



The influence of availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools

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DECLARATION

I the undersigned, Kwanele Mayisela, hereby declare that the work contained in this dissertation entitled: **THE INFLUENCE OF AVAILABILITY AND MAINTENANCE OF SCHOOL FACILITIES ON TEACHING AND LEARNING IN AMAJUBA DISTRICT SECONDARY SCHOOLS** is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.



21 November 2024

SIGNATURE

DATE

DEDICATION

This dissertation is dedicated to my late dad, Mr Aaron Maviyo Mayisela. Your spirit kept me strong throughout my studies, Nkundla, Ziyane, Jibhela.

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I owe all my praises to God the Almighty, who gave me strength and courage throughout the entire study even when I felt like giving up, He carried me through. “For I know the plans I have for you, declares the Lord, plans to prosper you and not to harm you, plans to give you hope and future.” – Jeremiah 29:11. You also said in Philippians 4:13 “I can do all things through Christ who strengthen me”. Indeed, you carried me through.

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ABSTRACT

School facilities and facility management play a pivotal role in actualising the core purposes for which schools were established and designed. Successful schooling relies heavily on how school infrastructure and resources are managed and maintained within a specific school. While many scholars have written about school facility management in various contexts, little is known about school facility management in the context of the schools within the Amajuba District. Acknowledging the wealth of existing literature in other areas, this study focuses on the Amajuba District to fill a contextual gap regarding the relationship between the quality of school facilities and learners' academic achievement in three secondary schools in the Amajuba District.

A qualitative study approach was adopted, using in-depth, one-on-one, face-to-face interviews as an instrument to collect data from nine participants. These participants were selected through the KwaZulu-Natal Department of Basic Education Senior Secondary Schools data base in the Amajuba District, with three schools and nine teachers were chosen randomly. The study used participants lived experiences to address the research questions.

Using a narrative analysis approach, the findings of this study indicate that maintaining and managing school facilities is essential for safety, effective teaching and learning, inclusivity, and sustainability, while challenges such as lack of resources, inadequate training, poor budgeting, and insufficient accountability may hinder proper facility management and maintenance. Furthermore, the study identifies strategies for improving school facility maintenance such as learner engagement, budget planning, fundraising, rule enforcement, quality investments, and dedicated personnel. The importance of qualified custodial staff was also highlighted, although challenges with resource limitations and the need for further training remain.

Key terms: *School facilities, learner achievement, leadership, adequate resources, facility maintenance, historically disadvantaged community, quality of teaching.*

LIST OF ABBREVIATIONS

NWU	North West University
SMT	School Management Team
SGB	School Governing Body
ICT	Information Communication Technologies
HoD	Head of Department
PL1	Post Level One
DoE	Department of Education
DBE	Department of Basic Education
PAM	Personnel Administration Measures

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CHAPTER ONE

INTRODUCTION, PROBLEM STATEMENT AND RATIONALE FOR THE STUDY

1.1. INTRODUCTION

The physical environment of a school plays a crucial role in shaping the quality of education and overall learning experience. Parents often consider the condition of school facilities as a key factor when deciding where to enrol their children, as they associate well-maintained infrastructure with better academic performance and student well-being. Research supports this notion, indicating that well-maintained, quality school facilities and infrastructure are strong indicators of a school's optimal academic performance (Blake & Mestry, 2020). Many studies reveal the important role of school facilities and infrastructure in influencing learners' academic performance (Ewhrudjakpo & Kpee, 2024; Mokgwathi, Graham & De Villiers, 2023; Molaudzi & Adeyemo, 2022).

However, the impact of school facilities and infrastructure on teaching and learning can be either positive or negative depending on how they are maintained. Learners in newly constructed schools with adequate facilities tend to perform better and have higher morale leading to improved academic achievement compared to their counterparts in less-equipped schools (Assoumpta & Andala, 2020:62; Szuba & Young, 2003:43). At the university level, Hanaysha, Shriedehandand In'airat (2023) found that facilities and infrastructure influence student performance. This suggests that a similar relationship may exist in schools, where infrastructure influences learner performance. It is against this background that this study seeks to examine the influence of availability and maintenance of school facilities on teaching and learning in secondary schools within the Amajuba District.

Akinsolu (2004:3) argued that a sound and well implemented educational curriculum cannot exist in schools with poorly and badly maintained school facilities. This means that successful curriculum coverage and implementation

requires the availability and effective management of school facilities. Supporting this argument, Assoumpta and Andala (2020) stress that the quality and quantity of educational facilities available within an educational system positively correlate with the quality and standards of education. To maintain a high-quality educational system with high performing learners, the Department of Basic Education (DBE) 'must' ensure that teaching and learning school facilities and infrastructure are adequately provided in all schools (Thaba-Nkadumene, 2020). This provision of resources enables teachers to teach their subjects effectively.

Uchefuna (2001:98) conceptualises an effective teacher as one who achieves desired results in the course of his duty as an educator. Nevertheless, the quality of teaching and the academic performance of learners are dependent on many other factors, the pivotal role of school facilities and infrastructure Nhlapo (2020:2). Thaba-Nkadimene (2020) argues that inadequacies in these provisions by the DBE contribute to teacher demotivation and poor learner performance. Hence, adequate school facilities and infrastructure are critical not only for improving academic performance but also for motivating teachers to perform effectively.

Abraham (2003:105) asserts that "the type of atmosphere required for effective learning is that consisting of better school buildings, more and better teaching facilities". Thaba-Nkadimene (2020) also argues that inadequate resource provision of school facilities and infrastructure is an unfair and unjust practice by the DBE which infringes on the learners' right to education, potentially leading to learners dropping out of the school. Lack of school facilities and infrastructure such as classrooms may lead to overcrowding which has been associated with poor learner performance (Graham, 2023:169; Kielb et al., 2015:160; Muthusamy, 2015:2; West & Meier, 2020:2).

In another study, Nhlapo (2020) stresses that it is important for the DBE in South Africa to focus on providing appropriate school facilities and infrastructure to enhance the quality of teaching and learning. Critical facilities that contribute to learner academic performance include classrooms, desks, chairs, water and

electricity, workshops, libraries, school halls, adventure playgrounds, art rooms, laboratories, multipurpose centres, computer rooms (Ikegbusi, Manafa & Iheanacho, 2022; West & Meier, 2020:2). However, it has been observed that the physical conditions of buildings in most schools in the Amajuba District are poor and unsafe, which may affect learner attendance and academic performance. Furthermore, the lack of facilities such as laboratories, workshops and libraries hinder effective teaching and learning in subjects that require these specialised facilities.

According to Adeboyeje (2000:95) and Emetarom (2004:193) school facilities are therefore, without doubt, “physical and spatial enablers of teaching and learning,” which have the potential of improving academic performance. This implies that school facilities serve as pillars of support for effective teaching and learning and in turn, learner academic performance. However, it has also been observed that in some schools where good facilities are provided, the learners and other stakeholders in the school fail to maintain them. Ensuring that school facilities and infrastructure stay in good condition to serve their educational purposes is not the responsibility of teachers, school management and the school governing body only, but also rests on learners and the community. For example, Zulu, Bhengu and Mkhize’s (2021) study found that vandalism and theft by community members was a challenge for maintaining school facilities and infrastructure. Other studies (Sout 2002:2; Zulu, Bhengu and Mkhize, 2021) have provided evidence that school vandalism is mostly committed by the schools’ own learners which exacerbates the difficulties of maintaining school facilities and infrastructure. While there is evidence that learners destroy furniture and vandalise buildings, with the right management led by the school principal and supported by the School Governing Body (SGB), these problems can be minimised. Poor management of school facilities remains a significant concern affecting teaching and learning in schools across Amajuba District.

In this study, school facilities and infrastructure refer to the resources that add value to the teaching and learning of any subject within the school. These may include classrooms, laboratories, books, desks and chairs. These resources are

important for supporting effective teaching and learning, which, in turn affect learner performance. For instance, if the school has enough classrooms, desks and chairs and the learner-teacher-ratio is optimised according to the recommendations of the DBE, teaching and learning outcomes are likely to improve (West & Meier, 2020). By 'perceived influence' this study refers to participants' subjective assessment of the extent to which they believe school facilities and infrastructure affect teaching and learning.

1.2. BACKGROUND

The Bill of Rights, published on 15 December 1791, section 29 (3) states that everyone has the right to establish and maintain, at their own expense, independent educational institutions that – (c) maintain standards that are not inferior to standards at comparable public educational institutions. Furthermore, the South African Schools Act 84 of 1996, section 5 (1) states that in order to progressively realise regulations, the member of the executive council must develop a plan for providing facilities to schools in his or her province. Section 5(2) further stipulates that the plan must take into account the following:

- a) Learner numbers in school;
- b) Access and availability of such school facilities within the community where the school is located, and;
- c) Any other relevant factors, including the availability of resources and curriculum choices. (Department of Labour (DOL), 1996)

To this end, many studies such as those by Bullock (2007:4), Molaudzi (2020), Nhlapo (2020) and Thaba-Nkadimene (2020) have shown that there is a causal relationship between learner performance and school facilities and infrastructure. A shortage of requisite school facilities and infrastructure has proven to be a demotivating factor for learners, thereby affecting their performance (West& Meier, 2020). For this reason, Bullock (2007:46) argues that school management must prioritise the structural and cosmetic conditions of school facilities as well as learners' academic performance. This includes managing the combination of existing school facilities, leadership decisions and

the financial capacity of the schools. Factors such as the overall building conditions, the age of the school building, and the windows in the instructional areas have been positively associated with improved learner performance (Mokgwathi, Graham & De Villiers, 2023).

As alluded to above, inadequate school facilities not only hinder learners' progress but also contribute to educator apathy and may negatively affect teacher attitudes (Mokgwathi, Graham, & De Villiers, 2023; Nhlapo, 2020). Uchendu (2010:60) notes that for teaching and learning of higher quality to take place, adequate instructional materials are indispensable. For instance, when teaching aids are properly chosen and used, they enable the teacher to teach without stress, facilitating effective learning. School facilities are in high demand across all schools, regardless of their location. However, schools are also educators' workplaces, and the lack of school facilities contributes to poor working environments that can affect teacher attitudes and their ability to do their work. This forms a sub-problem inherent to this study.

Sirima and Poi (2010:661) reported in a study conducted in Busia District in Kenya that public secondary school educators with high levels of job satisfaction tend to foster a positive social and psychological atmosphere in the classroom resulting in high productivity and effective job performance and a willingness to remain in their roles longer. Similarly, Buckley, Schneider and Shang (2004) cited by Hailu and Biyabeyen (2014:67) highlighted that school facilities enable teachers to accomplish their tasks and help learners achieve to their full potential. Conversely, bad facilities in schools can cause stress and dissatisfaction among teachers, which, according to Dai and Sternberg (2004:3) can negatively influence their motivation and job.

Moreover, the quality of educational output to a large extent depends on the availability and utilisation of equipment and facilities such as laboratory, workshops, libraries, books and teaching aids (Mokgwathi *et al.*, 2023). It can therefore be concluded that proper availability, maintenance and management of school facilities are critical in the quest of providing quality education. Therefore, the school facilities need proper attention as they have great value

in not only supporting the morale and motivation of educators and learners, but also play a significant role in improving the quality of education. In light of these findings, teaching aids and resource materials are important school facilities that can aid effective teaching and learning in schools.

According to Nhlapo (2020:7), it is the principal's responsibility to manage and maintain school facilities to ensure that teaching and learning take place successfully. Moreover, advances in science and technology encourage school principals to adopt modern methods of facilities management (Ogie, 2015:59) which can enhance the quality of education provisioning in the school in alignment with the syllabus. Thus, as seen from this background, teachers and the school management team must collaborate to ensure that the school has good facilities and infrastructure to support teaching and learning and improve learner performance in schools around the Amajuba District.

For instance, the 2023 Grade 12 National Senior certificate examination results show that the Amajuba District recorded a throughput rate increase of 3.7% from 61.6% in 2022 to a throughput rate of 65.3% in 2023 (Department of Basic Education, 2023). While this improvement is notable, the district is not performing as well as the other districts within the province of KwaZulu-Natal. Thus, understanding the factors contributing to the slow increase in learner performance within the district is critical for making evidence-based recommendations that may help teachers and the DBE in improving overall learner performance in schools.

In general, schools located in historically disadvantaged communities experience several challenges related to school facilities. For instance, Nhlapo, Marais-Botha, and Botha (2023) observed that the use of technology for teaching and learning in these schools remains insufficient. This issue was attributed to the inadequate upkeep of school facilities, ineffective management, and the general neglect of infrastructure maintenance. On the other hand, Molaudzi and Adeyemo (2022) argued that historically disadvantaged schools had school inspectors lacking the capacity to assist schools with basic facility management, contributing to poor learner performance compared to historically

advantaged schools. These disparities in performance illuminate the inequalities in resource provision that exist between different groups within South Africa.

For example, in the Motheo District, Nthinya (2021) found that school management teams (SMTs) in historically disadvantaged secondary school do not have the appropriate facilities to implement strategic management processes effectively. Thus, there is a need to explore and understand the influence of school facilities on teaching and learning in historically disadvantaged secondary schools, such the ones in the Amajuba District.

1.3. PROBLEM STATEMENT

From my anecdotal experiences as a teacher, I have noticed that effective teaching and learning are hindered in environments that are not conducive to educational activities. This observation is in line with Lackney (2020:68) who argues that the entire school facility is a fundamental component of effective teaching and learning, as well as learner performance. Similarly, Tan (2018) argues that learning facilities and infrastructure can affect learner achievement in any subject within a school. Moreover, Allen, Kern, Vella-Brodrick, Hattie and Waters (2018:6) point out that environmental factors affect learner performance. Supporting this view, Mohamed (2020) opined that the South African educational system has been "characterised by crumbling infrastructure, overcrowded classrooms and relatively poor educational outcomes are perpetuating inequality and as a result, failing too many of its children".

However, while there is evidence of the causal effects between learner performance and school facilities and infrastructure, little is known about the perceived influence of school facilities and infrastructure on teaching and learning in secondary schools within the Amajuba District. Limited information exists regarding the state of classrooms, the working environment for teachers, the availability of subject-specific facilities required for teaching and learning, and the methods used to manage school facilities in these secondary schools.

This study, therefore, seeks to explore the influence of the school facilities on teaching and learning in the secondary schools within the Amajuba District. The aim is to recommend strategies that can be used to improve the quality of school facilities and infrastructure, thereby enhancing the academic performance of learners in secondary schools within the Amajuba District.

1.4. THE MAIN AIM AND OBJECTIVES OF THE STUDY

1.4.1. The main aim of the study

The main aim of this study was to explore the influence of the availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools.

1.4.2. Research objectives

- To assess the impact of the availability and maintenance of school facilities on teaching and learning in secondary schools in the Amajuba District.
- To examine how the nature of school facilities influences teaching practices and learning experiences in secondary schools around the Amajuba District.
- To identify strategies and provide recommendations for improving the quality of school facilities to enhance teaching and learning outcomes in secondary schools in the Amajuba District.

1.5. PRIMARY AND SECONDARY RESEARCH QUESTIONS

1.5.1. Primary research question

How does the availability and maintenance of school facilities influence teaching and learning in Amajuba District secondary schools?

1.5.2. Secondary research questions

- How does the availability and maintenance of school facilities impact teaching and learning in secondary schools in the Amajuba District?
- In what ways does the nature of school facilities influence teaching practices and learning experiences in secondary schools around the Amajuba District?
- What strategies can be implemented to improve the quality of school facilities to enhance teaching and learning outcomes in secondary schools in the Amajuba District?

1.6. THEORETICAL FRAMEWORK

This study adopted the systems theory, also known as the General Systems Theory (GST), as its theoretical framework, providing the lens through which the findings were analysed. Ludwig Von Bertalanffy's system theory (1968) is a conceptual framework emphasizing the interconnectedness and interdependence of components within a system. It provides a holistic lens to analyse the educational system in the historically disadvantaged area of Amajuba District.

Von Bertalanffy developed this theory as a response to the reductionist approach in science, where systems were studied in isolated parts rather than as integrated wholes (Muir, 1983). His theory emphasises that systems, whether biological, social, or technological, function as complex wholes with interactions among their parts, producing emergent properties that cannot be understood by analysing individual components alone. In system theory, a system is defined as a set of elements or components that are organised and interact in a way that produces a unified whole (Agazzi, 1978:343).

Von Bertalanffy (1968) proposed that systems could be open or closed (von Bertalanffy, 1950). Open systems interact with their environment, exchanging information, energy, or matter, while closed systems do not. Von Bertalanffy (1968) emphasised the importance of feedback mechanisms, which help

systems self-regulate and adapt to changes (Ramage & Shipp, 2020). In doing so, systems can self-regulate by getting continuous feedback from the Input-Process-Output (IPO) model, that describes how systems function in a structured, cyclical manner. An explanation of each of these elements of the IPO follows:

- **Input:** The resources, data, or stimuli that enter the system from the external environment. In educational systems, for example, inputs could be students, teaching materials, or curriculum guidelines.
- **Process:** The transformation or actions that occur within the system, where inputs are converted into outputs. In an educational context, this includes teaching methods, instructional processes, classroom interactions, and school facilities management.
- **Output:** The result or outcome produced by the system after the inputs have been processed. Outputs in education might include student learning outcomes, test scores, or acquired skills.

In emphasising the IPO, the systems theory suggests that systems are dynamic and continually influenced by feedback loops, where outputs may affect future inputs and processes, thereby promoting a cycle of adaptation and development. This theory has applications across various disciplines, including biology, sociology, education, and management, as it provides a holistic way to examine complex phenomena by focusing on relationships, interactions, and the dynamic nature of systems. A detailed description of how the systems theory was used in the current study is provided under the literature review section.

1.7. DEFINITION OF TERMS

In this section, key terms are operationalised to provide clarity and context.

1.7.1. School facilities

School facilities are considered a vital component of the overall educational system, functioning as part of the system's input. They include physical

infrastructure (such as classrooms, libraries, labs, and sports fields) and resources (like school furniture, technology, textbooks, and utilities) that directly support the teaching and learning environment. These school facilities are essential for creating conditions that enhance the processes of education, such as teaching, interaction, and learning activities. The quality and availability of school facilities impact the input phase by shaping the environment in which the educational processes take place. Well-designed and adequately equipped facilities contribute to effective teaching and learning, leading to better educational outputs (e.g., student performance, engagement, and well-being). Conversely, inadequate or poorly maintained facilities disrupt the system's processes, leading to lower student achievement and system inefficiency.

1.7.2. School facilities maintenance

School facilities maintenance is conceptualised in this study as the ongoing processes and actions involved in ensuring that the physical infrastructure of a school (such as classrooms, libraries, and laboratories) is kept in good condition to support the teaching and learning system's overall functioning. School facilities maintenance plays a crucial role in the input phase by ensuring that the learning environment is conducive to education. Well-maintained facilities provide essential resources and settings that influence the educational processes (teaching and learning activities) and ultimately affect the outputs (student performance and achievement). Poor maintenance disrupts the educational system's balance, negatively affecting the learning process and resulting in poor educational outcomes. General up keep refers to looking after the education facilities, taking care of these assets by cleaning them (dusting, sweeping, vacuum cleaning, collecting waste), managing solid waste, managing condemned materials, de-weeding them, trimming shrubs and trees, cutting grass and keeping everything organised and orderly.

1.7.3. School facilities management

In this study, school facilities management is different from school facilities maintenance. It refers to the process executed by a designated individual to

procure, maintain and ensure the availability of school facilities to support teaching and learning. This involves designing maintenance plans, establishing a maintenance committee, and budgeting for school facilities maintenance, among other responsibilities.

1.7.4. Learner achievement

Learner achievement is the output of the educational system. It reflects the results of the processes that occur within the system, including teaching methods, instructional quality, learner engagement, and the use of resources such as school facilities and learning materials. In the context of this study, learner achievement is influenced by various inputs such as the quality of teaching, availability of school facilities, student motivation, and curriculum design. The processes represent how these inputs are used through classroom instruction, interaction, assessment, and learning activities. Effective use of inputs and the optimisation of processes lead to positive outputs in the form of high learner achievement, which may include good academic performance, skill development, and overall student growth. If the inputs or processes are flawed, learner achievement may be negatively impacted. Therefore, learner achievement serves as a key measure of the educational system's success, reflecting how well the system's components function together to produce desired outcomes.

1.7.5. Leadership

Leadership involves guiding, influencing, and managing the various components and interactions within the system, ensuring that inputs (such as resources, staff, and students) are effectively used to achieve optimal outputs (such as learner achievement, and school performance). It is crucial in overseeing and coordinating the processes, including decision-making, staff management, resource allocation, and creating a positive school culture. Effective leadership ensures that the educational system runs smoothly, fostering an environment where teaching and learning can thrive. This, in turn, leads to better outputs like improved student outcomes, staff morale, and

institutional success. If leadership is weak or ineffective, the system's processes may become disjointed or inefficient, negatively affecting the system's ability to achieve its desired goals. Thus, in Systems Theory, leadership serves as the engine that drives the system, ensuring that the system's inputs are transformed into high-quality outputs through effective management and strategic direction.

1.7.6. Adequate resources

Adequate resources represent a crucial component of the system's input. Resources such as teaching materials, technology, trained staff, and physical infrastructure provide the necessary support for effective teaching and learning processes within the educational system. The availability and quality of these resources directly influence the processes that occur within the system, such as instructional delivery, student engagement, and classroom management. Adequate resources ensure that teachers can implement effective lessons, learners have access to the tools they need to learn, and the school environment is conducive to education. When resources are sufficient and properly allocated, the educational system's processes can be optimised, leading to positive outputs, such as improved learner achievement, enhanced teacher performance, and better school outcomes. Conversely, a lack of adequate resources hampers the system's ability to function efficiently, resulting in lower educational outcomes and inequities. Therefore, adequate resources are a vital input that ensures the smooth operation of the educational system and contributes to the achievement of desired outcomes.

1.7.7. Historically disadvantaged community

Historically disadvantaged communities represent an important input to the educational system. These communities often face systemic inequalities, such as limited access to resources, economic challenges, and social constraints, which impact the quality of education provided to their schools. These challenges serve as inputs that influence the internal processes within the educational system, such as resource allocation, teaching quality, and student engagement. Schools in historically disadvantaged areas may encounter inputs

such as underfunded facilities, overcrowded classrooms, and lack of access to technology or support services. These factors hinder the processes of education, limiting the ability to provide high-quality teaching and learning experiences, individual support, and comprehensive educational opportunities. As a result, the outputs, such as learner achievement, may be lower compared to more advantaged communities. Addressing the unique needs of historically disadvantaged communities requires adapting the educational system's processes, such as improving resource allocation, enhancing teacher training, and fostering community partnerships, to transform the inputs into more equitable educational outputs. Therefore, the challenges faced by these communities must be recognised and addressed to ensure that the system produces fair and successful outcomes for all learners.

1.7.8. Teaching and learning

Teaching and learning represent the core processes within the educational system. These processes involve the interaction between teachers, learners, and educational materials, where knowledge is transmitted and skills are developed. Teaching refers to the methods and strategies used by teachers to deliver content, while learning is the student's engagement and acquisition of knowledge. Furthermore, teaching and learning processes are influenced by various inputs, such as student characteristics, teacher expertise, school facilities, and resources. These processes include classroom instruction, assessments, discussions, and hands-on activities that foster student understanding. The quality of teaching and the effectiveness of learning strategies determine how well these inputs are transformed into educational outputs. Effective teaching and learning processes lead to positive outputs such as high learner achievement, skill development, and long-term student success. If the processes are weak, disorganised, or unsupported, the system's outputs, such as student performance, are negatively affected.

1.8. AN OVERVIEW OF THE RESEARCH METHODOLOGY

This section presents an overview of the research methodology. More details about the research methodology are provided in Chapter 3.

1.8.1. Research paradigm

This study was underpinned by the interpretivist paradigm, which focuses on understanding and interpreting the meaning individuals ascribe to social or human problems (Creswell & Creswell, 2022). Researchers operating within this paradigm believe that reality is socially constructed, subjective, and influenced by human experiences and contexts (Gemma, 2018:8). This research paradigm is relevant to the current study because the researcher aimed to interpret the influence of the availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools based on the participants' lived experiences.

1.8.2. Research approach

This study adopted a qualitative research approach to explore the influence of maintenance of school facilities on teaching and learning in secondary schools around Amajuba District. The study used exploratory qualitative research design to explore how the availability and maintenance of school facilities impact teaching and learning. This approach was suitable for this study because the study collected textual data that narrated participants' experiences and views on the influence of the availability and maintenance of school facilities on educational outcomes. More details on the application of this approach provided in Chapter 3.

1.8.3. Qualitative research strategy

This study adopted phenomenology as the qualitative research strategy. Phenomenology focuses on exploring and understanding participants' lived experiences. It seeks to describe how individuals perceive and make sense of their lived experiences (Creswell & Creswell, 2022). This strategy is appropriate

for this study, as it aims to capture the essence of the influence of the availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools. The key objective of phenomenology is to delve into participants' consciousness and subjective realities, emphasising their perspectives and the meanings they attach to specific events or phenomena. More details on how phenomenology was used in this study are provided in Chapter 3.

1.8.4. Population and sampling

According to Creswell (2012:142) a population is a group of individuals who have the same characteristics. The population for this study consisted of principals, deputy principals, head of departments and educators from the secondary schools in Amajuba District where the researcher works and resides. The reason for choosing this population was to establish a connection between school facilities and the effectiveness of teaching and learning in this area. A sample, which is a manageable section of a population, representing elements that have common characteristics (Creswell & Creswell, 2022), was purposefully and conveniently drawn from four schools in the Amajuba District to participate in the study. Convenience sampling is “a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher” (Creswell, 2014:301).

1.8.5. Methods of data collection

Data collection refers to the process of gathering information on certain a phenomenon on to answer research questions posed in the study (McMillan & Schumacher, 2006:12). The current study used structured, individual, face-to-face semi-structured interviews as a means of data collection (Kvale, 1994). Semi-structured interviews provided the researcher with an opportunity to engage in one-on-one sessions with the participants, at a time and place that were convenient for them. More details are explained in Chapter 3.

1.8.6. Methods of data analysis

Data analysis is the process of narrowing down the collected data and giving meaning to it (Maree, 2019). This study used narrative data analysis for the purposes of analysing the interview data. Narrative analysis focuses on individuals as the unit of analysis, examining their voices and exploring how they make meaning of their life experiences (Josselson & Hammack, 2021). It entails analysing participants lived and shared stories, extracting deeper meaning from broad range of information provided. This method helped the researcher to distil the data collected from the interviews, into finer and more solid meanings that were presented in the study.

1.9. TRUSTWORTHINESS OF THE STUDY

Trustworthiness in a study refers to the confidence in the quality of data, interpretation, and methods used, ensuring the study is credible, dependable, confirmable, and transferable (Guba & Lincoln, 1994:89). Credibility was enhanced through the use of a well-established qualitative method, purposive sampling, and member checks, where participants verified the accuracy of their data. Dependability was supported by audit trails, detailed notes, and supervision, ensuring consistent and reliable findings. Confirmability was achieved by minimising researcher bias and employing triangulation through diverse data sources and methods. Lastly, transferability was ensured by providing detailed descriptions of the research context, allowing others to determine whether the findings could apply in different settings. A detailed explanation of trustworthiness strategies is provided in Chapter 3.

1.10. ETHICAL CONSIDERATIONS

Ethics are moral principles or guidelines that govern how a person behaves; determining what is deemed morally right or wrong, good or bad (MacMillan & Schumacher, 1993:182). It represents the norms for conduct that distinguish between right and wrong and acceptable and unacceptable behaviour (Creswell, 2015:112). Research ethics may be referred to as doing what is

morally and legally right in research (Parveen & Showkat, 2017:81). The ethics are crucial in research because they guide the researcher in conducting the study responsibly, following due procedures as far as morals are concerned (Dooly, Moore & Vallejo, 2017:352). Finally, ethical standards ensure that the participants are treated fairly, and take part willingly or voluntarily in a study (Christians, 2000:138).

Ethics approval for this study was obtained from the North West University Ethics Committee [NWU-00301-22-A2]. Subsequently, an application letter for permission to conduct research in Amajuba District was submitted and approved by the KwaZulu-Natal Department of Education. Letters were then sent to all the selected schools and their respective SGBs requesting consent for the study.

Furthermore, consent forms were given to the identified participants, outlining the voluntary nature of their participation in the study and their right to withdraw at any stage of the study without consequence. The researcher also assured the participants that their contributions would be kept confidential and their identities would be protected with absolute anonymity.

Interviews were conducted at times and places convenient for the participants, typically after working hours, with each interview not exceeding one hour. Prior to the interviews, participants were informed about the audio recording of the interviews, and their consent was obtained.

1.11. CONTRIBUTIONS OF THE STUDY

This study contributes to the existing body of knowledge regarding the influence of facilities and infrastructure on teaching and learning, offering a new perspective based on the research conducted in secondary schools in the Amajuba District. Moreover, the researcher used a different angle which was focusing on the perceived influence of school facilities on teaching and learning, so the study adds value to the body of knowledge concerning this topic, specifically within the Amajuba District. Additionally, the study presents a

strategy for creating an enabling environment with the use of available school facilities to enhance the effectiveness of teaching and learning in Amajuba District. This is a major contribution to both practice and theory.

1.12. DIVISION OF CHAPTERS

The study is organised into five chapters. Chapter 1 provides an introduction to the study, outlining the problem statement and rationale. Chapter 2 presents a literature review, focusing on how school facilities influence learners' academic achievement in secondary schools. In Chapter 3, the research methodology is discussed in detail, explaining the approach, data collection, and analysis techniques used. Chapter 4 focuses on data analysis and interpretation, highlighting the key findings. Finally, Chapter 5 summarises the findings, provides recommendations, and addresses the limitations of the study.

1.13. SUMMARY OF THE CHAPTER

The aim of this chapter was to outline the purpose of the research highlighting its significance and orient regarding the methodology used in conducting this research. The study was begun with an introduction, followed by the background and problem statement, then the research aims and research questions were explained. Thereafter, the theoretical framework was provided, alongside the clarification of important concepts. Following that was the research methodology where the research design, paradigm and strategy of enquiry were outlined. The researcher chose the interpretivist paradigm for the study. A qualitative research method was selected, and the phenomenological design was adopted. The current study used structured individual in-depth face-to-face interviews. The methods of data collection and data analysis were explained clearly as well as the population and sampling. Convenience sampling was used to identify the participants to take part in the research. The trustworthiness of the study and ethical considerations were then highlighted. It concluded by summarising the possible contributions of the study and outlining the layout of the subsequent chapters.

CHAPTER TWO

REVIEW OF LITERATURE

2.1. INTRODUCTION

In Chapter One, an overview of the study was provided, including the background, problem statement, research aims and objectives as well as the research questions and sub-questions. The reasons behind this research were explained and the first steps in structuring the process were explored. In this chapter, an in-depth literature study is conducted where the researcher highlights the current findings and possible gaps in research related to school facilities and their impact on teaching and learning in schools. The literature focuses on exploring existing findings regarding the importance of school facilities, their maintenance, proper management of these facilities. It also explores how the proper management of the school facilities influences teaching and learning outcomes. This chapter further discusses the theoretical framework that underpinned the current study.

2.2. THE IMPORTANCE OF SCHOOL FACILITIES MANAGEMENT

Facility management is the process through which a selected team makes sure that school facilities are managed effectively, which includes planning, maintaining and utilising available resources (Wuniet *et al.*, 2018:5). Management and maintenance of facilities are key responsibility of the school management and administrators, meaning they should ensure the infrastructure of the school is in good shape and is linked to the behaviour and performance of learners (Lunenburg, 2010:6). There is a growing body of literature exploring the relationship between the quality of educational facilities and resultant educational achievements (Hayat *et al.*, 2020:1-3). Many of these studies argue that proper management of school facilities is of paramount importance for enhancing the quality of teaching and learning in schools. Earthman (2002) posited that school facilities management is important because well-maintained school facilities positively influence student achievement. Earlier, Lowe (1990)

also argued that students and teachers perform better in well-maintained environments. Recently, Siswanto and Hidayati (2020), Nhlapho (2020) and Ikegbusiet *al.* (2022) also emphasised the significance of good school facilities management to improve the quality of teaching and learning in schools. These studies provide a strong rationale for schools to ensure that the facilities that affect the process of teaching and learning are well managed and maintained. Well managed and maintained school facilities are important for schools as they have been shown to affect learner performance and how teachers work within the school environment (Siswanto & Hidayati, 2020:78). Furthermore, if schools' facilities are well maintained and managed, they provide a conducive environment that translates into quality education (DOL, 2008:25).

A literature review by Nurhuda *et al.* (2023:248) found that school facilities management includes three important elements: "(1) the planning concept, (2) the procurement concept which consists of purchasing, self-manufacturing, renting, borrowing, receiving grants, exchanging, recycling, and repairing, (3) the regulatory concept which consists of inventory, storage, maintenance, and use". The South African Schools Act of 1996 states that "principals are responsible for the management, safeguarding and maintenance of all assets and liabilities of the school, and must ensure that processes and procedures are effective, efficient, economical and transparent" (Nhlapho, 2020:1DOL, 1996). Thus, is it important for schools to develop a framework that they can use to ensure facilities management in schools so they can improve the quality of teaching and learning in schools. Despite the South African Schools Act of 1996 stating that principals are responsible for the management of school facilities, Nhlapho (2020) found that principals' role in managing school facilities is often compromised due to the involvement of the school governing body in the management process.

Proper management of school facilities is essential for the benefit of learners, teachers, and staff, as it enhances the overall educational environment. Effective facilities management involves identifying necessary resources, ensuring their optimal use (Lawson & Gede, 2011:50), and conducting regular

maintenance to extend their longevity. A well-trained facilities management team is critical, as they can educate both teachers and learners on facility utilisation and upkeep (Alexander, 2013:3). Without such a team, schools may incur greater costs for repairs and replacements (Usman, 2016:30), while fostering a culture of maintenance among administrators, teachers, and students further contributes to improved outcomes (Asiyai, 2012:200). Research indicates that conducive environments enable teachers to perform better, which in turn benefits student achievement (Loeb *et al.*, 2005:65; Bernardi & Kowaltowski, 2006:156). Society also gains from well-managed facilities, underscoring the need for principals and facility managers to recognise the impact of their roles (Onyekwere & Ubong, 2019:74). Effective facility management is thus not only vital for academic success (Herman *et al.*, 2011:260) but also involves creating safe conditions for all school users (Leung *et al.*, 2006:226; Szuba & Young, 2003:43).

A clear understanding of maintenance responsibilities among staff is crucial to prevent facility deficiencies and support the learning process (Gouge *et al.*, 2008:106; Wakeham, 2003:5). Implementing rules and regulations for facility use can significantly improve students' academic performance (Cindy *et al.*, 2022:596). Mbalaka and Cheloti (2021:88) argued that a high percentage of learner drop-out is caused by schools' physical and infrastructural facilities such as lack of classrooms and other recreational facilities. It is thus important to discuss and explore different frameworks that can be used for facilities management and maintenance in schools.

2.3. FRAMEWORKS FOR FACILITIES MANAGEMENT PROCESS

There are different ways in which schools can ensure that school facilities are managed well to ensure quality teaching and learning in schools. These facilities management frameworks are crucial for every school. In this regard, Hinum (1999:1) emphasises the fact that it is important to develop strategies for managing educational facilities and to engage in research to better understand how facilities influence learner behaviour and achievement. Schools can establish a facilities management committee that deals primarily with facility

management in order to positively influence teaching and learning to meet the aims and objectives of the Department of Education.

Furthermore, Asiabaka (2008:12) argues that planning, as in all management processes, is the first logical step in ensuring good school facilities management. This early argument is in line with recent studies that argue that planning for school facilities management and infrastructure needs is an important step for ensuring quality education (Alfaizah, Harapan, & Tahrin, 2021:349). For example, Nhlapo (2020:2) argued that “the maintenance of school facilities should involve keeping records of these, supervising and planning for them, and motivating learners and teachers to participate in the maintenance of school facilities and the evaluation of the existing facilities”. Ndisa (2022:123) also argued that improving planning requires the establishment of vision and mission statements that emphasise the importance of school facilities planning. It is important to foster a culture of planning in schools. School facilities management entails determining the required facilities to achieve educational goals, which also includes maintaining the facilities regularly to ensure their longevity (Lawanson & Gede, 2011:50). However, issues related to planning for school facilities management in secondary schools around Amajuba District are not well documented in the literature which underscores the importance of this study.

Asiyai (2012:193) asserts that the quality and standard of a school depend largely on the provision, adequacy, utilisation and management of educational facilities. From this it can be understood that school facility management is important for the well-functioning of the school, and for learners to achieve better results. Asiabaka (2008:14) posits that the school facility management process requires expert input from a wide range of stakeholders, as collaborative efforts bring into facilities management new ideas and perspectives. Despite the importance of developing frameworks for facilities management in schools, findings from Xaba (2012:215) indicate that, in general, schools do not have administrative structures for planned school

facilities maintenance and they also do not have policies in place for school facilities maintenance.

2.4. MAINTENANCE AND THE TYPES OF MAINTENANCE IN SCHOOLS

Maintenance refers to the activities and processes undertaken to preserve or restore a system, building, or piece of equipment to its optimal working condition (Gbesoevi, Akinyemi, Oluwatunbi, & Ashogbon, 2024:73). It ensures that assets continue to function effectively, reliably, and safely throughout their lifecycle, minimising breakdowns, wear, and tear. School facility maintenance involves all the tasks required to keep educational buildings and infrastructure functional, safe, clean, and conducive to teaching and learning (Akinradewo, Aigbavboa, Oke, Edwards, & Kasongo, 2023:1902). This includes maintaining classrooms, laboratories, libraries, restrooms, playgrounds, heating, ventilation, and air conditioning (HVAC) systems, electrical systems, plumbing, and other vital infrastructure that supports daily school activities. Effective school facility maintenance ensures a healthy and safe environment for learners and teachers, reduces costly repairs, improves the longevity of school assets, and ensures compliance with safety standards (Akinradewo *et al.*, 2023; Gbesoevi *et al.*, 2024; Nhlapo, 2020).

Literature outlines different types of school facilities management and maintenance procedures. One method is preventive maintenance which involves routine checks and servicing performed at regular intervals to prevent equipment failure or building deterioration (Lolli, Coruzzlo, Peron & Sgarbossa, 2022:3). It aims to maintain optimal working conditions and prolong the lifespan of the school's facilities. For example, ensuring regular inspection of HVAC systems, routine cleaning and servicing of plumbing and electrical systems, and repainting walls and repairing minor wear and tear.

Another type of maintenance is corrective maintenance which is performed after a fault or damage has occurred. It is the simplest type of maintenance strategy (Le, Domingo, Rasheed & Park, 2022:440; Nhlapo, 2020) which is reactive in nature and aims to fix problems that prevent equipment or systems from

functioning properly (Pitt, Goyal & Sapri, 2006:154). Corrective maintenance involves fixing broken windows or doors, repairing leaking roofs or plumbing systems, and replacing damaged electrical wiring.

Literature also highlights the significance of predictive maintenance which uses real-time data and technology to monitor the condition of equipment and facilities (Nhlapo, 2020; Shin, Han, & Rhee, 2021:2). This allows for predicting potential failures before they happen, and minimising disruptions. Schools can also use routine maintenance for this school facilities which involves tasks performed on a daily or weekly basis to maintain cleanliness, order, and functionality in school environments (Nhlapo, 2020). This type of maintenance is often assigned to custodial staff and may include daily cleaning of classrooms and common areas, checking lighting and replacing burnt-out bulbs and maintaining garden or playground areas.

Another type of maintenance is emergency maintenance which is unscheduled and required immediately due to urgent or dangerous conditions (Nhlapo, 2020). It addresses issues that pose risks to health, safety, or significant disruptions to the school environment which may include addressing gas leaks or power outages, fixing sudden structural failures like a collapsing ceiling and repairing critical equipment breakdowns (e.g., boilers in winter). Lastly, schools can use deferred maintenance which refers to maintenance tasks that are postponed due to budget constraints, lack of resources, or other reasons (Kim & Ebdon, 2021; Nhlapo, 2020). While this may provide short-term savings, it often leads to higher costs and risks in the long run. Deferred maintenance involves delaying roof repairs, resulting in more extensive water damage, postponing HVAC system upgrades, leading to energy inefficiency, and ignoring minor plumbing issues that eventually escalate.

As argued earlier, school facility maintenance plays a critical role in ensuring a safe and productive teaching and learning environment for both teachers and learners. Effective maintenance helps minimise costly repairs, extend the lifespan of facilities, and promote safety (Nhlapo, 2020; Richard, Devinney, Yip & Johnson, 2009:719). Schools must adopt a well-planned, balanced approach,

utilising both preventive and corrective maintenance to avoid emergencies and keep facilities in optimal condition (Ferreira & Souza, 2021:4).

Regular assessments and predictive maintenance can further enhance the efficiency of facility management. However, many schools struggle with budget constraints, leading to deferred maintenance, which can worsen infrastructure problems over time (Nhlapo, 2020; DOL, 2018). Addressing this issue requires strategic planning, adequate funding, and proper staffing to ensure a sustainable approach to maintaining school facilities. Furthermore, resource constraints pose challenges for public high schools in ensuring maintenance because of the poor allocation of budgets for school facilities maintenance in the upcoming year (Mncube, Ngema & Mkhasibe, 2023:25). Maintaining and managing school facilities is a process that is important for schools because it can either positively or negatively affect the teaching and learning performance which can also affect learner performance.

2.5. SCHOOL FACILITIES THAT NEED PROPER MANAGEMENT

The frameworks discussed in the previous section highlights the significance of effective school facilities management and outlines various approaches for ensuring proper maintenance. Lawson and Gede (2011) identified key facilities requiring attention for the management of school facilities, including instructional, recreational, residential, and general-purpose facilities. However, this study focuses specifically on physical facilities and their role in teaching and learning. Some of these school facilities are discussed in the upcoming section.

2.5.1. School buildings

Well-maintained school buildings contribute to a safe and motivating environment for both educators and learners (Reaves & Cozzens, 2018:52). Duyar (2009:8) emphasises that school buildings are a visible reflection of society's investment in education, and poorly maintained facilities can create unsafe teaching and learning conditions. No parent wants to send their children to a school that has poorly maintained buildings because this can create an

unsafe environment to conduct the activities of teaching and learning. Given that human beings believe that their surroundings or the physical environments they live in can have a positive or negative impact on how they behave and think (Christofaro, 2020:2-3), then it is important for schools to maintain their buildings to create a safe environment for the teachers and learners. Schools with well-maintained buildings foster a sense of safety, attracting parents to send their children to the particular school and also enhance student engagement.

A clear link exists between the condition of school buildings and academic performance. For example, Duran-Narucki (2008:279) found a positive correlation between building quality and student achievement, further noting that well-maintained facilities can improve attendance. Similarly, Sahin (2018:2126) and Earthman (2004:18) reported that students in well-maintained buildings perform better academically compared to those in dilapidated environments. Maintenance, involving planning, organisation, and control, is crucial for sustaining building quality and supporting educational outcomes (TijanićŠtok, Marenjak, & Car-Pušić, 2022:3). This requires the school facilities management and maintenance committee to take a proactive approach and ensure the high-quality implementation of the maintenance framework and policies to ensure that school buildings are well-maintained (TijanićŠtok, 2021). Effective implementation of maintenance policies by school management is essential for ensuring the longevity and functionality of school buildings.

For the purposes of this study, only the classrooms, libraries, laboratories, school offices and staffrooms, and school grounds are regarded as school buildings and are discussed in detail in subsequent paragraphs. However, as TijanićŠtok, Marenjak and Car-Pušić (2022:3) note, the expensive nature of maintaining school facilities can make it difficult for management to ensure that school buildings are always in pristine condition. Furthermore, Myeda and Zambli (2018:2) found that one of the reasons school buildings are not being well maintained and managed is because of the low budget that is available in schools for this purpose. However, in some schools, building maintenance lacks

a shared vision, competent people to conduct the maintenance, adequate resources, information management and performance evaluation (Leet *et al.*, 2023:1). In addition, poor school building maintenance practices are believed to be the root cause of many defects which may also lead to disturbances in the teaching and learning process.

Taking good care of school buildings and managing them well is also taking good care of the learners and teachers in the school and can result in increased learner performance (Hameen, 2020:200). School buildings can positively impact the teachers, because when they are in good condition, teachers will be motivated to come to school, which results in the success of the process of teaching and learning (Leung *et al.*, 2006:80). Uline and Tschannen-Moran (2008:56) agree that proper school buildings and well-maintained classrooms can lead to both teachers and learners having positive attitude towards coming to school. This is proof that the condition of school buildings is linked to the academic achievement of learners and if well maintained and managed it can have a positive impact on learners' performance (Benka-Coker *et al.*, 2021:1).

In rural areas, teachers often work in inadequate facilities, further underscoring the need for regular maintenance. As Levitt (2013:2–4) argues, school buildings require ongoing maintenance like any other building because they cannot stay new forever. Furthermore, newly built school buildings need to be well taken care of as it becomes nearly impossible to rebuild every building in the organisation all at once. Newly constructed schools also need consistent upkeep, as rebuilding is often not feasible (Adangabe *et al.*, 2020). Proper maintenance ensures the durability of buildings and supports the school's operational efficiency, which is vital for effective teaching and learning.

Schools that are well-maintained foster a positive environment for all stakeholders, promoting a sense of safety and well-being. Learners and educators feel safer in such schools and perform better than those in schools with poor maintenance. Barrett *et al.* (2019:13) argue that poorly maintained buildings can cause stress and anxiety for students, teachers, and parents, particularly in the face of natural disasters or extreme weather conditions. The

authors maintain that if the school building cannot stand floods and bad weather it can also make it harder to produce the level of academic results that would have been possible if the school was safe and had well maintained buildings (Barrett *et al.*, 2019). Filardo *et al.* (2019) further note that students from low-income families are disproportionately affected by attending schools with poorly designed and maintained facilities, which can pose health and safety risks. Poorly maintained buildings can create unsafe environments for teachers and learners. In summary, the condition of school buildings is an important input into the educational system that can affect the process and output of the educational system (Ndisa, 2023:138).

2.5.2. Management and maintenance of classrooms

Classrooms are important as they are where learners spend most of their time, and evidence has shown that structural aspects of the classroom influence learners' ability to learn effectively; these aspects include, but are not limited to, lighting and acoustics (Mogas-Recalde, 2021:246). Barksdale *et al.* (2019:2) agree that the physical conditions of the classroom have a strong influence on how learners perform academically. For example, ensuring that the classroom size is proportionate to the number of learners per the DBE learner-educator ratio of 33:1 (DBE, 2014:4) is an important factor in avoiding overcrowding in the classroom, which can affect teaching and learning (West & Meier, 2020:9). This is important because overcrowding is an important determinant of how teaching and learning take place (Pedder, 2006:214). For example, overcrowded classrooms have been constantly associated with increased levels of aggression in learners and decreased levels of concentration and engagement which may affect learner performance and learning (Ayoub, 2019:8).

Furthermore, overcrowded classroom also led to negative learner discipline and learners become less attentive, which may affect the process of teaching and learning (Bressoux, 2016:88; Maingi *et al.*, 2017:37; Marais, 2016:2). For example, Hanson and Austin (2016:4) reported that between 16% and 18% of learners agreed or strongly agreed that their classrooms were so crowded that

it was hard to concentrate and learn. Thus, it can be argued that learners in overcrowded classrooms are robbed of the opportunity to be taught effectively because, for proper teaching and learning to happen, learners must be taught in small numbers, meaning their class sizes must not exceed the expected and accepted learn-educator ratio of 33:1 (Barrett & Shmis, 2019:7).

Overcrowding falls under the management aspect of the study, and managing overcrowding is also important because, in overcrowded classrooms, furniture and other classroom facilities can be easily damaged by learners, which, in turn, affects teaching and learning. To manage overcrowding, principals can make arrangements for temporary mobile classrooms (McMullen, & Rouse, 2012:820). However, the use of mobile classrooms should be strategically planned to optimise learning based on the needs of learners. For example, it was found that for learners with autism spectrum disorder, mobile classrooms were not a good alternative or overcrowding management strategy as the movement and noise from the classrooms disturbed teaching and learning process (Sumbane, Mothiba, Modula, Mutshatshi, & Manamela, 2023:10). Furthermore, since most schools do not have enough classrooms for teaching and learning (Mncube *et al.*, 2023:35), they should only accommodate learners that are registered at the school to ensure that the learner-educator ratio is maintained.

Overcrowding can also cause problems with the air ventilation within the classroom. Bako-Biro *et al.* (2007:2) emphasise that inadequate ventilation in the classrooms causes increased risk of asthma and other health related symptoms among school learners. Poor air ventilation in the classroom has been associated with reduced pupil well-being and performance of school work (Rajagopalan *et al.*, 2022:1; Toftumet *et al.*, 2015:494). Hence, it is important for every school to manage and maintain the ventilation in classrooms to protect the health of teachers and learners and also aid in learner performance. This can be ensured by hiring a trained team that deals with the management and maintenance of ventilation in the physical structure of the classroom (Toyinbo *et al.*, 2016:2).

Additionally, schools should ensure that each classroom accommodates learners according to the learner-educator ratio to improve ventilation. Good air ventilation in the classroom should be maintained because poor indoor air quality has both short and long-term negative impacts on the health of both learners and teachers (Abhijith *et al.* 2022:121).

Adani (2019:102) found that the rate of learners repeating a grade was high, and learner performance was low among those in schools with poor classroom and school facilities compared to their counterparts with well-equipped classrooms and school facilities. It is therefore important for school principals to frequently assess classroom facilities, maintain and manage them accordingly to help improve the teaching and learning conditions which can help improve the academic performance of learners (Takwate, 2018:305). This entails prioritising classroom facilities management to promote a good and safe teaching and learning environment to achieve basic educational needs and goals. Yosvita, Sowiyah and Hariri (2022:85) argued that the procurement process for classroom facilities and infrastructure involves several key steps: 1) the teacher reports to the principal regarding necessary purchases; 2) the principal conducts direct observations and informs the facilities coordinator; 3) the coordinator reviews the budget and submits a procurement proposal to the finance department; 4) upon availability of funds, the coordinator proceeds with purchases; 5) finally, after completing inventory, the coordinator distributes the items to the relevant classrooms and obtains a receipt from the school. Implementing a systematic process to maintain classroom facilities that support teaching and learning is an important aspect of ensuring the smooth functioning of the school.

Flippin, Clapham and Tutwiler (2021) argue that the provision and maintenance of kinaesthetic equipment instead of traditional seating in classrooms can improve student on-task behaviour and focus. Poor maintenance of classroom facilities such as ceilings, floors, and gutters may cause a health hazard for learners (Nhlapo, 2020:4) and negatively affect the quality of teaching and learning. Additionally, the lack of routine maintenance, such as sweeping of

classrooms can expose learners to harmful metal concentrates, which can cause or exacerbate existing illnesses in learners and teachers (Praveena, Mutalib, Razak, Abidin, Aris, 2014; Tan, Praveena, Abidin & Cheema, 2018). To avoid such health hazards, the school should ensure the implementation of routine maintenance for school classroom facilities.

In summary, classroom venues are an important input for teaching and learning to occur as they should provide a safe environment for learning. Routine checks of classroom facilities and preventative routine maintenance should be incorporated into the school maintenance plan to ensure that the classroom is always in optimal condition for teaching and learning (Okeke, 2013:103). However, routine maintenance can sometimes be costly, which can cause schools to overlook some of these routine classroom maintenance aspects, negatively affecting teaching and learning (Britz, 2021:22; Nhlapo, 2020). Hence, maintaining classrooms is of paramount importance for schools as it directly affects teaching and learning as well as learner performance.

2.5.3. School offices and staffrooms

School offices and staffrooms are some of the most important school facilities that provide shelter for teachers, school documents and school records. Ensuring that these facilities are well-maintained and kept in good condition is of significance in any school. Maintaining the staffroom building and furniture is important because it provides convenient space for teachers to sit and wait for their lesson periods, prepare for lessons, and be easily accessible to learners who may need to make enquiries (Ebimuna, 2020:70). Furthermore, management staff such as principals, deputy principals and head of departments spend most of their working hours in their own offices completing their management tasks and duties. Thus, there is also a need to regularly maintain this office working space to ensure optimal performance of the management staff tasks and duties (Mncube *et al.*, 2023:27).

Maintaining staff rooms and offices means keeping furniture, cupboards, and other systems (e.g., electricity, air conditioning, etc.) functioning well for both

teachers and school management teams. The principal, as the person responsible for maintaining school facilities, must ensure proper upkeep and procure necessary maintenance for these spaces to support the effective functioning of the school (Nweke & Nwikina, 2022:129). While facilities in offices do not deteriorate easily, there needs to be a clear preventive maintenance plan in place to ensure that school offices and staffrooms are always kept in pristine condition (Nhlapho, 2020). This plan should involve experts who can project timelines for facilities upkeep and suggest replacement schedules (Alonso Pérez, Vieira & Marques Cardoso, 2010). Ensuring offices and staffrooms are well maintained is a good practice that can positively affect teaching and learning. However, a literature search revealed very few studies in recent years dedicated to addressing the management requirements to maintain staffrooms and offices.

2.5.4. Upkeep of school libraries

In a study conducted in Kenya, the results show that public secondary schools often face the challenge of inadequate library resources, leaving little to maintain or manage, according to the responses of principals, and this affects learners' academic performance (Maingi *et al.*, 2017:38). However, libraries are among the most essential school facilities influencing the process of teaching and learning. Libraries serve as the most important source of educational material (Owoeye & Yara, 2011:172), significantly contributing to the improvement of learners' academic performance (Smallet *et al.*, 2010:29). Libraries in schools have been reported to play a positive role in education, linking them directly to the improvement of learners' academic achievement (Baro & Eze, 2016:8). School libraries are essential for equipping learners with information from books, articles and internet resources that enhance literacy, education and information as well as economic, social and cultural development (Lee, 2024:1; Mahajan, 2010:2). To this end, Lance (2007:2) opines that when school libraries have a "higher level of professional and total staffing, larger collections of print and electronic resources and more funding, learners tend to earn high score on state reading tests". Thus, for schools, it is important that

libraries are managed and maintained well to ensure that educational activities continue smoothly.

This means that principals and the school facilities management teams should ensure that school libraries have the required materials that can support teaching and learning (Ebimuna, 2021:59). Routine and planned maintenance should be affected in school libraries to keep them in optimal condition. These maintenance and improvements should happen regardless of the socioeconomic or educational levels of the school (Lonsdale, 2003:6). The maintenance of libraries should be emphasised because learners' test scores tend to be higher when there is a greater usage of the school library and learners would use a library that has information worth looking for in the library (Gaver, 1963; Lance & Kachel, 2018:15). This could imply that if libraries are well taken care of and are properly used, they can help learners with their reading and writing skills (Lee, 2024:8). This means that, principals, as heads of school facilities management need to ensure that school libraries always have relevant and appropriate resources for learners to effectively engage in learning.

When effecting improvements in school libraries, it is important that key factors influencing policies and practices in school libraries, such as traditional library values, educational beliefs, and principles of social justice that affect access and usage are put in place (Gordon & Cicchetti, 2023:100). Furthermore, for a school to develop a strong library programme, adequate staffing of a certified librarian and library support staff is crucial (Strong, 2013:90). Another important aspect of managing and keeping libraries abreast, is continuous training of school librarians (Lance & Kachel, 2018:18; Mojapelo, 2016:11). Well-trained school librarians could ensure that the resources within the library are made easily available and accessible to all learners, and manage any chaos that might be caused by learners who use the library (Majinge & Stillwell, 2014:40). Ensuring that library staff is well trained and certified is important in ensuring that the library is maintained with relevant and recent sources of information for learners.

Lance and Maniotes (2020) argued that contemporary teaching and learning approaches such as inquiry-based learning should be facilitated by well-trained school librarians for learners to acquire good information literacy skills (See also Montiel-Overall & Grimes, 2013). This means that collaboration between teachers and librarians should be strengthened as a way to ensure that librarians are aware of classroom proceedings and can help learners improve their performance (Dent, 2006:404; Lance & Maniotes, 2020). This collaboration is important to keep librarians aware of the materials required by learners in the classroom and be in a position to request the principal to procure these required library resources (Molaudzi, 2020). Furthermore, this collaboration also positions librarian in a better place to help learners with their assessments and learning activities by recommending sources that are relevant to what learners are engaging with in the classrooms.

Thus, the principal can create a culture and a working environment that promotes excellent service, instils core values, encourages communication, and preserves local culture through curated library collections and displays (Bustari, 2020:123). Lastly, there is also a need for collaboration between learners and librarians where librarians listen to the voices and the needs of learners to ensure that the resources within the school library are aligned with the learners' needs (Xu, Wang, Sturm, & Wu, 2020:438). Allowing such collaboration is a good practice for school library facilities management because it enables all teaching and learning relevant stakeholders (librarians, teachers, principal, and learners) to be involved in ensuring that the library has relevant resources.

Hence, principals should ensure that school librarians are trained on how to maximise learners' learning by recommending relevant sources to be bought for the library. Librarians can actually recommend appropriate sources if there is good collaboration between teachers and librarians so that librarians would know what is happening in different classrooms and recommend relevant sources. Thus, the principal should also ensure that there is a good

collaboration between teachers and learners to ensure that the facilities within the library are appropriate and can facilitate and enhance teaching and learning.

One factor that may inhibit school principals from maintaining state-of-the-art libraries is financial constraints. Financing as part of maintaining and managing the library is of paramount importance and helps buy new resources that are needed for the empowerment of learners and to facilitate teaching and learning (Baro & Eze, 2016:9). Given that most schools may struggle with financing school facilities such as libraries (Nhlapo, 2020), school principals can use mobile libraries to ensure equitable access to libraries within schools in previously disadvantaged communities (Sung & Bamkin, 2023). This means that the principal should ensure that there is always a reserved budget for procuring library resources which will ensure that these facilities are well maintained. Another strategy that can be used by the principal to manage library facilities is to collaborate with school librarians to develop all components of the school library to meet accreditation criteria and compete nationally (Bustari, 2020:123).

Another element of facilities management of library resources involves putting security personnel or technological detectors to avoid learners removing library material and taking it home without permission. Even though limited literature has been dedicated to this area; it is important that library resources are always kept in place and removed with permission from librarians. This will ensure that resources are always tracked and managed accurately by school librarians. This relates to facilities management because it can ensure that no excess money is spent replacing library resources that were stolen by learners.

2.5.5. School science laboratories management

A laboratory has been a central component of science teaching and learning since the early 20th century (Singer *et al.*, 2006:3). School science laboratories play a pivotal role in helping learners studying science subjects to better conceptualise practical experiments, practise what they are being taught, and exemplify learning as a scientist. Fagihi (2018:107) argues that in particular, science laboratories provide an ideal environment for learning the practical work

that is usually expressed abstractly in textbooks and during teaching and learning (Mji & Makgato, 2006:260). Therefore, if educators conduct practical experiments with learners, it can help learners to get a clearer picture and understanding of the abstract content being taught. As a result, there is always an improvement in their performance in the practical subjects as compared to learners who do not have laboratories. Thus, it is always important that school laboratories are designed and maintained to be safe spaces for teachers and learners to use for teaching and learning purposes (Ashbrook, 2017).

However, “the unavailability of laboratory personnel and technicians, multifunctional laboratory space, allocation of time for laboratory use, and lack of infrastructure in science laboratories” (Rini, Bramastia, Aditia, Fitriani, Siswanto, 2024:49) makes it difficult to effectively manage school science laboratories. This means that the unavailability of these aspects of the science laboratory may deem it non-compliant to safety procedures and practices. Ensuring that laboratories are safe to use for both teachers and learners is an important element of facilities management in schools. For example, there must be a trained laboratory assistant who ensures that learners follow the laboratory safety guidelines (Nikolic *et al.*, 2015:139). To avoid laboratory accidents such as the ones experienced by secondary school chemistry students (Kandel, 2017; Ménard & Trant, 2019:22), the school needs to have a clear set of rules on how to behave in the laboratory. Observations in Botswana revealed that “chemical containers were either not labelled or had fading labels and incompatible chemicals were stored together increasing the risks of chemical accidents” (Mogopodi, Paphane & Petros, 2015:17). To minimise such accidents, school facilities management team in collaboration with the laboratory assistants should ensure that all chemical containers are clearly labelled and are stored safely (Abbas & Zakaria, 2015:3).

Another suggestion to minimise accidents in the laboratory, is to ensure that all people entering the laboratory are trained on how to work with chemicals and also ensure that everyone who enters the library is aware of the safety guidelines for the laboratory (Zhang *et al.*, 2020:2). This involves ensuring that

learners are adequately trained on proper behaviour in a science laboratory. While learners may have some knowledge of laboratory conduct, they remain unaware of specific permitted and prohibited behaviours, as well as the safety symbols they see in the textbook and the laboratory (Caymaz, 2021:220). Furthermore, learners who express that they are not competent with laboratory safety and need training (Caymaz, 2021:220) underscores the need for training by a relevant and qualified person such as a qualified laboratory assistant. Thus, routine and planned maintenance of school science laboratory facilities is essential to ensure safety. This includes regular assessments conducted by a team of qualified personnel to guarantee that the laboratory is safe for use.

In summary, the school facilities management team should always ensure that the school laboratory facilities are well maintained to improve the ergonomics of both teachers and learners working on experiments in the laboratory (Santiago, Dizon, Espina, & Tamayao, 2018:869). School facilities management should also ensure that chemicals and other teaching and learning infrastructure in the science laboratories does not cause harm to learners or teachers. They need to ensure that there are safe chairs for seating and that all chemicals used in the laboratory are not expired (Santiago *et al.*, 2018; Zhang *et al.*, 2020).

2.5.6. School computer laboratories

Computer knowledge has become one of the most vital skills needed in this time and day because of the growing use of technology to develop the country's economy and enhance a country's competitiveness on the global stage (Kyomuhendo, Mugizi, Rwothumio, & Waiswa, 2024:1). Some subjects including but not limited to mathematics and science are believed to be understood by learners more efficiently if their teaching and learning integrates the use of particular software that can be installed in school computer laboratories (Saadonet *et al.*, 2011:352). The use of computer laboratories when teaching subjects like physical sciences has the potential to improve learner's knowledge and performance (Jimoyiannis & Komis, 2000:185; Mayaka, 2019). However, while many schools may lack school laboratories (Mayaka, 2019),

some schools also lack expert teachers who can guide learners to use the available computers successfully in the computer laboratory (Likoko, Wafula, & Amadi, 2023:306). If teachers are well-equipped with computer knowledge, they are in a better position to facilitate effective teaching and learning in their subjects using computers (Becker, 2000:25; Urhahneet *al.*, 2009:501). Furthermore, teachers' attitude towards technology integration determines the usage of computer laboratories in schools (Al-Zaidiyeenet *al.*, 2010:213; Chisango & Marongwe, 2021:158; Raygan & Moradkhani, 2022). Well-equipped teachers know how to ensure that the school computer laboratories are used appropriately to last longer. Hence, school facilities managers should ensure that teachers who use school laboratories are well equipped with the knowledge to facilitate teaching and learning using computers.

Most South African public schools encounter significant challenges related to crime, which often result in the theft of computer laboratory equipment (Chisango, 2019; Makate, 2023). Furthermore, schools also face common incidents of vandalism of laboratory facilities (Chisango & Marongwe, 2021). This vandalism leads to damage of computer laboratory facilities, rendering them non-functional (Nhlapho *et al.*, 2023:51). Therefore, it is imperative for the school facilities management team to implement measures that ensure the security of the computer laboratory. Additionally, employing dedicated security personnel to monitor the facility during periods when staff and students are absent may help mitigate the risk of theft and vandalism.

To further ensure good maintenance and effective management of school laboratory facilities, the principal needs to design and implement a proper maintenance and management plan in every school that has a computer laboratory. For example, learners may sometimes make mistakes while working with computers, necessitating frequent checks and maintenance to ensure they remain in working condition for teaching and learning purposes (Britz, 2021:8). This means that a maintenance plan should be in place that would have computer laboratory assistants regularly checking all the computers after learners have used them to ensure that they are in working condition for the

next group of learners. Hence, it is important that a qualified computer laboratory administrator or technician is employed and tasked with monitoring and managing the use of computers in the computer laboratory (Arkhiansyah *et al.*, 2020:241). Furthermore, principals should ensure that staff computer development training is conducted regularly and facilitated by a qualified person to help minimise incorrect usage of computers, which might lead to computer system crashes (Katulo, 2009:22). Thus, managing and maintaining computer laboratories is important for the efficiency of these facilities for supporting teaching and learning.

2.5.7. General upkeep of school grounds

The school grounds are as important as the classrooms because so much can be learnt through these grounds. Tranter and Malone (2004:132) state that the school ground is one of the few places where children can play outdoors in the natural environment with their peers and is important for environmental learning. Jansson *et al.* (2018:116) emphasise that school grounds help learners by supporting their physical and mental health; they state that school grounds can help learners to interact with nature, which supports the learning of other natural subjects like life sciences.

Furthermore, these grounds also help learners to realise their own sport talents. Champbell (2004:9) agree that the school grounds are important for the learners to play and for their overall development. School grounds also need to be well managed and maintained. Billmore *et al.* (1999:74) argue that there should be a management policy that aims to maintain the schools' grounds in order to keep them conducive for learners. School ground management encompasses all aspects of the grounds, which is how they are maintained, how they are designed, what they contain, how they are used and how much they cost (Wood, 1996:10). Corson (2003:49) also suggests there should be a school yard maintenance crew that deals with the safety of learners who use the school ground. Prestileo *et al.* (2005:16) concur that there should be a team dealing with pest management using chemicals that will not be harmful to learners. They

should also take care of the papers and stones that may be on the ground to avoid accidents when the learners play.

2.5.8. School health facilities

Given that learners can get sick at any time of the school day, all schools should prioritise the management and maintenance of school health facilities. A health promoting school is one that prioritises and constantly strengthen its capacity as a healthy place for teaching and learning (WHO, 1996). Health facilities are the most important of all facilities because they are provided to protect and promote the health of everyone in the school, especially sick learners (Osaigbovo & Osiagbovo, 2021:9). Learners' health is of great value and should be taken seriously because sickness is one of the greatest causes of school absenteeism and may also lead to scholastic backwardness which means it affects teaching and learning (Ade *et al.*, 2020b:6). A school with good health values has healthy school policies and its physical environment and health services are always maintained regularly. Nhlapo (2022:102) on using and maintaining ageing school facilities argues that learners from clean, safe and higher health standard schools are better positioned to perform academically compared to their counterparts from schools with dilapidated buildings. However, Naseem *et al.* (2018:28) assert that schools provide health facilities but these are not well managed and there is inadequate health education for both teachers and learners. In schools, health facilities that should be prioritised in terms of maintenance and management include, but are not limited to first aid kits, sick rooms, and hand washing facilities, and counselling facilities (Butin, 2000:2). This study only focuses on sick rooms, first aid kits and restroom facilities which are more important in schools.

“A sickroom is where we sleep and relax when we are sick or not feeling well” (Mtimkulu, 2022:233). These rooms are used to secure learners who are temporarily not feeling well, suffering from minor sickness such as mild headache or a stomach-ache. Omar *et al.* (2017:1559) emphasise the importance of having sickrooms in schools, as they cater for learners who may

become injured or ill during school hours and require medical attention. However, regarding the usage of these sick rooms, schools should have clear guidelines regarding the use of sick rooms, including who can access them and under what circumstances. This ensures that students receive appropriate care when needed (Department of Basic Education, 2020). Schools should also ensure that there is regular cleaning and disinfection of the sick room to maintain hygiene and prevent the spread of germs (National Department of Health, 2021). The sick room should also contain all the appropriate medical supplies such as a well-stocked first aid kit to treat learners' minor wounds while waiting for the ambulance or parents to pick up the sick learner (Mtimkulu, 2022).

A first aid kit is a collection of supplies and equipment that is used to provide initial medical assistance in case of injuries or emergencies (Shankar & Surya, 2018). It typically includes items such as bandages, antiseptics, gloves, and tools to manage wounds, burns, or other medical issues before professional help can be obtained. While first aid kits may not be regarded as actual school facilities, they form an important element of the schools' sick room and can enhance the health facilities of the school (Mtimkulu, 2022:234). These first aid kits are important in treating minor bruises that result from injuries during sporting events or while learners are playing during break time. They may also be used to manage chronic conditions such as asthma in learners (Ibrahim *et al.*, 2020:10). Hence, as part of the school's sick rooms, Shah *et al.* (2020:129) emphasise that first aid kits should be well stocked and contain all the essential material required for effective first aid management. First aid kits can be managed in schools by assigning members of staff who are well trained to handle first aid related emergencies (Konwar *et al.*, 2021:87). These designated staff members should also report to the principal regarding any medical supplies that are depleted so that these are promptly procured as part of the school's maintenance plan.

In a perfect environment, learners' medical emergencies (first aid or sickness related) should be handled by a qualified school nurse or any other trained

person who has medical knowledge (Ajani *et al.*, 2022:28; Hilli & Pederson, 2021:971). However, findings from Mtimkulu (2022) and Ajani *et al.* (2022:29) revealed that it is teachers who keep watch of learners in sick rooms. Furthermore, the school cleaning staff should ensure that the sick room is clean, and the bed and blankets are always clean to ensure that learners can use clean beds to minimise risks for discomfort. Hence, the duty of ensuring that sick rooms are maintained and managed effectively rests with the school principal and the teachers using the sick rooms. The maintenance of sick rooms in schools has not been extensively researched globally. Exploring the management and maintenance of sick rooms in secondary schools around the Amajuba District will add value to the existing body of literature.

Another crucial element related to a school's health facilities is the rest rooms (or toilets) that are used by both teachers and learners. According to Bhattarai (2017:23), ensuring that the school has clean rest rooms that are always in a good condition can contribute to reducing absenteeism among learners. Learners, especially girls tend to miss school and be absent if the rest rooms are not in good condition. This can contribute to high failure rate among female learners. Thus, the school rest rooms should be in good condition in order to serve the needs of learners and everyone in the school (Mubita, 2021:11). This means that the school cleaning staff should ensure that the school rest rooms are always clean, not only to minimise the risk of infections from germs but also to improve learner attendance, especially among female learners. Tobin and Levi (2013:309) emphasise the importance of labelling the restrooms at schools according to gender, as some of the learners reported in their interviews that they sometimes miss school to avoid being labelled or discriminated against. Proper labelling of rest rooms is also important in ensuring that learners use their designated facilities freely, which can enhance their health status while attending schools.

2.6. THEORETICAL FRAMEWORK

2.6.1. Introduction

Creswell and Creswell (2018) define a theoretical framework as a structure that can hold or support a theory within a research study. It provides a clear conceptual basis for the research, guiding the researcher in understanding the relationships between different variables or phenomena, and it helps to frame the research questions, guiding the methodology and analysis, and contextualising the findings within existing knowledge. Furthermore, the framework is essential for establishing the rationale behind the study, as it connects the research to established theories and concepts, ensuring that the research is grounded in a solid theoretical foundation (Creswell & Creswell, 2018). This study adopted the system theory by Ludwig Von Bertalanffy (1968), specifically the Inputs – Process –Output (IPO) relationship, as the theoretical framework that underpins it. The IPO model posits that “an input leads to a process and that this process yields an output” (Decius, Schaper & Seifert, 2021:287).

A system represents a group of parts that are interacting, interrelated, and interdependent to form a complex and unified whole (Zhang & Ahmed, 2020:436). Systems theory provides a framework for understanding complex systems through a model of Inputs IPO. This approach emphasises the interdependence of components within a system and is particularly useful for analysing organisational structures, including the functioning of educational institutions (Von Bertalanffy, 1972:409). Key to Von Bertalanffy’s definition of the systems theory is the “importance of the *whole system*, and the idea that the distinction between a system and a collection of parts is that the system has some form of *organisation* of its parts” (Ramage & Shipp, 2020:55). The systems theory is related to systems thinking, “a way of understanding reality that emphasises the relationships among a system’s parts that go beyond the parts themselves” (Zhang & Ahmed, 2020:436). As a system, schools use different inputs to perform the teaching and learning process so that learner performance can be maximised (Von Bertalanffy, 1968). Hence, Von

Bertalanffy (1968) argued that systems transform inputs into outputs using processes and these three elements of the system are important in the functioning of the system. These three components of the system are important in this study and will be discussed based on the foci of the study which is on facilities management and maintenance. Later on, a motivation for the suitability of this theory for the current study is provided, and then the chapter is concluded.

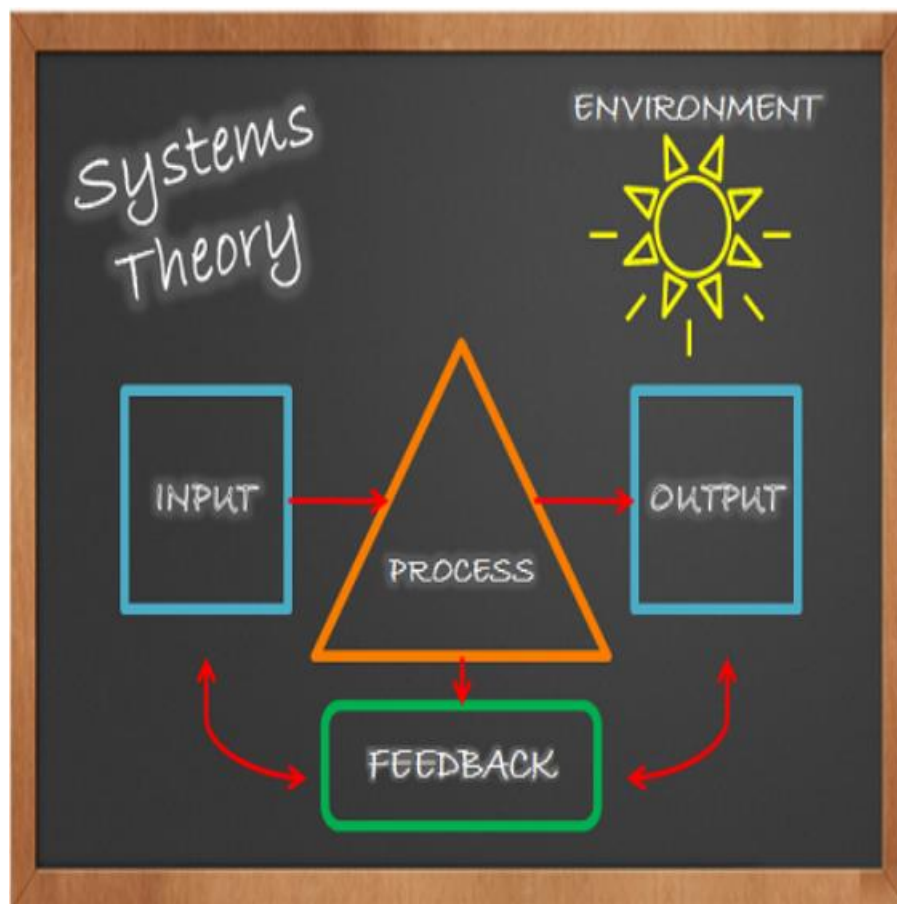


Figure 1.1: Systems Theory (Google image)

2.6.2. Inputs

In the context of a school as a system, inputs refer to all the resources and factors that are brought into the educational system (Von Bertalanffy, 1968). The inputs to the educational system are always important determinants of the output of this system (Glasman & Biniaminov, 1981:514). In a school system,

inputs can include various resources and factors that contribute to the educational process such as learners, teachers, the curriculum, school facilities, funding, and policies (D’Inverno, Smet, & De Witte, 2021:1115). The focus of the discussion in this study is school facilities as the inputs of the school system that help in ensuring that the school functions smoothly.

In the context of this study on facilities management and maintenance, school facilities provide inputs to the teaching and learning process. School facilities may include the physical condition of the classroom where teaching and learning takes place, as well as the number of learners within the classroom. The classroom is an important input to teaching and learning and needs to be managed and maintained effectively to maximise learning. In a classroom environment that is overcrowded, it may be hard for the teacher to control the noise level of learners and to provide individualised assistance to learners (West & Meier, 2020:9). Furthermore, the classroom environment should be maintained to ensure good air ventilation so as to optimise teaching and learning in a well-ventilated classroom environment. Several other school facilities, such as school buildings, sick rooms, computer and science laboratories are connected to the general operation of the school system and may influence the process of teaching and learning. Effective management and maintenance of these school facilities inputs is crucial, as they form the foundational elements that influence the schooling system and affect the output of the system in the form of learner performance. These educational inputs are used in the process of teaching and learning. The school facilities that need to be maintained and managed to ensure that teaching and learning is supported form the input to the process.

2.6.3. Process

The process encompasses the activities and interactions that occur within the school environment as a result of certain inputs (Von Bertalanffy, 1968). The process involves the transformation and/or manipulation of the inputs to produce a specific outcome. For example, good maintenance of school sports grounds facilitates the process of good and safe sporting events. School

science laboratories affect the teaching and learning process of science subjects, where conducting experiments in a safe environment is of paramount significance. Other processes may include teaching methodologies, administrative practices, and the management of facilities, which all affect the functioning of the school system.

A well-managed process ensures that inputs are used effectively to encourage and support successful teaching, learning and growth within the school system. It also involves the continuous assessment and improvement of practices to adapt to changing needs and to optimise the educational experience. Furthermore, if we the principal is considered the input of the school system's management and maintenance of the school facilities, then the process involves the policies and practices put in place by the principal to ensure that school facilities are maintained appropriately. The processes taking place within the school system will produce an output. For example, the process of teaching and learning should produce an output related to learner performance.

Another important aspect about a system is that it needs to be reviewed to meet the current demands (Zaki & Rashidi, 2013). For example, the COVID-19 pandemic caused the educational system to be reviewed and adapted to the 'new normal' of functioning during the pandemic (Myburgh & Calitz, 2022:94). This process of reviewing the system entails the maintenance of current school facilities and introduction of new ones to ensure the functionality of the school system.

2.6.4. Output

Outputs in the systems theory represent the results produced by the educational system, including student performance, satisfaction, and overall institutional effectiveness (Von Bertalanffy, 1968). The outputs of a system can be positive or negative. Positive outputs indicate that the system is functioning well and achieving its goals, while negative outputs may signal the need for changes in inputs or processes. Within the educational system, outputs can be thought of as the learners that graduate from this system (Huang, Spector, Yang,

2019:68). These outputs in the context of the study also include evidence of well-managed school facilities which allows learners to achieve the objectives of learning. This means that the process of implementing the maintenance plan and ensuring that school facilities are managed and maintained results in the output of school facilities being in pristine condition. The outputs of a system are very important as they serve as a foundation or support for the next steps in that process (Tyson, 1993:203). In other words, the outputs generated at one stage, set the stage for what comes next, providing the necessary context or materials for further actions or developments. It implies that outputs are not just end results but play a crucial role in facilitating ongoing processes. Hence, the outputs of the system can be used to enhance the process of school facilities management and maintenance.

In the context of school facilities management and maintenance, the *outputs* include various outcomes that significantly influence the educational environment. Effective management practices result in well-maintained facilities, which enhance the physical condition of classrooms and common areas, thereby promoting a safe and conducive learning atmosphere (Hopland, 2019:5). Additionally, operational efficiency is achieved through the regular maintenance of systems such as HVAC, leading to improved functionality and reduced downtime (Fadahunsi, Utom, Ochim, Ayedun, & Oloke, 2019:5). This proactive approach not only minimises maintenance costs but also extends the lifespan of school infrastructure (Min, Morgenstern, & Marjanovic-Halburd, 2016). Furthermore, adherence to health and safety regulations results in facilities that prioritise the well-being of students and staff, while user satisfaction surveys often reflect positive sentiments regarding facility conditions (Lee, Jilke, & James, 2021:117). Collectively, these outputs emphasise the importance of strategic facilities management in fostering a school environment that supports academic success and community engagement.

2.6.5. Suitability of the systems theory for the study

Applying the IPO model of Von Bertalanffy's (1968) system theory to this study on school facilities management highlights the interconnectedness of resources, management practices, and educational outcomes. By analysing how inputs such as science and computer laboratories, classroom facilities, HVAC systems and the library, are managed through effective processes of facilities maintenance and management, the study demonstrates how improved facilities and maintenance practices lead to better outputs in the form of improved learner performance. This holistic perspective not only informs strategic decisions about facilities management and maintenance but also emphasises the importance of viewing the school as an integrated system where all components work together to achieve common objectives. Thus, this theory is suitable for this study which aims to explore the influence of the availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools. This theory enabled the researcher to elucidate the relationship between the availability of school facilities (inputs) and their management and maintenance (process). It further delineates how these processes of maintenance and management impact teaching and learning (process) and subsequently influence student performance and academic progression (output).

2.7. SUMMARY

This chapter discussed the literature related to school facilities management and maintenance. In this chapter It began by outlining the importance of school facilities management, followed by an explanation of several frameworks for the facilities management process. The chapter then explored the maintenance and types of maintenance in schools and proceeded to discuss different school facilities that require proper management and maintenance. Furthermore, this chapter detailed the theoretical frame work that underpins the current study on the influence of the availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools. The next chapter describes

the study's research design and methodology used during the empirical investigation for this study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1. INTRODUCTION

The previous chapter discussed the literature review and the theoretical framework for this study. The current chapter outlines the research design and methodology that was adopted for the empirical investigation. The chapter begins by explaining the research paradigm, and then discusses the research approach and the research design which includes the population and sampling, methods of data collection and methods of data analysis. In addition, the chapter addresses the measures taken to ensure trustworthiness in this study and the ethical considerations observed. Lastly, it concludes with a summary of the chapter.

3.2. RESEARCH PARADIGM

A good research undertaking begins with the selection of the topic, problem or area of interest as well as the paradigm to inform the study (Khupe, 2022:9). Within a research study, a paradigm serves as the framework of shared beliefs, values, techniques, and assumptions that defines legitimate research within a scientific community (Gomez *et al.*, 2021:28; Kuhn, 1996). Paradigms shape how researchers perceive and investigate phenomena, guiding their methodologies and interpretations of data. A paradigm enables the researcher to view the world through a particular lens, framing a research topic and the methodology (Kamal, 2019:1388; Khatri, 2020:1436; Urcia, 2021:4). Particularly, the paradigm informs the process of data collection, analysis and interpretation in a research study, allowing for a deeper understanding of the phenomena being investigated (Omodan, 2022:227). Furthermore, the paradigm offers the researcher a particular point of view to adopt when approaching their study (Perera, 2018:5; Shawa, 2021:33).

The research paradigm that underpinned the current study was the interpretivist paradigm. According to Creswell and Creswell (2022), the interpretive paradigm

is a research approach that focuses on understanding the meanings and experiences individuals assign to their social realities. This paradigm emphasises the subjective interpretation of human behaviour and interactions, highlighting the importance of context, culture and the complexity of social phenomena (Gemma, 2018:8; Pervin & Mokhtar, 2022:421). Researchers using the interpretive paradigm typically use it in conjunction with the qualitative research approach to collect in-depth data, aiming to explore how individuals construct their realities (Alharahsheh & Pius, 2020:41; Williams 2020:80).

Hence, this paradigm was suitable for the current study because it adopted a qualitative research approach to explore participants' experiences related to the influence of the availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools. One of the advantages of using the interpretivist paradigm is that a researcher does not only describe objects, human or events but also gains a deep understanding of these in their social context (Pervin & Mokhtar, 2022:422). Furthermore, this research paradigm was relevant because the study adopted a phenomenological research strategy, focusing on participants' lived experiences. This helped reduce researcher bias by focusing on authentic accounts of the participants' lived experiences (Koole, 2023).

3.3. QUALITATIVE RESEARCH APPROACH

The current study adopted a qualitative research approach. According to Creswell and Creswell (2022), qualitative research is designed to explore and understand the meaning individuals or groups ascribe to a social or human problem. Similar to the interpretive paradigm, the qualitative research approach is characterised by its emphasis on context, complexity, and the subjective nature of human experience (Mulisa, 2022). It typically involves collecting data through methods such as interviews, observations, and textual analysis, allowing researchers to gain deep insights into participants' perspectives (Creswell & Creswell, 2022). The qualitative research approach was suitable for this study because it collected only textual data to explore the influence of the

availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools.

Within the qualitative research approach, the study adopted phenomenology as a strategy of inquiry. Phenomenology in qualitative research is a strategy of inquiry that aims to understand and describe the lived experiences of individuals regarding a particular phenomenon (Creswell & Creswell, 2022; William, 2021). It focuses on the essence of experiences, seeking to discover and explain how individuals perceive and make sense of their experiences (Manen, 2021). Researchers using phenomenology typically gather data through in-depth interviews and reflective writing, allowing them to capture the richness and depth of participants' feelings and thoughts. Bitbol and Tremblaye (2022) asserted that phenomenology seeks to achieve a theoretical understanding that transcends participants' lived experiences. Thus, phenomenology aims to contextualise, evaluate, and understand these experiences, thereby imbuing them with new meaning (Mavhandu-Mudzusiet *al.*, 2022; Mohajan & Mohajan, 2022).

Using phenomenology was beneficial and relevant for this study because the study focused on participant's lived experiences related to the influence of the availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools. Phenomenology also allowed the researcher to understand participants' lived experiences within specific contexts. For example, in Amajuba District, the unique socio-economic and cultural conditions significantly shape how facilities influence educational outcomes (Rasid *et al.*, 2021). Thus, phenomenology facilitated nuanced exploration of these contextual factors related to the phenomena under investigation.

Furthermore, through in-depth interviews and qualitative methods, phenomenology enabled participants to express how the availability and maintenance of facilities affect teaching practices and learning experiences. This subjective perspective was crucial for understanding the real impact of

school facilities management on teaching and learning within the context of Amajuba District.

3.4. RESEARCH DESIGN

Creswell and Creswell (2022) define a research design as a structured plan that guides the research process, outlining how data is collected, analysed, and interpreted. The research design serves as a roadmap for researchers, ensuring that the study addresses the research questions effectively. A well-thought-out research design integrates various elements, including the selection of participants, data collection methods, and analytical strategies, all tailored to achieve the study's main aim and objectives. The sub-sections provide a detailed explanation of the research design, specifically addressing the population and sampling, methods of data collection, and methods of data analysis.

3.4.1. Research context

The current study was conducted in the Amajuba District secondary schools, located in Newcastle, one of the 11 districts of the province of KwaZulu-Natal. The Department of Corporate Governance and traditional Affairs (COGTA) indicated that the Amajuba District consists of “134 primary schools, 71 secondary schools, 33 combined schools, 6 special needs school and 8 independent schools 938 public schools and 3 tertiary education institutions” (p. 13). The focus of the present study was narrowed to three secondary schools within this district. These schools were selected due to their convenient accessibility for the researcher.

The Amajuba District is characterised as a historically disadvantaged area, where schools that have traditionally faced numerous challenges related to resource allocation and facility management. Inadequate facilities in such schools may hinder not only the physical learning environment but also the overall educational experience. For instance, poorly maintained classrooms, insufficient technological resources, and lack of safe recreational spaces can

adversely affect student engagement, motivation, and academic performance. A significant number of the learners in the Amajuba District come from poor socioeconomic backgrounds. By concentrating on this specific context, the study aimed to explore how effective management of school facilities can enhance teaching practices and learning experiences in secondary education. The study also sought to highlight the broader implications of resource availability in promoting educational equity and improving academic performance for students in historically marginalised communities.

3.4.2. Population and sampling

In research, the population is the entire group of individuals that meet a set of specified criteria and share similar characteristics, from which a sample may be drawn (Creswell & Creswell, 2022). Understanding the population is crucial for researchers as it informs the selection of a representative sample, ensuring that the findings can be understood in the context of the larger group. Properly defining the population also helps to clarify the scope and limitations of the research study.

The population for this study consisted of all principals (3) and teachers (6) from secondary schools in Amajuba District where the researcher works and resides. This population was chosen to establish the connection between the availability of school facilities and teaching and learning outcome of students in Amajuba District secondary schools. An important aspect of qualitative research is the strategic and purposeful selection of participants using a specific and justified for sampling method.

Sampling in research refers to the process of selecting a subset of individuals or cases from a larger population to participate in a study (Baltes & Ralph, 2022; Creswell & Creswell, 2022). This process is crucial for ensuring that the sample accurately represents the population, which allows for more trustworthy findings. The current study adopted a combination of purposive and convenience sampling methods each with its own strengths and weaknesses (Mthethwa, 2015). Purposive sampling is a non-probability sampling technique

used to select participants based on specific characteristics or criteria that align with the research objectives (Creswell & Creswell, 2022). This method allows researchers to gather rich, relevant data from participants who are most knowledgeable about the topic under investigation. The inclusion criteria for participants in this study included the following considerations:

- Participants were teachers, heads of departments (HODs) and principals from secondary schools within the Amajuba District, as they can provide insights into how they manage and maintain school facilities and how these facilities impact their teaching practices.
- Principals were important in this study because they provided insights about the availability and condition of school facilities and their effect on educational outcomes.
- Teachers were important in describing how facilities may affect the process of teaching and learning in their specific schools.
- All participants were chosen because they had served in their respective schools for more than three years and also resided in the Amajuba District.

Participants were selected from various secondary schools and geographic locations within the Amajuba District to capture a wide range of experiences and perspectives. This sampling strategy was important and relevant for this study because it allowed the researcher to select participants that were directly relevant to this study and provided valid data to address the research questions posed in this study. Furthermore, the study adopted convenience sampling to select participants that were conveniently located for the researcher. Convenience sampling is a non-probability non-random sampling where the participants are chosen or selected because it is convenient for the researcher (Creswell & Creswell, 2022; Etikan *et al.*, 2016). Since the researcher resides and works in Amajuba District, this approach allowed for efficient logistical arrangements and reduced costs (Stratton, 2021).

The participants for this study were selected from three different secondary schools located within the Amajuba District. From each of the three schools,

one principal, one head of department (HOD) and one post-level 1 teacher were selected, resulting in a total of nine participants. These participants, drawn from a historically disadvantaged community, understood the social dynamics of the community and provided rich data for the current study. Selecting these participants was useful for the researcher to gain insights not only from principals and HODs on how they ensure the availability and maintenance of school facilities but to also explore from teachers' experiences how the availability of school facilities affects their teaching and learning. Furthermore, these nine participants were enough to provide rich data and diverse perspectives, enabling the researcher to reach data saturation and answer the research questions posed in this study.

3.4.3. Instruments used in the study

This study used an in-depth, one-on-one, face-to-face semi-structured interviews to collect data. Interviews are flexible, interactive and continuous methods of collecting in-depth textual data regarding a particular phenomenon (Taherdoost, 2021:9). Interviews involve direct interaction between the researcher and participants, allowing for in-depth exploration of participants' perspectives, experiences, and insights (Creswell & Creswell, 2022). Langley and Meziani (2020:3) assert that an interview is a two-person conversation initiated by the interviewer for the specific purpose of obtaining the relevant data to achieve the objectives of the research. Interviews can be structured, semi-structured, or unstructured; each varying in the level of flexibility and guidance provided by the researcher. They allow the researcher to see the world through the eyes of the participants. Interviews were suitable for this study because they are widely used in collecting data in qualitative studies.

Semi-structured interviews are “an exploratory interview used most often in the social sciences for qualitative research purposes or to gather clinical data” (Magaldi & Berler, 2020:4825). Semi-structured interviews were the preferred data collection method for this study because the researcher's goal was to better understand the participant's unique lived experiences regarding the influence of the availability and maintenance of school facilities on teaching and

learning in Amajuba District secondary schools (McGrath et al., 2019). Semi-structured interviews are a specific type of data collection instrument where the researcher prepares a set of open-ended questions but retains the flexibility to probe the participant further on their responses (Adeoye-Olatunde & Olenik, 2021; Creswell & Creswell, 2022; Magaldi & Berler, 2020). This approach allows for a deeper understanding of the participants' views while providing a consistent framework for data collection. Designing a set of questions that allows for the interviewer to probe the participants further allowed the researcher to collect rich in-depth data which is why semi-structured interviews were preferred in this study.

To ensure the validity of the semi-structured interviews, several strategies were employed. Content validity was ensured by designing interview questions based on an extensive literature review and aligning them with the study's objectives. Additionally, experts in qualitative research and educational leadership reviewed the questions to ensure their relevance and appropriateness. Pilot testing was conducted with a small sample of participants similar to the target population to refine the interview guide, clarify ambiguous questions, and confirm that the questions elicited responses aligned with the research objectives.

For reliability, the study adopted measures to ensure consistency in data collection and analysis. The same set of open-ended questions was used across all interviews, ensuring uniformity while allowing flexibility for further probing. To enhance inter-coder reliability, a second researcher or expert cross-checked the coding of interview responses to ensure consistency in thematic analysis. Furthermore, all interviews were audio-recorded and transcribed verbatim (with participants' consent) to maintain accuracy and prevent data distortion. These strategies strengthened the trustworthiness of the data collected, ensuring that the findings were both credible and dependable.

3.4.4. Methods of data collection

The methods of data collection in this study involved the process of data collection which describes the steps followed by the researcher in collecting the data for this study. Thereafter, the instrument used to collect the data from the participants is also described in this section.

3.4.4.1. The process of data collection in this study

The data collection process in research involved gathering information systematically to address the research questions and objectives (Creswell & Creswell, 2022). This process includes selecting appropriate methods, recruiting participants, and ensuring that the data collected is trustworthy. Gaffane (2005:81) asserts that data collection is the “process of collecting information for a specific purpose; usually data consist of individual or group information”. To improve the quality of data collected, it is important to record and report the process of data collection. During the process of collecting data for this study, the researcher secured appointments with the potential participants based on their availability and convenience. Prior to scheduling these appointments, participants were informed that they would be taking part in face-to-face interviews. The following stages were followed during the data collection process:

- Stage 1 –The researcher had to travel to meet the participants after school hours at their chosen locations and times.
- Stage 2 –Upon meeting with the participant, the researcher began by explaining the interview process. The researcher informed the participant that the interview would be audio recorded and that their responses would remain anonymous in the final report. It was also emphasised that, they could withdraw from the study at any time without suffering any consequences. After this explanation, the researcher requested permission from each participant to audio record the interview, and all the participants gave their consent.

- Stage 3 –Before each interview began, the participants were reminded that they had the right to ask for clarification should they not understand the questions. Additionally, the researcher explained that follow-up questions might be asked during the interview should there be a need for clarity.
- Stage 4 –Finally, once the interview started, it was recorded and the interviewer proceeded to ask the 10 questions that were sent to the participants before the interviews. They responded according to their experience and knowledge. Probing questions were asked where necessary.

These stages were consistently followed when collecting the data for this study using the semi-structured interview instrument, as explained in the subsequent section.

3.5. METHODS OF DATA ANALYSIS

Methods of data analysis in qualitative research involve systematically examining and interpreting collected data to identify patterns, themes, and insights relevant to the research questions (Creswell & Creswell, 2022). This process is iterative and often requires researchers to engage deeply with the data, using techniques such as coding and narrative analysis to derive meaningful conclusions. Data analysis involves breaking down the collected data into detailed elements with the aim of answering the research questions and achieving the aim of the study (Tracy, 2019). During data analysis, the researcher systematically and purposefully searched through the data to discover useful information for answering the research questions and giving meaning to the data ((Maree *et al.*, 2007; Marshall & Rossman, 2016:323 Mthethwa, 2015). This study adopted the narrative approach as a method of data analysis.

Narrative analysis is a qualitative research method that focuses on the stories participants tell about their experiences (Creswell & Creswell, 2022). This approach seeks to understand how people construct meaning through their

narratives, emphasising the context, structure, and content of the stories. It allows researchers to explore the complexities of human experiences and the significance of personal stories in shaping individuals' perceptions and actions. Narrative data analysis entails analysing participants' lived and shared stories, to derive meaning from the data collected. For this study, exploring the influence of the availability of school facilities on teaching and learning in Amajuba District secondary schools, narrative analysis was conducted by following these steps:

- Step 1: Transcribing the data from the individual semi-structured face-to-face interviews to create a text corpus of narratives and organising them thematically based on common topics such as specific facilities, their use, and their perceived impact on teaching and learning.
- Step 2: Examining the structure of the narratives, including how participants frame their experiences, the chronological order of events, and the emotional elements conveyed in the participants' stories. This involved the researcher iteratively reading through participants' transcripts to get familiar with the data.
- Step 3: Extracting key themes from the narratives that highlight common experiences or unique perspectives related to the influence of school facilities on educational outcomes. This involved the researcher identifying the most common responses in the collected data and identifying patterns that could address the research questions for the current study.
- Step 4: Analysing how the narratives reflect broader societal or contextual factors, thereby providing insights into the relationship between school facilities and the dynamics of teaching and learning dynamics.

Following these steps allowed the researcher to transform the data collected from the semi-structured interviews into finer and more solid information that was used to answer the research questions for the study.

3.6. TRUSTWORTHINESS

The trustworthiness of a study is considered crucial because it ensures the study's reliability and integrity (Rose & Johnson, 2020). Trustworthiness in qualitative research refers to the credibility, transferability, dependability, and confirmability of the study's findings (Creswell & Creswell, 2022; Guba & Lincon, 1994). Furthermore, it represents the degree of confidence in the data, interpretation, and methods used in the research to ensure the quality of a study (Pilot& Beck, 2014). Establishing trustworthiness is crucial for ensuring that the research accurately represents participants' perspectives and experiences. Researchers follow specific and systematic strategies to enhance trustworthiness throughout the research process. Singh *et al.* (2021:1293) identify the following four elements for verifying the trustworthiness of a study: truth value, applicability, consistency and neutrality. Similarly, Guba (1981) and Gubaand Lincon (1994) propose that in qualitative studies, trustworthiness can be maintained by ensuring credibility, transferability, dependability, confirmability and researcher reflexivity. For this study, the following strategies were used to ensure trustworthiness:

3.6.1. Credibility

Credibility in qualitative research refers to the accuracy and authenticity of the findings, reflecting the degree to which the research accurately captures participants' experiences and perspectives (Creswell & Creswell, 2022; Guba & Lincon, 1994). Establishing credibility is essential for ensuring that the research findings are believable and trustworthy. The researcher employed a well-established qualitative research method, using semi-structured interviews aligned with the study's objectives. The use of the qualitative approach allowed the researcher to provide thick descriptions detailed descriptions of the context and participants' experiences enabling readers to understand the depth and complexity of the data.

Furthermore, the researcher also familiarised herself with the participants early in the study to build trust between her and the participants, which encouraged

honest answers. Purposive sampling also enhanced credibility (Lincoln & Guba, 1985), ensuring that participants meet specific criteria relevant to the study. Member checking was also used, where participants reviewed and confirmed the accuracy of the transcriptions, findings and interpretations derived from their narratives, to enhance the credibility of the results (Lincoln & Guba, 1994). During the interviews, the researcher shared notes from previous conversations with participants to verify their statements (Maree, 2019:123).

3.6.2. Transferability

Transferability refers to the “degree to which the results of a qualitative study can be transferred to other contexts or settings with other participants” (Tracy, 2010:845). Furthermore, transferability refers to the extent to which the findings of a study can be applied or generalised to other contexts or settings (Creswell & Creswell, 2022). While qualitative research does not aim for broad generalisability, transferability allows readers to determine how the findings might relate to other situations. The researcher enhanced the transferability of the study by providing rich, thick descriptions of the context and participants to enable readers to assess the applicability of the findings to other settings or populations. Furthermore, the socio-economic and educational characteristics of the Amajuba District were clearly outlined (see subsection 3.4.1), helping other researchers understand the specific circumstances of the study. Participants were sampled from different levels of the school system—post-level 1 teachers, HODs and principals—to capture diverse perspectives. Lastly, the researcher acknowledged the limitations of the study and highlighted the specific contexts in which the findings are relevant, providing readers with a clear understanding of where the results might be transferable.

3.6.3. Dependability

Dependability refers to the stability and consistency of the findings over time and across different conditions (Creswell & Creswell, 2022). To ensure dependability, the researcher kept a detailed audit trail documenting the research process, including decisions made during data collection and analysis,

to allow for external evaluation of the research process (Korstjens & Moser, 2018:124). Recordings of the semi-structured one-on-one face-to-face interviews, journals, and notes for all the processes of the study and for all the decisions taken during the course of the study were kept (Maree, 2019:124). In addition, case member checks were adopted where the researcher verified the data collected with the participants to make sure that the data represented the participants' utterances during the interviews. Lastly, as an expert, the researcher's supervisor consistently reviewed the research design and findings, providing external feedback to address any inconsistencies or areas requiring improvement in the study.

3.6.4. Confirmability

Confirmability in qualitative research refers to the degree to which the findings of a study can be confirmed or corroborated by others (Creswell & Creswell, 2022). Triangulation was used to corroborate findings, combining data sources of information (e.g., interviews, observations, and documents) to support the conclusions drawn. Confirmability emphasises the objectivity of the research process, ensuring that the results are shaped by the participants' narratives rather than the researcher's biases or preconceptions (Guba, 1981). The researcher reduced bias by adhering to clearly designed data collection and analysis protocols (Lincoln & Guba, 1985:89).

3.6.5. Reflexivity

The researchers' reflexivity refers to the process by which researchers critically examine their own biases, assumptions, and influences throughout the research process (Creswell & Creswell, 2022). Reflexivity emphasises the importance of recognising how the researcher's background, perspectives, and experiences can shape the research and the interpretation of data, potentially introducing biases. To ensure reflexivity in this study, the researcher kept a reflexive journal, which served as a tool for recording thoughts, feelings, and reflections throughout the research process to facilitate self-awareness, critical

reflection, methodological transparency, and the development of ideas (Meyer & Willis, 2019), helping to mitigate bias in the study.

In summary, these five elements ensured that the findings of this qualitative study are trustworthy. Despite the study following a pure qualitative methodology without triangulation of data or theory, these five strategies were closely followed to uphold trustworthiness.

3.7. ETHICAL CONSIDERATIONS

Ethical considerations pertain to the processes and procedures that researchers must adhere to when conducting studies involving human participants. According to Creswell and Creswell (2022), ethical considerations involve the principles and guidelines that researchers must adhere to in order to protect participants and ensure the integrity of the research process. This includes the obligation to inform participants about the nature and purpose of the study, as well as ensuring that data presentation reflects the accuracy and integrity of the collected information (Dooly et al., 2017:352).

Ethics refer to the moral principles or guidelines that govern an individual's behaviour, delineating actions that are considered morally right or wrong, and good or bad or legally right or wrong (Amstrong, 2020:9; Borah, 2020:19; Parveen & Showkat, 2017:81). These principles serve as a framework for decision-making and conduct, ensuring that individuals act in accordance with societal values and standards when conducting a research study. Finally, ethical standards ensure that the participants are treated fairly and are free to take part willingly or voluntarily in a study (Cox, 2023:36). These considerations are crucial for maintaining trust and respect between researchers and participants. For the current study, the following ethical considerations were upheld during the study to ensure the participants felt safe, secure, and protected throughout their participation in the study.

Ethical review committee

As part of adhering to research ethics, the researcher sought and received approval from the North West University's Faculty of Education Research Ethics Committee (EDUREC) to ensure that ethical standards were met and the welfare of participants safeguarded. Approval was granted under approval number NWU-00301-22-A2 (See Appendix E). Subsequently, an application to conduct research in Amajuba District was sent to the KwaZulu-Natal Department of Education, which granted permission (See Appendix C). Upon receiving approval from the Department of Basic Education, permission letters were sent to school principals asking for permission to conduct the study in their schools, and was obtained (See Appendix D).

Informed consent

Informed consent is a fundamental ethical principle in research that ensures participants are fully aware of the nature of the study, including its purpose, procedures, risks, benefits, and their rights as participants (Creswell & Creswell, 2022; Laurijssen *et al.*, 2022). Informed consent emphasises the importance of transparency and voluntary participation, allowing individuals to make informed decisions about their involvement in a research study. For this study, informed consent was obtained by providing participants with a detailed consent form explaining the study's purpose and expectations. Participants were asked to sign a consent form before participating, and all nine participants signed and returned their forms.

Confidentiality

Confidentiality in research refers to the ethical obligation to protect the privacy of participants by ensuring that their personal information and responses are not disclosed without their consent (Creswell & Creswell, 2022). Protecting the privacy of participants by anonymising the reporting of the data and ensuring that identifiable information is not disclosed in the dissertation and publications is an important element of confidentiality. The researcher told the participants

verbally that their identities would be protected when reporting the data, they provided. Furthermore, to ensure anonymity and confidentiality in the report of the research findings, the researcher used pseudonyms, e.g., Teacher 1, 2 & 3 for teachers, HOD 1, 2 & 3 for HODs and P1, 2 & 3 for principals. These pseudonyms ensure that the participants' identities are concealed in the reporting of the findings.

The audio recordings and the transcribed data were stored in a password protected folder on a laptop and only the researcher had access to the data. This data will be stored for a period of three years then discarded by deleting the folder and emptying the recycle bin on the laptop. The data was solely used for analysis and reporting purposes in completing the dissertation.

Right to withdraw

Participants were informed that their participation in the study was voluntary and that they had the right to withdraw their participation at any time without suffering any consequences. This assurance ensured that the participants participated freely and willingly without being coerced. Furthermore, the participants were not compensated for participating in the current study, emphasising the voluntarily nature of their participation.

Minimising harm

The researchers took all the necessary steps to minimise any potential physical, emotional, or psychological harm to participants, especially when discussing sensitive topics related to school facilities and their impact on teaching and learning.

3.8. SUMMARY

In summary, this chapter discussed the important elements of the research methodology employed in conducting this study. The researcher provided a detailed description of the research paradigm, approach and strategy of inquiry, along with the research design which included the context of the study,

population and sampling. Additionally, the chapter detailed the methods of data collection, including an exposition of the research instrument and its application, as well as the methods of data analysis. Furthermore, the researcher explained themes that are used to ensure trustworthiness and adherence to ethical standards throughout the study. The next chapter presents the findings of the study, derived from the data collected through semi-structured, one-on-one face-to-face interviews with participants.

CHAPTER FOUR

FINDINGS OF THE STUDY AND DISCUSSION

4.1. INTRODUCTION

In Chapter Three, the research methodology that was followed when conducting this study was extensively explained. The current chapter reports on the findings on the study and links these findings to the literature and the theoretical framework. Overall, this study aimed to explore the influence of the availability (and maintenance) of school facilities on teaching and learning within secondary schools in the Amajuba District. To gain deeper insight, data was collected through semi-structured, face-to-face interviews, with three principals, three HODs and three post-level 1 teachers. With their permission the interview sessions were audio recorded to make sure that the data was retained and kept safe for transcription and analysis.

The recordings of all the interviews conducted were transcribed verbatim. During the interviews, participants occasionally used code-switching to their mother tongue, IsiZulu, as they believed this would provide greater clarity in expressing their experiences to the researcher. These interviews were initially transcribed verbatim, then the transcripts were translated into English for the purposes of reporting them in this dissertation. This iterative translation process was implemented to ensure the accurate representation of participants' responses.

When reporting the findings from these participants, the pseudonyms listed in the first column of Table 4.1 were used. The second column in Table 4.1 provides the profile of each participant, including their role in the school, gender and years of experience in their current role in their current position at the secondary school where the study took place. This information is important for contextualising the study, improving generalisability, identifying potential bias, enabling comparative analysis, enhancing credibility and promoting transparency in this study.

The last column in Table 4.1 is labelled ‘interview period’ and it indicates the duration of each participant’s semi-structured interview. This information is important because it provides insight into the depth and breadth of the data collected. Longer interview periods may suggest more detailed responses and richer qualitative data, while shorter durations could indicate more concise answers or potential limitations in the depth of the discussion (Creswell & Creswell, 2022). This information helps assess the comprehensiveness of the findings and allows the reader to evaluate how the time spent with each participant may influence the richness of the collected data, ultimately enhancing the study’s trustworthiness.

Table 4.1: Profile of the participants

Pseudonyms	Participants’ profile	Interview period
Teacher 1	Senior phase post-level 1, Female, 5 years’ experience in education with the current school.	14:36
HOD 1	Senior phase HOD, Female, 7 years’ experience in education with current school	09:03
Teacher 2	Senior phase post-level 1, Female, 8 years’ experience (2 years with the previous schools and 6 with the current school).	05:21
HOD 2	Senior phase HOD, Female, 10 years’ experience with the current school.	08:04
Principal 1	FET phase Principal, Mal, 14 years in total of experience but 7 with current school.	09:37
Teacher 3	FET phase PL1 – Female, 4 years teaching experience with the current school.	
Principal 2	FET phase Principal, Male, 10 years in total but 4 years with the current school.	10:18
Principal 3	FET phase principal, Male, 10 years teaching experience but 3 years with current school.	11:08
HOD 3	FET phase HOD, Female, 7 years teaching experience but 2 with current school	08:11

The process of data collection took place either at the participants’ school or at their residences, depending on where they felt comfortable participating in the study. Upon analysing the data collected from the interviews, the following themes emerged:

- The role of school facilities in providing quality education, where the negative and positive effects of the availability of school facilities on the

quality of teaching and learning as well as learner performance are discussed.

- Reasons for maintaining school facilities.
- Challenges in facility maintenance and management.
- Responsibility for school facilities maintenance.
- Strategies for improving facility maintenance, management and resource allocation.
- The importance of the availability of qualified custodial staff for school facilities maintenance.

In addition to the themes highlighted above, the analysis also revealed important data related to school facilities maintenance, management and learner performance that did not create a theme. For example, the interviews revealed that despite the lack of required school facilities, resources and challenging conditions, teachers remain dedicated to their roles, doing their best to ensure students succeed. Principal 2 highlighted that the school generally performed well because of dedicated teachers. This is evident from the statement: *"we have not performed less than 90%... that is through the effort of the incoming educators"* [Principal 2].

4.2. The role of school facilities in supporting quality education

The analysis of the data in this study indicated that school facilities are an important part of ensuring and supporting quality education. Within this theme, two sub-themes became evident, (1) negative effects school facilities on the quality of teaching and learning as well as learner performance where the researcher discusses how the lack of poor resources can negatively affect teaching and learning, and, (2) positive effects of facilities on the quality of teaching and learning as well as learner performance where the researcher discusses participants' experiences of how well-maintained school facilities can positively affect teaching and learning, and learner performance.

4.2.1. Negative effects of facilities on the quality of teaching and learning as well as learner performance

Many participants highlighted the critical role of functional school facilities in influencing teaching and learning outcomes. It was evident from participants' responses that while some schools have functional facilities, others struggle with a shortage of resources or facilities in poor condition, affecting both teaching and learning. HOD2 emphasised that facilities are essential for both learners and teachers:

HOD2: "... learners they need uhm, facilities for the learning in order to proceed or to take place and also teachers also need these facilities, ... so yeah I think they do have an impact in these results because yeah they are in need."

HOD3: "... they somehow hinder the good performance because the facilities that we spoke about obviously they need the learners to be personally engaged and without sometimes a presence of an educator so since we don't have good facilities, I'd say good performance is a bit hindered meaning we can perform more if these facilities can also be attended to for both educators and learners."

HOD3 suggested that the lack of proper facilities negatively impacts the performance of both learners and teachers, limiting the potential for better learner performance. Teacher 2 supported these views by stating that poor facilities exacerbate poor learner performance:

Teacher 2: "They [school facilities] hamper the quality by creating bad results, in most cases there are bad results. As much as you can have the results that are good but at some point, there are those learners that you need to put more effort on therefore the surface [physical conditions of the classroom], it's still contribute in it, contributes in a bad way."

Participants also pointed to the lack of critical resources such as textbooks, functional libraries, and science laboratories, which hampers both teaching and learning processes. HOD1 expressed concern about the lack of library resources:

HOD1: "We seem to have a problem with the library because it is still empty in the shelves which is a problem because the learners can't go to the library when they have research to find books that will help them to compile the research so that is the problem that we are facing at the moment."

Principal 1 emphasised the importance of having functional school facilities:

Principal 1: "We have a shortage in terms of school facilities ... the libraries they are there but they are not functional... laboratories they are there but they are not functional again."

Principal 1 also pointed out the lack of sufficient learning materials, specifically textbooks, noting, "...textbooks are short, learners have to share textbooks while each learner is supposed to own a textbook." This indicates that learners are forced to share resources, which hinders their ability to study independently and complete their work efficiently. Even though some schools had functional facilities, such as the computer laboratory noted by HOD1, the absence of other critical facilities, like a library or science laboratory, hindered comprehensive learning:

HOD3: "...in fact we don't have the facilities because we don't have an active library, we don't have a laboratory, we have a shortage of computers to be accessed by educators. So therefore, the precise answer would be no, but instead it is the hard work of the educators that contributes to the above-mentioned results."

Many participants discussed the poor condition of school facilities and its negative impact on the quality of education and learner performance. For example, Teacher 1 explained that poor physical environments directly affect learners' academic performance:

Teacher 1: "...they [school facilities] are not in good condition, I could say that only one facility is in good condition which is the administration office, it's okay but, we wish it could be better and as for the kitchen and the emergency, that's a big no because it's not in good condition ... the facilities, in most cases here in the townships are bad, they are not in good condition because the schools are not well taken care of and the conditions of these schools are not good."

The safety risks associated with poorly maintained facilities were also a concern, as illustrated by an incident described by Teacher 1:

Teacher 1: "...our facilities if I can make you an example we have, we have labs but the labs are not working well, you find that maybe there is a case whereby the learner went and took a certain chemical and hit another learner with it."

The absence or poor condition of science laboratories was a recurring issue. Teachers and principals explained that without access to functional laboratories, learners are unable to grasp science concepts effectively. Principal 3 highlighted the challenges of teaching science subjects without proper facilities:

Principal 3: "Okay, I made an example with the science departments, especially science labs...Th[e] issue alone, it is hard to talk about an experiment with kids that you cannot perform for them, so that they'd see what you are talking about, so that they know when they are writing, they are writing about what. How it reacts, how it happens instead of just reading it down from the book."

Principal 1 added that the school had to spend additional money to send learners to external colleges for practical lessons:

Principal 1: "...it ends up adding on the expenses of the school because they have to attend at college... which is money and time consuming."

Another major challenge mentioned was the issue of overcrowded classrooms. Teacher 2 explained that teaching is complicated by small classroom spaces with too many learners, making it difficult to ensure effective learning.

Teacher 2: "The classes that we are using are very small for the number of learners, they are 60 in one class so it's not easy for a teacher to teach effectively... it's bad sorry. So, for the condition of the key facilities in my school, it is not good at all based on the classrooms they are very small, so it makes teaching to be more complicated. We can teach but it takes a teacher to create extra hours so that all learners are being attended to."

The added burden of extra work to compensate for overcrowding was seen as a potential cause of teacher stress and burnout. Several participants discussed how poor infrastructure contributes to behavioural issues in schools. Teacher 1 remarked on the lack of security and its consequences:

Teacher 1: "...the learner goes and jumps the fence, it's not good because they are terrorising the school as a whole."

Teacher 3 supported the notion that the poor physical condition of school facilities negatively affects learner results:

Teacher 3: "Yes, I think the results were influenced by the school facilities, firstly because our school has broken windows, it has broken doors, we lack some of the teaching resources, so I think the facilities influenced the results of the school ...Mmmh, the condition of the facilities are not in a good condition as I've mentioned that we have broken windows and broke doors and the somehow it affects the learning and teaching in class and obviously it does affect the results so the conditions are not so good."

On the other hand, Principal 2 argued that good facilities can significantly contribute to positive outcomes:

Principal 2: "...we have not performed less than 90% in Grade 12 ... [so] yes, the school facilities they've manipulated and influenced the

results, looking at the buildings that we are having, they are very spacious, they are accommodative, and the teacher can do group work, he or she can facilitate, can move within the, the isles of the classrooms because the classrooms are very spacious and the, the equipment that we utilise in the classroom context, they are very accommodative of each and every learner."

In summary, participants agreed that school facilities play a vital role in shaping both teaching quality and learner performance. However, the condition, availability, and proper maintenance of these facilities are critical to ensuring that they serve their intended purpose in education. As highlighted by HOD3, without adequate facilities, the potential for better performance remains limited:

HOD3: "...good performance is a bit hindered meaning we can perform more if these facilities can also be attended to for both educators and learners."

In summary, the insights of this study's participants underscore the significant impact of school facilities on the quality of teaching and learning, as well as learner performance. Participants argued that many schools face challenges due to poor or inadequate facilities, including a lack of critical resources such as functional libraries, science laboratories, and well-maintained classrooms. As noted by Barretet *al.* (2019:9), challenges such as a high percentage of learners dropping out of school can be caused by the school's physical and infrastructural facilities such as lack of classrooms and recreational facilities. Similarly, Nhlapo (2022:102) emphasises that it is unfair to expect strong performance from learners in schools with facilities that are not well-maintained, whereas schools that are clean, safe and healthy stand a better chance of fostering better outcomes. These findings align with the literature, where poor infrastructure has been linked to high dropout rates and poor academic performance (Barrett *et al.*, 2019).

Such deficiencies hamper both teaching effectiveness and learners' academic achievements. For example, poor school facilities may affect the teacher's performance of their duties (Siswan to & Hidayati, 2020) which may affect

learners' performance. The participants in this study reported that overcrowded classrooms, poor physical environments, and safety concerns further complicate the teaching process, contributing to learner underperformance and behavioural issues.

Specific subjects, such as mathematics and science, are particularly sensitive to these challenges. In mathematics, Graham (2023) observed that a larger class size is directly correlated with poor performance, while Zenda (2020) found that smaller class sizes allow teachers to detect difficulties in learners' learning and address them as soon as they arise. This ensures that learners are not left behind, which can improve their performance. Furthermore, in science classrooms that require practical sessions in the laboratory, overcrowding may also affect how teachers implement these practical sessions in their teaching (Zenda, 2020). Thus, there is a need to ensure that the learner-teacher ratio is adhered to in schools, which means that more infrastructure is required to build and maintain more classrooms to uphold the right to education for all learners.

Gleaning from these findings, the process of teaching and learning within the school is directly affected by the available resources. Inadequate facilities, such as overcrowded classrooms and inadequate safety measures, can affect teachers' ability to deliver effective instruction and engage learners (Graham, 2023; Zenda, 2020). Hence, even student teachers have reported no positive correlation between overcrowding and learner performance, citing lack of personalised support, inadequate assessment, and lack of motivation among learners as well as the absence of varied teaching methods (Marais, 2016). While Köhler (2022) suggests that class size is not negatively associated with learner achievement in wealthier school, evidence from poor schools such as the ones included in the present study indicates a positive link between the two phenomena.

It has been documented in the literature that if school facilities are in a bad condition, they can negatively impact the attitude of both the learners and teachers and can sometimes put them at risk (Nhlapo, 2020; Siswanto &

Hidayati, 2020). Findings from this study align with existing literature because several school facilities were identified by the participants as posing a risk to the health and safety of learners. Thus, there is a need for schools to implement appropriate and effective school health policies that can positively impact learners' health (Kwatubana, Nhlapo & Moteetee, 2021; Lee *et al.*, 2022) which in turn can improve their school attendance and academic achievement (Yuvaraj *et al.*, 2019:2). Without well-maintained health facilities and practices, learners are likely to perform poorly in their subjects (Agbor-obunet *et al.*, 2021). Thus, if school facilities are not well-maintained, the output of the school as a system (or learner performance) will be poor.

4.2.2. Positive effects of school facilities on the quality of teaching and learning as well as learner performance

Despite the negative effects of school facilities on the quality of teaching and learning, the analysis of the participant data revealed limited evidence of positive effects of school facilities on the quality of teaching and learning as well as learner performance. Participants highlighted that well-maintained school facilities can improve learner understanding and performance in their school subjects. When asked to motivate why school facilities should be properly managed, participants mentioned that:

HOD2: "... they should be managed because they play a huge role, had we not had these facilities, [the] learning and teaching process wouldn't be as smooth as it is now and it will also affect the, the results of the matric or the results of the entire school so they should be really managed".

Teacher 2: "It must be maintained and managed so that it can promote good results for the school and the record for the school."

HOD 3: "Now coming textbooks, the condition of the school when it comes to textbooks its very good ... that is why it is easy for learners to study and pass."

HOD 2's statement means that ensuring the availability and maintenance of school facilities can alleviate the difficulties related to teaching and learning

which may also enhance learner performance. Teacher 3 agreed that well-maintained school facilities can ensure effective teaching and learning. This is evident from the statement below:

Teacher 3: “Okay, I think it’s very important for school facilities to be maintained because I strongly believe that they play a big role in the success of teaching and learning so if the school facilities are well maintained, I think we can have a successful learning and teaching.”

Teacher 3 highlighted the importance of maintaining school facilities which suggests that keeping the physical environment in good condition is a priority for the success of teaching and learning. Thus, well-maintained school facilities support both teachers' ability to teach and learners' ability to learn effectively. Furthermore, Teacher 3 expressed confidence that good facility management leads to educational success, reinforcing the idea that maintaining school facilities is a key factor in creating a positive and productive teaching and learning atmosphere in schools. Furthermore, HOD1 argued that textbooks can be a good source of bridging misunderstandings that occur in the classroom during teaching and learning.

HOD1: “You do know that it happens that you don’t understand a teacher in class but when you read a textbook, you are able to get understanding based on the chapter or topic that was done in class.”

This means that students can always revisit the textbook on their own to enhance their understanding of concepts that they did not understand in the classroom. This can enhance their understanding of concepts and support learning outside the classroom, which can also improve learner performance. Hence, school facilities management teams must ensure that learners have their own textbooks that they can use outside the classroom for learning. The importance of textbooks in enhancing understanding and revision of concepts missed in the classroom was also emphasised by HOD 2 who mentioned that:

HOD2: "...learners need to have assessments so these textbooks, they have assessments of which learners can revise with or they can refer to if they forgot what I said in class or what I taught them in class they can refer to this text books."

In addition to revising what was covered in the classroom, HOD 2 highlighted the importance of textbooks in helping learners complete their assignments. Furthermore, HOD 2 emphasised that due to the lack of a functional computer laboratory and library in the school, textbooks remain the sole resources available to enhance the quality of teaching and learning. HOD 2 stated that:

HOD 2: "Since we do not have the other facilities of which it's a computer library, oh!!!! it's a computer lab and a library. Yes, we do have a library it's not in working condition so the only ones that are in working conditions are the textbooks so yeah I think they do help."

This finding highlights the importance that HOD2 places on textbooks as a tool for student revision and reinforcement of learning. HOD 2 emphasised that assessments in textbooks provide learners with resources to revisit key concepts taught in class. Thus, the availability of textbooks enhances the reinforcement of concepts and independent learner revision.

While participants acknowledged the negative impact of inadequate facilities, they also highlighted the positive effects of well-maintained facilities on learner performance and educational outcomes, although evidence for these positive effects was limited. Participants believed that well-managed school facilities support smoother teaching and learning processes. HOD 2 emphasised that maintaining school facilities directly contributes to improved results, including Grade 12 output rates, reinforcing the idea that well-maintained physical spaces create an environment conducive to better academic performance. Similarly, Teacher 2 and Teacher 3 affirmed that good facility management enhances the success of teaching and learning by creating an effective and productive learning environment. The output is the resulting academic performance. Participants believed that well-maintained facilities, especially access to textbooks, lead to better learner performance. HOD 2 specifically noted the

improvement in Grade 12 output rates when school facilities are well-managed. This corroborates findings by Mwamwenda and Mwamwenda (1987) and Rafiq *et al.* (2022), who established a correlation between well-maintained facilities and academic success.

Additionally, even though Picus, Marion, Calvo, and Glenn (2005) found no direct relationship between school facilities and learner performance, recent research by Schlaffer and Burge (2023) found that lower-performing students benefit significantly from new and improved facilities, reinforcing the idea that facilities impact learner achievement. This means that a complete refurbishment of school facilities may improve learners' performance. A study by Kombe and Mwakasangula (2023) found that certain facilities, such as laboratories and sports grounds, significantly influence learning performance; but other facilities such as school toilets, ramps, and classrooms were not found to have a direct influence on learning performance. Although literature presents varied perspectives on the relationship between school facilities and learner achievement, this study found that participants consistently believed in a direct link between the two.

The study also highlights that school facilities, including physical infrastructure, sanitation, and access to reading materials, form the foundational inputs for creating a conducive learning environment. Participants emphasised that well-maintained facilities positively impact learners' ability to focus and engage in lessons. For example, leaking roofs and poorly maintained classrooms distract learners from learning (Teacher 3, Principal 2), while well-kept facilities promote smoother teaching and learning processes. Textbooks, in particular, are critical inputs, as multiple participants pointed out their importance for independent study. They help learners review and reinforce concepts outside the classroom. Mtshali, Ngwenya, and Myende (2022) emphasised that the lack of textbooks can inhibit effective teaching and hinder learner performance. This finding is supported by Heyneman, Farrell, and Sepulveda-Stuardo (1981), who argued that investing in textbooks can have a more direct impact on learner outcomes

than teacher training. Similarly, Molaudzi and Adeyemo (2022) found that the sufficient availability of textbooks is a good determinant of learner performance.

The process involves the interaction between learners and the school environment. Participants noted that when facilities are well-managed, they create a conducive atmosphere that supports better focus and productivity in the classroom. HOD 2 and Teacher 3 noted that well-maintained facilities contribute to smoother teaching, as learners are not distracted by environmental issues such as cold, rain, or clutter. Similarly, Kombe and Mwakasangula (2023) found that specific facilities, like laboratories, have a direct influence on learning performance, though others, like toilets and classrooms, may not always have the same effect. Furthermore, the sufficient availability of textbooks further enhances this process by promoting independent learning, allowing learners to study outside the classroom and revisit missed concepts, thereby reinforcing the learning process.

The overall findings in this theme suggest that, while poor facilities can hinder education, well-maintained facilities, particularly, access to essential resources like textbooks, can alleviate these challenges, thereby improving learner understanding and performance. The availability and maintenance of school facilities such as textbooks can promote independent learning and enhance the quality of education where other school facilities are lacking. Thus, proper management and maintenance of school facilities is critical for creating a supportive and effective learning environment where learners can flourish academically.

4.3. Reasons why school facilities should be maintained

Considering that participants believed school facilities should be managed to ensure quality education, several reasons for maintaining school facilities were mentioned. For example, Teacher 1 emphasised the importance of maintaining facilities to ensure safety, prevent harm to learners and teachers, and avoid health risks. A specific example mentioned by Teacher 1 is that, to avoid

dangerous animals such as snakes entering the school and biting learners, the school needs to ensure that the grass is kept at a manageable length.

Teacher 1: "We doing it so that the snakes and all other animals that we don't know of which may enter the school ..."

Furthermore, Teacher 1 mentioned that cutting the grass can also ensure that learners do not bring dangerous and illegal items to the school and hide these in the grass within the school.

Teacher 1: "Like cutting grass, if you cut grass in the school it would cost like R2000 nothing more, but it is very important... the learners bring illegal and dangerous objects so you could find these in the grass."

As teacher 1 lamented, failing to take care of school facilities may cause serious problems including fatalities due to snake bites, as well as the risk of dangerous items students brought to school by students, which may not be detected if hidden in the grass.

Teacher 1: "I'm talking about classrooms and also the staffrooms, in fact everything, the school infrastructure. If we don't maintain it, we will end up having a problem and a big problem that can include death."

This lack of maintenance may cause parents to be hesitant to send their children to schools with poorly maintained facilities, which aligns with previous studies (Khan & Javaid, 2019; Hayat, 2017). Teacher 1 also indicated that the lack of school facility maintenance could lead to tragic outcomes, including fatalities, which is consistent with the findings of Rahman *et al.* (2018), who also reported that schools lacking school proper maintenance can result in learners losing their lives. Three participants (Teacher 3, Principal 2 and HOD 3) highlighted how poor school facilities negatively affect teaching and learning, disturbing the classroom environment and learner focus. For example, Teacher 3 and Principal 2 mentioned that teaching in classrooms with leaking roofs can disrupt the learning process because learners focus more on avoiding the leaks than on their lessons.

Teacher 3: "The facilities are broken... it becomes very difficult to conduct a lesson, especially when it's cold or raining. Learners end up feeling cold, then they are disturbed in their learning."

Principal 2: "... looking at the leaking classrooms, that also hampers teaching and learning... heavy rainfalls disturb the teaching and learning because learners focus on the leak instead of the lesson."

HOD3: "No working facilities, it's almost impossible to work, so there is a need for them to be resuscitated, managed, and maintained... resuscitating the school facilities will help the school in a very positive way."

HOD 3, on the other hand asserted that maintaining the school facilities can positively impact the school. HOD 1 mentioned that, if the school wants to ensure that all learners have access to the necessary facilities to support their learning; the school management team must ensure these facilities are both available and well-maintained.

HOD1: "Yes, the school environment needs to be conducive. No learner should be left out, every learner must be included so they can access everything... for their education to go further."

Teacher 1: "Textbooks are very important... sharing textbooks is a bad idea because at the end of the day, some learners end up not studying because the person they are sharing with is keeping the books."

As mentioned by HOD 3, ensuring that school facilities are well-maintained in the school can support learning. Furthermore, the issue of textbooks was also mentioned by Teacher 1, which means that for inclusivity, learners need to have individual textbooks so that they can study on their own. Principal 2 mentioned the need for maintaining facilities to preserve them for future generations.

Principal 2: "We have to look at the broader picture of the word sustainability. If we do not sustain, that means we are not preserving for the future. We've got unborn and newly born babies that will also need these classrooms and equipment."

This highlights the importance of maintaining school resources to ensure they can be used by everyone in the community, including learners who may not yet be enrolled in school. Clean, well-maintained classrooms, proper lighting, and adequate resources such as libraries and laboratories create conducive learning environments and improve student outcomes (Kwatubana, Nhlapo & Moteetee, 2022). Conversely, poor facilities, are associated with lower academic performance due to distractions and health risks (Earthman, 2002; Rafiq *et al.*, 2022). When school facilities are well-maintained and managed, they contribute to an environment where learners can perform better (DOL, 2008).

The participants in the study provided several compelling reasons for maintaining school facilities. Teacher 1 emphasised safety, noting that proper maintenance, such as cutting grass, can prevent harm from dangerous animals like snakes and help detect illegal or dangerous items that learners may hide. These findings align with the DBE's policy on South African Standard for Principalship (South Africa, 2016) which stress that the principal should ensure a safe, secure and healthy school environment to facilitate teaching and learning. Effective teaching and learning require a safe school environment that positively impacts learner performance (Day, Sammons, & Gorgen, 2020). Neglecting maintenance, according to Teacher 1, could lead to severe problems, even fatalities. These findings align with a UNICEF study, which found that ensuring proper sanitation, clean water, and functional facilities like toilets reduces absenteeism caused by health issues. For instance, inadequate sanitation can lead to the spread of diseases, particularly in schools with younger children, thereby disrupting learning (UNICEF, 2019).

The importance of taking care of classrooms' physical conditions also emerged in this study. For example, classrooms with leaking roofs disrupt lessons, as learners become distracted by leaks and uncomfortable learning environments. This is a safety concern and can affect both teaching and learner performance (Mokgwathi *et al.*, 2023). Furthermore, in mathematics, Graham (2022) found that safety related issues also predicted learner performance. Well-maintained

school facilities also support teacher performance by reducing stress and promoting a productive teaching environment. Proper equipment, manageable class sizes, and comfortable working conditions help teachers focus on delivering quality education (Buckley *et al.*, 2004). A supportive environment encourages learners to take pride in their surroundings, which in turn encourages respect for school property and peers (Uline & Tschannen-Moran, 2008).

In fact, it has been established that the lack of school facilities can impede the successful implementation of inclusive education (Sibanda & Mathwasa, 2020). Participants indicated that adequate school facilities contribute to a more equitable education system by ensuring that all learners have access to the same learning conditions. Instead of sharing textbooks, learners should be provided with individual copies to bridge the gap between schools in different socio-economic areas, promoting equality in learning opportunities (Leung & Fung, 2005). Finally, Principal 2 mentioned sustainability, emphasising the importance of preserving facilities for future generations so that upcoming learners can benefit from well-maintained infrastructure. The procurement of high-quality school facilities to ensure their longevity emerged as relatively new finding, with limited literature to support it, and was mentioned by one participant in the study.

4.4. Challenges in school facility maintenance and management

Many participants in this study mentioned difficulties they face in addressing school facilities maintenance and management issues effectively in their respective schools. Facility maintenance remains a major challenge for several reasons that will be discussed in this theme. The analysis revealed a general trend of inadequate maintenance of school facilities, driven by various factors. For example, Principal 3 highlighted a pervasive issue when discussing facility upkeep, stating that:

Principal 3: *"The upkeep is not there because the people are not trained on how to maintain these facilities although they are trying but most*

facilities are deteriorating and every single year things are getting a bit worse ... although we try to...some of us as staff members are trying to maintain them."

Principal 1: "The conditions they are not right... sometimes you find that there is a facility but it's not serving its purpose."

The deteriorating state of resources was also highlighted by another principal who mentioned that while some school facilities may be present, they no longer serve their original purpose. The deteriorating conditions of school facilities may indicate a lack of policies, an absence of a responsible committee, insufficient training or inadequate funding for facilities management and maintenance. Burrett *et al.* (2019) echo this concern suggesting that the lack of proper training and policies may result in the deterioration of school facilities, which in turn, negatively affects teaching and learning. Additionally, since SGB members are collectively responsible for school facilities management and maintenance, Nhlapho (2020) argued that these members lack the necessary knowledge and expertise to execute this duty effectively. These challenges in facilities management and maintenance contribute to the inefficiency of school facilities in supporting the school environment. The findings of this study, highlighting inadequate training as a barrier to effective school facilities management and maintenance, align with Nhlapho's (2020) study, which identified the lack of training among principals as a significant challenge. This means that without adequate training, principals may struggle to ensure that schools are properly maintained to support good learner performance (Earthman 2004; Uline & Tschannen-Moran, 2008). Similarly, Bosworth (2001) noted that staff often lack the necessary training and support to maintain and manage school facilities effectively.

Another relevant and important challenge contributing to inadequate maintenance came from HOD 2, who mentioned the absence of a committee responsible for maintaining school facilities.

HOD 2: "We do not have a committee yet that's going to help us, so since we don't have that committee as the management, we are responsible."

This highlights the importance of establishing a committee to oversee the upkeep of school facilities, which was also highlighted as important by Nhlapho (2020) and the DBE. Teacher 2 echoed this sentiment by emphasising the necessity of having dedicated members within the school to manage facility maintenance:

Teacher 2: "There should be certain members within the school that will be elected to maintain the school facilities, therefore they will be looking at which school facility they need to fix for that particular period of time whenever they receive the school norms."

The participants' suggestion that schools should establish facility management committees aligns with the literature on school management. According to Owolabi and Oduyale (2014), structured management systems, such as dedicated facility committees, help ensure regular maintenance and the efficient allocation of resources. Participants also mentioned that a key challenge in facility maintenance is the constraints caused by the school's budget. Teacher 1 pointed out that budget meetings often overlook essential maintenance as evident from his statement that:

Teacher 1: "They mustn't only discuss the issue of budgeting for ink and electricity... they need to include the issue of maintenance like cutting grass, fixing broken windows."

Additionally, participants highlighted the importance of financial planning, explaining that requesting money from the school governing body requires a solid budget plan at the outset, detailing how funds will be used for facility maintenance.

HOD 3: "If we have to ask the school governing body for funds, we have to go back to the drawing board and allocate funds for these above-mentioned facilities."

The importance of the budget was also emphasised by Principal 1 who mentioned that "... if there is a need for fundraising, they must be done", emphasising that if the funds are insufficient, the school needs to find

alternative ways to raise funds for school facilities maintenance. This highlights a recurring issue where schools fail to allocate a specific budget for school facilities maintenance (Leung & Fung, 2005). For instance, the day-to-day upkeep of critical areas, such as maintaining a clean kitchen to prevent contamination of learners' food, requires adequate financial resources.

The budgeting challenge is a complex one. Nhlapho (2020) found that principals often reported insufficient funding from the DBE for school facilities maintenance. The DBE itself acknowledges this shortfall, stating that “insufficient budget is made available to undertake maintenance activities with priority being given to the provision of new facilities” (DBE, 2018:26). Thus, there is a need for the DBE to allocate more funding to ensure school maintenance runs smoothly to positively influence learner performance (Magaki, Ntabo, & Nduku, 2021).

Teacher 1 emphasised the importance of ensuring that facilities, such as the kitchen, are clean and safe by stating that:

Teacher 1: “If we call the ambulance, we need the ambulance to find the learner in good and safe hands. Our kitchen must be safe and clean and neat so that the learners will eat something that clearly has nutrients... and that doesn't have germs.”

This finding suggests that schools must proactively budget for both long-term and day-to-day facilities maintenance, as delays or neglect in this area can lead to escalating costs and further deterioration of school infrastructure (Ololube, 2013; Sarbini, Ibrahim, Abidin, Yahaya, & Azizan, 2021). The lack of financial accountability in schools was also found to be a challenge that negatively affects school facilities maintenance and management (Xaba & Ngubane, 2010).

Additionally, Principal 2 stressed the importance of fostering accountability and responsibility among learners for maintaining school facilities. The principal suggested holding learners accountable for damages they cause, such as requiring them to replace broken doors or windows.

Principal 2: "If the learner breaks the door, the learner has to replace the door; if the learner breaks the window, the learner has to replace the window."

While this promotes personal responsibility, schools in underprivileged areas may struggle to implement such practices due to socio-economic challenges faced by parents. The notion that learners should be held accountable for damages may promote responsibility but is difficult to implement in under-resourced schools (Gamage & Pang, 2003). Teacher 1 on the other hand lamented that *"facilities in most cases here in the townships are bad, they are not in good condition because the schools are not well taken care of."* This accentuates the disparity between well-resourced schools and those in less affluent areas.

The participants of the study provided several compelling reasons for maintaining school facilities. Teacher 1 emphasised safety, Teacher 3, Principal 2, and HOD 3 highlighted how poor facilities negatively impact teaching and learning, while HOD 1 argued for inclusivity, and Principal 2 mentioned sustainability. In sum, the maintenance of school facilities is crucial for safety, effective learning, inclusivity, and sustainability.

The findings also reveal several input factors contributing to poor maintenance, including insufficient resources, lack of staff training, and inadequate budgeting. These challenges highlight the critical need for resource allocation and proper financial planning in maintaining school infrastructure. Without the necessary resources and training, school facilities will continue to deteriorate, affecting their functionality.

From the findings, facility management emerges as a key challenge for the sampled schools. Participants stressed the need for a structured approach in the process of facility management, such as establishing a facility maintenance committee. Principal 2 suggested accountability as an essential aspect of facility management. However, this approach may be difficult to implement in socio-

economically disadvantaged areas, as Teacher 1 pointed out that schools in townships often lack the financial capacity to enforce such measures.

Lastly, the findings from this study also indicated that the process of facility management depends on proactive budgeting and financial planning. The consequences of poor facility maintenance are evident, with deteriorating facilities negatively impacting both the safety of learners and the quality of teaching and learning.

4.5. Responsibility for school facilities maintenance

The analysis of the data from the interviews revealed that the participants had clear ideas about who is responsible for school facilities management. The findings from Principal 1 and Principal 2 reflect a shared understanding of the importance of collective responsibility and collaboration within the school community regarding school facilities maintenance and management.

Principal 2: "The school is a triune... the learners, teachers, the school management team, and the school governing body all have a role to play."

Principal 1: "I can say all of us—together as SMT members, educators, and learners—we have to be responsible for maintaining the school facilities because we all use them. If they are destroyed, we are fighting a losing battle."

For example, using the triune concept, Principal 2 emphasised a holistic view of the school as a collective entity made up of learners, teachers, the SMT and the school governing body. Principal 2 argued that each group has a role in the maintenance of school facilities, indicating a belief in shared responsibility. Similarly, Principal 1 stressed the need for all members of the school community to take responsibility for maintaining the school facilities, highlighting that everyone benefits from them. The metaphor of a "losing battle" suggests that neglecting these responsibilities could lead to detrimental outcomes for the entire school. Teacher 3 seemed to adopt a view similar to that of the principals,

viewing the responsibility for facilities maintenance as a responsibility for all members of the school. This is evident from Teacher 3's statement that:

Teacher 3: I think it's everybody's responsibility, the teachers at school, the learners as well must be accountable or must be responsible for all the facilities as they would affect, the teaching, and learning, everybody is responsible."

However, findings from the HODs and teachers in this study mainly indicated that facilities management and maintenance is the responsibility of the school management team (SMT), the principal and the school governing body (SGB).

HOD1: "The SGB is responsible for managing and maintaining the school facilities, together with the SMT ... since they finance everything..."

HOD3: "It's the principal and the SGB who are ultimately responsible for school facilities and their maintenance ... but we as educators are also involved in raising concerns."

HOD2: "Currently, at school, the management is responsible..."

However, HOD 3 highlighted that teachers are responsible for raising concerns related to school facilities that needs maintenance. Two teachers in this study seemed to agree with the HODs that the SMT and the principals are responsible for the maintenance of the school facilities as evident from their statements below.

Teacher 1: "The principal together with all the SMT are the ones who have to make sure that everything in the school is going well."

Teacher 2: "It's the SMT itself including the principal because they are the one who receives the school norms, and they are supposed to know what is, what must be fixed within the school as they are managing the school so they are responsible for any problem that is caused by these facilities."

The findings on the responsibility for school facilities management and maintenance reveal varying perspectives among the participants. While the principals and one teacher believed in collective responsibility, encompassing

learners, teachers, the SMT (which includes the principal), and the SGB, HODs and some teachers primarily attributed this responsibility to the SMT, principal, and SGB, noting their role in financing and overseeing maintenance.

These findings align with Section 20 of the South African Schools Act, which mandates that the SGB and principal of a public school are responsible for administering and controlling the school's property, buildings, grounds, and, if applicable, school hostels (South African Schools Act, 1996). However, the literature reflects varying views. For example, Sunaengsih *et al.* (2019) found that the principal is responsible for the maintenance and management of school facilities. Furthermore, Nhlapo (2020) highlights that, principals are accountable to the DBE for ensuring that school facilities are well-maintained and effectively used to support a conducive teaching and learning environment. They provide direction to the SGB and school maintenance committee. Most participants were of the opinion that it is the responsibility of the SMT and SGB to maintain the school facilities. Some felt that these members of school management should delegate tasks to people who could help in managing and maintaining the school facilities, thereby ensuring their prolonged usability.

Despite the principal being put at the helm of ensuring school facilities management and maintenance, none of the participants mentioned one person or school committee as responsible for this duty. All the participants saw the responsibility for school facilities management to be a collective endeavour that should be undertaken by every member of the school and stakeholders.

4.6. Strategies for improving facility maintenance, management and resource allocation

The analysis of the data revealed that participants also suggested strategies for improving school facility maintenance, management, and resource allocation. These findings reflect the suggested use of a variety of approaches, each focusing on different aspects of management. To highlight the collective approach to resource maintenance, Principal 3 mentioned the importance of engaging learners in the process of maintaining school facilities.

Principal 3: *"If we get the learners involved... we have more hands taking care of school facilities ... that will give them pride."*

This strategy suggests that developing a sense of ownership and responsibility among learners could lead to better care of facilities. Another strategy that was suggested by the participants involved budget planning. For example, Teacher 1 mentioned that:

Teacher 1: *"Budget meetings must include the maintenance issue... minor things like chalkboards and chalks...are important..."*

This demonstrates that thorough financial planning is crucial for ensuring that school facilities are procured and maintained, and school resources like textbooks are allocated appropriately across various teaching and learning needs. In cases where funding is depleted, the participants indicated the significance of fundraising to ensure that school facilities are maintained.

Teacher 2: *"Usually they do the fundraising for each and every Friday so they can contribute where it is necessary."*

Principal 1: *"If there is a need for fundraising, they must be done and they must know they are doing it for their school."*

This suggests that schools, recognising budget limitations, rely on fundraising strategies to address specific school facilities maintenance needs. These findings align with Xaba (2012), whose study similarly indicated that budget planning is important for school facilities maintenance and that schools frequently augment insufficient funding with fundraising campaigns. On the other hand, several participants proposed the establishment of committees and stricter rule enforcement to manage and maintain school facilities better. These findings emphasise the importance of clearly defined roles and responsibilities related to school facilities management in schools.

Teacher 3: *"Okay, I think there need to be rules and they need to be strengthened and to make sure that those rules are put into place and are strictly followed....uhm yeah I think that is it ...if rules are*

enforced... there's nothing wrong that can happen in the school."

Teacher 1: "...there need to be certain committees created, where we will know who does what..."

Principal 1: "... there must be school policies, the school policy makes the school to run smoothly and for the facilities to be functional, not just be there but functional, not just be there in writing but in practical too."

Principal 2: "Enforcement of rules, that's what, that's what one can say if you can enforce the rules, I think that is the first key movement, if rules are enforced that means there's nothing wrong that can happen in the school, but looking at this question at a broader picture even in terms of facilities, I think if we can put facilities of higher quality that means eeeh that we are also economical."

The rules will serve as a guiding policy on how to ensure that school facilities, which are pivotal for creating a conducive teaching and learning environment, are taken care of and well-maintained. These rules can also be used to support the suggestion made by HOD 2 who advocated for assigning specific individuals to oversee school facilities to ensure that school facilities are well maintained. Furthermore, this idea focuses on accountability and ensuring that school facilities are consistently maintained, with dedicated personnel responsible for their upkeep.

HOD 2: "When we hire... each and every facility should have one person who's going to look after that facility."

The views from Principal 2 and Teacher 3 highlight the importance of structured oversight, where specific committees handle different aspects of school facilities management and maintenance by following specified rules. Furthermore, Principal 2 also advocated for investing in high-quality facilities. This aligns well with Principal 2's earlier view that school resources should be maintained to ensure that they can also be used by future generations. Findings from Le *et al.* (2022:4) also argue that maintenance and management of school buildings should maximises capital investment to ensure the longevity of school facilities

to support future learning and teaching activities. This highlights the importance of long-term sustainability and the view that investing in durable school facilities reduces the need for frequent replacements and maintenance, thereby minimising long-term costs. Furthermore, Principal 2's idea aligns with Nhlapho (2022) who argued that the school helps many generations in the community, so it must be well-maintained so that the facilities can be used by future generations. In summary, the participants' strategies for improving school facility maintenance and management reflect a combination of learner engagement, strategic budgeting, fundraising, rule enforcement, quality investment, and dedicated personnel.

4.7. The importance of the availability of qualified custodial staff for school facilities maintenance

The findings from the participants in this study highlight the importance of competent custodial and support staff across the school community, although there were differences of opinion regarding the adequacy and training needs of such staff. Participants shared insights into their schools' support systems, emphasising the role of security personnel, cleaners, and gardeners. Several participants expressed satisfaction with the competence of custodial staff in their schools. For example, HOD1 emphasised the role of the security guard in ensuring safety within the school and the importance of personnel dedicated to take care of the school yard.

HOD 1: "Yes we do. We do have a security guard that stays by the gate which makes sure that everyone entering the gate are the people who are expected to enter the gate. We also have 1 security that goes around the yard making sure that the learners are safe and also us as teachers we are safe. We do have ladies who clean the classrooms, the kitchen that is used by the staff, the toilets, and we also have another grounds man who takes care of the yard making sure the school yard is always clean."

Principal 2: "We do have a grounds man who ensures... he takes care of the flowers of the institution... [and] acts as a concierge."

Teacher 1: "Yes there are we have a gentleman who does everything for us in the garden he cuts the grass trees and everything else. Then we have security guards, there are those that guard at night and those for the day, and then we have ladies who cook for us. Also, we have people who help us there by the clerk's office with everything."

HOD3: "Well, I would say yes... the school has one [mentions the surname of the custodial staff member] whom I can boldly say he is very competent when it comes to maintaining the grounds as much as he has limitations because we don't have access to or to everything but personally the one that we have is competent. Coming to general workers and cleaning I'd say they are competent except that they are sometimes restricted by the inevitability of resources for them to be on their duties but yes they are competent."

Principal 1: "Yes they are there caretakers security uhhm yes they are there they are functional."

Principal 2 supported these views by detailing the various roles of custodial staff, particularly the groundsman, who is responsible for maintaining the garden and repairing broken items. The importance of custodial staff was also highlighted by Teacher 1 who extended this recognition to clerks and cooking staff emphasising their contribution to school operations. Across the findings, participants consistently indicated that custodial staff plays a vital role in the day-to-day running of the school. Principal 1 reinforced this sentiment; stating that the presence and effective functioning of custodial staff are importance to the smooth running of the school.

Principal 1: "Yes they are there caretakers security uhhm yes they are there they are functional."

Despite the overall positive feedback, some participants raised concerns about the limitations of school resources for custodial staff to perform their duties effectively. HOD3 mentioned that while the staff is competent, they are occasionally restricted by a lack of resources.

HOD 3: "They are sometimes restricted by the inevitability of resources for them to be on their duties, but yes they are competent."

Teacher 1: "So I think they are there but still short and not enough and they still need training so they can be able to do their work well so there won't be any complaints or anything that might be wrong which might end up affecting teachers and learners."

Teacher 1 also pointed out that while the school does have support staff, there is a shortage, and additional training is required to improve their effectiveness and functionality of the custodial staff. Thus, in summary, the participants generally agreed that custodial staff are competent and essential to the school's operations. However, some concerns about resource shortages and the need for further training were raised. The study revealed that custodial staff, including security personnel, cleaners, and groundsmen, are crucial inputs to maintaining a functional and safe learning environment. These roles are essential inputs, as proper staffing and resource allocation determine the functionality of the school environment, consistent with studies showing that well-maintained school environments improve learning conditions (Earthman, 2002; Moosung & Shin, 2021; Uline *et al.*, 2022).

In the process phase, the operational activities of custodial staff ensure that school facilities remain in good condition and create an environment conducive to learning. The daily tasks performed by custodial staff, such as cleaning, security, and maintenance, are directly linked to the smooth running of the school. HOD3 acknowledged the competence of custodial staff but noted that they are sometimes constrained by the unavailability of resources to perform their duties effectively. This highlights a process inefficiency where custodial staff are limited by inadequate resources, potentially hindering successful maintenance of school facilities. This challenge aligns with Uline *et al.* (2022) who emphasise the need for adequate resources in facilities management to maintain operational effectiveness.

The output phase refers to the result of the inputs and processes, whether custodial staff and resources contribute to a functional and well-maintained

school. Most participants agreed that custodial staff play a vital role in ensuring the school's smooth operation, contributing to a conducive learning environment. However, concerns about shortage of resources and the lack of training were raised, which indicates that although the output is generally positive, improvements in staffing levels and training would enhance the overall effectiveness of the facilities maintenance process.

4.8. Conclusion

The analysis of the study found that all participants agreed that school facilities do affect teaching and learning as well as learner performance. This is in line with findings from the literature, such as Nhlapo, Marais-Botha and Botha (2023) who found that the lack of management and maintenance of school facilities may lead to teachers not using them, thereby negatively affecting teaching and learning. Within this finding, both positive and negative effects of school facilities, as identified by the participants in this study, are highlighted.

In general, the main findings of this study indicate that maintaining and managing school facilities is essential for safety, effective teaching and learning, inclusivity, and sustainability. However, challenges such as lack of resources, inadequate training, poor budgeting, and insufficient accountability may hinder proper facility management and maintenance. Furthermore, the findings emphasise strategies for improving school facility maintenance through learner engagement, budget planning, fundraising, rule enforcement, quality investments, and dedicated personnel. The importance of qualified custodial staff was also emphasised, though challenges related to resource limitations and the need for further training remain. In the next chapter, this study concludes by addressing the research questions, making recommendations for practice and future research, and highlighting the limitations of the study.

CHAPTER FIVE

SUMMARY OF FINDINGS, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

5.1. INTRODUCTION

In Chapter Four, the researcher discussed the findings of the study through the themes that were identified as prominent during the data analysis process. The current chapter provides the conclusions to this dissertation through answering the research questions that were posed for this study. The aim of the study was to investigate the influence of school facilities on the quality of teaching and learning in secondary schools within the Amajuba District, focusing on their availability, maintenance, and impact on teaching and learning. To achieve this broader aim, the following research objectives were formulated:

- To assess the impact of the availability and maintenance of school facilities on teaching and learning in secondary schools in the Amajuba District.
- To examine how the nature of school facilities influences teaching practices and learning experiences in secondary schools around the Amajuba District.
- To identify strategies and recommendations for improving the quality of school facilities to enhance teaching and learning outcomes in secondary schools in the Amajuba District.

To ensure that the main aim for the current study is addressed, the following main research question was posed: *How does the availability and maintenance of school facilities influence teaching and learning in secondary schools in the Amajuba District?* The primary research question was addressed by decomposing this main research question into three sub-research questions, each focusing on specific aspects of the main inquiry. This approach facilitated a comprehensive exploration of the main research question by systematically

answering the associated sub-questions. The sub-research questions were as follow:

- How does the availability and maintenance of school facilities impact teaching and learning in secondary schools in the Amajuba District?
- In what ways does the nature of school facilities influence teaching practices and learning experiences in secondary schools around the Amajuba District?
- What strategies can be implemented to improve the quality of school facilities to enhance teaching and learning outcomes in secondary schools in the Amajuba District?

In the current chapter, these sub-research questions are answered using the findings discussed in Chapter Four. In particular, each of the three main research questions is discussed and then conclusions are made for the study.

5.2. How does the availability and maintenance of school facilities impact teaching and learning in secondary schools in the Amajuba District?

The findings of the current study indicated that the availability and maintenance of school facilities significantly affect the achievement teaching and learning objectives in secondary schools in the Amajuba District. Poor maintenance of school facilities and inadequate school facilities make it difficult for teachers to ensure that the sustainable development goal (SDG 4) of quality of education is achieved. Given that these secondary schools were in a previously disadvantaged and underprivileged community, Khalid and Tadesse (2024) found that addressing the availability and maintenance of basic school facilities can be useful in achieving equal access to education for marginalised and underprivileged population groups. This equal access can ensure the provision of quality education which is hindered by the lack of school facilities in schools. This lack of appropriate school facilities may also cause teacher stress and lack of motivation to conduct their teaching duties, which result in a decreased

quality of education, and may also cause these teachers to leave the school (Khalid, Tadesse & Gao, 2021).

Participants in the study also highlighted issues such as non-functional libraries, overcrowded classrooms, broken windows, and unsafe environments, all of which disrupt teaching and learning processes. The lack of such important school facilities has been shown to negatively affect learner performance in underprivileged and previously disadvantaged schools (Khalid *et al.*, 2021). This means that the availability and maintenance of school facilities may be one of the causes of poor learner performance in secondary schools within the Amajuba District. This suggests that if a school does not prioritise the maintenance of school facilities (Nhlapo, 2020), the quality of teaching and learning becomes compromised and it is reflected in poor learner performance. This may be expected in school located in previously disadvantaged communities because they often lack the necessary school facilities that can boost both learners' and teachers' well-being and academic success (Ahmed, Wong, Chua, Hydrie, & Channa, 2021).

Schools lacking critical teaching and learning facilities like textbooks and laboratories face further challenges, as learners cannot perform practical lessons, and teachers struggle to engage students effectively. Blumling *et al.* (2022) found that maintaining and managing school laboratories can be difficult for school managers. In Science education, laboratories are important for ensuring learners' active involvement in the lesson and for developing their scientific inquiry skills (Högström, Ottander, & Benckert, 2010). Furthermore, exposing learners to laboratory work during their learning can develop important skills like research, communication, teamwork, and problem-solving skills (Ndondo & Beyers, 2009; Nsengimana, Mugabo, Hiroaki, & Nkundabakura, 2020.) which are all important in boosting their performance. Furthermore, as the participants alluded, the lack of laboratories inhibit learners' ability to learn abstract science concepts in a practical setting, where they can verify and observe certain aspects of their classroom learning. Thus, the study considers that the lack of such critical school facilities, for example a laboratory, may

cause challenges that may dampen learners' performance in subjects that require the use of the laboratory for teaching and learning.

Another challenge raised by the participants regarding the availability and maintenance of school facilities was the lack of classrooms, which results in overcrowding. Overcrowding was also indicated by the study's participants as a challenge that affects how they teach. The findings that overcrowded classrooms affect teachers' ability to provide individualised support, which contributes to poor learner performance, aligns with findings from the literature. For example, West and Meier (2020) found that overcrowded classrooms may affect teaching and learning in several ways. They mentioned challenges like didactical neglect, where teachers cannot pay attention to all learners (c.f. Graham, 2023), discipline challenges where teachers struggle to control the learners in their classroom (Chirinda & Barmby, 2018), and lack of motivation for teachers to teach their students. In the study by Chirinda and Barmby (2018) in mathematics education, they found that overcrowded classrooms force teachers to take more ownership of teaching and learning, mainly teaching through the traditional lecture method. Furthermore, Graham (2023) also mentioned the effects of teachers' perceptions on overcrowded classroom where he quantitatively showed that learners who are taught by teachers who believed they have overcrowded classrooms performed worse than their counterparts taught by teachers who do not believe they are overcrowded.

In summary, the availability and maintenance of school facilities in secondary schools in the Amajuba District have a profound effect on both teaching and learning processes. The study highlights both the negative and positive effects that the condition of school facilities can have on learner performance. The negative effects included poorly maintained school facilities that were either non-functional or re-purposed for unintended uses, physical deterioration and safety concerns where poor maintenance caused the school resources to deteriorate, leading to safety concerns, and teacher stress and burnout, which in turn affect teaching and learning. The positive effect from this study was that well maintained school facilities can enhance teaching and learning and the

quality of education which can enhance the quality of education and learner performance. The availability and maintenance of school facilities directly influence the effectiveness of teaching and learning in the Amajuba District. Poor facilities lead to disruptions in the learning process, hinder teacher performance of their teaching, and negatively affect learner performance. However, well-maintained facilities provide a conducive environment for both teaching and learning, contributing to higher learner performance and a more positive school experience overall.

5.3. In what ways does the nature of school facilities influence teaching practices and learning experiences in secondary schools around the Amajuba District?

The condition and nature of school facilities directly influence teaching practices and learning experiences. Schools with well-maintained facilities allow teachers to implement different and interactive teaching strategies, such as group work, which enhances learner engagement. However, in schools where there is a shortage of classrooms and learners are overcrowded, teachers cannot use interactive teaching strategies like group work when teaching (Graham, 2023; West & Meier, 2020). Furthermore, the lack of functional school facilities, like laboratories, limits the scope of teaching methods, particularly for subjects that require practical demonstrations, such as Physical Sciences. These laboratories are important because learners who engage in practical activities in either traditional or virtual laboratories have been shown to experience increase performance in Chemistry (Penn & Ramnarain, 2019). Furthermore, Ramnarain (2018) argued that a well-resourced laboratory is important in schools to facilitate inquiry-based learning, a strategy that values active participation and knowledge creation.

However, poor school facilities undermine the importance of active learning and learner engagement, an important process in learning (Wersch, 1991). In schools with poorly maintained or inadequate facilities, teachers are often forced to rely on less effective teaching methods. For example, the absence of functional science laboratories limits teachers' ability to conduct experiments,

which negatively impacts the teaching of practical subjects. This leads to a reliance on theoretical instruction rather than hands-on, experiential learning. This leads to teachers giving instructions to learners and learners following these instructions either from an approved textbook or an external source which is against the purpose of inquiry (Ramnarain, 2018). In most cases teachers from disadvantaged and underprivileged areas teach physical sciences without laboratories (Ramnarain, 2023), a sentiment also raised by the participants in this study. Thus, the lack of availability and maintenance of school facilities in disadvantaged and underprivileged areas like Amajuba District may inhibit the incorporation of innovative teaching strategies such as inquiry-based learning which are proven to enhance learning and learner performance.

Poor physical environments also contribute to a lack of focus among learners, as they are distracted by the deteriorating condition of classrooms. Thus, no matter the strategy used to teach learners, the deteriorating nature of school facilities does not only affect learner concentration but is also a health hazard. Thus, poorly maintained school facilities, mostly found in poor communities and previously disadvantaged schools, contribute not only to poor learner performance but also widen the inequality in education gap (Filardo, Vincent, & Sullivan, 2019). This means that learners who attend more affluent schools with well-maintained school facilities experience better education compared to their counterparts in non-affluent schools. Schools with functional and well-maintained facilities encourage a positive learning environment where learners can concentrate better and achieve higher academic performance compared to their counterparts in schools that have school facilities that are not well maintained. Thus, the study finds that well maintained school facilities can contribute to effective teaching and learning while poorly maintained facilities may deter these processes.

The lack of school facilities and resources such as textbooks and functional libraries also contribute to negatively affecting teaching and learning because students may struggle to have access to the resources they need for individual learning. For example, Mudulia (2012) found that the lack of textbooks in sub-

Saharan countries is associated with poor learner performance. The TIMSS South African study of 2015 also revealed the importance of textbooks as they found that learners with textbooks in Grade 9 scored 24 and 32 points higher in mathematics and science respectively, when compared to their counterparts without textbooks (Reddy *et al.*, 2016).

Furthermore, Halupa (2015) argued that learner performance is influenced by the quality and availability of teaching and learning materials, and schools with well-resourced school facilities, such as those with sufficient textbooks, achieve better performance than schools with fewer textbooks. The lack of textbooks can be attributed to poor learner performance as Chambers (2015) and Molaudzi and Adeyemo (2022) argued that schools in previously disadvantaged areas had fewer teaching resources and lower performance compared to their counterparts in advantaged schools. While the lack of textbooks cannot be identified as the main cause of poor learner performance, literature and the findings from this study indicate that it is one of the main contributors. Thus, the lack of textbooks can affect teaching and learning by depriving learners of access to information they need for learning.

In summary, the nature of school facilities has a significant influence on both teaching practices and learning experiences in secondary schools around the Amajuba District. The condition, type, and functionality of these facilities directly affect how teachers deliver lessons and how learners engage with educational content. Poorly maintained and inadequate facilities restrict teaching methods, reduce learner engagement, and create a less conducive learning environment. In contrast, well-maintained and functional facilities enable teachers to employ more effective teaching strategies, support learner engagement, and enhance academic performance. Therefore, the quality and upkeep of school facilities are essential for fostering a positive and productive educational environment.

5.4. What strategies can be implemented to improve the quality of school facilities to enhance teaching and learning outcomes in secondary schools in the Amajuba District?

To improve the quality of school facilities and enhance teaching and learning outcomes in secondary schools in the Amajuba District, the study found that several strategies can be implemented by schools and the Department of Basic Education. These strategies are listed and discussed in the section below.

5.4.1. Establishment of dedicated facility management committees

One key strategy is the formation of committees responsible for the maintenance and management of school facilities. These committees would oversee the upkeep and repair of essential infrastructure, ensuring that schools environments remain conducive for teaching and learning. Xaba (2012) found that the formation of school facilities maintenance committees is an important aspect of keeping the school facilities in pristine condition, to enhance the process of teaching and learning. The participants reported that the lack of a structured facility management system was a challenge to schools around the Amajuba District and creating such committees would provide consistent oversight and ensure accountability. Nhlapo (2020) found that a principal in his study lamented the dysfunctionality of the school facilities maintenance committee, which led to school facilities being either non-functional or deteriorated. Having a committee that can conduct physical inspections of school facilities and report to the principal for maintenance was found by principals in Mokgwathi *et al.*'s (2023) study to be useful in ensuring a safe environment for learners and teachers. Furthermore, the participants in this study indicated that SMT and SGB should collaborate with this committee to ensure effective maintenance of school facilities. In summary, the participants stressed that a more structured management of school facilities is required for the upkeep of school facilities.

5.4.2. Strategic budgeting and fundraising

The participants from this study also indicated that schools need to prioritise the allocation of funds for maintaining and improving facilities. They indicated that budget planning must include the provision of funds for routine maintenance, such as fixing broken windows, cutting grass, and ensuring safety measures are in place. They also argued that proper financial planning would ensure that financial resources are available for essential repairs, preventing school facilities from deteriorating. However, a study by Xaba (2012) found that the 12% ring-fenced budget for school facilities maintenance was not enough to maintain the school facilities needs for the whole year. Eight years later, Nhlapho (2020) also found that principals complained that the 12% funding from the Department of Education is not enough to ensure that school facilities are always in pristine condition for teaching and learning in South African schools. More recently, high school principals and teachers have indicated that they do not have control over their budget, which has left many maintenance needs unattended in their schools (Mokgwathi *et al.*, 2023). Thus, even though the participants of this study thought that budgeting is an important aspect of keeping up with school maintenance issues, it seems that evidence from the literature argues that the budget allocated for school maintenance is not enough.

This means that a different strategy suggested by the participants to cover the shortfall on allocated funding for school facilities maintenance is required. More specifically, the participants in this study indicated that fundraising initiatives could be a strategy used by schools to address the shortfalls in the school facilities maintenance budget. Several participants suggested that schools could organise fundraising campaigns or events to raise money for specific maintenance needs. This could involve contributions from the local community, parents, or private sponsors. These initiatives would help bridge funding gaps, ensuring that essential improvements, such as fixing roofs or purchasing textbooks, can be addressed. To signify the importance of fundraising in schools, Nhlapho's (2020) participants also mentioned that they supplement the

12% maintenance funding through fundraising. Furthermore, Buys, Du Plessis and Mestry (2020) argued that fundraising can be a good strategy for ensuring and providing quality education to learners. In summary, the findings indicate that budgeting and fundraising for school facilities maintenance is an important strategy for improving school facilities.

5.4.3. Engaging learners in facility maintenance

The participants of this study suggested that the schools should engage learners in the process of maintaining school facilities as it fosters a sense of ownership and responsibility. This strategy involves educating learners about the importance of taking care of school facilities and encouraging them to contribute to their upkeep. By involving learners, schools can create a culture of respect for the facilities, reducing vandalism and promoting a cleaner, safer learning environment. This finding appears to be scarce in existing literature and as a result represents a relatively new idea in ensuring school facilities maintenance and management.

5.4.4. Investing in durable, high-quality school facilities

Investing in high-quality, durable infrastructure is another strategy that was suggested by a participant in this study as useful to reduce the frequency of maintenance and extend the lifespan of school facilities. The principal mentioned that schools that prioritise the use of durable and high-quality school facilities, such as constructing spacious classrooms or upgrading science laboratories and the library, not only improve overall teaching and learning in the school but also minimise ongoing maintenance and repair needs. Durable, well-constructed facilities are better equipped to handle the demands of daily use, leading to a more sustainable and cost-effective approach to school upkeep. In the South African context, where many schools face infrastructure challenges, such investments are particularly vital. Upgrading classrooms, libraries, and recreational facilities can significantly enhance educational outcomes by providing students with a conducive environment for learning. Additionally, schools that invest in durable infrastructure can support

generations of learners while reducing the long-term financial burden of frequent repairs. For instance, the South African Department of Basic Education recognises the need for improved infrastructure through programmes like the Accelerated Schools Infrastructure Delivery Initiative (ASIDI), which aims to replace dilapidated buildings with modern, durable structures (Development Bank Southern Africa, 2023).

Research emphasises the importance of infrastructure investment for school functionality and sustainability. Anderson and Williams (2018) argue that long-term investments in durable infrastructure lower maintenance costs while creating a stable, well-functioning teaching and learning environment. In the South African context, Modisaotsile (2012) highlighted that inadequate infrastructure is a significant barrier to effective education, and durable, high-quality construction is necessary to address these challenges. Johnson (2019) further connects well-built facilities to enhanced student performance, noting that a well-maintained learning environment promotes health, safety, and better academic outcomes. These findings underscore that investing in durable infrastructure is a long-term solution to ensuring sustainable school facilities in South Africa and beyond.

5.4.5. Strengthening rule enforcement and accountability

Strengthening rule enforcement and accountability in the maintenance of school facilities was considered by the participants in this study as essential for ensuring a sustainable and well-maintained school facilities. Schools can achieve this by drawing up clear policies that explain the responsibilities of both staff and learners in maintaining school facilities. Such policies provide a structured framework for school facility maintenance, which, when coupled with effective enforcement mechanisms, helps to prevent school facilities neglect and vandalism. To ensure compliance, schools can form dedicated maintenance committees to oversee the enforcement of these rules. For example, if a learner damages school facilities, such as breaking a window, holding them accountable by requiring them to replace or repair the damage promotes a sense of personal responsibility. This not only discourages future

acts of vandalism but also promotes an environment where learners and staff alike take ownership of the school's facilities.

The importance of accountability in school maintenance is supported by literature. Phelps (2019) argued that ensuring accountability mechanisms and developing a culture of responsibility in schools are key components in minimising school facilities damage and enhancing the overall teaching and learning environment. Similarly, research by Walker and Day (2020) emphasises the role of clear rules and accountability in encouraging positive behaviours among learners, leading to long-term benefits such as reduced vandalism and improved school morale. These findings emphasise that well-maintained school facilities can be achieved when learners and staff alike understand and adhere to clearly defined responsibilities, with accountability structures in place to address any violations.

5.4.6. Training and supporting custodial staff

Ensuring that custodial staff receive adequate training and support is a critical factor in the effective maintenance of school facilities. Schools should provide ongoing professional development opportunities for custodial staff, including cleaners and ground keepers to help them develop the skills needed to maintain a clean, safe, and functional school environment. Adequate training in areas such as cleaning techniques, the proper use of equipment, and health and safety protocols will enable custodial staff to perform their duties efficiently, thereby contributing to a positive, conducive and safe teaching and learning environment. In addition to training, schools must ensure that custodial staff have access to the necessary resources, such as appropriate cleaning supplies and equipment, to carry out their tasks effectively. By investing in their training and providing them with adequate support, schools can ensure a higher standard of facility upkeep, which directly impacts the overall quality of the learning environment.

The importance of training and supporting custodial staff is emphasised by Smith (2018) who argued that providing adequate training and resources to

custodial staff not only improves the quality of school facilities' maintenance but also boosts staff morale and job satisfaction, which are essential for long-term effectiveness. Harris and Jones (2019) similarly highlighted that competent custodial staff play a crucial role in ensuring a healthy and safe school environment, which directly affects learners' academic performance and well-being. These findings reinforce the study's findings that well-trained and supported custodial staff are key contributors to the overall functioning of school and maintenance of school facilities.

In summary, to improve the quality of school facilities and enhance teaching and learning in secondary schools around the Amajuba District, schools should establish dedicated facility management committees, engage in strategic budgeting and fundraising, involve learners in maintenance, invest in durable infrastructure, enforce facility-related rules, and ensure custodial staff are well-trained and supported.

5.5. CONCLUSION

This research study investigated the perceived influence of school facilities on the quality of teaching and learning in secondary schools within the Amajuba District, focusing on their availability, maintenance, and impact on teaching and learning. It has been found in this study that school facilities influence teaching and learning in general but more so in secondary schools located in previously disadvantaged communities, which are further impacted by various socioeconomic problems. Drawing on data from the participants, the different ways in which both the availability and lack of school facilities can affect teaching and learning are discussed in the study. These findings highlight the significant influence that the availability and maintenance of school facilities have on teaching and learning in secondary schools within the Amajuba District. Poorly maintained facilities, overcrowded classrooms, and a lack of essential resources such as textbooks and laboratories negatively affect learner performance and teacher effectiveness. In contrast, schools with well-maintained and adequately equipped facilities create conducive environments that enhance both teaching and learning experiences.

The study's findings also emphasised the need for strategic investments in durable school facilities, effective maintenance practices, and collaborative efforts among stakeholders to ensure that all learners have access to quality education, particularly in previously disadvantaged communities. By addressing these facility-related challenges, schools can better support their educational objectives and improve overall academic performance. To signify the importance of ensuring the availability and maintenance of school facilities, Section 24 of the constitution of South Africa of 1996 states that "everyone has a right to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of the present and future generations..." (DOL, 1996:10). Failure to maintain school facilities, can lead to various health hazards for both teachers and learners and may also disturb their well-being. Thus, neglecting school facility maintenance can be considered a clear violation of the rights of these individuals.

5.6. STUDY RECOMMENDATIONS

Given the findings of the current study, several recommendations are made to raise awareness about the importance of school facilities management. The recommendations are made to different levels of the school management and departments.

- The DBE should establish long-term partnerships with local government and private sector stakeholders to prioritise school facilities development in previously disadvantaged areas.
- The DBE should consider allocating more funds specifically for school facilities maintenance and upgrades in underprivileged schools to bridge the inequality gap.
- The schools should consider collaborating with district officers to develop interventions aimed at improving teacher morale by addressing the challenges caused by poor school facilities. Regular support in terms of mental health programmes, adequate teaching materials, and improved working conditions will reduce teacher stress and burnout, enhancing

their ability to provide quality education even in disadvantaged schools (Yuvaraj *et al.*, 2019; Graham, 2023).

- To combat the lack of full-scale laboratories, schools should consider collaborating with other stakeholders and DBE to secure and introduce mobile or virtual laboratories to enhance the teaching of practical subjects such as Physical Sciences (Penn & Ramnarain, 2019). The DBE and private institutions can collaborate to provide schools with portable science kits or virtual learning tools that can help learners develop inquiry-based learning skills despite inadequate school facilities.
- The DBE should pay immediate attention to addressing overcrowding in previously disadvantaged areas by constructing additional classrooms or redistributing learners across neighbouring schools that have enough classrooms to accommodate the learner-educator ratio. Furthermore, the DBE, circuits and districts should consider training teachers on alternative teaching strategies to manage and teach in large classrooms.
- To enhance the quality of school facilities and improve teaching and learning outcomes in secondary schools within the Amajuba District, schools should: establish dedicated facility management committees, engage in strategic budgeting and fundraising, involve learners in maintaining facilities, invest in durable, high-quality infrastructure, strengthen rule enforcement and accountability, and train and support custodial staff.
- Investing in custodial staff development and ensuring adequate resources are necessary steps for optimising school facilities maintenance and improving teaching and learning in schools (Leithwood *et al.*, 2020).

5.7. LIMITATIONS OF THE STUDY

Several limitations cloud this study and may affect the trustworthiness of its findings. The researcher faced challenges with participant availability as some participants who had agreed verbally to participate were unavailable for interviews when the time arrived. Additionally, some participants later

expressed reluctance to take part in the interviews due to fear, reducing the originally intended sample size from 12 to 9 participants.

Another challenge was that some of the participants felt that they could better express themselves using IsiZulu, their home language, and use code-switching between IsiZulu and English during the interviews. While the researcher had no problem with both languages as she is bilingual, she had to translate the interview questions to IsiZulu to ensure clear understanding. Subsequently, all the interviews were translated to English for transcription data analysis purposes.

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APPENDIX A: ETHICS CLEARANCE

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the **Education Sciences Research Ethics Committee (EduREC)** on 29 September 2022, the Education Sciences Research Ethics Committee hereby **approves** your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWU-SCRE) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: The influence of school facilities on teaching and learning in secondary schools in Amajuba District: Management and governance perspective														
Study Leader/Supervisor (Principal Investigator)/Researcher: Dr VA Nhlapo														
Student / Team: K Mayisela (MEd student – 33386595)														
Ethics number:														
N	W	U	-	0	0	3	0	1	-	2	2	-	A	2
Institution			Study Number					Year		Status				
Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation														
Application Type: Single study														
Commencement date: 29/09/2022										Risk: Low				
Expiry date: 29/09/2023														
Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.														

Special in process conditions of the research for approval (if applicable):

General conditions: <i>While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:</i> • <i>The study leader/supervisor (principle investigator)/researcher must report in the prescribed format to the ES-REC:</i> – <i>annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and</i> – <i>without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.</i> • <i>The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the ES-REC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.</i> • <i>Annually a number of studies may be randomly selected for an external audit.</i> • <i>The date of approval indicates the first date that the study may be started.</i> • <i>In the interest of ethical responsibility, the NWU-SCRC and ES-REC reserves the right to:</i> – <i>request access to any information or data at any time during the course or after completion of the study;</i>
--

- *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;*
- *withdraw or postpone approval if:*
 - *any unethical principles or practices of the study are revealed or suspected;*
 - *it becomes apparent that any relevant information was withheld from the ES-REC or that information has been false or misrepresented;*
 - *submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or*
 - *new institutional rules, national legislation or international conventions deem it necessary.*

The ES-REC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the ES-REC or the NWU-SCRE for any further enquiries or requests for assistance.

Yours sincerely



Prof CP van der Vyver
Chairperson NWU Education Sciences Research Ethics Committee

Original details: (22351930) C:\Users\22351930\Desktop\ETHICS APPROVAL LETTER OF STUDY.docm
8 November 2018

Current details: (22351930) M:\DSS1\8533\Monitoring and Reporting Cluster\Ethics\Certificates\Templates\Research Ethics Approval Letters\9.1.5.4.1 ES-REC Ethical Approval Letter.docm
5 December 2018

File reference: 9.1.5.4.2

APPENDIX B: EDITING CERTIFICATE

EDITING CONFIRMATION LETTER

Douglasdale 2055
suko@wordlabs.co.za

20 November 2024

TO WHOM IT MAY CONCERN

Please let this letter serve as confirmation that I, Sukoluhle Mlambo, provided technical editing services for **Kwanele Mayisela**, for her dissertation titled, **“The influence of availability and maintenance of school facilities on teaching and learning in Amajuba District secondary schools”**. I uphold the following editing standards:

- proofreading for mechanical errors such as spelling, punctuation, grammar
- copy-editing that includes commenting on, but not correcting, structure, organisation and logical flow of content, basic formatting (headings, page numbers), eliminating unnecessary repetition
- checking citation style is correct, punctuating as needed
- returning the document with track changes for the author to accept

I confirm that I have met the above standards of editing and professional ethical practice.

The content of the work edited remains that of the student.

Sincerely,



S. Mlambo, PhD

APPENDIX C: GOODWILL PERMISSION: DEPARTMENT OF EDUCATION



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE HEAD OF DEPARTMENT

Private Bag X9137, PIETERMARITZBURG, 3200
Anton Lembede Building, 247 Burger Street, Pietermaritzburg, 3201
Tel: 033 392 1063

Email: Phindile.duma@kzndoe.gov.za

Enquiries: Phindile Duma

Ref.:2/4/8/3

Miss K Mayisela
Private Bag X5015
MADADENI
2951

Dear Miss Mayisela

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

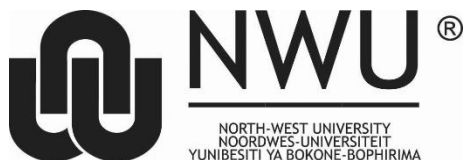
Your application to conduct research entitled: **"THE INFLUENCE OF SCHOOL FACILITIES ON TEACHING AND LEARNING IN SECONDARY SCHOOLS IN AMAJUBA DISTRICT: MANAGEMENT AND GOVERNANCE PERSPECTIVE"**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 23 January 2023 to 31 January 2026.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma at the contact numbers above.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

AMAJUBA DISTRICT

Mr GN Ngcobo
Head of Department: Education
Date: 23 January 2023

APPENDIX D: PARTICIPANT INVITATION LETTER



PrivateBagX6001, Potchefstroom
South Africa 2520
Tel: 018 299-1111/2222
Web: <http://www.nwu.ac.za>

Faculty of Education

(Research entity details)

Tel: 018 1111111
Email: Name.Surname@nwu.ac.za
Date

PERMISSION LETTER: SCHOOL PRINCIPAL/OTHER RELEVANT PERSON

I herewith wish to request your permission for educators to participate in this research, which entails the influence of school facilities on teaching and learning. Prior to granting permission, please acquaint yourself with the information below.

The details of the research are as follows:

TITLE OF THE RESEARCH PROJECT: The influence of school facilities on teaching and learning in secondary schools in Amajuba District: Management and Governance perspective

ETHICS APPLICATION NUMBER: NWU-00301-22-A2.

PROJECT SUPERVISOR: Dr V.A.Nhlapo

CO-SUPERVISOR: N/A

ADDRESS: 1174 Hendrick Van Eck Boulevard, Vanderbijlpark, 1900

CONTACT NUMBER: 016 910 3111

MEMBER OF PROJECT TEAM MEd-Student: Miss K.Mayisela

ADDRESS: D5434

Madadeni

2951

CONTACT NUMBER: 0783969591

FACULTY OF EDUCATION RESEARCH ETHICS COMMITTEE

Contact person: Ms Erna Greyling, E-mail: Erna.Greyling@nwu.ac.za, Tel. (018) 299 4656

This study has been approved by the Research Ethics Committee of the Faculty of Education of the North-West University and will be conducted according to the ethical guidelines of this committee. Permission was also obtained from the provincial Department of Basic Education/other relevant body.

What is this research about?

The aim of this study is to explore the influence of school facilities on teaching and learning in Secondary Schools in Amajuba District.

Research objectives

- To determine the influence of school facilities for teaching and learning.
- To establish how the nature of school facilities affect teaching and learning in Amajuba District.
- To recommend strategies that can be used to improve the quality of school facilities to enhance quality of academic performance of learners in secondary schools.

Participants

The participants will comprise of Principals, HODs, and PL1 educators from the 4 selected schools.

What is expected of the participants?

To take part in the face-to-face recorded interviews

Benefits to the participants

Gain knowledge about the importance of school facilities and learn new strategies to use for effective teaching and learning

Risks involved for participants

Mild discomfort

Confidentiality and protection of identity

The participants' identity will be kept private and confidential

Dissemination of findings

A research paper will be written and submitted for publication. The selected schools will be provided with at least one copy of the paper.

If you have any further questions or enquiries regarding your participation in this research, please contact the researchers for more information.

DECLARATION BY PRINCIPAL/OTHER RELEVANT PERSON:

By signing below, I agree to give permission for the research to take place with the identified participants in the study entitled:

The influence of school facilities on teaching and learning in secondary schools in Amajuba District: Management and Governance perspective

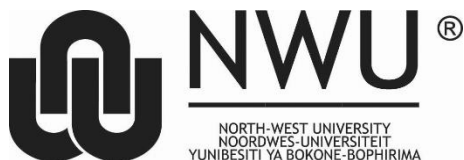
I declare that:

- I have read this information and consent form and understand what is expected of the participants in the research.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and participants will not be pressurised to take part.
- Participants may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- Participants may be asked to leave the research process before it is completed, if the researcher feels it is in their best interests, or if they do not follow the research procedures, as agreed to.

Signed at (place) _____ on (date) ____/____/20____

Signature of School Principal/Relevant person

APPENDIX E: LETTER OF CONSENT



PrivateBagX6001, Potchefstroom
South Africa 2520
Tel: 018 299-1111/2222
Web: <http://www.nwu.ac.za>

Faculty of Education

(Research entity details)

Tel: 018 1111111
Email: Name.Surname@nwu.ac.za
Date

PARTICIPANT INFORMATION AND CONSENT FORM

I herewith wish to request your consent to participate in this research, which involves educators. Before you give consent, please acquaint yourself with the information below.

The details of the research are as follows:

TITLE OF THE RESEARCH PROJECT:

The influence of school facilities on teaching and learning in secondary schools in Amajuba District: Management and Governance perspective

ETHICS APPLICATION NUMBER

NWU-00301-22-A2

PROJECT SUPERVISOR: Nhlapo.VA
ADDRESS :1174 Hendrick Van Eck Boulevard, Vanderbijlpark, 1900
CONTACT NUMBER: 016 910 3111
MEMBER OF PROJECT TEAM MEd-Student: Mayisela K.
ADDRESS: D5434
Madadeni
2951

CONTACT NUMBER: 0783969591

FACULTY OF EDUCATION RESEARCH ETHICS COMMITTEE

Contact person: Ms Erna Greyling, E-mail: Erna.Greyling@nwu.ac.za, Tel. (018) 299 4656

This study has been approved by the Research Ethics Committee of the Faculty of Education of the North-West University and will be conducted according to the ethical guidelines of this committee. Permission was also asked from the provincial Department of Basic Education/other relevant body (please describe) as well as the school principal (if relevant).

What is this research about?

The aims of this research are:

The aim of this study is to explore the influence of school facilities on teaching and learning in Secondary Schools in Amajuba District.

Research objectives

- To determine the influence of school facilities for teaching and learning.
- To establish how the nature of school facilities affect teaching and learning in Amajuba District.
- To recommend strategies that can be used to improve the quality of school facilities to enhance quality of academic performance of learners in secondary schools

Participants

The participants will comprise of Principals, HODs, and PL1 educators from the 4 selected schools

What is expected of you as participant?

To take part in the face to face recorded interviews

Benefits to you as participant

Gain knowledge about the importance of school facilities and learn new strategies to use for effective teaching and learning

Risks involved for participants

Mild discomfort

Confidentiality and protection of identity

The participants' identity will be kept private and confidential

Dissemination of findings

A research paper will be written and submitted for publication. The selected schools will be provided with at least one copy of the paper.

If you have any further questions or enquiries regarding your participation in this research, please contact the researchers for more information.

Yours sincerely

(Researcher)

DECLARATION BY PARTICIPANT:

By signing below, I agree to take part in a research study entitled:

The influence of school facilities on teaching and learning in secondary schools in Amajuba District: Management and Governance perspective

I declare that:

- I have read this information and consent form and understand what is expected of me in the research.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.

- I understand that taking part in this study is voluntary and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the research process before it has finished, if the researcher feels it is in my best interests, or if I do not follow the research procedures, as agreed to.

Signed at (place) _____ on (date) ____ / ____ /20 ____

Signature of participant

Researcher

APPENDIX F: INTERVIEW SCHEDULE

1. Does your school perform in tandem with the requirements of the Department of education in the province?
2. How were the matric results of the past three years in your school?
3. Do you think that the school facilities influenced these results? Why?
4. What is the condition of the key facilities in your school?
5. How do these conditions enable or hamper the provisioning of quality teaching and learning in your school?
6. Why must school facilities be managed and maintained?
7. Who is responsible for the school facilities and their maintenance?
8. Does your school have competent custodial staff? (Groundsmen or general workers)
9. How does your school deal with minor maintenance needs of the institution?
10. What strategy or strategies do you suggest should be implemented to improve the quality of school facilities in order to enhance the quality of teaching and learning the schools?

APPENDIX G: TURNITIN REPORT

10881182:Final_Dissertation_Kwanele_Mayisela_(Tracked_C...

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