

AFRICA UNIVERSITY
[A United Methodist-Related Institution]

ASSESSING THE EFFECTS OF INADEQUATE INFRASTRUCTURE
DEVELOPMENT IN SHAPING THE QUALITY OF EDUCATION IN
RURAL MZIMBA DISTRICT, MALAWI.

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE DEGREE OF MASTER IN HUMAN RIGHTS,
PEACE AND DEVELOPMENT

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Abstract

The main aim of this study was to assess the effects of inadequate infrastructure development in shaping the quality of education in rural Mzimba District, Malawi. The study recognizes education as a fundamental human right, as enshrined in Article 26 of the Universal Declaration of Human Rights and other covenants such as the International Covenant on Economic, Social and Cultural Rights, which recognize the right to education directed towards the full development of human personality and dignity. The study also acknowledges the importance of quality education in alleviating poverty and achieving sustainable development while emphasizing the role of infrastructure in ensuring access to quality education, as adopted by the United Nations Sustainable Development Goals in 2015. The research examines educational infrastructure in rural Mzimba, focusing on the state of school buildings, classrooms, libraries, laboratories, and other facilities. It aims to identify challenges, evaluate impacts on educational outcomes, and advocate improvements. Human Capital Theory was employed as the theoretical framework, with the study guided by an interpretive paradigm. A qualitative, exploratory research design was utilized, employing purposive interviews and observations to gather data from key informants, including teachers, students, and community leaders. Data were analysed to inform meaningful presentations, discussions, conclusions, and recommendations. Findings revealed disparities in access to quality education due to poor infrastructure, resulting in high dropout rates, poor academic performance, diminished teacher morale, absenteeism, and poor educational service delivery. Such inadequacies impact national examination performance, career opportunities, and other learning outcomes. Interventions suggested include increased funding, rural school assessments, public-private partnerships, and improved provision of educational resources. The study advocates for policy changes and further research to improve access and quality of education in rural schools, ensuring that infrastructure deficits are addressed comprehensively.

Key Words: Fundamental Human Right, Quality Education, Infrastructure, Inadequate

Declaration Page

I declare that this dissertation for the Master's in Human Rights Peace and Development has not been submitted previously for an award of any degree at this or any other university, and it is my own work and execution, all reference material contained therein has been duly acknowledged.

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Dedication

This research study is dedicated to all teachers who are relentlessly engaged in the instruction of learners within rural secondary and primary educational institutions. Their efforts are commendable in striving to prioritize education for all Malawians, despite their significant lack of essential resources to support their endeavours.

List of Acronyms and Abbreviations

ACHPR	African Charter on Human and People's Rights
ACRWC	African Charter on the Rights and Welfare of the Child
AU	African Union
CRC	Convention on the Rights of the Child
GoM	Government of Malawi
HCT	Human Capital Theory
ICESCR	International Covenant on Economic Social and Cultural Rights
ICT	Information and Communication Technology
MDGs	Millennium Development Goals
MGDS	Malawi Growth Development Strategy
MIE	Malawi Institution of Education
MoE	Ministry of Education
MoEST	Ministry of Education Science and Technology
NEA	National Education Act
NESP	National Education Plan
OECD	Organization Economic Cooperation and Development
SDGs	Sustainable Development Goals
UNESCO	United Nations Educational Scientific and Cultural Organization
UDHR	Universal Declaration of Human Rights
UNICEF	United Nations Children Education Fund
WASH	Water Sanitation and Hygiene

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Education plays a crucial role in development and it is instrumental in breaking deeply intertwined cycles of poverty, malnutrition, child mortality, and exclusion, and can help build social inclusion, peace, and sustainable development. Millennium Development Goals (MDGs), agenda 2 was limited to ensuring that boys and girls everywhere complete primary schooling. The United Nations Sustainable Development Goals (SDGs) agenda 4, targets a much broader and deeper concept of quality education, which is not just about enrolling but continuing children in schools that have the infrastructure, are safe, are healthy environments, and meet the learning needs of individuals and local communities. Providing quality and adequate infrastructure is a crucial prerequisite for providing quality education that effectively contributes to socio-economic development. Whilst education is not measured by infrastructure only, this research study aims to assess the consequences of inadequate infrastructure in the rural Mzimba District of Malawi, and how it impacts the quality of education experienced by students and teachers in the district.

1.2 Background to the Study

Education is universally recognized as a critical determinant of an individual's life opportunities in both developed and developing nations. Beyond its economic importance, education is considered an intrinsic good and a fundamental human right, particularly at the primary and secondary levels. The right to education is a fundamental human right enshrined in various international and regional instruments. Universal Declaration of Human Rights (UDHR), Article 26 states that everyone has

the right to education, which should be free at least in the elementary stages. This underscores the obligation of states like Malawi to ensure that all children have access to basic education without discrimination. Besides that the International Covenant on Economic, Social and Cultural Rights (ICESCR) Article 13 recognizes the right of everyone to an education directed towards the full development of the human personality and dignity. It obliges states parties to take necessary steps to achieve progressively the full realization of this right. Similarly, the Convention on the Rights of the Child (CRC) Article 28 affirms that state parties recognize education as a legal right to every child on the basis of equal opportunity and guarantees free compulsory primary education for all. The CRC emphasizes not only access but also quality education.

Most African states, including Malawi, have signed and ratified both the African Charter on Human and Peoples' Rights (ACHPR), in which Article 17 recognizes every individual's right to education while calling upon state parties to ensure that this right is realized without discrimination. The African Charter on the Rights and Welfare of the Child (ACRWC), in Article 11, stresses that every child shall have a right to an education while encouraging state parties to take measures aimed at ensuring that children can benefit from educational opportunities. Furthermore, SDG 4, one of the Sustainable Development Goals adopted by the United Nations (UN) in 2015, aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030. It recognizes the importance of quality education for achieving sustainable development and emphasizes the role of infrastructure in ensuring access to quality education. It also emphasizes the importance of providing accessible education regardless of geographical location or socio-economic status. In

rural Malawi, achieving SDG 4 is particularly challenging due to infrastructural inadequacies that hinder access to quality education. The goal highlights the need for investment in educational infrastructure as a means to improve learning outcomes and foster an environment conducive to teaching and learning. These international and regional instruments underscore the importance of accessible, quality education as a fundamental human right, emphasizing the need for governments to ensure adequate infrastructure to facilitate the realization of this right, particularly in marginalized and rural communities.

Notwithstanding, these international and regional commitments, many countries, including Malawi, continue to face challenges in providing quality education, particularly in rural areas. Malawi is one of the poorest countries in the world, with over 80% of its population living in rural areas. Rural areas often lack adequate infrastructure, including schools, roads, electricity, water, and sanitation facilities, which hinders access to education. The Mzimba District in Malawi is one such area that faces significant challenges in terms of infrastructure development. The district has a high poverty rate, low literacy levels, and limited access to quality education. Many schools in the district lack basic amenities such as classrooms, desks, chairs, and textbooks. This affects the provision of quality education in the district.

1.3 Statement of the Problem

Empirical investigations reveal that substandard educational facilities significantly undermines the provision of quality of education. According to Hauya & Makuwira (2019) the presence of inadequate education infrastructure in learning institutions and a lack of essential resources has a bearing on the provision of quality education, and exacerbate education disparities, this phenomenon is particularly salient in rural

communities. In rural Mzimba district, the quality of education is profoundly affected by inadequate infrastructure development, presenting a significant barrier to achieving Sustainable Development Goal 4 (SDG 4) and the internationally recognized right to education enshrined in the Universal Declaration of Human Rights (UDHR), the International Covenant on Economic, Social and Cultural Rights (ICESCR), the Convention on the Rights of the Child (CRC), the African Charter on Human and Peoples' Rights (ACHPR), and the African Charter on the Rights and Welfare of the Child (ACRWC). According to Dorsi (2014) Education is not only pivotal for individual empowerment and societal development but also a fundamental human right, crucial for poverty reduction and sustainable development perspectives. Despite global commitments to ensure inclusive and equitable quality education for all, including marginalized populations, rural areas like Mzimba District continue to face critical infrastructure deficits that hinder educational access, quality, and outcomes.

This study therefore, aims to assess the effects of inadequate infrastructure development on the quality of education in rural Mzimba District comprehensively. Specifically, it seeks to understand how deficiencies in school buildings, electricity access, water and sanitation facilities, and educational resources such as textbooks and technology impact various dimensions of quality education (Ndala, 2017). These dimensions include student enrolment, academic performance metrics, teacher retention and morale, community engagement in education, and overall perceptions of educational adequacy. Henceforth, by exploring these factors through qualitative research methods, the study aims to provide empirical evidence that highlights infrastructure deficits in shaping the quality of education in rural settings.

1.4 Purpose of the Study

Whilst education is not measured by infrastructure only, the purpose of the study was to comprehensively assess the effects of inadequate infrastructure development in shaping the quality of education in rural Mzimba district.

1.5 Research Objectives

The main objectives of the study were to:

- 1) To assess how inadequate educational infrastructure affects educational outcomes in rural Mzimba District.
- 2) To analyse the challenges faced by teachers and students due to inadequate educational infrastructure in rural Mzimba District.
- 3) To examine the impact of inadequate infrastructure on the overall provision of quality education in rural Mzimba district.
- 4) To recommend potential solutions and policy interventions to improve educational infrastructure in order to enhance the quality of education in rural Mzimba District.

1.6 Research Questions

The study sought to answer the following research questions:

- 1) How does inadequate educational infrastructure affect educational outcomes in rural areas of Mzimba District?
- 2) What challenges do teachers and students encounter due inadequate educational infrastructure in rural Mzimba District?
- 3) How does inadequate educational infrastructure impact the overall provision of quality education in Mzimba district?

- 4) What recommendations and policy interventions could be implemented to improve educational infrastructure and enhance the quality of education in rural Mzimba District?

1.7 Significant of the Study

This research provides invaluable insights into the critical role of educational infrastructure in shaping the quality of education in rural context. By highlighting the specific challenges faced by the Mzimba District, the study aimed to inform targeted interventions that can significantly improve educational outcomes. The findings can be instrumental in guiding policymakers, educational planners, and development agencies in their efforts to create a more conducive learning environment for students in rural Malawi.

1.8 Delimitation of the Study

The study specifically focused on rural areas of Mzimba district, Malawi in order to understand the consequences of inadequate infrastructure development in shaping the quality of education in rural Mzimba district, Malawi. The researcher concentrated on public secondary schools in rural areas of Mzimba district in order to make an assessment on the effects of inadequate infrastructure development in shaping the quality of education in rural Mzimba district, Malawi. The study also explored the perspectives of key holders in education services delivery in rural areas, such as teachers, students, parents, and local authorities.

1.9 Limitation of the Study

It is important to note that every research study has its own limitations. In this case, this research study targeted secondary schools located in rural setting within Mzimba district, henceforth, the accuracy of data solely depended on the willingness of the

research participants to provide accurate information during field work. Besides, lack of financial resources may have had a negative effect on the study because sometimes travelling for data collection demanded more than what the researcher could have afforded. Furthermore, unwillingness of some respondents from taking part in the study and such may bear unwarranted challenge to the successful conduct of this study.

1.10 Definition of Operational Terms

The terms below have been identified as key terms are made clear and understandable as a measure to avoid misinterpretation and distortions:

Quality Education: Refers to an educational system that provides students with the necessary knowledge, skills, and values for personal growth, social development, and economic success. Inclusive, and equitable quality education and promote lifelong learning opportunities for all.

Inadequate infrastructure: Is a constraint on growth worldwide, particularly in developing nations. Infrastructure services are often inadequate to meet demand, resulting in congestion or services rationing. Infrastructure services are also often of low quality or reliability, while many areas are simply un-served.

Sustainable Development Goal 4: The United Nations explains its fourth Sustainable Development Goal 4 [SDG 4] is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Rural Community: Is a group of people sharing common values, standards, and norms in place located outside modern development and characterized by poor access to services, and poor infrastructural development, such as electricity, water, and means of communication.

Academic performance: Refers to the measurement of the learning level achieved by students and is considered a key indicator of the effectiveness of educational institutions. It is influenced by various factors including social, psychological, educational, economic, family, personal and institutional factors.

1.11 Sequence of the Study

This study was structured or organized into five chapters. Chapter one consist of the introduction, background of the study, problem statement, the aim of the study, research objectives and questions, significance of the study, delimitation and limitations and lastly defining operational terms, and also the organization of the study. Chapter Two focuses on the theoretical framework of the study and the review of related literature. Chapter Three deals with research methodology, research design and related data gathering instruments. Chapter Four present, analyse and interprets data collected during study process. Chapter Five summarizes the entire study with the view of drawing some substantive conclusions out of which the study made some recommendations.

CHAPTER 2: REVIEW OF THE RELATED LITERATURE

2.1 Introduction

According to Fink & Arlene (2014) literature review surveys prior research published in books, scholarly articles, and any other sources relevant to a particular study, or theory, and by doing so provides a description, summary, and critical evaluation of these works in relation to the research problem being investigated. The review enables a clear understanding of the research topic, in-depth probe into some pertinent concepts surrounding the study. Therefore, in this chapter the researcher presented a comprehensive review of the literature related to the study. Material has been drawn from several sources closely related to the theme and objectives of the study.

2.2 Theoretical Framework for the Study

A theory is defined as a mental view of a phenomenon and form the basis for a chain of reasoning throughout the study. According to Blanton & Kegley (2016) defined theory as a set of assumptions postulating the correlations between variables. Theory play an integral role in a study as it helps in deepening the understanding of a phenomenon and that no single theory can fully explain a phenomenon. For the purpose of this study, the human capital theory has been utilized as the theoretical underpinning the study.

2.2.1 The human capital theory

People bring varying levels of education, knowledge, skill, and ability to the workplace, along with varying expectations in the world of labour. McConnell et al (2009), stated that "a more educated, better-trained person is capable of supplying a larger amount of useful productive effort than one with less education and training."

An organization depends on the talent, knowledge, and ability of its people as a fundamental component of value creation, as the value of human capital theory is widely acknowledged to improve organizational performance.

The eighteenth century marked the beginning of a crucial development in human aptitude related to production, as noted by Adam Smith in 1973. Theodore W. Schultz in 1961, popularized the term "human capital," now known as "investment in human capital," in the American Economic Review. Blair (2012) avers that the term gained widespread use after Gary Becker received the Nobel Prize. This led to the development of "human capital theory," which posits that higher education and training levels are associated with higher incomes and salaries; the more knowledge, skill, and aptitude one possesses, the higher the likelihood of securing a better job.

Smowl (2023) defined human capital as the knowledge, skills, abilities, and experience individuals possess that can be used to create economic value. Organizations invest in health, education, and training for their human resources. Davenport (2010) stated that "the components of human capital consist of abilities, knowledge, skill, personal talent, behaviour, and effort." He further explained that 1) knowledge includes Intelligent Quotient, intelligence, and both specific and general knowledge for work; 2) skill is the knowledge and proficiency applied to tasks, encompassing the use of one's body and movements. 3) Talent is an innate human quality that can be enhanced through growth. 4) Behaviour is the outward manifestation of observed norms, ethics, and personal beliefs. 5) Effort is when people tries to use their innate or personal resources including their talent, experience, knowledge and ability to work to be successful, and finally there is time.

According to Smowl (2023) human capital is a tangible means of production, and that organizations make investments in health, education, and training in their human capital. Human capital can be acquired through various pathways, including migration, training, education, and health. Employees acquire knowledge, skills, and abilities in various ways through these forms. Businesses invest in human capital because they see people as an asset and anticipate a positive return on their investment and value generation in the future. Put another way, a person who invests in their education or training expects that the knowledge and skills they acquire will help them improve in their work. Ulrich (2011) contended that labour and human resources have historically been seen as expenses that should be minimized. However, these days, human resources are viewed more as human capital, creating a source of value.

Therefore, the notion of human capital considers people's abilities, know-how, and experience as valuable resources that support economic expansion and advancement. To improve the quality and productivity of the labour force, the theory—which was put forth by economists such as Gary Becker in the 1960s—emphasizes spending on healthcare, education, and training.

2.2.2 The human capital theory on education

According to Barro & Lee (2010) the foundation of human capital theory is the idea that raising a population's potential for productivity greatly benefits from formal education. Human capital theorists contend that people with higher levels of education are more productive. Human capital theory highlights how education raises workers' levels of productivity and efficiency by boosting the cognitive stock of economically valuable human capability, which results from both investment in people and intrinsic abilities. Formal education is viewed as an investment in human capital, which

proponents of the theory believe to be just as valuable as, or even more valuable than, physical capital (Woodhall, 2013).

Ross (2023) contended that Human Capital Theory (HCT) suggests that investing in human capital increases economic output, although there are situations when it is difficult or contradictory to demonstrate the theory's validity. Economic power used to be mostly derived from material possessions like factories, land, and machinery. While labour was an essential component, capital equipment investments contributed to a business's value growth. Ross (2023) quoted Becker (1967) who submitted that education and healthcare are critical to enhancing human capital and, eventually, raising national economic output, according to contemporary economists.

According to Wuttaphan (2017) investing in human capital may hold greater significance in the current global economy than tangible goods. Thomas Friedman wrote extensively about the value of education in the emerging global knowledge economy in his phenomenally popular book, *The World is Flat*, from 2007. Not to be confused with renowned economist Milton Friedman, Thomas Friedman works as a journalist. The concept of human capital has become well known due to his best-selling book. The term itself is not only introduced, but the book consistently presents evidence for why human capital, or people and education, is essential to a country's economic success.

Human capital theory has recently led to a re-theorization of education as essentially an economic tool in all Western countries. Since the early 1960s, government policies have been framed by the most dominant economic theory of Western education, known as human capital theory (Cohen & Soto, 2017). It is becoming recognized as a crucial factor in determining economic performance. Using the idea of people as

human capital and several economic metaphors, such as technological change, research, innovation, productivity, education, and competitiveness, has been a fundamental tactic in assessing economic success. However, historically, economic factors alone have not influenced education.

The importance of education and training as a means of engaging in the new global economy is emphasized by human capital theory. Gillies, (2015) documented that the Organisation for Economic Cooperation and Development (OECD), for instance, asserts in a recent report that the drastic adjustments made to the public and private sectors of the economy in response to globalization will be detrimental and upsetting to numerous long-standing practices and values. Internationalism in higher education is explained as a part of globalization in another research. Internationalism, according to the OECD, is essential to capitalism in the twenty-first century. Gillies (2015) maintains that this type of capitalism relies on electronic technology, as it is built on investments in financial markets rather than the production of goods.

Any country's ability to develop its people is primarily based on its stock of human and physical capital. As a result, current social science research focuses on human behaviour sciences and their connection to economic productivity. In general, human capital refers to the resources that each person acquires to increase economic production. Furthermore, Chowdhury (2022) argues that the effective implementation of development and education strategies is a concern of human capital. Human capital theorists essentially contend that a population with more education is more productive. Human capital theory highlights how education raises workers' levels of productivity and efficiency by boosting the cognitive stock of economically valuable human capability, which is the result of both investment in people and intrinsic abilities.

Asghar (2020) highlighted that offering formal education is viewed as a productive investment in human capital, which proponents of the theory consider equally or even more worthwhile than physical capital.

2.2.3 Empirical evidence of human capital model of education

The idea of human capital has been elevated in many discussions of economic growth and development due to the importance of education. Research has demonstrated that raising educational standards increases productivity and advances technological advancements, both of which enhance human capital (Woessmann, 2020). Education and human capital have become increasingly important in the context of economic growth and development, primarily because of East Asia's phenomenal rise.

By making significant investments in education, nations like Taiwan, Hong Kong, Korea, and Singapore have achieved unprecedented rates of economic growth. Weinstein, (2013), avers that statistical analysis following his study, it was discovered that educational advancement is a highly significant explanatory factor for East Asian economic growth. It is possible to model in several ways how the massive increase in education accelerated economic development and growth. One way to view education is as an investment in human resources. A third perspective on education's contribution to economic success holds that it has positive externalities, benefiting the community as a whole when one member is educated.

The notion that positive externalities arise from education is by no means novel. Due to the beneficial externalities that society would experience from having a more educated labour force and public, many classical economists argued forcefully in favour of the government actively supporting education. When Smith (2018) stated

that a society does not benefit much from its members' education, he was reflecting a progressive modern way of thinking. The greater their education, the less susceptible they are to the superstitious and enthusiastic beliefs that, in illiterate societies, often give rise to the most terrible diseases. People who possess knowledge and intelligence tend to be more polite and organized than those who lack them. According to Smith, the externalities associated with education are critical to the health of the economy as a whole.

2.2.4 The Relevance of the Theoretical Framework to the Study

Human capital theory emphasizes the significance of investing in education and training to enhance individuals' skills, knowledge, and abilities, which ultimately contributes to economic growth and development (Blair, 2012). Education is widely recognized as a fundamental human right, essential for the realization of other rights and the empowerment of individuals. Olaniyan & Okemakinde (2011) submitted that from a human capital perspective, ensuring access to quality education for all is not only a moral imperative but also a strategic investment in building a skilled and knowledgeable workforce. By promoting equal opportunities for education, societies can unlock the full potential of their human capital and drive sustainable development.

One of the fundamental principles of this theory is that access to quality education is essential for individuals to realize their full potential and for societies to thrive collectively. Access to quality education is crucial as it ensures that all individuals have the opportunity to develop their human capital, regardless of their background or circumstances. Woolley (2017) maintains that human capital theory posits that individuals are valuable assets whose skills and knowledge can be enhanced through education and training. However, when certain groups are denied access to quality

education due to factors such as socioeconomic status, gender, or geographic location, it not only hinders their personal development but also has broader implications for society as a whole (Woessmann, 2020).

Kapur (2020) holds the view that in many parts of the world, inadequate infrastructure poses a significant barrier to equal access to quality education. Schools that lack basic facilities such as classrooms, textbooks, and sanitation services struggle to provide a conducive learning environment for students. This not only affects the quality of education that students receive but also perpetuates inequality by limiting the opportunities available to them. According to human capital theory, investing in improving educational infrastructure is essential to ensure that all individuals have the necessary resources to develop their skills and capabilities effectively. Moreover, Clark (2019) asserts that the importance of access to quality education is underscored by Sustainable Development Goal 4, which aims to ensure inclusive and equitable quality education for all. SDG 4 recognizes education as a fundamental human right and a key driver of sustainable development. By providing all individuals with access to quality education, countries can empower their citizens to contribute meaningfully to social and economic progress. Human capital theory aligns with the goals of SDG 4 by highlighting the role of education in enhancing human capabilities and fostering economic growth.

According to Snell, (2018) access to quality education is essential for promoting social mobility and reducing inequality within societies. Human capital theory suggests that individuals who receive a high-quality education are better equipped to secure meaningful employment, earn higher incomes, and improve their overall well-being. However, when certain groups are marginalized or excluded from educational

opportunities, it not only exacerbates existing inequalities but also stifles social progress. Therefore, in this case, human capital theory provides valuable insights into the importance of access to quality education in fostering individual development and societal advancement. Chowdhury (2022) indicated that investing in education and training, countries can unlock the potential of their human capital and pave the way for sustainable growth and prosperity; and addressing issues such as inadequate infrastructure and working towards the goals of SDG 4 are crucial steps towards ensuring that all individuals have the opportunity to receive a quality education. Ultimately, by prioritizing access to education, societies can create a more inclusive and equitable future for all.

2.3 The Importance of Educational Infrastructure

Educational infrastructure encompasses various facilities that provide indirect support to the educational process, such as outdoor spaces like yards, gardens, and parks. Educational facilities refer to the equipment directly utilized during the teaching and learning process, such as tables, seats, and teaching aids (Windoro, 2021). These educational facilities and infrastructure entail a wide range of elements including buildings, classrooms, tables, seats, and teaching aids, along with equipment directly involved in the educational process. According to the findings of Siswanto & Hidayati (2020), amenities like yards, gardens, school gardens, and pathways linking different areas of the school are part of the educational infrastructure that indirectly contributes to enhancing the educational experience. When these facilities and infrastructure are repurposed for direct use in teaching and learning activities, for instance, transforming school gardens or yards into sports fields, they are reclassified as educational facilities. Consequently, it is evident that educational infrastructure encompasses all equipment

and facilities utilized in the educational process, whether they are movable or immovable, with the ultimate aim of achieving educational objectives.

Suranto (2022) discussed that schools equipped with appropriate infrastructure and facilities have the capability to enhance the quality of education provided to students. This enhancement is achieved through the provision of suitable facilities and infrastructure that support various learning activities aimed at attaining the desired educational outcomes. The management of facilities and infrastructure plays a crucial role in aiding the preparation and organization of all the necessary equipment essential for the successful execution of the educational processes, thereby facilitating the teaching and learning activities effectively.

According to Ernawati (2022), the connection between students, teachers, and schools is deeply intertwined with the presence of adequate infrastructure in facilitating learning activities. The utilization of learning infrastructure proves to be more beneficial for students, especially those with varying levels of intelligence, as it helps them engage more effectively in the learning process. Dudek, (2015) suggested that the provision of infrastructure support proves advantageous for teachers as it enables them to conduct more engaging, diverse, and meaningful learning activities within the school premises. While schools bear the responsibility of managing all educational activities, they are ultimately the most accountable party in ensuring the proper functioning of infrastructure facilities.

Apart from the provision of facilities, schools are also entrusted with the crucial task of maintaining and upgrading the existing infrastructure to ensure a conducive learning environment. The field of Educational Administration emphasizes the indispensable role of infrastructure in the effective delivery of education and the overall functioning

of educational institutions (Dudek, 2015). The assistance provided by learning infrastructure not only benefits students but also contributes significantly to the overall success and effectiveness of the teaching and learning processes within schools. It is imperative for schools to recognize the importance of investing in and maintaining appropriate infrastructure to uphold the quality of education provided to students and to support the professional growth and development of educators.

2.4 The availability and accessibility of the educational infrastructure in rural schools

School infrastructure encompasses various elements such as school buildings, playgrounds, public amenities, libraries, laboratories, and other facilities that are crucial for creating a conducive learning environment (Hussain, 2018). The presence of adequate school infrastructure plays a fundamental role in the realm of education by addressing issues related to students' access to the educational system and enhancing their academic performance. Chepkonga, (2017) highlighted that a well-designed infrastructure, which encompasses essentials like chairs, tables, desks, lighting systems, sanitary services, and internet connectivity, is paramount in ensuring that students can comfortably engage in learning activities within the school premises. Moreover, it also enables teachers and other school personnel to efficiently carry out their respective duties.

Education, in countries like Malawi, holds immense importance as it significantly influences the opportunities and outcomes in the lives of individuals. The concept of quality in education encompasses various elements that are considered essential, including the standards of education itself, the calibre of teachers, the engagement of students, and the overall educational environment. It is through education that equality can be promoted and efforts towards poverty alleviation can be advanced. Msiska,

(2014) documented that the impact of higher quality education extends beyond academic achievements to include enhanced socialization skills and increased participation in civil and community activities. A well-rounded education equips students with the necessary tools to navigate the challenges and uncertainties prevalent in the modern world across multiple domains. Msiska, (2014) further argued that despite its significance, the quality of education faces significant challenges that hinder its effectiveness in driving positive outcomes. Moreover, the potential of education to address poverty issues and contribute to sustainable development has not been fully realized yet. The global community recognized the importance of quality education as a fundamental component of the 2030 Agenda for Sustainable Development Goals (SDGs) established by the United Nations in September 2015. The fourth goal within this agenda aims to ensure that by the year 2030, universal access to free primary and secondary education is achieved, and that individuals of all ages have opportunities to pursue quality technical, vocational, and higher education programs (UNESCO, 2017).

An objective assessment of facilities in rural schools as reported by UNESCO (2021) uncovers a state of infrastructural decay that is not only gross but also deemed unacceptable, characterized by the presence of buildings constructed in the late 1950s and early 1960s using mud blocks. Moloi, (2017) concluded that the inadequacy of infrastructure in many African rural classrooms is evident through the substandard conditions prevailing within these educational spaces, including a lack of basic facilities that can significantly impede the learning process. Turkson & Dubose, (2020) acknowledged that rural classrooms often exhibit infrastructure that falls short of expectations, showcasing the constraints in resources that educational institutions grapple with on a daily basis, thereby painting a grim picture of the situation. These structures, predominantly built from materials readily available in the local

environment, pose a clear and present danger, serving as potential hazards to the safety and well-being of those within their confines.

2.4.1 School Buildings and Classrooms

Herodotou, (2018) asserts that strong evidence and fundamental logic clearly demonstrate that quality infrastructure plays a crucial role as a driving force behind quality education, enabling enhanced accessibility, boosting student performance, and diminishing the prevalence of students abandoning their studies prematurely. Given this premise, it is indisputably evident that addressing this issue constitutes a significant obstacle, particularly as numerous rural schools continue to grapple with deficiencies such as insufficient classroom facilities, excessively crowded learning environments, and infrastructure that fails to accommodate students and those with disabilities.

According to Elie & Andala, (2021) in the realm of international studies, the substandard conditions of school buildings and the aging of infrastructure have been shown to have a significant impact on both learner safety and academic achievement. Asiyai, (2012) conducted a study which revealed that the infrastructure in Nigerian schools was generally in a state of disrepair, with a lack of adequate maintenance being carried out on most of the facilities. Conversely, Maxwell (2016) undertook research in 236 American schools and made the observation that "academic achievement is directly correlated to the condition of the building, with this relationship being influenced by the social climate and student attendance." Maxwell (2016) further asserted that academic success is intrinsically tied to the state and sufficiency of the school infrastructure, with these factors being influenced by the overall school climate

and the attendance of students in the classroom. On the contrary, Martorell & McFarlin, (2018) also conducted a study in the United States and found that enhancing school building conditions through renovation projects has minimal impact on academic performance.

In the context of Malawi, the prevalence of inadequate school building conditions remains a significant challenge. Dilapidated school infrastructure can still be commonly observed, especially in many of the rural areas across the country. According to McKay et al (2018) the issue of poor infrastructure sometimes extends across both public and a portion of private schools. Moreover, Khumalo & Miji, (2017) carried out a study in rural educational institutions and determined that the inadequate school infrastructure has a detrimental effect on the provision of quality education, a key component outlined in the United Nations Sustainable Development Goals, particularly Goal number 4. Additionally, Hauya & Makuwira, (2019) found that deteriorating school buildings are prevalent, particularly in rural schools throughout the country, thereby negatively impacting the quality of teaching.

Many educational institutions in Malawi are unfortunately overlooked and suffer from a significant deficiency in adequate school building infrastructure that is essential for supporting the provision of high-quality education and facilitating the teaching and learning processes (SACMEQ, 2018). The educators and students within these schools are forced to endure the negative consequences of the substandard school infrastructure or the absence of such infrastructure, which ultimately leads to diminished academic performance (Barrett et al., 2019). Furthermore, Barrett et al. (2019) their research highlights that secure and effective school infrastructure has a beneficial impact on the learning outcomes of students. Barrett et al (2019) emphasized

that the standard of infrastructure holds equal significance to the quality of education being imparted.

Khumalo & Miji, (2017) have pinpointed a pressing requirement to rectify the inadequate infrastructure provisions as they have a detrimental effect on the smooth operation of educational institutions. Of particular note is the declaration made by Agnes Nyalonje (2021) regarding the culpability of the Ministry of Education, Science, and Technology for its failure to furnish sufficient school resources and vital infrastructure necessary for establishing conducive learning environments in many rural areas, thereby hindering the delivery of quality education and learning experiences. Despite the clear evidence showcasing the vital role of school infrastructure, the educational infrastructure of the country is currently on the verge of collapse due to neglect in maintenance, growing demands, and the poor quality of existing infrastructure. Regrettably, there continues to be a lack of emphasis on investing in the upkeep and enhancement of school infrastructure (Hammond, 2016).

2.4.2 Electricity/Technology, Water and Sanitation facilities

Abrahams et al (2021) remarked that electricity facility is considered a crucial infrastructural amenity not just within educational institutions such as schools, but also across various organizations and workplaces. According to Ventura (2021), the presence of electricity infrastructure plays a significant role in enhancing the overall comfort level of individuals within their surroundings, enabling them to efficiently carry out their duties and responsibilities. Moreover, Naidoo & Loots, (2020) pointed out that electricity provision facilitates the availability of adequate lighting, empowers the operation of various technological devices, allows for the utilization of heating and cooling systems, and offers a myriad of other benefits. Extensive research conducted

in countries like Malawi and several others within the region has highlighted the challenges faced by rural schools and classrooms, particularly in terms of the absence of electricity (USAID, 2018). This lack of access to electricity not only hampers students' ability to focus on their studies effectively but also contributes to a sense of despondency among them. It is evident that the provision of electricity facility is indispensable for fostering conducive learning and working environments, thereby underscoring its critical importance across various sectors.

Despite the implementation of free primary education policies in Malawi starting from 1994, the country still faces persistently low retention and completion rates in both primary and secondary schools, which consequently contribute to the overall low levels of national literacy. Mussa, (2020) commented that a significant number of students fail to meet the minimum benchmark of 40% in the national primary curriculum performance standards, resulting in only 38.4% of primary education graduates being able to transition to secondary schools, as reported in the Malawi Education Sector Analysis of 2019. This study highlighted that deficiencies in physical school infrastructure and the availability of qualified educators further impede access to education for all individuals, hindering policy makers from making substantial progress towards achieving the United Nations Sustainable Development Goal particularly goal number 4 in the education sector (Mussa, 2020).

It is imperative for school authorities to prioritize the installation of electricity in classrooms and administrative offices, as technology plays a crucial role in facilitating a wide range of educational activities. MoEST (2020) reported that by ensuring access to electricity, schools can enhance the learning environment and enable students and teachers to utilize technological tools effectively for academic purposes. Further,

MoEST, (2020) stressed that the availability of electricity can support the implementation of innovative teaching methods and improve overall educational outcomes in Malawi. Therefore, investing in reliable electricity infrastructure in urban and rural schools is essential for advancing the quality of education and promoting academic excellence across the country.

The significance of incorporating technology in educational institutions, particularly schools, cannot be overstated when it comes to grasping academic concepts effectively and attaining desired educational outcomes. Both preschools and formal schools place a strong emphasis on the integration of technology in their daily operations (Lyimo, Too, & Kipng'etich, 2017). By utilizing technology for various tasks and activities, teachers and students alike can not only enrich their learning experiences but also organize their assignments and projects more efficiently. World Bank, (2016) remarked that it is imperative for schools to establish a dedicated computer centre staffed with competent and skilled professionals to support the technological needs of the institution. Both educators and students must undergo thorough training to ensure they are proficient in utilizing technology to its fullest potential.

According to Muyende, (2016) the integration of technology within classroom settings is deemed essential for driving advancements in teaching and learning methodologies. Whether it is through the use of computers, laptops, projectors, tablets, or mobile devices, individuals must uphold principles of morality and ethics in their technological endeavours. Despite the increasing global connectivity through the internet, a significant portion of the world's population, accounting for over a third, remains unconnected. The lack of internet access is particularly prevalent in developing countries, where approximately 96% of individuals without online

experience reside. Muyende, (2016) documented that in regions like Malawi, internet accessibility is limited, predominantly concentrated in urban areas, thereby creating a digital divide that adversely impacts rural education and diminishes the prospects for rural students to engage with Information and Communication Technologies (ICT).

Investing in ICT infrastructure is crucial for enabling e-learning in rural areas. This includes improving internet connectivity, providing access to devices such as computers or mobile phones and ensuring a stable power supply (Sullivan, 2019). Therefore, governments and education ministries should prioritize the development of ICT infrastructure in rural schools with a particular focus on solar energy solutions. Solar power can provide reliable sources of electricity for schools located even at remote locations; thus enable their functioning regarding ICT infrastructures or e-learning platforms.

According to World Bank Group, (2024) water and sanitation Facility issues have a profound impact on the overall school learning atmosphere. It has been highlighted by WaterAid (Malawi) that the provision of adequate water, sanitation, and hygiene (WASH) services is a significant challenge in most schools across the country. Shockingly, a large number of schools lack proper sanitation facilities, with less than 5% having hand washing facilities equipped with soap. The absence of WASH facilities in schools heightens the risk of children falling ill and consequently missing out on crucial educational opportunities.

The Government of Malawi (GoM, 2017) emphasizes that the presence of improved water supply and sanitation facilities in schools plays a pivotal role in enhancing the quality of education. This is achieved through a reduction in disease incidences among both students and staff, an improvement in school attendance and retention rates -

especially among girls, as well as the attraction and retention of qualified teachers. Additionally, it creates a more conducive learning environment for all stakeholders. UNICEF (2021) underscores the importance of maintaining a recommended pupil to toilet ratio, which ideally should be one per 25 girls and one for female staff, along with one toilet and one urinal per 50 boys, and one for male staff. However, in many schools in Malawi, particularly those situated in rural areas, the reality is starkly different. These schools frequently lack access to clean drinking-water and are plagued by inadequate and substandard sanitation facilities, directly impacting the quality of education provided (GoM, 2017). The unequal distribution of resources affects girls and boys differently, leading to disparities in learning opportunities. Girls, in particular, are disproportionately affected as the absence of proper sanitary facilities often forces them to miss school during menstruation.

2.5 International and national perspectives concerning physical infrastructure provision in rural schools

Global school infrastructure is considered a fundamental factor contributing to the provision of quality education on a worldwide scale (UNICEF 2015). Alongside this, the United Nations Children Education Fund (UNICEF) identifies four additional critical dimensions, which encompass learners' health, a favourable environment, effective teacher contributions, and the acquisition of knowledge (UNICEF 2018). The UNICEF report underscores a notable dedication to enhancing the well-being of marginalized and underprivileged children by affording them opportunities for healthy development, education, and safeguarding. Notably, rural households are reported to lack essential school infrastructure amenities such as clean water, electricity, transportation, and modern communication services. According to the UNDP (2020) underscores the significant impact of school facilities on learning outcomes and the

overall well-being of both students and educators. Emphasizing the alignment between classroom settings and societal expectations, the author advocates for an environment conducive to fulfilling children's potential. It is further concluded that 'buildings and other structural facilities profoundly influence learning,' and ultimately contribute to enhanced public service delivery. Adequate infrastructure is also a prospect for the dignity of learners (Barnes 2023).

The report by Tsegay, (2012) highlighted the prevalence of insufficient infrastructure services in various rural communities across Africa. The nations where the investigations took place encompass the Republic of South Africa, Kenya, Liberia, Senegal, and Mozambique. The insufficiency of rural infrastructure was recognized as a major impediment to the advancement of socio-economic conditions. It was observed in the report that "rural households lack access to clean water, electricity, dependable transportation, contemporary communication amenities, and notably, appropriate educational infrastructure" (Tsegay, 2012).

In Zimbabwe, as highlighted by the Human Rights report of 2018, primary education is not mandated, without charges, or universally accessible. Nonetheless, the Zimbabwean Constitution explicitly affirms that every individual residing permanently within the nation is entitled to receive fundamental education funded by the state. According to Mukeredzi (2016), the rural environment is frequently overlooked and narrowly construed as solely the physical landscape, failing to acknowledge the various dimensions of segregation, scarcity, and necessities associated with it. Furthermore, educational institutions in rural settings are often perceived as isolated hubs of knowledge dissemination primarily serving the rural populace. Shadreck (2012), drew a comparison between the provision of physical

infrastructure in rural schools in Zimbabwe and the migration of educators to urban regions, the prevalent low socio-economic status, the struggle to attract and retain adequately skilled teachers, financial constraints, and resource deficiencies. Yabiku & Agadjanian, (2017) expounded on how factors prompting or pulling learners away from rural schools contribute to poor academic performance. To elucidate, the 'push' elements encompass deteriorating school facilities and lack of connectivity, while the 'pull' aspects involve superior working conditions, connectivity, and exposure to diverse educational institutions.

Nyoni, (2015) asserts that specific rural primary educational institutions in Zimbabwe can be likened to a homestead characterized by four grass huts, as depicted in his study. The writer goes on to elaborate that numerous schools in these areas lack basic facilities, such as proper infrastructure, which results in a shortage of qualified educators willing to accept positions in these remote regions. Consequently, according to Shadreck (2012), it is suggested that the responsibility falls on the Zimbabwean government to ensure appropriate physical structures are in place in rural schools and to provide scholarships for teachers who wish to pursue further studies.

Barrett, Treves, Shamis, & Ustinova (2019), propose an alternative perspective on the matter, emphasizing the significance of enhancing academic performance by creating accessible, well-constructed, learner-focused, collaborative, and fully developed learning environments. Similarly, Garira, Howie, & Plomp, (2019), contend that while school infrastructure alone cannot educate students, it plays a crucial role in shaping the quality of students' achievements. This highlights the interconnectedness between the physical environment of schools and the academic outcomes of learners, underscoring the importance of investing in appropriate facilities for optimal

educational results on both individual and collective levels. Thus, it is imperative for policymakers and educational stakeholders to recognize the pivotal role that infrastructural development plays in the overall success of educational institutions and the academic growth of students.

Byaruhanga & Basheka, (2019) have documented in their research findings that the government of Uganda has pinpointed the road infrastructure as a crucial catalyst of economic expansion, resulting in a significant allocation of funds from the national budget towards this particular priority. To further elaborate, Kasaija (2015) has emphasized the necessity of placing a stronger emphasis on developing the road infrastructure to foster economic growth, thereby side-lining the significance of enhancing the quality of school infrastructure for the advancement of educational standards in Uganda. This strategic priority should be complemented by enhancements in the physical infrastructure of rural schools, aiming to cater to the needs of the vast majority, which accounts for 83.9% of the Ugandan populace relying on rural educational institutions.

Contrary to the aforementioned perspectives, Buwembo (2016) presents a divergent view on the state of affairs in Uganda by asserting that a considerable number of schools recording subpar academic performance are public institutions. The prevailing unfavourable conditions in rural areas of Uganda ought to prompt governmental authorities to critically assess the status quo and devise more effective strategies for the long-term improvement of rural schools, as highlighted by Nassaka, (2017). It is worth noting that the government of Uganda has formally recognized education as a fundamental human entitlement, with investments in education being acknowledged as a pivotal component in the overarching efforts towards poverty alleviation, as

underscored by Lombo, (2023). Consequently, there is a steadfast commitment on the part of the Ugandan government to ensure inclusive and affordable access to education for all segments of society, as evidenced by the national agenda outlined in Uganda (2018) cited in Lombo's work (2023). The Ugandan Education Act 13, 2008 serves as a legislative framework aimed at facilitating the expansion and enhancement of equitable educational opportunities for learners across the board, as highlighted by UNICEF (2018).

In Ghana, several contextual factors such as the inadequate educational infrastructure and poverty have been identified as contributors to the low level of education according to (Nassaka, 2017). On the contrary, Mohammed, (2018) argued that the primary concern in Ghana is the urban-rural migration phenomenon, which has escalated from 23% of the total population in 1960 to 54% in 2015. Rolleston, (2017) underscores the intricate connection between low levels of education and the overall economic development, the quality of teachers, and the educational infrastructure in the country. Furthermore, Kabiru & Arshad (2016) further elaborate that a solid educational physical infrastructural foundation is fundamental for the functionality of any educational system, whether at the primary or secondary levels. Their analysis leads to the conclusion that the provision of adequate education infrastructure is indispensable for meaningful educational development to take place in Ghana.

The basic schools in Ghana have been facing numerous challenges stemming from inadequate infrastructure, a shortage of teaching staff, and the absence of essential facilities such as ICT labs and libraries, as highlighted by Buwembo, (2016). Mohammed (2018) asserts that the enhancement of school infrastructure and facilities plays a crucial role in boosting school attendance, fostering motivation, improving

academic performance among students, as well as enhancing the well-being and morale of teachers. In terms of the rights of learners, Wang, Li, & Li, (2016) note that the government of Ghana has established a comprehensive policy framework concerning the right to education. Ghana has ratified most of the major international rights treaties, including the right to free and compulsory education from elementary to high school levels, supported by various policies enshrined in its Constitution and Human Rights report (2018:3). Consequently, notable advancements were recorded in 2017 in the implementation of child and family welfare policies as well as justice for children, as indicated in the UNICEF report (UNICEF 2017).

In the Malawian context, it is asserted by Osman (2018) that education constitutes a fundamental human rights issue, and a school serves as the crucial platform through which this right is nurtured. The provision of this right within a school setting hinges on the presence of adequate infrastructure, alongside other essential resources. This encompasses the availability of classrooms, laboratories, libraries, school furniture, as well as teaching and learning materials. Lombo, (2023) maintain that the disparities in infrastructure provision directly contravene learners' rights to education. This assertion aligns with the imperative to cater to learner requirements, including the provision of physical infrastructure to rural schools in need, as a key national priority in the realm of basic education.

2.6 Policy interventions to improve educational infrastructure in order to enhance the quality of education in rural schools

According to Verger, Novelli, & Kosar, (2016) on a global scale, education policy and legal framework refers to the set of principles, guidelines, laws and regulations that govern education at an international level. These frameworks are designed to provide a common understanding and direction for education systems across countries and

ensure that education is accessible, inclusive, and of high quality. The global education policy framework is guided by the United Nations Declaration of Human Rights [UHDR] which was adopted in 1948, recognizes education as a fundamental human right, and declares that, “Everyone has the right to education (UDHR, 2020).” And Sustainable Development Goals (SDGs) spearheaded by the United Nations. The SDGs have 17 goals which include: Eliminate poverty; erase hunger; establish good health and well-being; provide quality education; enforce gender equality; and improve clean water and sanitation, among others. Specifically, the goal number 4 of the SDGs deals with provision of education to all. The goal is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by the year 2030 (UNSTATS, 2017). The SDG goal number 4 is crucial for the achievement of other SDG goals. Under this goal, countries are committed to ensuring that all girls and boys, including learners with special education needs have access to quality education in all member countries of United Nations.

According to MoE, (2020) Malawi as a member of African Union (AU) and is committed to the implementation of its policies as guided by the African Union Agenda 2063: “The Africa We Want”. Specifically, African countries have committed to speeding up actions that will catalyse education and skills revolution and actively promoting science, technology, research and innovation to build knowledge, human capital, capabilities and skills. This is expected to drive innovations for the African century through expansion of universal access to quality early childhood, primary and secondary education; expansion and consolidation of gender parity in education; strengthening of technical and vocational education and training through scaled up investments, establishment of a pool of high-quality Technical Entrepreneurial Vocation Education and Training (TEVET) centres across Africa.

Aligned to international and regional policies, Malawi's legal and policy framework is guided by the Government of Malawi Constitution in which education is a human right. The National Education Act (NEA, 2013) provides legal guidance to establishment, administration and management of primary, secondary and teacher training schools. Beside this, there are other legal instruments that guide the implementation of technical and vocational training and higher education institutions. The third Malawi Growth Development Strategy (MGDS III) is the overarching national strategy, in which Education and Skills Development is among the five key priority areas (Gondwe, 2017). The MGDS III recognizes that education is key to socio-economic development and industrial growth of the country. Skills development provides economic empowerment for different groups of people including women, youth and persons with disabilities.

According to MoE, (2020) Malawi is faced with a high population growth, the 2018 National Census reported a total fertility rate of 4.17 and a growth rate of 2.9 percent which is high, resulting in unprecedented boom in the school going population. This has exerted enormous pressure on the existing education infrastructure, learning materials, and education human resources. Access to education services is therefore limited. In addition, our aspirations are that the quality of education has to be at par with international standards in an increasingly knowledge based world. This is a challenge and it will continue to be as such if there are no concerted and consolidated efforts amongst the education stakeholders (MoEST, 2020).

One of the primary objectives of the Government's agenda is to guarantee that every single citizen has access to quality education. The regulations outlining the criteria for the establishment and essential resources needed in public secondary schools are

clearly outlined in the legislation and policies that oversee the education system of a nation (GoM, 2017). According to the Ministry of Education's inspection manual for educational institutions, the academic performance of students is influenced by various factors such as the presence of proper sanitation facilities, the availability of necessary physical resources, the effective utilization of these resources, as well as having well-maintained and adequately trained teachers (NESP, 2017). Throughout the years, school administrators have consistently highlighted the fact that many schools' physical infrastructure can be considered outdated in terms of both quality and quantity, as they were initially designed to cater to a smaller student population. However, due to the increase in student enrolment, there is a pressing need to expand the number of facilities available in order to enhance the overall learning environment.

Insecurity for children can arise not only from personal threats but also from inadequate school facilities and infrastructure, which can have detrimental effects on their well-being (Dorsi, 2014). The presence of poorly constructed classrooms, dormitories, and playing grounds, along with insufficient and malfunctioning facilities, significantly contributes to the challenges faced by students, particularly in rural areas or communities. These obstacles serve as barriers to accessing quality education and hinder the realization of educational goals. Despite efforts made by the government to allocate resources for the development of school infrastructure, the level of investment falls short of meeting the extensive infrastructural requirements of schools across the nation. As noted by Ndala (2017), there is a recognized correlation between enhanced education infrastructure and the delivery of quality education and training, with the Malawi Institute of Education (MIE) assuming a crucial role in implementing the National Education Sector Plan (NESP). The MIE is entrusted with the responsibility of designing high-quality curriculum and supporting educational

materials to enhance the learning experience (GoM, 2017). However, the effective implementation of education policies and the enhancement of physical infrastructure in schools have been progressing at a slower pace, notably in rural regions such as the Mzimba district. This delay has adversely impacted Malawi's efforts to achieve the United Nations Sustainable Development Goals, particularly in relation to goal number 4, which aims to ensure the provision of quality education for all individuals (NESP, 2017).

2.7 Summary

In this section, the researcher has presented the theoretical framework, the importance of educational infrastructure, the conditions of the educational infrastructure, perceptions on the educational infrastructure and policies interventions in order to improve the educational infrastructure. The next chapter presents research methodology that was employed when conducting the study.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This section details the methodology that was adopted in the study. This chapter, outlines the qualitative research approach that the study utilized. The chapter also discusses methodological issues that includes research design, study population, sampling techniques and sample size, methods of data collection, data analysis and ethical considerations that were upheld during data collection.

3.2 Research Design

The research design refers to the overall strategy that a researcher choose to integrate the different components of the study in a coherent and logical manner, thereby, ensuring that the researcher will effectively address the problem (Bouchrika, 2024). Research design simply expresses what data is required, what methods are to be used to collect and analyse data. Braun & Clarke, (2013) add that a design of the project is the blueprint of the project which summarizes the whole strategy or technique on how the research study is going to conducted. VanWyk, (2012) documented that research design is an overall plan connecting the conceptual research problems to the pertinent empirical research.

In regard to this study, the researcher adopted a qualitative research design. The qualitative methods in which the researcher investigates in depth a program, event, process or a phenomenon on individual or a group of individuals. In this study, the researcher sought to have an in-depth exploration and understanding of the effects of inadequate infrastructure development in shaping the quality of education in rural Mzimba District in Malawi. Qualitative methods are well-suited for capturing the viewpoints, experiences, and opinions or perceptions of people in the community. The

researcher in this case, selected the case study in order to provide rich data. The qualitative data was collected through in depth interviews with semi-structured open-ended questions and data was solicited from its natural environment. The researcher was also able to obtain a detailed grasp of the intricacies surrounding the problem by using techniques like observation checklist and focus group discussions.

3.3 Population and Sampling

The research population, sometimes called the target population, refers to the entire group or set of people, objects, or events that have particular qualities or traits and are of the interest to the researcher (Thomas, 2023). It is a representation of the entire population from which sample is taken. The researcher chose participants whom he thought were going to provide richness of data that was relevant to the study. In regard to this study, head teachers, teachers, students, local leaders, and community members who are working and learning in secondary schools located in rural areas of Mzimba district constitutes the population of the study. These were preferred because are well versed with educational infrastructure and are directly affected by the impact of the educational infrastructure on daily basis and therefore, they were the relevant respondents for the study. The population of the study was comprised of 30 participants which include head teachers, teachers, students, local leaders, and community members.

A sample is a carefully chosen subset of the research population that is meant to reflect its features. Researchers opt to study this more manageable, small group in order to make conclusions that apply to wider population (Thomas, 2023). Therefore, the researcher employed a purposive sampling technique to select participants who have a first-hand knowledge and experience related to the research problem. The sample of

the research study comprised of 2 public secondary schools located in the rural communities within Mzimba district. The choice of the sampling criteria ensured diversity in terms of gender, age, education, and geographical location within Mzimba District.

3.4 Data Collection Instruments

Data collection instruments occupies the most important position in the whole research study. According to Hughes (2014) data collection is viewed as a systematic approach to the gathering of information from different sources to get a complete and accurate picture of an area of interest. In order to find a clear knowledge and understanding on the phenomenon under investigation, the researcher used three main data collection methods, these are interviews, observation checklist and focus group discussions. The researcher used these methods because of flexibility of the tools in exploring participants' perspectives while ensuring that the key issues related to inadequate infrastructure on the provisional of quality education are addressed. To this respect, the researcher collected data from the head teachers, teachers, and students using interviews. In addition to that the researcher also used observation to assess the accessibility of educational infrastructure and the prevailing conditions. Focus group discussion were also facilitated in order elicit diverse viewpoints shared, experiences, and group dynamics.

3.4.1 Interviews

An interview is a qualitative research method that relies on asking questions in order to collect data (Bussetto, Wick, & Gumbinger, 2020). Due to its ability to obtain highly personalized information directly from the source, one-on-one interviews are among

the most widely utilized data gathering techniques in qualitative research. Interviews are useful tool for getting information on sensitive subjects because they allow participants to their thoughts, motives, beliefs, and experiences. In regard to this study the researcher used in-depth face-to-face interviews and they were guided by semi-structured interview guide designed by the researcher. This is in accord with Marlow (2011) who consider interview as the primary and most beneficial means by which a researcher can obtain information about the participant's lived experiences pertaining to the issue at hand. The interviews were structured to encompass three distinct cohorts of research participants, specifically head teachers who concurrently serves as school administrators, teachers who often utilize the educational resources, and students who avail themselves of these educational infrastructures.

3.4.2 Focus Group Discussion

According to George, (2022) a focus group discussion in qualitative research is a methodological approach used to gather insights and opinions from a diverse group of individuals on a particular topic. A focus group discussion is a form of qualitative research consisting of interviews in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a product or service. As pertaining to this study, the researcher brought together a small group of participants from each school to discuss the matter under investigation. In this study, a group of 10 participants constituted one focus group discussion and these were 3 members of school committee, 2 block leaders, 2 traditional leaders, 2 members from Non-governmental organization operating in the area and 1 member of staff. During the collected discourse, the researcher would initially introduce himself followed by self-introductions by the attendees. With respect to the authentic execution of the focus

group discussion, the researcher posed questions in an engaging group environment where participants were at liberty to converse with other group members. To ascertain that all crucial information was documented, there were written notes on interviews, and on focus group discussion was recorded and transcribed. The focus group discussion enabled the researcher to draw upon respondents' experiences and in a way in which would not be feasible using other methods.

3.4.3 Observations

Dewi, (2021) submitted that observation is a crucial tool for data collection in qualitative research, providing rich, contextual insights that other methods may overlook. It allows researchers to document phenomena in their natural setting, facilitating a deeper understanding of complex issues. In other words, the observation constitutes one of the conventional methodologies employed for the collection of qualitative data. Observation method proves to be advantageous for qualitative data collection, particularly when there is a need to examine the ongoing process, circumstances, or responses pertinent to a specific issue associated with the subjects being observed. In this context, the researcher assessed the availability, accessibility and adequacy of educational infrastructure in the schools. This aimed at investigating the conduciveness of learning environments in the schools. The observation checklist was included with items that were relevant to the research objectives and research questions of the study, which are appropriate for the research. Observation checklist was consisted on four options as follows; well located, fairly located, poorly located, and not available. Following each observational session, the researcher meticulously documented notes. The researcher adopted this methodology due to its reputation as it necessitates minimal effort from the respondents.

3.5 Data Collection Procedure

Before the researcher set foot into the field to collect data, or prior to data collection, ethical approval were obtained from relevant institutional review boards, such as Africa University Research Committee (AUREC), Ministry of Education, Science, and Technology through the Education Division Manager for Mzimba district. Therefore, administered the informed consent forms to the respondents and explained it to them. Afterwards, informed consent were obtained from all participants with an emphasis on voluntary participation, confidentiality, and the right to withdraw at any time. Interviews were held each for an average of 35 to 40 minutes since interviews are supposed to be controlled to complete within some minimum time to avoid stressing out the participants leading to fatigue. In regard to focus group discussion, the participants were invited to the discussion before the date of the focus group discussion. All interviews and focus group discussions were conducted in suitable venues within the community, ensuring comfort and privacy for participants. Interviews were not recorded as most respondents preferred written notes than recorded information.

3.6 Analysis and Organization of Data

For this study, the researcher followed a thematic approach, beginning with transcription of audio recordings and systematic coding. The codes are derived both deductively, this is based on predetermined themes related to effects of inadequate infrastructure development, and inductively, allowing the emergent to be identified from data itself. Therefore, through constant and iterative refinement, themes are organized into a coherent and narrative supported by verbatim quotes and illustrative

examples. Triangulation of data sources are therefore, enhance the validity and reliability of findings. In a qualitative research, the abstraction of trustworthiness is often used instead of reliability.

3.7 Demographic Data of the Participants

In regard to this study, the researcher interviewed 10 head teachers, 10 teachers, and 10 students. These were preferred because they are well versed with educational infrastructure and are directly affected by the impact of educational infrastructure on daily basis and therefore, they were the relevant respondents for the study. Table 3.1 shows the bio data of the research participants.

Table 3.1 Demographic data of the head teachers as respondents.

PARTICIPANTS FROM JOMBO AND MSIKI COMMUNITY DAY SECONDARY SCHOOL										
	Head Teachers		Teachers				Students			
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Age	56	53	54	44	38	42	20	18	21	17
Sex	Female	Male	Male	Female	Female	Male	Male	Female	Male	Female
Marital Status	Married	Married	Married	Married	Married	Married	Single	Single	Single	Single
Education	Diploma	Degree	Diploma	Degree	Diploma	Degree	N/A	N/A	N/A	N/A
Years in service	30	27	28	18	9	16	-	-	-	-
Name of School	Jombo CDSS	Msiki CDSS	Jombo CDSS	Jombo CDSS	Msiki CDSS	Msiki CDSS	Jombo CDSS	Jombo CDSS	Msiki CDSS	Msiki CDSS
Date of Interview	04/10/24	01/10/24	04/10/24	04/10/24	01/10/24	01/10/24	04/10/24	04/10/24	01/10/24	01/10/24
Interview time in Minutes	40 min	38 min	42 min	40 min	37 min	41 min	40 min	38 min	37 min	40 min

Table 1.3 illustrates head teachers, teachers, and students as respondents from Jombo and Msiki Community Day Secondary Schools in rural Mzimba District.

3.8 Ethical Considerations

The researcher sought verbal and written consent from all the participants who were interviewed in the study. The participants participated in the study voluntarily. The researcher did not force, deceive or threaten any identified participants to participate. Permission was sought from each participant to record his or her response. The researcher guaranteed and ensured that there was privacy and confidentiality during data collection, which then guaranteed free participation in the study. The findings were not be tempered with, doctored or altered by the researcher

3.9 Summary

As noted at the beginning of this chapter, the study adopts a qualitative research approach. Purposive sampling was utilized to obtain the study sample. The participants consists of stakeholders involved in the education sector in Mzimba District, including head teachers, teachers, students, community leaders, education officials, and NGOs working in the area. Thematic theme analysis was used to analyse data while data presentation was verbatim. The next chapter presents the findings of the study.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the study findings or deals with the presentation and analysis of data collected and also discusses the study findings with the aim to assess the effects of inadequate infrastructure development in shaping the quality of education in rural Mzimba District. This chapter also discusses the study findings

4.2 Data Presentation and Analysis

Data was collected from primary respondents that are head teachers, teachers, and students. In this chapter, the investigator interpreted and analysed data that was gathered from public secondary schools that are located in rural communities in Mzimba District. This exercise permitted the researcher to reposition the qualitative events shared by the respondents into a deeper understanding of how inadequate infrastructure shape the quality of education in rural Mzimba district.

The researcher used interviews to collect data from participants throughout the research, specifically targeting head teachers, teachers and students. The researcher also utilized observational technique to acquire data independently of participants' involvement, and ultimately, the study incorporated focus group discussion to enhance the data collection process for the research study.

The demographic data of the respondents is presented in chapter 3.

4.3 Discussion and Interpretation

For ease of discussion and interpretation, the data was analysed according to themes that emerged from the range of questions asked via the interview guide. The identified

themes relate to four basic aspects around understanding of the effects of inadequate infrastructure in shaping the quality of education in rural Mzimba district, Malawi. The general positions of the respondents' clusters were summarised and infused within the thematic discussion to give a wholesome meaning to the findings the inadequate of educational infrastructure in rural Mzimba District.

Thematic analysis was employed to analyse the data collected for the research study. The data that was collected was analysed and categorized into themes and themes that are discussed include: educational infrastructure assessment, issues arising from inadequate infrastructure, the impact on overall education outcomes, and recommendations for improvement.

4.4 Emerging Themes

In the subsequent segment, a detailed analysis is presented that delves into different emerging themes that have been identified and extracted from the data that was collected during the research process.

4.4.1 Theme 1: Educational infrastructure assessment

During the interview, the respondents were asked to state the condition of the school buildings, classrooms, furniture, sanitation facilities, and desks and so on. This question was raised with the intention of determining the prevailing conditions of the school infrastructure. From the information that was gathered through interviews, and observation, it reveals that many schools have inadequate classrooms, furniture, sanitation facilities and science and laboratory equipment. Data also reveals that the available educational infrastructure is dilapidated, not conducive, in adequate to accommodate and equip students on their academic journey. On exploring the

conditions of school infrastructure, one of the head teacher from Jombo Community Day Secondary School in particular gave this testimonial,

At this school, the educational infrastructure is an exceedingly deplorable state because they are very old; the majority of rooms exhibit cracks, poor ventilation, and insufficient lighting as a result of windows which were constructed with breeze blocks. We have come into possession of the infrastructure that was erect in 1965. It is pity that we continue to utilize these educational facilities to this very day (Mvula, 2024). Besides that the school is currently deficient in adequate furniture for both teachers and students, and teaching and learning resources are in limited availability, thereby rendering the teaching and learning exercise exceedingly challenging. Imagine, that this entire school lacks computing equipment, necessitating the procurement of printed end-of-term examinations from a nearby trading centre.

On the same state of educational infrastructure, more teachers cited the dilapidated or deplorable of available school buildings, shortages of classrooms, unavailability of adequate sanitary facilities, and unavailability of technology. During the interview, one of the teachers from Msiki Community Day Secondary School lamented that,

On the state current of education infrastructure, there exist a notable deficiency in terms of progress, particularly our school is significantly lacking a number of important education infrastructure, compounded by an overwhelming reality that there is an insufficient quantity of desks available, to the height that one particular classroom is entirely devoid of desks for student to utilize during class activities (Phiri, 2024). The other arching challenge is that we do not have a designated staffroom where us as teachers can sit and organize our instructional materials and find respite. You should also know that at this school, there is only a single staff residence, which means the remainder of us must engage in daily commuting. Furthermore, the sanitation facilities are not dependable, as they are susceptible to damage during rainy season.

The data also reveals that eight of the student who were interviewed, expressed concerns over the state or condition of their current school infrastructure. One of the male student from Msiki Community Day Secondary School provided the following account,

The current status of our school infrastructure is very poor and not very conducive for learning. The buildings are not fully completed in construction. Most of classroom floors are broken, some window panes are broken, and there is insufficient furniture in almost every class (Chavula, 2024). For instance, our class constitute about 120

students but we have less than 100 chairs, which means some students learn whilst seated on the floor for all the lessons. In a number of classrooms, the lumber is consumed by moths.

The narration reveals profound insights of the prevailing conditions of the education infrastructure present in the numerous schools situated within the predominantly rural areas of Mzimba district, which is known for its varied geographical and socio-economic challenges.

4.4.2 Theme 2: Issues arising from inadequate infrastructure

Educational infrastructure constitute the main influential factor for ensuring quality education. It is regarded as one of the standard of measuring the level of education development and growth. The inadequacy of education infrastructure poses challenges at any institution of learning, this is particularly salient in rural context. In regard to this study, the researcher, asked the school administrator or head teachers to share their first hand experiences and observations regarding the challenges posed by inadequate educational infrastructure. One of the head teachers from Jombo Community Day Secondary School pointed out that,

There is inadequate enrolment of students which is largely due to the tendency of most of our students transferring from our school to more better schools that provide boarding facilities, enough functioning furniture, science and laboratory equipment, technology resource room, functioning library, and other essential amenities (Mvula, 2024). Besides that, my fellow staff members are disheartened to work within an environment that lacks basic necessities such as potable water, electricity, and adequate resources. In addition to that the other issue is punctuality which presents another significant challenge, as our students often arrive late to class upon returning from breaks due to the considerable distance of one kilometre that they must walk traverse to obtain water.

The respondent narrated the issues that have arisen due to the presence of inadequate educational infrastructure. Another respondent, explained that,

It has always been a challenge for us as school head teacher and my fellow members of staff to execute our duties and responsibilities because we do not have a library that is fully functional. Most texts books that are available are torn, out dated, and this affect us teachers if our students fails to perform on national exams (Msango, 2024). The other challenge that arise due to inadequate infrastructure is the high rate of absenteeism among our students especially those who literally sit on the floor crowdedly, they feel demotivated every day returning home in dirt.

From this statement, the respondent had expressed negative attitude because of the insufficient educational facilities at their school. During the interview with the teachers, most teachers expressed that improved educational facilities and resources tend to positively motivate them. However, the state of unsatisfactory school infrastructure have negatively affected the teaching and learning processes. One of the teachers from Jombo articulated that,

According to Gondwe (2024) the current capacity of our classrooms is insufficient, in fact they are overcrowded, resulting in difficult of delivering lessons, and furthermore, managing students within these classrooms has become more challenging. This situation is worrisome to both teachers and students due to the non-conducive nature of environment. In some cases, it has led to increased incidents of student's dropouts, especially those who walks considerable distances to attend school.

In addition to that the information that was obtained from students during the interview sessions reveals that the inadequate infrastructure affects their academic journey and aspirations. One of the female students from Msiki gave this testimonial;

It is regrettable that our educational institution lacks the necessary educational infrastructure; this demotivates me and my fellow students because we are limited in certain areas of educational interest, and my performance is very poor in science courses (Banda, 2024). I aspire to pursue a career in nursing, but lack of laboratory and equipment hinders our exposure to science and hands- on experiments. This obstructs me and my fellow students the invaluable opportunities to engage in scientific concepts, which in many ways is critical to my future career endeavours.

This information reveals that the unavailability educational infrastructure and instructional materials diminishes students' motivation and engagement in the pursuit of science-oriented career, consequently affecting their academic performance in scientific disciplines throughout the process.

4.4.3 Theme 3: The impact on overall education outcomes

During the interview session, respondents were asked if the inadequate educational infrastructure around them affects their performance. The majority of the head teachers, teachers and students alike, posited that inadequate educational infrastructure present within their schools is adversely influencing their overall academic outcomes. This contention aligns with their perceptions regarding the importance of various education infrastructure and resources necessary for effective operation of their educational institutions and the achievement of the desirable outcomes. The head teacher of Jombo provided the following account;

It is heart breaking to me as the school head teacher to observe how inadequate educational infrastructure hampers the potential of our students at this school. Most of our classrooms and other building here do not have basic amenities such as electricity, desks, potable water, thereby rendering it difficult to create an atmosphere that is conducive for teaching and learning processes (Mvula, 2024). You can concur with me that without access to electricity, technology in terms of computers and updated teaching resources, our students often find it difficult to compete with their peers who receive education in urban setting. So this has a bearing on overall educational outcomes as it affects the morale of my fellow staff members, resulting in high turnover rates, which disrupts our students' learning process.

Teachers also had their remarks on overall of educational outcome due to inadequate infrastructure. Teachers were asked if they believe that the educational infrastructure around them affect their performance. One of the female teachers from Jombo Community Day Secondary School, explained that,

Being a teacher in a rural area comes with a number of challenges, as you may see that we do not have proper educational infrastructure. The available classroom are inadequate to accommodate the number of students enrolled at this school, hence, they are often overcrowded, fewer desks, and have poor ventilations. Speaking of teaching resources like text books and other learning materials, this makes so difficult to effectively deliver lessons (Tobias, 2024). For instance, sometimes I have to improvise materials, however, the improvise materials do not bring about the true reflection of the concept you want to bring about to students. This has affected our school's performance in national exams, especially in science subjects and our students are not

inspired at all. The other thing is that these have led to lower student's attendance especially in senior classes and poor academic performance.

This demonstrate that most of available educational infrastructure are poorly located in a number of schools in rural setting and affects the overall of education in rural context. During the interview, one of the students at Msiki Community Day Secondary School as respondent conveyed that,

As for me, I attend school that is situated here in remote area, I always feel like I am deprived of quality education because our school does not have adequate infrastructure and learning resources such that books are in short supply. We have never used a computer practically, but we learn about computers theoretically and I do not think I can operate an actual computer (Marble, 2024). Our classrooms are congested, this makes it very uncomfortable, making it so challenging for us as students to focus in class. As a student and my peers alike, we aspire to acquire knowledge, skills and excel in academics. However, our schools does not have such commitment towards us as students because of inadequate educational infrastructure and essential resources.

This data reveals that inadequate infrastructure have an impact on overall educational outcomes in rural areas. As the educational infrastructure is critical to their performance as teachers in their profession and students to excel and succeed in their academics.

4.4.4 Theme 4: Recommendations for improvement

Improving the quality and standard of school infrastructure can enhance the delivery of quality education. During interviews, the researcher probed the respondents on potential solutions and improvement towards the educational infrastructure. The researcher sought to collect data on knowledge on potential solutions and how these rural school can improve their educational infrastructure. Most respondents proposed different solutions to the problem under investigation. I recall, one of the respondents, a head teacher from Msiki Community Day Secondary School, articulated that,

Our school is in this rural set up and lacks requisite financial resources that can effectively deal with challenges related to inadequate educational infrastructure; consequently, we depend on our collaboration and cooperation with various stakeholders, including the School Management Committee, Board of Governors, Parent Teachers Association, and Mother Group, who have become instrumental in supporting rural education establishments (Kajilombere, 2024). In addition to that, there exist certain private sector institutions that occasionally exhibit a willingness to render assistance; for instance, a non-governmental organization called Ulalo has constructed a computer laboratory and supplied ten computers along with a printer. We can improve our educational infrastructure by forming meaningful alliance and cooperation with stakeholders such as Board of Governors, Mother Group, Parent Teachers Association and other private sector entities.

This narration explains that the establishment of adequate educational infrastructure within rural schools continues to be a challenge as the schools rely on the willingness of well-wishers support for improved educational infrastructure. A teacher, from Jombo stated the following,

Currently, the government has changed the course and focused on providing support on rural schools in terms of educational infrastructure which includes provision of learning materials and to erect classroom blocks. We have already reached out to the Education Division Manager Office, who agreed to hold a meeting with stakeholders in the Ministry of Education Science and Technology regarding this important matter (Phiri, 2024). Additionally, the Member of Parliament [MP] for this constituency has graciously committed to constructing a classroom block using local development fund. We are also making efforts to collaborate closely with other donors, though I regret that I cannot specifically name them at the moment. In this case, we remain hopeful for some positive changes in terms of education infrastructure and the resources available for teaching and learning.

This explanation simply signifies that the establishment of educational infrastructure in certain rural schools is no longer a challenge as it once was. This narration serves as special indication that situations are beginning to shift favourably with regard to the provisional of educational infrastructure. One of the students, during the interview conveyed that,

In order to improve the education infrastructure and the provision of learning resources for this school, and any other school located in rural areas, it is important for the school authorities to come up with a functioning reporting mechanism and share with the Ministry of Education on issues related to educational infrastructure. Besides that they should also partner with other non-governmental organizations and agencies for assistance (Jonas, 2024). For example, the computer laboratory that we

have at this school was constructed by the Ulalo Organization, and we are grateful for the opportunity to learn on how to operate a computer practically.

This particular narration explains the existence of various ways and approaches that be effectively employed to the pressing issues of inadequate educational infrastructure, thereby improving the educational infrastructure, as well as concurrent challenge of ensuring the adequate provision of essential learning resources necessary for optimal educational outcomes.

4.5 Checklist on the availability and accessibility of the educational infrastructure

During data collection, the researcher assessed the state or conditions, availability, accessibility, and adequacy of educational infrastructure of the schools surveyed. The data was collected through the observation checklist which is attached as an appendix 5 in the appendices. The observation checklist was included with items that were relevant to the research objectives and questions of this study, which were appropriate for the study. It consisted on four options as follows; well located, fairly located, poorly located, and not available. Following the observation, the researcher documented notes.

4.5.1 Availability and accessibility of educational infrastructure

Regarding the availability and accessibility of educational infrastructure, observational analysis revealed that nearly all surveyed schools contained classrooms, which were predominantly situated within one or two structural blocks. Notably, out of the ten institutions examined, four exhibited classrooms in a deplorable condition, while six demonstrated a moderate state or condition. Despite the substandard conditions, access to these classrooms was generally maintained. Among the ten schools, only one school lacked a designated staffroom, forcing educators to conduct their preparatory work in

an outdoor setting beneath a tree. While nine schools possessed staffrooms, it is important to note that three of these facilities were found to be in poor condition, though still accessible. Conversely, the remaining five schools boasted staffrooms that were well-maintained and readily accessible.

The researcher also ascertained the presence of libraries and books, data revealed that among the ten schools surveyed, and only two had functional libraries that were both accessible and reasonably located. In contrast, four schools possessed libraries characterized by severely limited book collections and inadequate conditions. The final school, which previously maintained a library, had ceased its operations but is currently in the process of revitalizing the library resource. Furthermore, laboratory facilities and equipment necessary for practical experimentation in science subjects were found to be unavailable in seven of the schools; only three institutions had laboratories, which were notably in poor condition and equipped with limited resources and equipment. With respect to desks and other furnishings, it was observed that nearly all schools faced a scarcity of desks available for student utilization within classrooms, where the desks still existed were primarily allocated for senior students and were notably old and in disrepair.

Through an observational checklist, the researcher also noted that most schools had water facilities, predominantly relying on boreholes; however, one school lacked a water facility and depended on a nearby community facility for its water needs. In terms of sanitation facilities, the research indicated that among the ten schools, only four were equipped with adequate sanitation amenities, which were constructed and donated by local organizations in conjunction with community members. The

remaining schools had sanitation facilities, yet the majority of these were found to be in disrepair and unsuitable for safe usage, particularly during the rainy season. Access to electricity remains prohibitively expensive; therefore, most schools lack electricity, with only a few schools equipped with solar panels for lighting. Out of the ten schools, only four had access to electricity, two utilized solar panels, while the remaining schools had neither solar power nor electricity access.

4.6 The effects of inadequate educational infrastructure on overall provision of quality education

Overall, the empirical investigation explains the inadequate educational outcomes encountered by the rural schools in the Mzimba district, due to inadequate educational infrastructure. This encompasses the availability and accessibility of existing educational infrastructure, student enrolment, academic performance metrics, teacher retention and morale.

4.6.1 Availability and accessibility of existing educational infrastructure

With respect to Article 26 of the Universal Declaration of Human Rights, which states that everyone has a right to education and that shall be directed to the full development of human personality and to the strengthening of respect for human rights and fundamental freedoms; and also the United Nations Sustainable Development Goal 4, which ensure on provision of inclusive and equitable quality education. Goal 4a, emphasize on building and upgrading education facilities so that they are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all (Clark, 2019). This is facilitated by the United Nations Educational Scientific Organization (UNESCO). However, regarding the circumstances in the rural Mzimba district exhibit a complete contrast, as the provision

of quality education is significantly compromised due to the prevailing conditions of educational infrastructure in the majority of schools. It is imperative to acknowledge that educational infrastructure constitutes a primary influential factor in the provision of quality education. Furthermore, it serves as one of the critical benchmarks for assessing the level of educational development and growth. From the data that was collected and subsequently analysed, it can be inferred that the majority of rural schools in the Mzimba district are presently delivering substandard or poor quality education owing to inadequacies in educational infrastructure and from observation the existing ones seems to be falling down state while some lack good maintenance or may not function at all.

4.6.2 Student enrolment

The implications of inadequate educational infrastructure on student enrolment are varied. The study reveals that inadequate facilities, including classrooms, laboratories, libraries, and sanitation resources, frequently result in students transferring to institutions that are better equipped, offering boarding options and sufficient educational materials. This predicament is further exacerbated in the rural Mzimba district, where educational establishments such as Jombo and Msiki Community Day Secondary schools contend with a lack of appropriate furniture, obsolete resources, and inadequate basic amenities such as clean water and electricity. Such shortcomings foster an environment that is neither supportive of learning nor inspiring for students and educators alike, ultimately leading to diminished enrolment figures and increased dropout rates as students and their families pursue more favourable opportunities elsewhere.

4.6.3 Academic Performance metrics

Facilities of education play an important role in promotion of quality education. According to UNESCO (2017) every school must have proper buildings, proper classrooms, science laboratories, library, playground, clean drinking water, toilets for students and teachers. In regard to the impact on overall performance, these educational facilities motivate students' to pursue their future career prospects and to engage with the curriculum as well as teachers to teach. Availability of these educational infrastructure have a positive impact on teachers and students alike. The situation pertaining to school located in the rural areas of Mzimba district necessitates systematic observation, as a considerable number of these schools exhibit inadequate infrastructural facilities, thereby leading to poor educational quality and resultant poor academic outcomes for both students and educators' professional efficacy. Nevertheless, in certain instances, educators demonstrate remarkable ingenuity, devising innovative solutions by improvisation of teaching materials to address specific challenges encountered in the realm of teaching and learning resources, thereby striving to achieve desirable educational outcomes. Conducive atmospheres and adequate educational infrastructure can affect students' performance positively in education.

4.6.4 Teacher retention and morale

The study revealed that inadequate educational infrastructure significantly impacts teacher retention, morale, and motivation in the majority of schools in rural Mzimba District. The surveyed schools lacked basic amenities, such as proper classrooms, access to potable water, and reliable electricity, most teachers lamented that this creates a challenging work environment for them and students alike. This results in decreased morale and job satisfaction, as teachers feel unsupported and undervalued in their roles. Studies that were conducted in Zimbabwe and Uganda, for instance, echo similar

challenges, with inadequate educational facilities leading to low teacher retention and student performance (Mukeredzi, 2016). Furthermore, the findings indicated that the absence of sufficient educational resources and overcrowded classrooms exacerbates the issue, making it difficult for teachers to deliver effective instruction. Such conditions contribute to high teacher turnover rates as educators often seek better opportunities in urban schools or other professions, disrupting the learning process for students in rural Mzimba district. Moreover, the survey further revealed that certain teachers experience a lack of motivation stemming from the inadequate educational infrastructure, as they are compelled to commute to their workplaces due to unavailability of teachers' houses within the school premises.

4.7 Challenges encountered by teachers and students

Regarding the issues arising due to inadequate educational infrastructure, the majority of the schools face challenges due to inadequate educational infrastructure in rural Mzimba district. Based on the findings of the research study, it can be posited that the inadequacy in educational infrastructure has significantly contributed to a high school dropout rate among students in the majority of the rural schools that were assessed and examined. It was noted that students experienced a sense of discouragement while attempting to learn in a seated position right on the floor. Inadequate educational infrastructure further negatively affects their learning environment, with students reporting that they are receiving instruction in uncomfortable conditions. Nevertheless, in several other some other school, the atmosphere is favourable for both educators and learners, owing to the enhancements made in some classrooms through donations from local and private entities.

Research conducted in other rural areas, including rural schools in Nigeria and the United States, indicates a correlation between poor infrastructure and low academic performance, a finding aligned with this study's observations in Mzimba District. For instance, Asiyai (2012) found that inadequate infrastructure in Nigerian schools detrimentally affects education quality, leading to similar issues such as high dropout rates and low teacher morale. This study's results corroborate these challenges, adding a unique emphasis on the infrastructure deficits in rural Mzimba district and highlighting the limited access to essential facilities like electricity and libraries, which are critical for effective learning in today's educational landscape.

4.8 Suggestion for improving the educational infrastructure

Schools are essential institutions that require a high quality physical and social atmosphere. Research revealed that the quality of educational infrastructure influences citizen perceptions of schools and can serve as a point of community pride and increased support for public education. It was suggested by a number of teachers and students that creating a strong partnership with non-governmental organizations that focuses on addressing the issues of inadequate educational infrastructure can alleviate the matter at hand and be one of the lasting solutions. The effective administration of resources is deemed a viable strategy in addressing the challenge of insufficient educational infrastructure by putting the available resources to good use such as maintenance and repair of the available resources. However, certain schools have established collaborations with the private sector and sought assistance from the Ministry of Education to secure developmental funding aimed at improving both the accessibility and quality of their educational infrastructure within their schools.

4.9 Summary

This chapter has presented and critically analysed the data that was collected for the purpose of making an assessment on the effects of inadequate infrastructure development in shaping the quality of education in rural Mzimba district, Malawi. The analytical process was conducted through a comprehensive combination of thematic analysis, which involves identifying and interpreting patterns within qualitative data, alongside a rigorous interpretation of the data that was gathered through systematic observation. Consequently, chapter five will serve to summarize the findings of this study, well-informed recommendations for future practice, and ultimately draw conclusive insights that encapsulate the overall themes and implications of this research study.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The main aim of this study was to assess the extent to which inadequate infrastructure in shaping the quality of education in rural Mzimba district, Malawi. The assessment was based on education as a fundamental human rights as enshrined in Article 26 of the Universal Declaration of Human Rights (UDHR) and the United Nations Sustainable Development Goals especially Goal number 4 (a), a commitment to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." This goal is a pivotal driver for positive change, emphasizing the transformative power of education in fostering a sustainable and equitable world. This chapter presents summary of the main findings, conclusions of the study drawn from the research findings. Moreover, suggestions for further studies were provided.

5.2 Discussion

With respect to the objectives, the study revealed the following results:

The study found that the majority of schools located in rural areas of Mzimba have poor educational infrastructure. Instead, most participants cited the dilapidated school buildings, shortages of classrooms, limited furniture, unattractive sanitation spaces and unavailability of library, media and Information Communication Technology resource rooms. For instance, some school buildings have broken windows which affect both teachers and learners, and some have breeze blocks with poor ventilations. In addition to that lack of proper sanitation facilities is affecting both teacher and students depriving them of their human right to a clean and healthy environment. It is important to note that the proper and adequate educational infrastructure is one of the most important factors that affects the morale and learning of the teachers and students. By

creating a conducive enabling environment, both teachers and students have a sense of belonging and safety. However, inadequate education infrastructure remains a major challenge in the rural Mzimba as study revealed the adverse conditions of the rural schools.

The research study was also directed towards exploring the challenges that teachers and students encounter due to inadequate educational infrastructure. The research study revealed numerous vices, including a notably high dropout rate among students, attributable to a lack of motivation emanating from the necessity to learn while seated on the floor, uncomfortable learning environments, uncooperative dispositions, diminished teacher morale, and the adverse impact on their competencies. Furthermore, the participants cited the demotivation experienced by teachers who are obligated to travel to their places of work, which adversely affects their well-being and places their safety at risk, given the daily nature of their commutes. The research also revealed a lack of effective monitoring mechanism by the Education Division through the Quality Assurance Office to assess the condition of educational infrastructure in rural areas.

With regard to the research objective on the overall impact of inadequate educational infrastructure, the rural school learners in the Mzimba district. The provision of infrastructure is essential to facilitate the effective execution of teaching and learning, thereby enabling the learners, community, and teachers to derive significant benefits. The study reveals that inadequate educational infrastructure like classrooms, libraries, science laboratories, and computers and resource rooms is perceived as a contributing factor to the underperformance or failure of students attending rural schools. Upon analysis of the data, the study indicates that the government continues to fall short in

delivering adequate physical infrastructure within the rural Mzimba district. Enhancing school infrastructure is a critical prerequisite for establishing a conducive learning environment and is identified as a notable gap through this research study. Moreover, the communities are not engaged in consultations concerning the types of infrastructure that are necessary for the educational institutions. The physical infrastructure is regarded as a vital necessity for the enhancement of learner performance. Additionally, it is the entitlements of every educator and student to be situated within an environment that is equipped with sufficient physical infrastructure.

Regarding the availability of information necessary for learners to carry out their studies, majority of the schools in the study have neither a library nor a computer laboratory. This affects their academic performance in science subjects, affects their choice for future career prospects. Further to that, most rural schools are far from town, therefore, learners depend only on the prescribed textbooks and the teachers' knowledge at their disposal. About equity and fairness, participants felt that they do not receive education that promote lifelong learning opportunities for all. The overall provision quality education in Mzimba district is compromised by the poor and inadequate educational infrastructure which leads to affecting the rights to education for rural students negatively, including the right to be treated equally like learners in well-resourced schools.

In regard to the study objective on potential solutions for improvements, there was a strong view that the government needs to increased and prioritised attention must be given to the rural schools. The challenge is that there are a large number of rural schools that are not in the renovation or building plans due to inaccurate data collected

by ministry. The government aims to develop appropriate skills and capabilities as it embarks on interventions to improve the quality of education outcomes in Malawi by 2030. The rural schools see a dire need for the government to invest in their schools for the situation to improve in rural areas, such as the Malawi Rural Electrification Program (MAREP) to provide electricity in rural schools. Others cited corruption might be the reason for current educational situation in rural schools and participants perceived resource monitoring as a way of curbing corruption practices because they believe that corruption affects resource provisioning to learners. There is a general dissatisfaction with the provision of the assistance from the ministry and majority of respondents argued that this has resulted in the violation of the rights of the rural schools' teacher and students, as well as negatively impacting their academic performance. Contrary to the norms and standards for the school infrastructure, the government does not commit to investing in rural schools as we move towards agenda 2030.

5.3 Implications

- I. The findings of the study could inform policy by pointing where capital is needed in educational institutions, libraries, or transportation infrastructures; they emphasize a necessity that should be steered by explicitly articulated educational aims.
- II. The study would consequently aid in the proper allocation of resources by governmental and non-governmental entities to sectors that are inadequately resourced for educational resources and infrastructure.

- III. The study could raise awareness within the local communities regarding how infrastructure influences educational outcomes, fostering the community's engagement in advocating for improvements.
- IV. It could create partnerships between governmental bodies, NGOs, and local communities to collectively address infrastructure challenges that impact education.
- V. Enhanced infrastructure in education can boost the quality of education and cultivate human capital, thereby bolstering the sustainable economic development of the region.
- VI. The particular contribution of enhancing the quality of education in alleviating the poverty rate within the community.

5.4 Recommendations

From the research findings and conclusions, this study recommends the following:

- I. Implementation of strategies to improve provision of rural schools' education infrastructure. Students overall performance is affected by inadequate education infrastructure, therefore, the Ministry of Education together with the Ministry of Local government should develop strategy that can be used to assess the present situation and find means to improve educational infrastructure such as funding through local development fund and constituency development fund. This should be done at the beginning of a fiscal year.

- II. The government should partner with international bodies and invest in rural school educational infrastructure and come up with proper mechanism for monitoring and evaluation. Therefore, the government should focus on investing and introducing effective monitoring in education infrastructure in rural schools. This can be done by collaborative agreements with NGOs and local organizations, with the involvement of school committees. NGOs should fund and the local authorities can should also mobilize locally available materials for school construction.
- III. Improve rural school student performance. To support and promote equal and fairness and improve overall education standards in the country. The government and other stakeholders should collaborate to ensure that rural schools receive equal education infrastructure and local education officers should oversee the execution of the projects. The Ministry of Education should fund these projects through education budget and also donations from partners and other private sectors.
- IV. Implement quality standards in terms of the norms and standards for education infrastructure policy. The Ministry of Education in conjunction with the Ministry of Local government should utilise its budget to benefit the community and concentrate on among other things, the priorities focused on rural schools. This could scale up efforts on the application of the Norms and Standards for Infrastructure policy to move from theory to practice in a more effective and pragmatic manner.

5.5 Conclusions

After assessing the consequences of inadequate infrastructure in shaping the quality of education in rural Mzimba district, the study had several findings, and in light of the forgoing findings, the study make the following conclusions:

I. The research study revealed that the majority of schools within the rural Mzimba district have inadequate educational infrastructure. The extent of the existing educational infrastructure at the majority of these schools are in dilapidated state, and inadequate teaching and learning resources are inaccessible for both teachers and students. This situation impedes the provision of equitable and quality education to students as they are deprived of adequate educational infrastructure, access to safe, comfortable and conducive learning environment. This affects the implementation of United Nations Sustainable Development Goals, especially agenda 4.

II. The study has also gathered perceptions of different participants who were involved in this study such as head teachers, teachers, and students on challenges posed by inadequate educational infrastructure. The participants cited various vices such as high school dropouts, impedes innovation and creativity within schools, demotivation among students, deficiency of learning resources, absenteeism, diminishing teachers morale and competencies. The study also revealed that inadequate educational infrastructure has negative effects on overall quality and performance of both students and teachers professionally. This has a bearing on the goal as it does not focus on the provision of education only, but also to enhance the quality so that it effectively prepares individuals for life and work.

III. The study also revealed the suggestions from research participants on potential remedies to the problem under investigation. It was suggested that the government should prioritize its attention on rural schools, and the development of interventions to

improve the quality of education in rural areas by forming partnership with other non-government organizations both local and international. The participants also cited the need to provide teachers with the required materials or resources and improved education infrastructure.

5.6 Recommendations for Further Research

From the findings of the study, further research has been recommended in the areas below:

- I. Future research should use quantitative approach to examine whether the similar results will be attained. This should also involve using a bigger sample and statistical analysis.
- II. Further research should use a mixed approach to determine the effect of inadequate educational infrastructure on academic performance of students in rural schools.
- III. To determine the nexus between quality education and educational infrastructure in secondary schools in rural context.
- IV. Identify and analyse common challenges and successful strategies for addressing inadequate infrastructure development in rural areas. A comparative analysis

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APPENDICES

Appendix 1: In-depth Interview Guide for Head Teachers

Dear Sir/Madam

This interview guide is meant to collect information on the effects of inadequate infrastructure development in shaping the quality of education in rural Mzimba district, Malawi. You have been chosen to participate in the study because of your knowledge and expertise in the subject under investigation. I assure you that your responses will be treated with strict confidence and not at any given time will your name be mentioned in this research whatsoever.

Segment 1: Demographic Data

- 1) Name [Optional]: _____.
- 2) Gender: Male ☐ Female ☐
- 3) Marital Status: Married ☐ Single ☐ Separated ☐ Divorced ☐
- 4) Age: _____.
- 5) Education Qualification: Masters ☐ Degree ☐ Diploma ☐ Certificate ☐
- 6) Name of the school: _____.
- 7) What class do you teach? Form 1 ☐ Form 2 ☐ Form 3 ☐ Form 4 ☐
- 8) Number of years in service: _____.

Segment 2: School Educational Infrastructure

- 1) State the current condition of school buildings and classrooms of your institution.
- 2) How do you evaluate adequacy of furniture and learning resources available to learners?
- 3) Describe the availability of water and sanitation facilities at this institution?
- 4) Describe the availability of electricity supply and access to technology?

Segment 3: Challenges due to insufficient educational infrastructure

- 1) Could you share your experiences and observations regarding the challenges posed by inadequate educational infrastructure?

- 2) Based on your experience, what specific challenges do this school face due to inadequate educational infrastructure?
- 3) Explain how these challenges affect learners overall academic performance and learning experience?
- 4) What are the main challenges that are hindering the educational infrastructure development at this institution?

Segment 4: Potential solutions and room for improvement

- 1) Do you engage with local stakeholders to enhance cooperation and support for educational infrastructure development?
- 2) What policies do you think are essential to ensure adequate funding and resources for rural school?
- 3) Looking to the future, what are your recommendations or priorities for improving and upgrading the educational infrastructure in rural schools?
- 4) What role do you think that the stakeholders including the government should play to overcome these challenges for a better educational experiences for teachers and learners in the district?

Appendix 2: In-depth Interview Guide for Teachers

Dear Sir/Madam,

This interview guide is mean to collect information related to effects of inadequate infrastructure development in shaping the quality education in rural Mzimba district, Malawi. You have been chosen to participate in this study because of your knowledge and expertise in the subject matter. I assure you that your responses will be treated with strict confidence and at no any given time will your name be mentioned in this research whatsoever.

Segment 1: Demographic Data

- 1) Name [Optional]: _____.
- 2) Gender: Male ☐ Female ☐
- 3) Age: _____.
- 4) Marital Status: Married ☐ Single ☐ Separated ☐ Divorced ☐
- 5) Education Qualification: Masters ☐ Degree ☐ Diploma ☐ Certificate ☐
- 6) Name _____ of _____ the _____ school:
_____.
- 7) What class do you teach? Form 1: ☐ Form 2: ☐ Form 3: ☐ Form 4: ☐
- 8) Number of years in service: _____.

Segment 2: School Educational Infrastructure

- 1) What is your assessment of the current condition of school buildings and classrooms in your school?
- 2) Describe the availability and condition of furniture in your classrooms?
- 3) Explain how adequate are the water and sanitation facilities for both boys and girls at this institution?
- 4) Describe the availability of electricity and technology at this school.
- 5) How are the existing educational infrastructure at this institution equipped to cater to the needs of all students?

Segment 3: Challenges posed by inadequate educational infrastructure

- 1) What are the specific challenges do you encounter in your classroom due to deficiencies and how do they affect your teaching effectiveness?
- 2) Explain how you adapt your teaching strategies to cope with the limitations of available resources?
- 3) In what ways do dilapidated school buildings affect your ability to deliver quality education at this institution?
- 4) Point out the main barriers you encounter in accessing necessary teaching materials and resources?

Segment 4: Potential solutions and improvements

- 1) What are the current government interventions that you know?
- 2) How effective do you find these current government interventions programs in addressing the needs of your school?
- 3) In your opinion, what additional resources or support do you think are essential to enhance teaching and learning at this school?
- 4) How can community involvement be leverage to improve educational infrastructure and support for the school?
- 5) Suggest strategies that should be prioritized in policy-making to ensure equitable access to educational facilities for rural schools?

Appendix 3: In-depth Interview Guide for Students

Dear Student,

This interview guide is meant to collect information on the effects of inadequate infrastructure development in shaping the quality of education in rural Mzimba district, Malawi. I have reached out to invite to participate as valued participant in this research study. I assure you that your responses will be treated with strict confidence and no any given time will your name be mentioned in this research whatsoever.

Segment 1: Demographic Data

- 1) Name _____ [Optional]:
- 2) Gender: Male ☐ Female ☐
- 3) Age: _____.
- 4) Name of your school: _____.
- 5) Class/year of study: Form 1: ☐ Form 2: ☐ Form 3: ☐ Form 4: ☐

Segment 2: Current school infrastructure

- 1) How do you perceive the current state of school infrastructure of your school?
- 2) Can you describe the conditions of classrooms and furniture of this school?
- 3) Explain the availability of electricity, potable water, and sanitation facilities of this school.

Segment 3: Challenges posed by inadequate educational infrastructure

- 1) What are the specific challenges you face in accessing learning resources and technology at this school?
- 2) Do you think that lack of educational infrastructure impacts your motivation and academic performance?
- 3) In your opinion, do you think the educational infrastructure affects your future career aspirations?

Segment 4: Potential Solutions

- 1) How do you think improving infrastructure can enhance the quality of education at this school?
- 2) What policy interventions would be most effective in addressing infrastructure challenges facing your school and any other rural school in Mzimba district?

- 3) In your opinion, what role should stakeholders play in improving educational infrastructure in rural schools?

Appendix 4: Guide for Focus Group Discussion

Dear Respondents,

My name is Ganizani Nkhambule, a final year student at Africa University, pursuing a Master's in Human Rights, Peace and Development. I am conducting a study on the Effects of Inadequate of Infrastructure Development in Shaping Quality Education in rural Mzimba District, Malawi. You have been purposefully chosen to participate in this study because of your influence, knowledge, and expertise in the subject under investigation. Your participation in this study has the potential of contributing to the success of this study and useful in shaping the progressive discourse around improving the infrastructure facilities in rural schools.

Kindly participate by discussing the following questions/concepts:

- 1) In your view, what are the main challenges that are hindering the progress of infrastructure development in rural school?
- 2) What coping techniques/methods/strategies have you observed among school administrators in response to inadequate infrastructure?
- 3) What role do you see local authorities play in addressing the challenges posed by inadequate infrastructure development?
- 4) What recommendations would you make to improve education infrastructure in rural district?
- 5) What collaborative efforts have been made between government agencies, non-governmental organizations, and communities to address the problem in question?

Appendix 5: Observation Checklist

Name of School: _____.

Infrastructure	Well located	Fairly located	Poorly located	Not Available
Head Teacher's Office				
Staffroom				
Classrooms				
Library and Books				
Laboratory and Equipment				
Desks				
Sanitation facilities				
Furniture				
Electricity				
Potable Water				
Sports Fields				
Teachers Houses				

Appendix 6: Informed Consent Form

My name is Ganizani Nkhambule a final year student at Africa University in Mutare, Zimbabwe. Pursuing a Master's in Human Rights Peace and Development. I am carrying out a study on, "ASSESSING THE EFFECTS OF INADEQUATE INFRASTRUCTURE DEVELOPMENT IN SHAPING THE QUALITY OF EDUCATION IN RURAL MZIMBA DISTRICT." I am kindly asking you to participate in this study by answering the study questions.

Purpose of the study

The purpose of the study is to assess the consequences of inadequate infrastructure in shaping the quality of education in rural Mzimba district, Malawi. You were selected for the because of your knowledge, experience in managing school, teaching and learning expertize. The study involves head teachers, teachers, students and other leaders close to school.

Procedure and Duration

If you decide to participate in this study, 40 minutes of time will be required in participating in the interviews. Utmost an hour and half in the focus group discussion of 10 people that will be conducted for the purpose of gathering data for the study.

Risks and Discomforts

The only foreseeable risks to participate in this study is the inconvenience caused by the time to be set apart for this study and any possible discomforts that you may

possibly account in participating. Otherwise, as a participant you are free to state and express your fears.

Benefits and/or compensation

Please note that there will no tangible benefits or compensation that you will receive during and after this study. The findings of this study would be informative to several stakeholders about their right to education that of high quality vis-à-vis the duty of government to take measure to realize this basic right.

Confidentiality

Any information that is obtained in connection to this study will remain highly classified, and any such information identified with you will remain confidential and will be disclosed only with permission from you. For confidentiality, your name or any form of your identification will not be asked for in this study.

Voluntary Participation

Participation in this study is completely voluntary. If you decide not to participate there will be no negative consequences attached to you. Your decision will not negatively affect yourself or affect your relationship with anyone. If you choose to participate, you are free to withdraw your consent and discontinue participation without penalty.

Research Results Feedback

Please be aware that as a participant in this study it is your right to know the results of this study. The research will consolidate all the information gathered and feedback will be given to you as soon as possible.

Offer to Answer Questions

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

Authorization

By signing this form I am attesting that I have read and understood the information above and I freely give consent to participate.

Name of Research Participant [*Please Print*]

Date

Signature of Research Participants

If you have any questions concerning this study or consent form beyond those answered by the researcher including questions about the research, your rights as a research participant, or if you feel that you have been treated unfairly and would like to talk to someone other than the researcher, please feel free to contact Africa University Research Ethics Committee on telephone (020) 60075 or 60026 extension 2156, email: aurec@africau.edu

I have discussed this research study with the participant using the language which is understandable and appropriate. I fully informed this participant of the nature of the

study and its possible risks and benefits. I believe the participant understood this explanation and assented to participate in this study.

Name of Researcher: _____

Signature of the Researcher

Date

Appendix 7: Research Permit from Africa University Research Ethics Committee



AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 Website: www.africau.edu

Ref: AU 3449/24

25 September 2024

GANIZANI NKHAMBULE

C/O Africa University

Box 1320

MUTARE

RE: ASSESSING THE CONSEQUENCES OF THE INADEQUATE INFRASTRUCTURE DEVELOPMENT IN SHAPING THE QUALITY OF EDUCATION IN RURAL MZIMBA DISTRICT, MALAWI

Thank you for the above-titled proposal that you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

a) Research proposal

- **APPROVAL NUMBER** AUREC 3449/24
This number should be used on all correspondences, consent forms, and appropriate document
- **AUREC MEETING DATE** NA
- **APPROVAL DATE** September 25, 2024
- **EXPIRATION DATE** September 25, 2025
- **TYPE OF MEETING:** Expedited
After the expiration date, this research may only continue upon renewal. A progress report on a standard AUREC form should be submitted a month before the expiration date for renewal purposes.
- **SERIOUS ADVERSE EVENTS** All serious problems concerning subject safety must be reported to AUREC within 3 working days on the standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.



Yours Faithfully

MARY CHINZOU

**ASSISTANT RESEARCH OFFICER: FOR CHAIRPERSON
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE**

Appendix 8: Research Permit from the Ministry of Education Science and Technology

Telephone: +265 1 312 144
+265 1 312 107
Fax: +265 1 312 640



Communications should be addressed to
MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY
EDUCATION DIVISION MANAGER (NORTH)
P.O. BOX 133
MZUZU

Ref. No: NED/2/1A

10th September, 2024

RE: INTRODUCTORY LETTER: GANIZANI NKHAMBULE

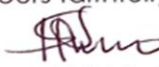
This letter serves to introduce Ganizani Nkhambule, a Master's Degree in Human Rights, Peace, and Development at Africa University in Mutare, Zimbabwe.

Mr Nkhambule would like undertake research for his studies under the topic The Consequences of Inadequate Infrastructure Development in Shaping the Quality of Education in Rural Mzimba District. This research study is a requirement for the award of a master's degree, and will solely be used for education purposes.

By copy of this letter, you are asked to accord him access and all the necessary assistance in order for him to carry out the research study.

Your cooperation in the matter will greatly be appreciated.

Yours faithfully,


Sam-Hobbie Tembo

For: Education division Manager (N)



Plate 1: A view of the head teachers' office, library, staffroom, and senior classrooms facility at Jombo Community Day Secondary School.

