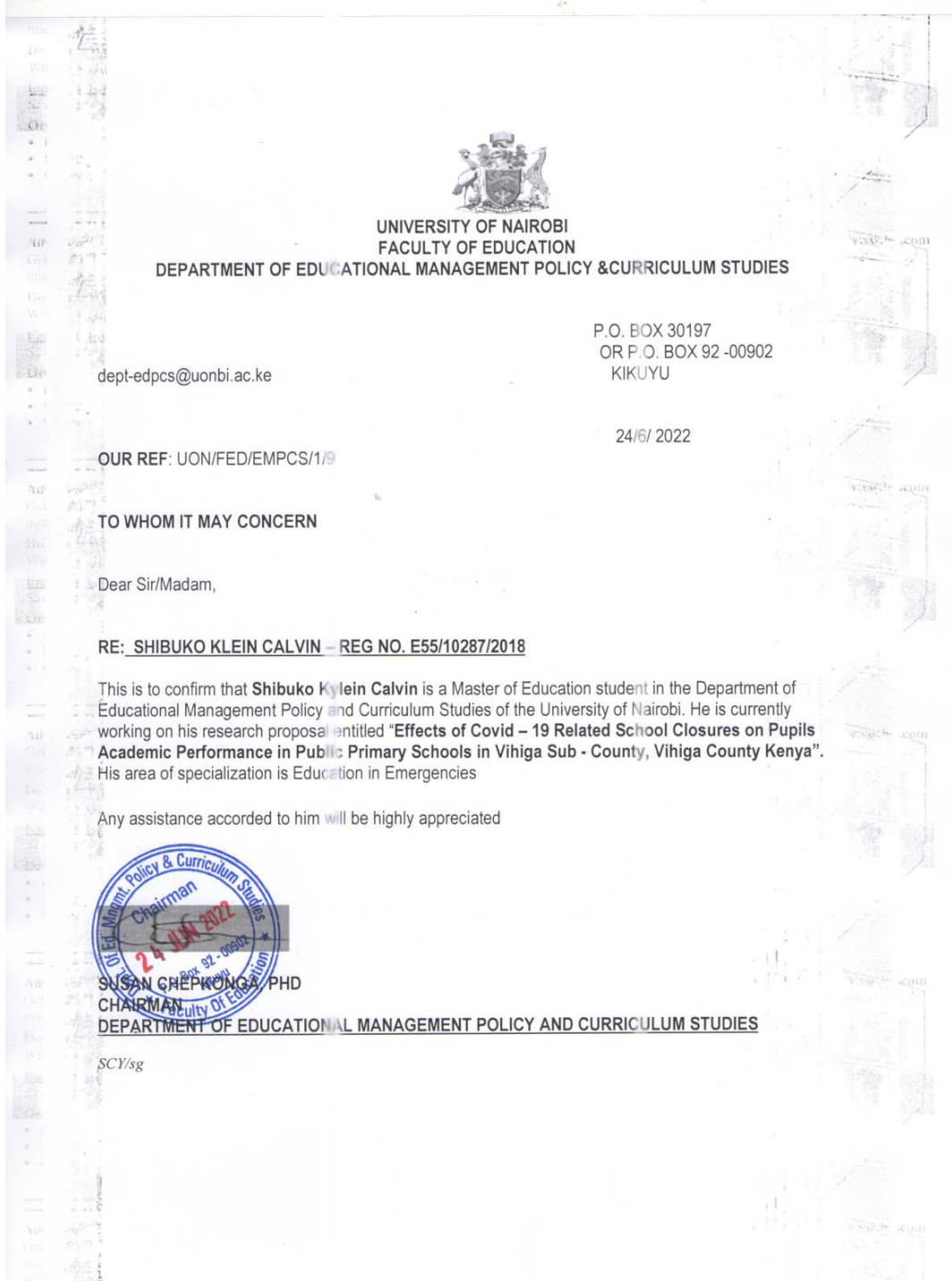
Source: Ministry of Education, Vihiga County

Appendix XI: Map of Vihiga Sub County in Vihiga County, Kenya



Source: Own

Appendix XII: Letter of Introduction



Appendix XIII: County Commissioner Authorization

REPUBLIC OF KENYA



THE PRESIDENCY

MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

Email: vihigacc1992@gmail.com
Telephone: +254728294705
When replying please quote

COUNTY COMMISSIONER
VIHIGA COUNTY
P.O BOX 75-50300
MARAGOLI

VC/ED/12/1 VOL. III (216)

27th June, 2022

DEPUTY COUNTY COMMISSIONER,
VIHIGA SUB COUNTY

RE: RESEARCH AUTHORISATION: MR. SHIBUKO KLEIN CALVIN

This is to introduce to you Mr. Shibuko Klein Calvin of University of Nairobi to carry out research on the topic "*Effects of COVID-19 related School Closures on Pupils Academic Performance in Public Primary Schools*" in Vihiga Sub County, Vihiga County for a period ending 24th May, 2023.

Kindly accord him the necessary assistance.


AARON E. OMASET
FOR: COUNTY COMMISSIONER
VIHIGA COUNTY

COUNTY COMMISSIONER
VIHIGA COUNTY

Cc. Mr. Shibuko Klein Calvin

Appendix XIV: Research Permit

 REPUBLIC OF KENYA National Commission for Science, Technology and Innovation	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 975620	Date of Issue: 24/May/2022
RESEARCH LICENSE	
	
<p>This is to Certify that Mr. Shibuko Klein Calvin of University of Nairobi, has been licensed to conduct research in Vihiga on the topic: EFFECTS OF COVID-19-RELATED SCHOOL CLOSURES ON PUPILS' ACADEMIC PERFORMANCE IN PUBLIC PRIMARY SCHOOLS IN VIHIGA SUB-COUNTY, VIHIGA COUNTY, KENYA for the period ending : 24/May/2023.</p>	
License No: NACOSTI/P/22/17707	Applicant Identification Number: 975620
 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION	
Verification QR Code 	
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THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is Guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014

CONDITIONS

1. The License is valid for the proposed research, location and specified period
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies
5. The License does not give authority to transfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one year of completion of the research
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