THE ROLE OF THE SCHOOL MANAGEMENT TEAM ON THE ACADEMIC PERFORMANCE OF MATHEMATICS, SCIENCE, AND TECHNOLOGY SCHOOLS IN THE WHITERIVER CIRCUIT

by

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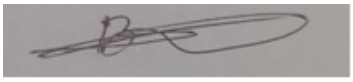
DECLARATION

I, Bheki Thulani Sandhleni, hereby declare that this dissertation, **"**The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the Whiteriver Circuit" is my own original work and that it has not been previously submitted and will not be submitted to any other University for similar or any other degree award. All sources used or quoted have been indicated and acknowledged by means of complete reference.



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DEDICATION

This research is dedicated to my lovely wife, Pricilia Maria Bila, who supported me when doing this research. She always believed in me. In everything, she was there for me and supported me wholeheartedly.

- To my late parents, Samson Malulu Hlatshwayo and Annah Yandela Ntini, for the wisdom I inherited from them.

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ABSTRACT

South Africa is one of the countries with a poor performance in Mathematics, Science, and Technology (MST) subjects. Therefore, this study aims to investigate the role of the School Management Team (SMT) on the academic performance of MST schools in the Whiteriver Circuit of Mpumalanga Province. This study is located within instructional and distributive leadership. The instructional leadership assumes that SMT members must be instructional leaders, while the distributive leadership assumes that the SMT members and teachers need to distribute or share leadership in an environment of trust. A qualitative approach was utilised in this study since it attempts to make sense of the SMT members and teachers experiences, views, beliefs, mentality, and behaviour in particular school settings. This qualitative study focused on the research paradigm of interpretivism. The interpretivism paradigm focuses more on what the teachers and SMT members in the study perceive as reality within their context. Using this approach involved investigating MST teachers and members of the SMT within their contexts and trying to understand their experiences and interpretation of management skills that result in learner academic performance. Five MST schools were purposively sampled, with five participants in each school; therefore, the study had twenty-five participants. A literature review was conducted on the role of the SMT on the academic performance of MST schools in South Africa and internationally. This study was approached from the human relations theory of management. The human relations theory was developed in the early 1920s by Professor Elton Mayo, an Australian psychologist and organisational theorist. The human relations theory of management assumes that teachers desire to be part of a supportive SMT that enables progress and development; hence, if teachers and other staff members receive special attention from the SMT and are encouraged to participate in school activities, they view their work as significant. As a result, they are driven to be more productive, resulting in good academic performance. Semi-structured interviews were used as the primary instrument to collect data. Data collected through semi-structured interviews was then triangulated with observation and document analysis in order to ensure validity and reliability of the data. This study revealed that the SMT plays a significant role in the academic performance of learners of MST schools. The findings also showed that MST schools use different strategies to improve the academic performance of learners. Moreover, MST schools face numerous challenges, and many factors are affecting the academic performance of learners in MST schools. Based on the findings, the researcher recommends the following: the SMT should ensure that daily

directions are set in order to ensure effective school management. This includes the day-to-day operations of schools; hence, this can only be done if the SMT has operational plans that detail the activities and the time the activity should be done. Secondly, teachers should ensure effective teaching and learning is taking place in their classes. This study makes an important contribution to the academic improvement of MST schools.

Key Words

School management team; academic performance; curriculum management; parental involvement; quality teaching and learning

LIST OF ABBREVIATIONS

ATP	Annual Teaching Plan
CAPS	Curriculum and Assessment Policy Statement
CPTD	Continuing Professional Teacher Development
DoE	Department of Education
EEA	Educators Employment Act
HoD	Head of Department
IQMS	Integrated Quality Management System
LiEP	Language in Education Policy
LRA	Labour Relations Act
LRC	Learner Representative Council
LTSM	Learner-Teacher Support Material
MDoE	Mpumalanga Department of Education
MST	Mathematics, Science, and Technology
MSTA	Mathematics, Science and Technology Academy
NCSL	National College for School Leadership
NSC	National Senior Certificate
NSMSTE	National Strategy for Mathematics, Science and Technology Education
PAM	Personnel Administrative Measures
PL1	Post Level one
RSA	Republic of South Africa
SACE	South African Council for Educators
SASA	South African Schools Act
SBM	School Based Management
SDT	Staff Development Team
SGB	School Governing Body
SIP	School Improvement Plan
SMT	School Management Team
SSE	School Self Evaluation
TIMSS	Trends in Mathematics and Science Study
UK	United Kingdom
UNISA	University of South Africa
USA	United States of America
WSE	Whole School Evaluation

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CHAPTER 1:

ORIENTATION OF THE STUDY

1.1.INTRODUCTION

Hamari, Sjöklint and Ukkonen (2016) define the school as an organisation of various activities performed and organised by different persons. They further assert that effective school management is necessary to co-ordinate many activities to realise the desired academic goals. This study aims to examine the roles of the School Management Team (SMT) on the performance of Mathematics, Science, and Technology (MST) schools in the Whiteriver Circuit in Mpumalanga Province.

In modern times, Mathematics, Science, and Technology (MST) is a driving force of a performing economy. MST is a field of expertise whose competency is needed for economic development and a crucial element of universal competitiveness (Dolan & Kawamura, 2015). The economic survival of any country primarily depends on MST. Therefore, this calls for the good academic performance of these subjects in our schools.

However, South African schools are poorly performing in MST subjects, particularly in Mathematics and Physical Science. In their 2019 report entitled Trends in International Mathematics and Physical cience Study (TIMSS), the Department of Basic Education (DBE) revealed that Grade 5 and 9 South African learners consistently scored in the lowest three countries for a range of TIMSS assessment as compared to the rest of the world. According to the TIMSS requirements, learners must score 400 points to be considered as having acquired basic skills or knowledge in Mathematics and Physical science. The 2019 TIMSS report shows that of the 64 countries that participated, South African learners in Grade 5 only scored an average of 374 points in Mathematics and 324 points in Physical science, which is below the benchmark of 400 points. Moreover, in Grade 9, they scored 389 points in Mathematics and 370 in Physical science which is also below the benchmark. On the other hand, the DBE also expect a minimum pass rate of 70% in Grade 12 Mathematics and Physical science; this is also a significant challenge as the national Mathematics pass percentage was 53,5% in 2020 compared to 54,6 in 2019, and Physical Science was 65,8% in 2020 compared to 75,5 in 2019.

It is now evident that the South African education system is confronted with many challenges when it comes to the performance of MST subjects. Therefore, one needs to ask themselves, what is really the problem? Is the problem with the learners? Is the problem with the teachers? Or is it the impact of the SMT that causes this poor performance? The researcher is of the view that the SMT play a significant role in the academic performance of these subjects. Hence, the researcher saw the need to embark on this study in order to explore the roles of the SMT in the academic performance of these MST schools. Therefore, this study will make a significant contribution to the rest of the world as it provides SMTs with an opportunity to reflect on their practices in order to achieve good academic performance.

1.2 BACKGROUND OF THE SUDY

It is commonly known that the South African education system is not performing as expected; thus, obliging the production of skillful persons, and economic growth and development Fägerlind & Saha (2016). Quality teaching and learning cannot be realised without proper management by the SMT Gay (2018). Mpungose and Ngwenya (2017) concur by stating that poor academic performance is always related to poor teaching practice resulting from poor management by the SMT.

Since the introduction of the Mathematics, Science and Technology Academy (MSTA) in 2014 in Mpumalanga by the Mpumalanga Department of Education (MDoE), which consists of 101 MST schools, the overall performance of MST schools in South Africa was not up to standard, particularly in Grades 8 to 12 (Reddy, Visser, Winnaar, Arends, Juan, Prinsloo & Sdale, 2017; TIMSS, 2015). However, the situation keeps getting worse in many MST schools around the country, particularly in the Mathematics and Physical science. Teachers and SMT's are still struggling to find strategies to remedy the situation. This study will help provide solutions to the SMT members, SGBs, teachers, parents, and other stakeholders involved in the management of MST schools on how they should better manage their schools to enhance the good academic performance of learners.

Many researchers agree that there is a strong link between learner academic performance and school management. The ability of schools to achieve good learner academic performance depends strongly on the quality management skills shown by the SMT. An increasing body of knowledge in the literature from scholars has made an effort to observe the relationship between management in education and learners' academic performance (Orodho, 2014; United Nations, 2013; Waweru, 2014). The SMT plays a crucial role in

school management in order to ensure quality teaching and learning of MST subjects to attain the desired academic goals (Benoliel, 2017). According to Benoliel (2017), the SMT is responsible for managing the school professionally, which comprises all activities that support teaching and learning. Hitt and Tucker (2016) argue that academic improvement in MST schools may be attained if school participants (such as the SMT) reflect on their practices.

1.3. STATEMENT OF THE PROBLEM

Like any other country, the South African education system is expected to produce a skilled, competent, and well-informed workforce to enhance the country's economic growth. The SMTs are, therefore, expected to be well-informed of the new developments in the curricula. In addition, the pool of appropriate and applicable qualified SMTs and teachers in MST subjects force the DoE to be more involved in interventions to maintain and improve learners' performance in general, particularly for Grade 12.

Tseng, Chang, Lou and Chen (2013) contend that MST impacts our daily lives. They further state that MST are tools that are significant to both individuals and the country as a whole to survive and meet the universal economic requirements. The researcher argues that MST subjects remain the most essential, as the globe is currently at a stage where its wealth and economic development is highly reliant on the science workforce.

According to Mutodi and Ngirande (2014), South Africa is one of the countries poorly performing in MST subjects. There are numerous reasons why South Africa is characterised as a poor performing country in MST subjects (Potvin & Hasni, 2014). Thus, the researcher saw a need to conduct this study to investigate and discover the role of the SMT on the performance of these subjects in the MST schools in Mpumalanga Province at Ehlanzeni district in the Whiteriver Circuit.

1.4. RESEARCH QUESTIONS AND SUB-RESEARCH QUESTIONS

The following main and sub-research questions guided the research:

1.4.1 **Main research question**

What is the role of the School Management Team in the academic performance in Mathematics, Science, and Technology schools?

The following sub-research questions emanated from the main research question:

- What are the aims and objectives of Mathematics, Science, and Technology schools?
- How does the School Management Team create conditions convenient enough to ensure a high standard of teaching and learning?
- What factors restrain the academic performance of learners in Mathematics, Science, and Technology schools?
- What challenges face the School Management Team in managing learner performance in Mathematics, Science, and Technology schools?

1.5. AIMS AND OBJECTIVES OF STUDY

The main aim of this study was to explore the role of the SMT on the performance of MST schools in the Whiteriver Circuit in the Mpumalanga Province. The objectives of the study are as follows:

- To acquire knowledge on the aims and objectives of Mathematics, Science, and Technology schools.
- To examine conditions that the School Management Team could create to encourage a high standard of learning and teaching.
- To investigate factors that hinder learner performance in Mathematics, Science, and Technology schools.
- To discover challenges facing the School Management Team in managing learner performance in Mathematics, Science, and Technology schools.

1.6. SIGNIFICANCE OF THE STUDY

This research revealed information about the role of the SMT and its impact on the academic performance of learners of MST schools. Recommendations on the strategies to improve academic performance were made. The findings of this study added to the existing body of knowledge concerning the role of the SMT on learner academic achievement of MST schools.

Data obtained from this study benefited teachers, SMT members, and any stakeholder involved in the education sector to better understand the causes of poor performance and how each stakeholder must play their role in improving the academic performance of MST subjects. This research also provided the MDoE, SMTs, school governing bodies (SGBs), and all stakeholders in the education sector with information necessary to assist them in adequately formulating amendments drafted in the action plan. Lastly, the findings from this research may contribute to the improvement of learner academic performance of MST schools around the globe.

1.7. THEORETICAL FRAMEWORK AND PRELIMINARY LITERATURE REVIEW

1.7.1. THEORETICAL FRAMEWORK

This study was approached from the human relations theory of management. The human relations theory was developed in the early 1920s by Professor Elton Mayo, an Australian psychologist and organisational theorist. A theory is defined as a contemplative and rational type of abstract or generalising thinking about a phenomenon or the results of such thinking (Noddings, 2018). Professor Elton Mayo, therefore, conducted experiments called the Hawthorne Studies to prove the importance of people for productivity, not machines. Therefore, this theory calls for the principal and the SMT members in MST schools to consider their subordinates as important people who need to be taken care of in order to improve productivity.

The human relations theory of management assumes that teachers wish to be part of a supportive SMT that enables progress and development. Therefore, if teachers and other staff members receive special attention from the SMT and are encouraged to participate in school activities, they view their work as significant. As a result, they are driven to be more

productive, resulting in good academic achievement (Hopkins, 2015). This management theory also indicates that if teachers or any staff members are treated in a way that makes them feel undervalued, they can mobilise each other and come up with ways to undermine the SMT; thus, hindering learner academic performance. However, when they are appreciated and valued, they put all their effort at work instead and they will be faithful and trustworthy to their subordinates. In addition, the theory also states that the way in which teachers and staff members act and think is not influenced by procedures, requirements, and rules imposed by the SMT (Wirth, 2014).

They put all their effort at work instead and they will be faithful and trustworthy to their subordinates. He further argued that, the theory also states that the way in which teachers and staff members act and think is not influenced by procedures, requirements, and rules imposed by the SMT.

1.7.2 PRELIMINARY LITERATURE REVIEW

This section seeks to review the roles of the SMT in the academic performance of MST schools. The literature review will discuss the emergence of the SMT in South Africa and also reflect on how other scholars have explored the roles of the SMT in the academic performance of MST schools. The literature review also discusses the importance of Mathematics, Science, and Technology, recommended teaching methods for MST, assessment strategies for MST, factors affecting academic performance of MST schools, and creating conducive environments for quality teaching and learning.

1.7.2.1 Emergence of the SMT in South Africa

During the apartheid era, the principal was granted supremacy, having unquestionable authority and charge overall school activities. Staff and parents would have very little input or no input at all (Badat, 2016). However, in the current education system, as stated by the South African School Act (SASA) 84 of 1996, the SMT comprises of the principal and his/her deputy or deputies, heads of department (HoDs), senior teacher, and post level one (PL1) teacher (Mestry, 2017). Rono, Onderi and Owino (2014) concur with Mestry when they state that school management is not only limited to the principal, but is also shared amongst other SMT members and, in some instances, with PL1 educators.

1.7.2.2 Functions of the SMT

The school has many activities that need to be planned and co-ordinated by the SMT. It is indeed the function of the SMT, through the power it has, to plan, organise, and control all school activities to provide quality teaching and learning to achieve desired academic goals (Hoadley & Galant, 2016). Important functions of the SMT are development of SIP prior to the academic year as per section 58b of the SASA, setting out activity plans for the whole year, allocating duties to staff members, and giving marching orders to staff members.

1.7.2.3 Importance of Mathematics, Science, and Technology

Green (2021) argues that MST focuses on the quality and communication of the things that encompass us and gives students tools to comprehend, examine, and impact the communities they live in. Knowing MST helps build up learners' confidence and improves their critical thinking abilities. Oakes, Lipton, Anderson and Stillman (2015) concur by citing that MST equips learners with tools to comprehend and change the world. These instruments involve consistent thinking, critical thinking abilities, relational abilities, and the capacity to think in a theoretical manner.

1.7.2.4 Recommended teaching methods for Mathematics, Science, and Technology

Knowles, Holton, Swanson and Robinson (2020) define teaching methods as a broad scope of processes, from classroom organisation and resources to day-to-day activities engaged in by educators and learners to facilitate learning. Tsai (2016) argues that teaching MST requires basic reasoning, powerful communication, joint effort, and innovativeness. He further argues that real-life situations, distributed teaching, hands-on activities, science projects, and field research projects are the most helpful teaching strategies in the MST curricular. Instruction in MST can frequently cultivate more interpersonal abilities and independent abstract reasoning. Suarez, Specht, Prinsen, Kalz and Ternier (2018) suggest the following teaching methods for MST, namely visualisation, co-operative learning, inquiry-based instruction, using technology in the classroom, management of learner behaviour as a teaching strategy, repetition, and planned testing.

1.7.2.5. Assessment strategies for Mathematics, Science, and Technology

Livieris, Kotsilieris, Tampakas and Pintelas (2019) contend that assessment has consistently been a part of prime significance to teachers and evaluates learners' work and makes decisions about their performance. They further state that assessment is more than just placing a learner in a particular grade. It reveals information on both teaching and learning effectiveness: for teachers, it reflects scholarly accomplishment, while for learners, it reveals the amount of work and exertion they can embrace. Nonetheless, one key aspect of assessment is to assist learners with learning their assessed work and improve their performance in future works to improve learners' performance. Gelmon, Holland and Spring (2018) suggest that educators should utilise different assessment strategies or even a combination of assessment methods depending on the context and learning climate. Teachers must know about the qualities and shortcomings of every assessment strategy and its reasonableness in order to select the best assessment strategy. Yarema (2015) highlights that short investigations, open-response questions, portfolios, self-assessment, administering pre- and post-tests, conducting experiments, investigation, and educator observation are the most effective assessment strategies for MST.

1.7.2.6. Roles of the SMT in ensuring good academic performance

Darling-Hammond (2015) mentions that MST are global problems as many learners perform poorly in Grade 12, particularly in Mathematics, in the United States of America (USA), other European countries, and in Africa. South Africa is one of the countries with a below average Grade 12 Mathematics and Science results. According to Benoliel (2017), the SMT plays a significant role in the performance of MST. He further stated that if the SMT fails to execute their management roles effectively, their school is likely to underperform. Thus, effective SMTs that provide good leadership and offer better teaching and learning are required in MSTA schools. The setting of school directions concerning learners and teachers, development of teachers, monitoring of curriculum, allocation of materials and financial resources, developing an annual School Improvement Plan (SIP), and actively liaising with the district office and other agencies to obtain assistance as required are regarded as key roles of the SMT in ensuring the good academic performance of learners (Knowles, Holton III & Swanson, 2014).

1.7.2.7. Creating an environment conducive for quality teaching and learning

Gawlik (2018) indicates that there is an extricable link between school climate and learner academic performance. He further contends that the quality of education relies on the educators as reflected in the performance of their duties and the successful co-ordination of the school climate. Barrett, Treves, Shmis, Ambasz and Ustinova (2019) are in support of this – they mention factors such as the size of the school, area or site, and class size; relationships between teachers themselves and teacher-learner relationship; offices and libraries, specialised workshops and laboratories; educator quality; and management of the school and teaching techniques as essential factors that influence learners' academic performance. To improve learners' academic performance and advancement and development, the school climate is a significant area that ought to be contemplated and well managed by the SMT.

1.7.2.8 Factors affecting academic performance of MST schools

Prakhov (2017) states that learners' academic performance is not merely a pointer to the viability or in any case of schools, but a significant determinant of the future of learners and the country as a whole. He further states that academic performance has become a phenomenon of interest; therefore, it motivated many researchers to investigate factors influencing the academic performance of learners. This is supported by Blumberg, Deater-Deckard, Calvert, Flynn, Green, Arnold and Brooks (2019) when they highlighted that researchers, guardians, policymakers, organisers, and parents had been attracted by academic achievement. They also believe that the significant objective of the school is to pursue the achievement of academic excellence by learners. However, some factors influence academic performance; it may be negatively or positively influenced. According to Ghavifekr and Rosdy (2015), the following are the factors affecting academic performance of MST schools.

(a) Lack of knowledge of school policies:

Oberle, Domitrovich, Meyers, & Weissberg (2016) define a school policy as a set of official beliefs for a particular conduct and standards within a school. School Management Teams (SMTs) need to ensure that they formulate school policies in order to guide the daily operations of a given school, as well as to ensure safety and a positive environment for

teaching and learning. Failure by a SMT to formulate policies that promote learner excellence and improve poor academic performance. Stakeholders such as parents, teachers, the Department of Basic Education and the learners should be consulted when formulating such policies;

(b) Lack of understanding of English as a language of learning and teaching;

Mutodi, & Ngirande (2014) indicate the problem of language in Mathematics as one of the contributing factors to the learning of Mathematics. They argue that Mathematics language does not form part of a person's daily vocabulary. This calls for an effective SMT to manage curriculum in the sense that they monitor if English is used across all subjects as the Language of Learning and Teaching (LOLT); and

(c) Lack of proper communication between the teacher and learners.

McQuail & Windahl (2015) define communication as an activity that occurs when a message is satisfactorily conveyed from one person to another so that they may understand it. Poor communication amongst stakeholders of a school can impede the academic performance of learners (Kpolovie, Joe, & Okoto, 2014). Kurtz, Draper, & Silverman, J. (2017) argue that the reasons for communicating is to explain, inform, encourage, propose, praise, reprimand, thank, persuade, appraise, consult, and apologise. They further state that a school will fail to achieve its desired academic goals if there is no proper communication amongst stakeholders.

1.8. RESEARCH METHODOLOGY AND DESIGN

Best and Kahn (2016) define research methodology as the various methodologies used in a study to collect data, which are then used as a foundation for inference, analysis, explanation, and estimation. This was achieved in this study by developing and conducting semi-structured interviews, observations, and document analysis (triangulation) to the SMT and teachers concerned in the five selected schools.

1.8.1. Research approach

The study adopted a qualitative research approach. This qualitative approach attempted to gather descriptive data that is rich in respect of a specific phenomenon or background to develop an understanding of what is being researched or observed (Merriam & Grenier, 2019). Moreover, this study was descriptive and exploratory. A descriptive study describes phenomena, activities, events, and conditions (Vaismoradi, Turunen & Bondas, 2013). This tudy is ideal and allows researchers an opportunity to collect, review, present, and analyse

data for the aim of clarification (Patten & Newhart, 2017). The data gained in this study will not be quantitative or numerous but in words.

1.8.2. Research paradigm

This qualitative study focused on the research paradigm of interpretivism. This paradigm focuses more on what the participants in the study perceive as reality within their context (Thanh & Thanh, 2015). Using this approach involved investigating MST teachers and members of the SMT within their contexts and trying to understand their experiences and interpretation of management skills that result in learner achievement. The study aims to understand the role of the SMT on the performance of MST schools in the Whiteriver Circuit; thus, it will be located in the interpretive paradigm. Interpretivism is described as a paradigm by which researchers do not intend to predict the actions of people, but rather describe how people interpret something in a way that one can understand and how they make sense of their specific actions (Antwi & Hamza, 2015).

1.8.3 Research design

Creswell and Poth (2016) define research design as the structure of research strategies and procedures picked by a researcher. They further state that the type of research problem faced by an organisation will determine the research design. In this study, the researcher deemed the qualitative approach as most suitable for interpreting and understanding the experiences and roles of SMT members and teachers in the academic performance of MST schools. To achieve this, the researcher selected a case study design that involved five secondary schools in the Whiteriver Circuit.

1.8.4. Population and sampling

1.8.4.1 Population

Lune and Berg (2017) define a population as a complete set of components (people or items) that have common characteristics defined by the sampling criteria, in which the researcher wants to draw a conclusion about. The target population for this study was the SMT members and teachers in five MST schools in the Whiteriver Circuit of Mpumalanga as the researcher has reasonable access to them.

1.8.4.2 Sampling

Sampling, in general, refers to choosing a particular number of subjects from a defined population as representative of that population (Guest, 2014). Thus, every statement made about the sample should also be true of the population (Deaton & Cartwright, 2018). In addition, it is commonly known that the bigger the sample, the smaller the sampling error.

Purposive sampling and convenient sampling were deemed most appropriate for this qualitative study as teachers and the SMT from the five MST schools in the Whiteriver Circuit were selected purposively to participate in this study. The selection of the SMT, senior teachers, and PL1 teachers from the selected five schools would serve the purpose of exploring the roles of the SMT in the academic performance of MST schools.

1.8.5. Instrumentation and data collection techniques

Instrumentation and data collection techniques refer to devices/instruments used to collect data, such as a paper questionnaire or computer-assisted interviewing system (Can, Arnrich & Ersoy, 2019). The researcher used three data collection methods, namely semi-structured interviews, observations, and document analysis. This process of using more than one data collection technique is called triangulation.

1.8.5.1. Interviews

An interview in qualitative research refers to a verbal conversation, where the interviewer/ researcher asks questions and the interviewee responds with the aim of eliciting information. The following are the fundamental types of interviews in research:

- **Structured interviews**

It is also referred to as a standardised interview and refers to research instruments that are inflexible in their operation. They are inordinate and utilised in survey research with the expectation of consistency in all the interview sessions. They permit almost none or very little of inciting the participants to acquire and analyse results. The questionnaire is one example of a structured interview.

- **Unstructured interviews**

It is also referred to as an in-depth interview and generally portrayed as discussions held considering a reason – to accumulate information about the research study. These interviews do not contain many questions as they lean more towards a typical discussion with a hidden subject.

- **Semi-structured interviews**

A semi-structured interview is defined as an interview in which the interviewer does not follow a specific list of questions (Janssens, Russo, van Overbeeke, Whichello, Harding, Kübler & Engelbrecht, 2019). The researcher used semi-structured interviews as the primary data collection instruments to determine the teachers and SMTs views regarding their experiences and roles in school management in order to achieve desired goals.

1.8.5.2. Observation

The observation technique was employed as a second method for data collection; this assisted the researcher to observe lesson presentations, departmental meetings, SMT meetings, and staff meetings. It was relevant in this study as it helped the researcher identify data that was not revealed by the semi-structured interview. During this observation, all COVID-19 safety measures were adhered to.

1.8.5.3. Document collection and analysis

Prasad (2017) defines a document as a powerful tool that can assist a researcher in understanding the main focus of the study better. Prasad (2017) further adds that documents may include policies, letters, minutes of meetings, reports, diaries, and other documents. In this study, the researcher also used documents as a data collection technique. The researcher made more focus on written communications that provided information on the phenomenon being investigated. Shipman (2014) argues that documents have limitations, and the researcher used a variety of official documents on management by the SMT to minimise these limitations during data collection.

1.8.6. Data analysis and interpretation

The qualitative data analysis process focuses on understanding how participants make meaning of a given phenomenon by analysing their perceptions, attitudes, understanding, knowledge, values, feelings, and experiences (Yüksel & Yıldırım, 2015). The researcher intended to analyse data using the constant comparative method described by Fram (2013), which is the coding system. The data is analysed accordingly to reveal categories for later retrieval and restoring.

1.8.6.1. Method of data processing

In this study, manual data processing and electronic data processing were deemed the most appropriate methods to process data. Wilkinson, Dumontier, Aalbersberg, Appleton, Axton, Baak and Bouwman (2016) define manual data processing as data processing that requires individuals to manage and process the data throughout its existence. They further assert that manual data processing utilises non-technological tools, including paper, writing utensils and physical filing cabinets. Although it is possible to take notes to capture interviewees' responses, it is difficult to focus on conducting an interview while taking notes simultaneously; thus, electronic data processing was also used to process data. In addition, the researcher used a laptop and cellphone voice recorder as tools for collecting and recording data from the semi-structured interviews.

1.9. CREDIBILITY AND TRUSTWORTHINESS

Oakley (2013) cites that there is always an element of bias when it comes to interviews, mainly because interviewers are not machines but humans too, and their manner may affect participants. Anney (2014) devised a set of criteria to determine the trustworthiness of the qualitative research, namely credibility, transferability, dependability, and confirmability. These constructs are briefly discussed below.

1.9.1 Credibility

Credibility refers to the researcher's endeavour to show that the correct picture of the phenomenon under study is introduced (Hancock & Algozzine, 2017). For example, the researcher verified the participant's opinions and experiences against others so that a correct picture of the behaviour of those under study could be constructed.

1.9.2 Transferability

According to Lewis and Tietenberg (2019), transferability is the provision of adequate detail of the setting of the fieldwork for a reader to have the option to decide whether the prevailing climate is like another circumstance with which the person is familiar and whether the findings can reasonably be applied to the next setting. To guarantee transferability, the researcher used thick descriptions. In addition, the researcher made an explicit record of field encounters in which the social and cultural relationships are put together in context.

1.9.3 Dependability

Veal (2017) defines dependability as the consistency and reliability of the research outcomes and the extent to which research methodologies are recorded, permitting somebody outside the study to follow, review, and analyse the research procedure. The researcher described in detail processes within the study to allow researchers in the future to get the same results if the same study was to be conducted.

1.9.4 Confirmability

According to Abdalla, Oliveira, Azevedo and Gonzalez (2018), confirmability refers to the process in which the researcher finds ways to show that research findings are from the data collected and not his/her own. The researcher acknowledged the research methodologies adopted, and the reason for adopting them was provided. The researcher also used triangulation of sources, which is scrutinising the consistency of different data sources.

1.10. ETHICAL CONSIDERATIONS

Research ethics is the application of moral rules and professional codes of conduct to the collection, analysis, reporting, and publication of information about research subjects, particularly active acceptance of subjects' right to privacy, confidentiality, and informed consent (Clandinin & Caine, 2013). Before embarking on this study, the researcher requested approval to conduct the study from the MDoE. Upon receiving the approval letter, the researcher approached the district office and the five participating schools with the letter describing the purpose and aim of the study, how the interviews would be conducted, and explained that interviews would be recorded through a laptop and cellphone voice recorder. The letter also indicated that the school would function as per normal without any

disturbance from the data collection process. Participants were also guaranteed that they would remain anonymous and were also advised that they may withdraw their participation at any given time without providing reasons. Consent was also obtained from participants selected to participate in the study. Ethical clearance was also granted by the University of South Africa (UNISA).

1.11. LIMITATIONS AND DELIMITATIONS OF THE STUDY

1.11.1. Limitations of the study

(Clarke, Hance, Soneji, Dennis, Lingsong Yun and Duminda 2014) define limitations as factors or situations that cannot be avoided in the research.in this study the limitation was the degree to which the SMT members were loyal, respectful, and friendly to each other, as this sometimes led to SMT members not revealing the truth about how they manage the school. This biasness by some participants was minimised by analysing management documents for the curriculum and school as a whole. These documents included departmental monthly reports, minutes of departmental meetings, minutes of staff meetings, time books, and leave registers.

Another limitation was that many schools in the Whiteriver Circuit are not performing well in Mathematics, Science, and Technology; however, the researcher could only select five MST schools due to limited resources. The schools were selected on the basis that they were within close proximity to each other. However, the researcher used three data collection techniques to address these limitations, such as interviews, to offset the anticipated crisis of having limited documents. The researcher also used observations to overcome the threat of semi-structured interview data. The observation of classroom lessons and the SMT meetings allowed the researcher to identify conducts highlighted by other SMT members that participants had not revealed during the interviews. Monthly reports by HODs were also of great assistance to provide data on how they manage curriculum. These three data collection techniques (semi-structured interview, document analysis, and observation) minimised limitations and ensured the data's credibility, validity, and trustworthiness. This process of using three data collection techniques is called triangulation. Triangulation refers to applying more than one data collection technique on the same topic (Heale & Forbes, 2013).

1.11.2. Delimitations of the study

Delimitations are the restrictions placed by the researcher around the study to ensure that it remains controllable (Whiteman, Walker & Perego, 2013). In this study, delimitations included: (a) limiting the evaluation of the impact of the SMT on academic performance to five MST schools within the Whiteriver Circuit, with only a few SMT members and teachers to be interviewed; (b) avoiding using the researcher's school to avoid bias when conducting interviews; (c) restricting the quantity of data to be collected by limiting the evaluation of the capacity of the members of the SMT to the opinions of the principals and HODs; and (d) each interviewee was given a maximum of 30 minutes to answer all the interview questions. The study could not be generalised because MST schools in other provinces may not be operating in the same contexts as those in the Mpumalanga Province. However, the researcher plans to reduce all these delimitations on the quality of research by using the triangulation method of data collection.

1.12. DEFINITION OF KEY CONCEPTS

1.12.1. Mathematics, Science, and Technology schools: According to the Mpumalanga Department of Education, Mathematics, Science, and Technology schools refer to 101 schools transformed in 2014 to only offer Mathematics, Science, and Technology subjects. In this study, Mathematics, Science, and Technology schools refer to the five schools purposively and conveniently selected to participate in this study.

1.12.2. **School Management Team:** Refers to the structure in the school with the only role of providing direction, leadership, mentoring, monitoring, and assistance to ensure quality teaching and learning (Elias, Dinah, Tome, Sizakele & Soane, 2014). In this study, the School Management Team refers to the principals, HODs, senior teachers, and PL1 teachers of the Mathematics, Science, and Technology schools that participated in this study.

1.12.3. **Effective school management:** Bush and Glover (2014) define effective school management as an administrative process through which school managers or leaders ensure that teachers contribute towards quality teaching and learning processes, effective to improve student learning and achievement. In this study, effective school management refers to the process by which the School Management Teams of the five selected Mathematics, Science, and Technology schools work with teachers, non-teaching staff, and learners to achieve a common academic goal.

1.12.4. Quality teaching and learning: The process of learning and teaching where learners are actively and purposefully engaged with issues and activities they regard as important (Ma, Han, Yang & Cheng, 2015). In this study, quality teaching and learning is defined as activities of the School Management Team, teachers, and non-teaching staff that promote student learning in the five selected Mathematics, Science, and Technology schools.

1.13. PLANNING OF THE STUDY/CHAPTER OUTLINE

This study will consist of the following five chapters:

Chapter 1: Orientation of the study

This chapter will provide an introduction and background to the study, as well as discuss important aspects such as the statement of the problem, aim of the study, main research question and sub-research questions, significance of the study, theoretical framework, and the definition of key terms.

Chapter 2: Literature review

This chapter will review literature pertaining to the role of the SMT on the academic performance of MST schools. The importance of continuous SMT training by the DoE to improve performance in MST schools will also be outlined.

Chapter 3: Research methodology and design

This chapter will discuss the study's research design, research approach, selection of participants, research instruments, limitations, and ethical considerations.

Chapter 4: Data presentation and discussion

The results of the study are interpreted and presented in this chapter.

Chapter 5: Summary of findings and recommendations

This chapter outlines the study's key findings and puts forward recommendations to the SMT, DoE, and recommendations for future research.

1.14. CONCLUSION

This chapter provides an introduction and background to the study. It further indicates that MST subjects have a significant impact on our daily life activities, and they continue to be the most important, as the world is currently at a stage where its wealth and economic development is highly dependent on them. Aspects such as problem statement, aims and objectives, significance of the study, limitations and delimitation, research methodology, and design of the study were briefly discussed in this chapter. Finally, this chapter also provides the definitions of key concepts and division of all chapters included in this study.

The next chapter (Chapter 2) will focus on the review of literature related to the research title of the study.

CHAPTER 2:

LITERATURE REVIEW

2.1. INTRODUCTION

Hart (2018) defines a literature review as the process that involves methodical identification, interpretation, and location of documents containing information related to the research problem. He further states that the literature review is regarded as one of the significant components of the research, and is the principal means by which the new researcher identifies gaps to be filled. Hamari, Koivisto and Sarsa (2014) concur by stating that the literature review assists the researcher in studying and discovering the limitations in the literature. Singer and Alexander (2017) further add that the purpose of the literature review is to share with the reader the findings of other studies that are more related to the conducted study. This is also supported by Marshall and Rossman (2014) when they mention that the purpose of a literature review is to provide frameworks for establishing the significance of the research, together with a benchmark for comparing findings of a study conducted with results from other studies.

In this study, the researcher intended to provide a critical review of the body of literature and the numerous researcher's views that have been studied about the role of the SMT in the academic performance of learners in South African schools and internationally. This will be achieved by first presenting the theoretical framework that guides the study, which is the "human relations theory." The researcher also presented the conceptual framework in which the study is grounded. The conceptual framework illustrated the research approach to ease the readers' understanding of the study. The concepts of distributed leadership and instructional leadership are clarified in this chapter. This chapter further presented the perspectives on the SMT in different countries, emergence and composition of the SMT in South Africa, the role of the SMT, duties of each SMT member in South African schools, National Senior Certificate (NSC) Performance overview for the past five years, MST and its importance, teaching strategy for MST, assessment strategies for MST, general factors influencing academic performance, factors influencing academic performance in the MST schools, roles of the SMT in ensuring good academic performance, and creation environments or climates conducive for quality teaching and learning.

2.2 THEORETICAL FRAMEWORK

This study was based on the human relations theory of management. The human relations theory of management was developed in the early 1920s by Professor Elton Mayo, an Australian psychologist and organisational theorist from Australia. This theory is defined as a contemplative and rational type of abstract or generalising thinking about a phenomenon, or the results of such thinking (Noddings, 2018). According to Walker (2015), the human relations theory emphasises the point that organisations comprise groups of people. Every person is incomparable and therefore cannot be easily predictable. He further states that employees' behaviour is complex, and understanding them is imperative to recognise their individual motivations.

Ferrell and Fraedrich (2015) argue that the complexity of individual behaviour increases when employees indicate their desires and know when they will make particular decisions. Therefore, it is the managers' role in an organisation to recognise the needs of individual employees and act appropriately. From a behavioural view, employees can also choose what behaviour they desire and how it manifests itself. Therefore, there is no particular pattern that is automatically related to a specific situation.

According to Wong, Wan and Gao (2017), this theory perceives employees in a different way. Employees are perceived as thinkers, people with different needs, and who enjoy receiving attention. They also contend that employees have different values, morals and desires; as a result, they will portray different behaviours.

Many organisations recognised that attention motivates employees and allows them to express themselves for the benefit of the organisations. Professor Elton Mayo, therefore, conducted an experiment called the Hawthorne Studies to prove the importance of people for productivity, not machines (Mayo, 2014). This theory, therefore, calls for the principal and all the members of the SMT in MST schools to create good human relations amongst all staff members to ensure good academic performance.

In this theory, Hallinger and Lu (2014) assume that teachers wish to be part of a supportive SMT that enables progress and development. Therefore, if teachers and all staff members receive special attention from the SMT and are encouraged to participate in school activities,

they view their work as significant. As a result, they are driven to be more productive, resulting in good academic achievement.

Hopkins (2015) argues that this management theory indicates that if teachers or any staff member are treated in a way that makes them feel undervalued, they can mobilise each other and come up with ways to undermine the SMT, thus hindering learner academic performance. However, when they are appreciated and valued, they put all their effort at work instead and they will be faithful and trustworthy to their subordinates. He further argued that, the theory also states that the way in which teachers and staff members act and think is not influenced by procedures, requirements, and rules imposed by the SMT.

The role of the human relations theory in this study is to provide assistance to the SMT members on how to improve their relations with other staff members and encourage the participation of all teachers in the management of the school. Maximum participation in the management of the school by other teachers will therefore improve their management and leadership skills, develop more potential for teachers, and improve learner academic performance. Therefore, the researcher concluded that the human relations theory in this study emphasises the issue of good relations between the SMT and other staff members under their supervision.

2.3 CONCEPTUAL FRAMEWORK

This study is located within the instructional and distributive leadership. Bush (2013) contends that the key role of the SMT is to improve teaching and learning; hence, the SMT members need to be instructional leaders. This is supported by Mestry and Govindasamy (2021) who suggest that SMT members are not expected to lead schools single-handedly but should rather involve other school members. This contention proposes that the SMT members are not expected to be exclusive in their attempt to attain desired outcomes of the school. Instead, the approach they use to monitor teaching and learning needs to be shared or distributed and extended to other teachers with specific skills at different levels. This means that although principals and their SMT members are regarded as instructional leaders, they are not necessarily subject specialists. Therefore, in order to monitor class activities related to specific subjects, the expertise of HODs and other subject specialists will be needed. Hence, this study is located within the instructional and distributed leadership concepts.

Bhengu and Mkhize (2013) argued that principals are expected to interact with other SMT members and teachers, and distribute or share leadership in an environment of trust. This expectation by Bhengu and Mkhize (2013) is in contrast with the actual exercise of principals mentioned by Bush and Middlewood (2013). They state that principals tend to be alone in their offices when performing school tasks and, spend most of their time attending meetings and performing general administrative duties.

Nevertheless, in this study, distributive leadership seems to be more appropriate and can offer solutions to the SMTs of schools of low enrolment without deputies. The researcher contends that distributive leadership can help principals share leadership information with other SMT members and PL1 educators. Therefore, the concepts of distributed and instructional leadership form the framework in which the study is founded.

This study uses the distributive leadership as presented by Northouse (2021), who defines it as a concept that emphasises leadership practice rather than the duties, responsibilities and structures, and the leaders' routines. Distributive leadership is a practice that is seen as a product of interactions of principals, SMT members, PL1 teachers, and their context. Principals in schools with low enrolment tend to be directly involved with the support and monitoring of classroom activities as the situation does not allow them to have deputies (KZN DoE, 2015). This distributive leadership offers the SMTs an opportunity to lead with instruction and through others in an environment of trust.

Bush and Glover (2012) state that most successful principals, deputies, and HODs prefer to operate under distributed leadership practice across their leadership teams. As a result, these leaders claim that leadership greatly influences schools and learner academic performance when it is widely distributed. The primary issue is not necessarily that leadership is distributed, but how it is distributed. Distributive leadership practice is not simply the actions of the principal or leaders in other levels. Thus, it is important to examine the interaction between leaders, followers, and elements of a situation when studying leadership practice.

Bhengu and Gounder (2014) postulate that this theory is relevant to schools where everybody takes part in learners' learning, including the principals, deputies, and the HODs (not just for PL1 educators). Numerous leadership skills attainable from the principal, deputies,

HODs, and PL1 teachers alike can be applied in a distributed manner, especially in routines such as evaluation and monitoring.

It is also important for the principal and the SMT members to know good instruction when they see it and applaud everyone involved. Likewise, More (2016) argues that the SMT can promote good instruction where its doses are weak or non-existent and facilitate ongoing staff development. The researcher's view on this is that principals and their SMT members are expected to be knowledgeable about daily classrooms activities so they are able to intervene when necessary.

Instructional leadership is defined as the influence of relationships that inspire, empower, and support the efforts of teachers to learn about and improve their teaching practices. In support of this, the National College for School Leadership (NCSL) (2009) suggests that the SMT should lead learning and teaching by example. This implies that they need to know what occurs in the classroom through monitoring teaching and learning. Bush (2013) and Du Plessis (2013) concur by stating that the SMT are instructional leaders and therefore should prioritise active involvement in teaching and learning monitoring.

Bush (2013) stresses the importance of the SMT as an instructional leader. He argues that the SMT has a significant impact on teaching and learning in the classroom by becoming instructional leaders. Instructional leadership is a concept that links leadership and learning. Its importance originates from the fact that it emphasises the direction of influence. Thus, the influence of instructional leadership is targeted at students through their teachers.

However, Lambert (2013) argues against the concept of the SMT becoming instructional leaders who prevail over the whole school without other teachers' participation. Instead, he prefers to revive the leadership phrase for learning. However, this leadership phrase for learning has its own challenges. It proposes emphasis on learning as if all learning methods are exclusive of teaching, a debatable contention.

The researcher argues that learning occurs as a result of teaching by teachers. In support of this argument, Rigby (2014) suggests that, like any other type of leadership, learning is built and occurs through interactive processing initiated by the teacher. He suggests that teachers

view the SMT as leaders based on appreciated forms of knowledge, expertise and human skills.

This study is located in the instructional leadership with the understanding that learning and teaching are inseparable. Both the distributive and instructional leadership guide this study due to their relevance to the contexts of the study. This study emphasises teaching and learning, particularly the monitoring thereof. Curriculum monitoring and implementation cannot be managed by one individual. Instead, the principal needs to ensure constant interaction between the SMT and the teachers, and that interaction must be regarded appropriate to be carried out through the concept of distributed leadership. On this matter, the researcher argues that the SMT as instructional leaders must be lifelong learners in order to be familiar with what is happening in classrooms.

2.4 PERSPECTIVES ON SMT IN DIFFERENT COUNTRIES

Basson and Mestry (2019) assert that the most crucial function of the SMT is to ensure the effective daily functioning of schools. Therefore, it is vital to look at how the SMTs in South Africa and other countries develop and implement policies to ensure schools' daily management and functioning. According to Parmenter (2015), there is an increasing expectation that the SMTs in schools will reflect a universal perspective in their practice, reflecting on their roles and duties. He further argued that the SMTs around the world have a shared duty of developing, implementing, and evaluating school policies). Therefore, it is important for the SMTs to ensure that the school environment and school partnerships support the school by appreciating all parties' roles in effective management of the school.

Comparing the school management of African countries with that of Western countries is crucial. It helps improve school management in our education system by learning from other countries encountering the same situations as ours. This comparison shows how different countries develop and implement policies relating to school management to improve their school performance. By learning from the school management policies of western countries and that of other African countries, South Africa can revive its own management policies that will help better manage schools.

22.4.1 School Management Teams in Western countries.

In the past years, the World Bank promoted School-Based Management (SBM) innovations as part of their agenda for a broader decentralisation process in Europe, the Americas and

Asia. According to Bandur (2018), SBM is a system of decentralisation to the school level of authority and responsibility in order to make decisions on important matters related to school functioning. Pilane (2017) concurs by stating that a SBM is a strategy of improving education by transferring important decision-making powers from the government to the regional offices to individual schools. SBM provides the SMT, the teachers, the learners and parents with control over the education process by giving them the responsibility to make decisions about the operations of a school.

The United Kingdom (UK) established its School Management Structures during the early 1970s (Lewis, Persoons, Bebber, Kigathi, Maintz, Findlay & Berlin, 2018). The UK's Department of Education and Science confirmed in 1977 that the success of the SMTs depended largely on consultations, working together as teams and contribution by each individual member of a team. The Department of Education and Science in the UK also highlighted the quality of leadership by headmasters (principals) as the most imperative single factor. Barr and Saltmarsh (2014) mention that, in Britain, the involvement and participation of staff members in managing the school depended more on the manner in which principals used their authority to empower their schools.

USA's Constitution indicates that each state is in control of its public education. There are 50 states in the USA, and each has its own department of education, which assigns the responsibilities of the daily functioning of schools from kindergarten to Grade 12 in different districts of local public schools to the schools themselves (Karner, 2017). Karner (2017) further contends that school districts and states have given schools more independence. This means that school management in the USA is also school-based, as in the UK. Elmelegy (2015) states that school-based school management in the USA promotes improvement in governance as individual schools are empowered to manage their own schools. He continues to state that the decentralisation of school control from districts to individual schools in the USA gives individual schools the following:

- The authority to make decisions that influence a school culture, school policies, and direction.
- Managerial knowledge and expertise that allow staff to understand and make their input to a school's performance.

- Information about the academic performance of learners, progress towards realising the goals of a school, and how parents and the community at large perceive the services offered by the school.

2.4.2 School management teams in African countries.

According to Ganimian (2016), school-based management of schools only picked up after the beginning of the new millennium in many African countries. In some, such as South Africa, changes were made in legislation, creating an opportunity for school-based management in the 1990s. These changes saw an introduction into law of the South African Schools Act (Act 84 of 1996), which brought with it the establishment of SMTs. Management powers are given to the SMTs in order to ensure that all schools in South Africa are effectively managed and are functional so as to achieve their desired academic goals.

In Lesotho, the main focus of SMTs is to ensure that the basic aims of teaching and learning are realised, and not much attention is given to strategies or practices meant to improve parent involvement. The role of SMTs in Lesotho is to ensure that education takes place properly in the country. According to Nkanda, (2017), 80% of secondary schools in Lesotho belong to churches. These schools are run by churches as proprietors, while government schools are sponsored by government in all of their activities. In both government schools and church-run schools, SMTs operate the same way, the only difference being that a principal from a church school should be a member of such a church and should possess the relevant qualifications while in government schools, it can be any person possessing suitable qualifications, regardless of their religious affiliation.

In Namibia, school based school management focuses on decentralisation at school level. Namibia adopted the school based management approach as a strategy to increase school independence and to devolve decision-making to teachers and sometimes parents, students, and the community leadership. As with decentralisation, the establishment of SMTs assumes that “those who are closest to the primary business of a schools will make the best-informed decisions” (PLEASE CITE YOUR SOURCE). The objective of SMTs in Namibia is to improve school management, school supervision, and teaching and learning. The SMTs empower schools in decision-making processes and extend democracy in education.

2.4.3 School management teams in African countries in contrast to such in Western countries.

As in some Western countries, African countries such as South Africa, Tanzania, and Zimbabwe promote school-based school management. They have even changed their education policies which belonged to colonial/segregationist regimes. The education systems in these African countries faced severe pressures from decentralising tendencies towards education for democracy and liberation. In these African countries, educational policies were developed to ensure a broader picture of legitimate interests by providing stakeholders of public schools with an opportunity t actively partake in decision-making. Kiragu (2013) argues that school-based school management in African countries promotes better decision-making, which, in turn, will cater for the needs and priorities of the local communities, particularly the previously marginalised communities.

The education systems of many Western countries have been structured in a way that their governments remain with the central powers that only they can distribute to schools. African countries such as Tanzania, South Africa and Malawi have adopted this distribution of central powers. The distribution of the central powers to the school level suggests that the government has its own duties in education, and the school management duty is delegated to schools themselves. Du Plessis and Mestry (2019) highlight the following main powers as those distributed from the centre to the school level:

- The compensation, appointment and dismissal of staff;
- The allocation of funds to run the school;
- The selection of the curriculum to be delivered;
- The supply of teaching and learning materials; and
- The repairs, building, and maintenance of school infrastructure.

According to Du Plessis and Mestry (2019), the distribution of management powers to the school level does not only broaden school-level engagement with decision-making, but also provides the foundation for school-based school management by providing the principal of the school and the SMT with more powers and space to implement such school-based decisions. The aim of distributing governing powers to the school level is to make schools

more accountable to their local communities by entrusting SGBs with planning in the schools, school finances, and other local decisions related to school governance.

Brown, Schildkamp and Hubers (2017) argue that school-based school management can help foster an improved school culture and promote informed quality decisions. This school-based school management approach is an imperative tool for attracting more capacity and embedded interest among staff members. However, one cannot assume that a SMT will necessarily manage new situations effectively. This, therefore, calls for a SMT to move away from dictatorial management approach and to allow all members space to freely offer their opinions in the teams in which they work as collectives (Woods, Jeffrey, Troman & Boyle, 2019).

On the other hand, Yu, Zhou and Zhu (2016) argue that there is little evidence that decentralisation attains what it aims to, as it usually leaves considerable residual power at central and regional levels and has little to no impact on achieving the objectives of teaching and learning process.

The paper follows a view that school performance is likely to improve in countries where the management of schools is delegated to the schools themselves, and where decision-making, control of school finances and curriculum (development, implementation, monitoring and evaluation) were devolved to the school level. The researcher further argues that if local communities and parents were to be given autonomy to govern and hold schools accountable for their performance, schools would be more effective and efficient. SMTs are meant to increase the potential of the learners and all staff members. The management of schools cannot be performed in isolation, and so no individual would possess all the necessary skills, energies and time to manage a school; and it is for that reason that a team is, rather, better equipped and prepared for such.

2.5. THE EMERGENCE AND COMPOSITION OF THE SMT IN SOUTH AFRICA

2.5.1 Emergence of the SMT

Saiti (2015) states that before 1994, in South Africa, the principal was the only person responsible for managing and leading the school. He further indicates that the principal was solely accountable to the former apartheid education department. Teachers and parents had

no role or input in developing school policies and decision-making, except in schools for white people.

After the arrival of democracy in South Africa, the education system was reorganised so that school management is no longer the principal's responsibility only, but of many stakeholders in education (Biesta, 2015). Therefore, management and governance structures of the schools, such as the SMT, SGB, and learners' representative council (LRC), were introduced by the SASA 84 of 1996. Bush and Glover (2016) concur with the introduction of management and governance structures. They state that the SMT is a crucial management structure in the new democratic South Africa as it provides each member with an important role in decision-making at school, and control or manage their working environment. They further assert that the SMT can resolve complications more innovatively than individuals (principals) who takes decisions alone.

Therefore, the researcher argues that the SMT concept in the new democratic South Africa represents the principles of teamwork in a school environment where all members share ideas and have a shared purpose. Effective SMTs offer a great tool to address the challenges and problems encountered by teachers in South African schools.

2.5.1.1. Significance of the SMT

The SMT allows members to work co-operatively on educational tasks to achieve a desired academic goal (Woods, Jeffrey, Troman & Boyle, 2019). This suggests that all SMT members carry out educational activities together, which comprises effectual communication and interaction. They further state that the SMT members also encourage sharing of knowledge, understanding each other on an individual level, assisting each other in attaining a level of excellence, creating a sense of unity in the team, and working toward the attainment of common educational goals. This is supported by Pitsoe and Isingoma (2014) who state that the SMT members set goals, interact, co-operate, and make decisions together, combining their expertise and skills to compile work plans that will allow them to achieve their goals. Fidalgo-Blanco, Sein-Echaluce, García-Peñalvo and Conde (2015) also agree by stating that teamwork is a significant approach that positively impacts learners' performance. They further stated that effective teamwork by the SMT is a vital approach

that schools can use to develop the potential of teachers. Therefore, effective SMTs strive for healthy teamwork as it is a crucial element in the progress and productivity of the school.

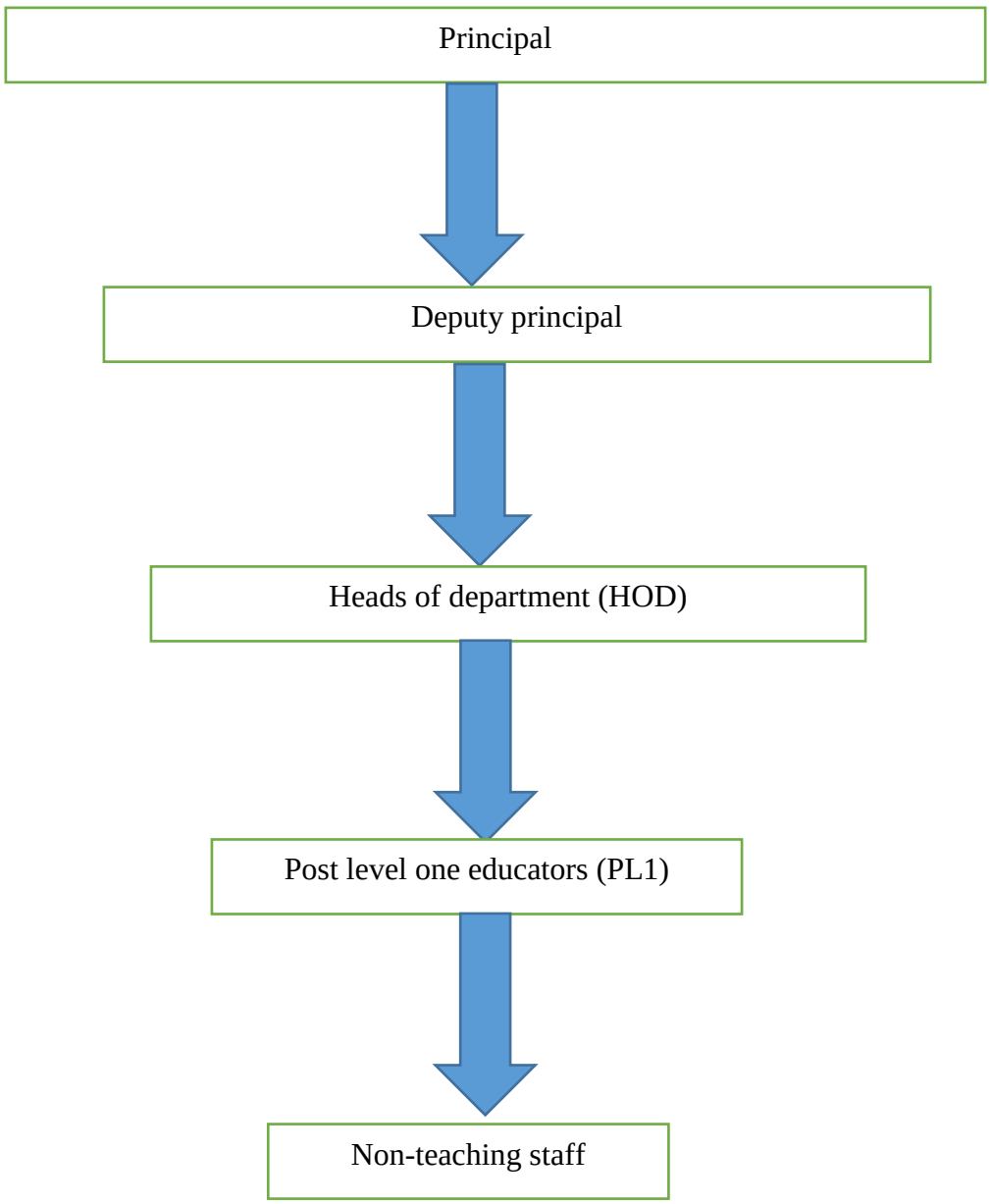
Phalane's (2016) research reveals that school effectiveness and improvement can easily be achieved through teamwork. Geldenhuys and Oosthuizen (2015) concur with Phalane by stating that effective SMTs use teamwork as a tool to ensure improvement in the quality of teaching and learning. They further state that with teamwork, the strengths of the SMT members are shared and their weaknesses are minimized. Furthermore, if the SMT members work together as a team, they reduce isolation, increase co-ordination, and promote sharing resources and ideas among them.

It is evident from the information mentioned above that if the SMT members work together, then the school and learners succeeds. Therefore, the researcher concludes that SMT members that work collectively as a team benefit the individual, the SMT, and the school. In addition, teamwork encourages the SMT members to appreciate and respect each other and promote a sense of belonging. Moreover, teamwork enables the schools to realise their goals.

2.5.2. Composition of the SMT

As mentioned in Chapter 1 (refer to cf.1.12), the SMT refers to the structure in the school with the only role of providing direction, leadership, mentoring, monitoring, and assistance to ensure quality teaching and learning. The SMT consists of principals, deputy principals, HODs, PL1 teachers, and non-teaching staff (PAM, 1998).
According to the Personnel Administrative Measure (PAM, 1998), Figure 2.1 below shows the hierarchical order of SMT members in South Africa.

Figure 2.1: hierarchical order of the SMT members in South Africa.



2.5.2.1 Responsibility of the SMT members

According to Benoliel (2017), the difference between responsibilities and functions is that, responsibilities are particular duties or tasks that the SMT members must perform as per their roles, while functions refer to the process of deploying human and physical resources by the SMT to carry out tasks to attain desired goals of the school. The SMT is responsible for ensuring the well-functioning of the school programme. Maharajh, Nkosi and Mkhize (2016) contend that one of the key responsibilities of the SMT is to ensure that all educational policies are known by educators and implemented effectively. The literature shows

numerous responsibilities for the SMT, which differ from a detailed list of tasks to common job descriptions. The SMT members require adequate direction to plan and perform their responsibilities.

Mestry (2017) asserts that the SMT also carry out the responsibility of managing and leading teachers and learners to ensure quality teaching and learning in schools. Hence, the SMT members are accountable for the overall performance of the school, provision of resources, and implementation of school policies.

The Department of Education (1999:21) and Matshe (2014) outline the responsibilities of the school management team:

- To ensure effective functioning of the school by promoting quality teaching and learning.
- Motivate teachers and learners to ensure they perform well.
- Ensure satisfactory management of schools so that they always comply with appropriate legislation, rules and PAM.
- Promote teaching and learning in an appropriate manner and in accordance with accepted policies.
- Ensure that school finances are appropriately used and managed.
- Ensure that the school development plan is formulated and implemented accordingly.
- Develop and implement the School Improvement Plan (SIP) and School Self Evaluation (SSE).
- Implementation of Integrated Quality Management System (IQMS).
- Learners and educators' work must be strictly controlled and monitored.

Feiteira (2018) argues that the SMT members need to be diplomatic when dealing with teachers and learners. They should also listen to their teachers so that they may be able to interpret their behaviours and create an environment where teachers feel free to participate or make their contributions. Moreover, the SMT must monitor teachers' work and help teachers who find it difficult to cope with specific issues at school.

2.6 FUNCTIONS OF THE SCHOOL MANAGEMENT TEAM

According to Hoadley and Galant (2016), school management involves structures and measures to co-ordinate the various school activities. They further assert that the SMT is given power and authority in its position in the school's management structure. Therefore, this means that all SMT members are accountable since they have the authority and obligation to manage schools to promote quality teaching and learning.

The researcher argues that drafting the timetable prior to the academic year, developing a year programme, and curriculum development are the most significant functions of the SMT. The researcher further argues that the SMT fulfils its functions officially through the powers vested in their positions as school managers.

2.6.1 Planning

Planning is regarded as one of the significant functions of the SMT, which refers to all planning activities needed to ensure quality teaching and learning in the school (Myende & Bhengu, 2015). Gurley, Peters, Collins and Fifolt (2015) concur by stating that planning activities begin by setting the mission and vision, and the purpose and objectives of the school. This requires the SMT to develop management policies of the school, create projects to develop the school, and conduct budgeting timeously. Thus, planning is regarded as one of the essential functions that need to be exercised by the SMT to ensure an effective school that offers quality education to all learners.

2.6.2 Organising

Malatji, Maphosa and Mavuso (2016) contend that one of the functions of the SMT is to ensure that all activities and resources needed to achieve the objectives of the schools are well-organised. Bell and Harrison (2018) posit that the SMT should ensure division/separation of activities and resources into workable groups and allocate the responsibility for attaining objectives to the relevant staff members during this phase.

2.6.3 Leading

According to Khuong and Hoang (2015), the SMT should influence its staff members to achieve the desired objectives of the school by providing leadership to them. These

leadership functions involve communication with staff members, motivation of staff members, rewarding good work done, management styles used, discipline, and modelling aspects of motivating staff members to carry out instructions properly to improve learners' learning.

2.6.4 Controlling

Controlling means that the SMT must ensure that all planned activities are followed and implemented accordingly to achieve the expected outcomes and objectives (Kerzner, 2018). As a management function, controlling also includes the setting up of criteria and principles of performance, and defining methods for evaluating such performance.

2.7 DUTIES OF EACH SMT MEMBER IN SOUTH AFRICAN SCHOOLS

The Educators Employment Act (EEA) No. 76 of 1998 describes the primary duties of different members of the SMT as follows:

2.7.1 The principal

The principal is viewed as the Chief Executive Officer (CEO) of the school. They occupy the authoritative position of the senior member and leader of the SMT. The principal is an accounting officer at the DoE and is responsible for supervising the other SMT members, teachers, general assistance, administrative clerk, learners, and parents at school. The principal automatically becomes a member of different committees such as the finance committee, School Governibg Body (SGB), safety committee, School-Based Support Team (SBST), and other committees related to school management and governance as needed. Furthermore, the principal is also required to ensure that extra- and co-curricular activities are promoted in the schools. The duties of the school principal as described by the Employment of Educators Act No. 76 of 1998 are as follows:

- An instructional leader who assumes responsibility to provide quality teaching and learning in line with the accepted policies.
- Works with the office of the district and government officials from DoE, in the establishment and implementation of the curricula.

- The principal assumes accountability for guiding and overseeing the work, effectiveness of the other SMT members, teachers in the school, and non-teaching staff.
- Develop standardised curricula, evaluate teaching approaches, monitor learners' achievement, promote parental involvement, and review school policies and procedures.

According to Wheelen, Hunger, Hoffman and Bamford (2017), the principal needs to ensure that the necessary policies for managing the curriculum are in place and implemented. They further cite that it is the principal's duty to ensure that all teachers attend educational workshops for professional development. In this regard, as the senior manager of the school, the principal has to carry out the role of being an active mentor in appraising other SMT members and teachers to develop potential skills.

Bush, Tony and Glover (2016) argue that the principal needs to offer the other SMT members and teachers with necessary support and opportunities to exercise their duties well. They further argue that the principals' delegation of some duties to other SMT members and teachers is also important. This will reduce their workload and will provide capacity or empower their subordinates. Similarly, Van Vooren (2018) asserts that principals use the delegation of duties as an opportunity to develop teachers and establish confidence in them (if they are asked to assume accountability and responsibility for a particular task).

The Employment of Educators Act No. 76 of 1998 states that the principal carries out the professional development task of staff and general management of the school. However, when dealing with matters related to the school or writing reports, the principal does not take the decision alone, other SMT members are involved. As an instructional leader, the principal emphasises the following as part of his management task (Baron, 2018):

- Assist HODs to manage their relevant departments adequately.
- Supervise curriculum development and implementation in different departments, bands, and grades.
- Ensure the implementation of curriculum and other educational policies.
- Plan and conduct developmental workshops for staff.

- Ensure that the Integrated Quality Management System (IQMS) and Continuity Professional Teacher Development (CPTD) are implemented effectively.

2.7.2 The deputy principal

The deputy principal is considered the principal's assistant and is also in charge of the school's management in the absence of the principal (Leahy, 2017). This means that the job description of the deputy principal is similar to that of the principal. According to the Employment of Educators Act No. 76, the primary duties of the deputy principal are as follows:

- Assists and supports the principal in school management.
- Monitors and oversees the work and performance of staff members, and where required, discuss and write or sign reports on behalf of the principal.
- Liaise with appropriate government departments on behalf of the principal.
- Provide control of the administrative processes of the activities of the school.
- Participate in the development process of the school in order to regularly review the professional practice of teachers and their development.

Gann (2015) cites that the SMT's duties are to monitor and guide human resources now and again, especially in the manner to how they relate to each other. Therefore, the deputy principal should control teachers work in a way that will lead to learners' academic performance. Curriculum management and instructional leadership is also the responsibility of the deputy principal, for example, choosing textbooks, co-ordinating the work of subject committees, drafting of timetable, INSET, and developmental programmes such as IQMS and CPTD. The deputy principal is also expected to participate in different school committees, including the development committee, in order to contribute to the school development and improvement.

2.7.3 The head of department

The HOD is responsible for the subjects in their department or band (Malatji, 2018). The HOD is also required to develop their departmental policy. Momanyi (2016) states that the HOD is further requested to co-ordinate activities related to the classroom, such as the

assessment programme and class/homework programme of all subjects under his/her department. According to Porter (2015), the HOD is also expected to provide guidance to members of the staff on the following:

- Offer information concerning content to be covered, allocation of duties to subordinates, teaching methodologies, class/homework, and practical work.
- Inform subordinates about the new developments on the approaches to subjects they are managing.
- Offer professional advice to learners concerning their educational welfare.
- Offer induction to novice or newly appointed educators under their department.
- Advise the principal and the deputy principal about the allocation of workload among teachers in their department.
- Participate in educator development programme such as Integrated Quality Management System (IQMS) and Continuing Professional Teacher Development (CPTD).

Pangrazi and Beighle (2019) argue that HODs are instructional leaders who implement curriculum, organise departmental programmes, supply teaching and learning resources, and conduct class visits. They further assert that it is the duty of the HOD to create conducive teaching environments for their teachers to achieve excellence and promote team teaching.

2.8. MATHEMATICS, SCIENCE, AND TECHNOLOGY

According to Wilson (2018), Mathematics, Sciences, and Technology (MST) are tools used by scientists to learn more about the world. Algebraic expressions in Mathematics can also be used to provide relationships that describe how the world functions. Such equations in Mathematics are a constant presence in Physical Sciences. Wilson (2018) further asserts that successes in the pure and practical disciplines founded in Mathematics, Physical science, and Technology have transformed the world. Recent improvements in education place increasing importance on extensive public understanding of these three disciplines of human endeavour.

The South African DoE introduced the National Strategy for Mathematics, Science, and Technology Education (NSMSTE) in 2001 to improve the quality of teaching and learning in Mathematics, Science, and Technlogy. The DoE ensured that the new curriculum integrates and connects on Mathematics, Science and Technology disciplines. During this process MST learners learn to:

- Apply what they have learnt to new situation.
- Actively study scientific and mathematical concepts.
- Conduct original investigations in Mathematics, Science and Technology.
- Understand how mathematical and scientifical ideas advanced throughout history.
- Detect new problems and pose original questions.

2.8.1. The importance of Mathematics, Science, and Technology

Ernest (2015) contends that there is a common belief that Mathematics, Science, and Technology are vital for individuals and society. He further asserts that the great status of Mathematics, Science, and Technology and MST education is seldom contested in many countries. Mathematics, Science, and Technology are believed to be a means of transportation towards political and social progress, and key to the development of a skilled workforce that can improve the economic situation of a country.

On the other hand, Genc and Erbas (2019) argue that MST classes are critical because they harness learners' natural curiosity about the world, the origins of our world, and the history of humans. As a result, learners learn crucial habits of mind, understand and integrate information, and grasp technical skills through a combination of laboratory activities, investigations, and traditional methodologies. They further argue that with all these experiences, learners will be able to find answers to the questions they raise themselves.

The researcher is of the view that the Mathematics, Science, and Technology curriculum offers an opportunity for learners to develop their mathematical, scientific and technological backgrounds. Moreover, the researcher observed that learners enjoy observing and thinking about nature, and how to manipulate it. Therefore, MST develops positive attitudes towards learners and leads to the understanding of concepts.

2.8.2. Recommended teaching methods for MST

Suarez, Specht, Prinsen, Kalz and Ternier (2018) highlight the following teaching methods for MST subjects:

2.8.2.1. Visualisation

The visualisation teaching technique is the making or reproducing of non-existent or genuine scenes inside one's mind. Notwithstanding, the expression ‘visualisation’ can be deluding, on the grounds that visualisation includes something beyond symbolism. Indeed, the more senses used, for example, contact, sound and taste, the more impressive the outcome. Wilhelm (2016) concurs by citing that visualisation involves utilising the interactive whiteboard to show photographs, sound bites, and recordings.

This teaching technique empowers learners of combined capacities to work by advancing little gathering or entire class lessons (Robin, 2016). Through verbally communicating their thoughts and reacting to others, they will build up their self-confidence and upgrade their correspondence and basic reasoning abilities, which are indispensable all through life. Tackling numerical riddles, directing logical examinations, and carrying on short show outlines are only a few instances of how helpful learning can form part of the classroom lessons.

2.8.2.2. Inquiry-based instruction

Educators ask interesting questions that motivate their learners to have an independent mind and become free students in this teaching method. Slavin (2019) mentions that inquiry-based instruction motivates learners to pose questions and examine their own thoughts, improve their critical thinking abilities, and gain a more profound comprehension of scholarly ideas. Ransford (2017) argues that inquiries can be science or math-based, for example, “for what reason does my shadow change size?” or “is the amount of two odd numbers consistently a significant number?” Notwithstanding, they can likewise be abstract and encourage learners to communicate their perspectives.

2.8.2.3. Using technology in the classroom

Consolidating technology in educating your learners is an incredible method to effectively connect with your learners, particularly as computerised media encompasses youngsters in the 21st century (Brookfield, 2017). Moreover, interactive whiteboards or cellphones can be utilised to show pictures and recordings, which assists learners with envisioning new

scholastic ideas. Learning can be more intuitive when technology is utilised as learners can genuinely engage during lessons and instantly investigate their thoughts, which creates self-sufficiency.

2.8.2.4. Management of learner behaviour as a teaching strategy

Brookfield (2017) postulates that actualising a successful conduct management strategy is vital to acquire learners' respect and guarantee that learners have a possibility in arriving at their maximum capacity. In addition, Burden (2020) posits that loud, troublesome classrooms do not support a learning climate; therefore, building up an atmosphere of mutual respect through a blend of control and prize can be beneficial for both the teacher and the learners.

2.8.2.5. Repetition

Boudett, City and Murnane (2020) state that another strategya teacher can use to improve Mathematics, Science, and Technology skills is repetition. By repeating and surveying past formulas, exercises, and data, learners are ready to understand ideas quicker. As indicated by Professor W. Stephen Wilson from Johns Hopkins University, the central ideas of fundamental Maths should be grasped before learners can move into a further developed study. Repetition is a straightforward instrument that makes it simpler for learners to master the ideas without sitting around idly. According to the University of Minnesota, day-by-day re-circling or audits will bring past lessons to the fore and permit educators to expand on those skills.

2.8.2.6. Planned testing

When educators move past clear ideas of numbers into number operation in Mathematics, or any topic in the Science or Technology subject, it is critical to administer timed-tests that review the past class or several classes. Administering a short test after each topic and after reviewing the test in class will assist educators in assessing learners' understanding. When the test shows that learners accurately answer more questions within the stipulated timeframe, educators become aware that learners have grasped the essential skills.

2.8.2.7. Working in pairs

Working in pairs is a basic technique that permits learners to work and solve a problem with other peers (Min, 2016). He further cites that at the point when a teacher has given guidance, it's useful to group learners to solve problems. Since the learners are working as a group, they can talk about the issues and solve problems. Furthermore, Posamentier and Smith (2020) mention that the objective of pair work is to teach learners basic reasoning abilities that are vital for future numerical statements and reality.

2.9 ASSESSMENT METHODS FOR MST SUBJECTS

2.9.1. Short investigations

Typically, a short investigation begins with an essential mathematical subject (or can be adjusted to some other school subject) that shows how the person has mastered fundamental ideas and skills (Tomlinson, 2014). Educators are therefore expected to ask learners to interpret, ascertain, clarify, describe, or predict whatever they are analysing. These tasks are usually an hour to an hour and a half for an individual (or group) to work freely, writing answers to questions, and asking questions independently.

2.9.2. Open-response questions

Putman and Rock (2016) argue that an educator can evaluate the learners' view of the real-world and how the logical process relates in a test setting, mentioning open reactions as a brief composed or oral answer, a numerical arrangement, a drawing, outline, diagram, or chart. These open-ended questions can be approximately 15-minute evaluations and can be changed into a more extensive scope.

2.9.3. Portfolios

As learners learn throughout their school year, they can be documented and will reveal progress and allow self-evaluation, alters, and revisions (Routman, 2014). Portfolios can be recorded in various ways, including journal composing, peer review, diagrams and artwork, group reports, learners’ notes and outlines, rough drafts, and completed work.

2.9.4. Self-assessment

After an educator has clarified and given the assumptions preceding the task, learners are requested to assess their own activities and participation (Hall & Simeral, 2015). They further assert that responding to the following questions will assist in assessing themselves and their work dispassionately:

- What was the most troublesome piece of this project for you?
- What do you think you must improve in the next project?
- Given an opportunity to do this task once more, would you do anything different? If yes, what?
- What have you gained from this task?

2.9.5. Administering of pre- and post-tests

Goswami and Bryant (2016) state that a learner who excels in a final test may have perceived the concepts before the unit started and a learner who under-performed may have begun with misguided judgments that were considerably changed during the unit. They further argue that if learners are tested in the same manner before and after the unit, educators can measure what learners learn, not necessarily what they know at a fixed point as expected.

2.9.6. Conducting experiments

When learners design, analyse, and conduct experiments, educators have a chance to notice learners describing factors, planning comparisons and utilising controls, determining relevant results, evaluating experiments, and making inferences.

2.9.7. Investigations

Hennink, Hutter and Bailey (2020) posit that scientific investigation includes the whole cycle of asking and answering questions, and utilising a number of instruments and methodologies to get the most ideal answer. Learners utilise substance and process skills to build their own pathways, mention objective facts, gather and dissect information, and reach inferences.

2.9.8 Educator observations

Douglas and Jaquith (2018) mention that educators' open-ended observation of learning progress, in view of explicit standards, can be a significant appraisal device, particularly

during independent or group learning time, and can likewise be joined successfully with learner self-assessment.

2.10 NSC PERFORMANCE OVERVIEW FOR MST SCHOOLS IN MPUMALANGA

According to Sergiovanni (2015), school performance is defined as the extent to which learners, teachers, or schools have achieved their short- or long-term academic goals. This refers to the knowledge, values, attitudes, and skills that learners have grasped in their academic journey. He further adds that it's a measure of how well learners have performed in the numerous assessment activities set for them. Many authors concur that school performance is the consequence of learning, incited by the teaching activity by educators and delivered by learners. From a humanistic methodology, Martinez, Dye and Gonzalez (2017) state that academic performance is the product given by the learners, and it is typically communicated through school grades. On the other hand, Gay (2018) defines academic performance as a proportion of the characteristic and responsive capacities that express, in an expected way, what an individual has achieved because of a process of teaching or training.

The purpose of academic performance is to accomplish an educational objective, which is learning. In such a manner there are several segments of the complex unit called performance. They are learning measures advanced by the school that include the change of a given state into a new state. They are attained with integrity in an alternate unit with intellectual and primary components. Performance shifts differ as per conditions, natural and ecological conditions that decide abilities and encounters. Academic performance includes factors such as, for example, the scholarly level, character, inspiration, abilities, interests, study propensities, confidence, or teacher-learner relationship.

According to DBE, any secondary school in South Africa is believed to have performed well if their overall pass percentage in the NSC examination is 70% and above. However, this yardstick does not focus on the quality of results; it concentrates on the schools ability to meet the minimum pass rate of 70% of all learners who wrote the NSC examination in that particular academic year. Therefore, schools that fail to achieve an average pass of 70% are regarded as underperforming schools.

2.10.1. OVERALL GRADE 12 PAST PERCENTAGE FOR ALL NINE PROVINCES IN THE PAST FIVE YEARS

TABLE 2.1: GRADE 12 OVERALL PAST PERCENTAGE FOR 5 YEARS

YEAR	2015	2016	2017	2018	2019
Western Cape	84.7	87.7	82.7	81.5	82.3
Eastern Cape	56.8	63.3	65.0	70.6	76.5
Northern Cape	69.4	82.2	76.6	73.3	76.5
Free State	81.6	93.2	86.1	87.5	88.4
KwaZulu-Natal	60.7	69.5	72.9	76.2	81.3
North West	81.5	86.2	79.4	81.1	86.6
Gauteng	84.2	87.0	85.1	87.9	87.2
Mpumalanga	78.6	77.1	74.8	79.0	80.3
Limpopo	65.9	68.2	65.6	69.4	73.2
TOTAL NATIONAL PASS RATE	**70.7%**	**72.5%**	**75.1%**	**78.2%**	**81.3%**

(Adapted from school subject report, Department of Basic Education)

The national results show an increase in the pass rate of 10.6% from 70.7% to 81.3% in the past five years. The country has managed to achieve above the 70% pass rate in the past five years. However, not all provinces achieved 70% in their pass rate. Eastern Cape achieved below 70% in three consecutive years, namely 2015, 2016, and 2017. Limpopo, on the other hand, only met the 70% target in 2019. Mpumalanga achieved a 70% average pass rate in the past five years, although below the national pass rate in 2017 and 2019. This pass rate does not reflect quality. The MST schools focus on quality results, as all learners are expected to achieve at a minimum of 50% and above in all subjects, excluding languages and Life Orientation, where they are expected to perform above 60%.

Despite the 10.6% increase in the overall pass percentage in the country in the past five years, MST subjects such as Mathematics and Physical Sciences are not performing as expected. MST subjected are expected to perform at 70% and above. MST schools are also expected to perform better than other schools in Mathematics, Physical science, and Technology subjects. Table 2 and 3 show the performance for Mathematics and Physical Science from all nine South African provinces for the past four years.

TABLE 2.2: MATHEMATICS PERFORMANCE PER PROVINCE

YEAR	MATHEMATICS	2016	2017	2018	2019
Western Cape		77.2	73.9	76.0	70.2
Eastern Cape		37.5	42.3	45.5	41.8
Northern Cape		60.7	57.4	59.0	56.6
Free State		71.3	70.6	74.3	68.5
KwaZulu-Natal		37.9	41.6	50.6	48.5
North West		62.7	61.2	68.9	62.2
Gauteng		68.7	67.7	74.7	67.8
Mpumalanga		53.6	47.8	54.2	51.6
Limpopo		53.9	50.1	54.9	53.1
NATIONAL		51.1	51.9	58.0	54.6

(Adapted from school subject report, Department of Basic Education)

TABLE 2.3: PHYSICAL SCIENCES PERFORMANCE PER PROVINCE

YEAR	PHYSICAL SCIENCES	2016	2017	2018	2019
Western Cape		73.8	74.0	79.5	81.8
Eastern Cape		49.6	57.3	66.5	70.3
Northern Cape		57.4	56.8	66.9	69.2
Free State		75.5	77.0	81.7	82.7
KwaZulu-Natal		57.8	65.1	73.6	74.8
North West		69.6	64.3	78.6	79.0
Gauteng		68.5	70.4	83.5	84.02
Mpumalanga		63.6	61.6	70.2	70.9
Limpopo		62.3	63.2	71.8	72.0
NATIONAL		62.0	65.1	74.2	75.5

(Adapted from school subject report, Department of a Basic Education)

Based on the percentages shared in Table 2.2 above, the performance of Mathematics is a challenge in the whole country (only a few provinces met the required target of 70%). In all four years, only Western Cape met the 70% target. Free State achieved 68.5% in 2019, but managed to meet the 70% target in the other three years. Gauteng only met the 70% target in 2018. On the other hand, Mpumalanga achieved below 55% in Mathematics in all the years. Thus, Mpumalanga's results are poor compared to other provinces such as Gauteng, Western Cape, Free state, and North West.

From Tables 2.2 and 2.3 above, it is evident that students performed poorly in Mathematics than they did in Physical Sciences in all provinces of the country. This poor performance in Mathematics is also experienced by MST schools in Mpumalanga at Ehlanzeni District, in which the study is located.

The following table highlights the performance of four MST subjects at Ehlanzeni District:

TABLE 2.4: EHLANZENI DISTRICT MST SUBJECTS PERFORMANCE

SUBJECT	2016	2017	2018	2019
Mathematics	53.9	46.5	54.6	52.9
Physical Sciences	64.2	62.6	72.0	70.9
Life Sciences	72.6	73.7	77.9	75.6
Accounting	77.1	71.9	75.3	78.6

(Adapted from Data Driven District, Mpumalanga Department of Basic Education)

Ehlanzeni District scored below 55% in Mathematics in all four years, while in Physical Sciences the performance is below the target of 70% in 2016 and 2017. However, in 2018 and 2019, Physical Sciences performed better as the District achieved 72.0% and 70.9%, respectively. The district performed above 70% but below 80% in both Accounting and Life Sciences. Table 2.4 shows that Mathematics and Physical Sciences are a challenge in both the district and MST schools.

Some factors generally influence learners' academic performance. Therefore, these factors need to be compared with factors influencing academic performance in MST schools.

2.11. GENERAL FACTORS INFLUENCING ACADEMIC PERFORMANCE

2.11.1. Learner-Teacher Support Material

One factor influencing the academic performance of learners is learner-teacher support material. Laurens, Batlolona, Batlolona and Leasa (2017) argue that the SMT needs to ensure that they provide teaching and learning materials that can be used to improve learners' academic performance. These teaching and learning materials include textbooks, study guides, notes, hand-outs, and laboratory equipment, especially for science subjects. Mestry (2017) concurs with this by stating that the provision of necessary Learner-Teacher Support Material (LTSM) by the SMT helps learners acquire a better understanding of concepts in their respective field of study and how to perform the experiments. On the other hand, Rivers (2018) argues that some learners cannot afford textbooks and materials necessary for learning due to their family's economic background. Therefore, the SMT need to ensure that they have programmes in place to assist such learners.

2.11.2. Skills and abilities of teachers

The skills and abilities of teachers play a vital role in influencing the learners' academic performance. Darling-Hammond, Hyler and Gardner (2017) argue that teachers are granted the power to control and manage all activities in their classrooms and oversee that effective learning takes place. Thus, the teachers must procure the attributes of professionalism and meticulousness. Darling-Hammond, Hyler and Gardner (2017) further contend that teachers need to be approachable, good listeners, and offer solutions to the problems encountered by the learners. Hopkins (2015) argues that the SMT needs to ensure that teachers possess sufficient knowledge and information concerning the subjects they teach. He also cites that the SMT is responsible for ensuring that all teachers have adequate knowledge of the use of technology, current and innovative approaches in the teaching and learning processes, managing discipline, and controlling all classroom and school activities in a proper manner.

On the other hand, Jones (2014) highlights the following skills and abilities that teachers should possess in a school environment:

- Development of School Improvement Plan (SIP) that delegates responsibility for attaining particular targets to individuals.
- Work together as a team and planning in phases (team teaching).
- Conduct class visits and observe each other teaching or discuss good practice.
- Have a detailed understanding of the factors that have a considerable impact on the success of the school and the performance of learners
- Have an in-depth understanding of the subject content knowledge and unlimited pedagogical expertise in teaching their subjects.

2.11.3. Classroom environment

Wilson (2017) states that teachers educate learners every day within the classroom. Teachers have the crucial responsibility of completing the Annual Teaching Plan (ATP). Therefore, it is fundamental that the classroom environment should be well-organised. Wheelen, Hunger, Hoffman and Bamford (2017) are of the view that the teachers and learners need to implement the features of integrity and ethics within the classroom. A mutual understanding, kindness, and co-operation between teachers and learners must be promoted. In addition, Wheelen, Hunger, Hoffman and Bamford (2017) state that learners learn better, and their

academic performance is likely to improve if there is discipline and effective communication.

2.11.4 Parental involvement

Simonson, Zvacek and Smaldino (2019) state that the foundation of learning and education is expected to take place at home. They further argue that for a school to achieve good academic performance, the SMT needs to ensure that parents are responsible for providing help to their children whenever they experience problems in their studies. This assistance may be in the form of hiring a private tutor or teaching their children themselves if they are familiar with the content. In addition, parents are expected to provide for technology and other materials of learning at home to enrich their children's academic performance. This suggests that parents play a key role in their children's education, impacting their overall growth and development.

2.11.5. Health and psychological factors

Learning is not and was never an easy task for learners. Thus, learners must be hard workers, creative, and conscientious in order to enhance their learning. Kapur (2018) argues that learners must maintain their physical and psychological health in order to produce good academic performance. Learners may be able to contribute effectively towards learning when they are healthy. On the other hand, psychological factors such as stress, trauma, panic, anxiety, depression, and physical health problems prove to be challenges within the educational journey of learners. Therefore, learners need to engage themselves in extra-curricular activities, physical health and psychological activities, and consume a healthy and nutritious diet (Deliens, Clarys, De Bourdeaudhuij & Deforche, 2014).

2.11.6 Motivating and encouraging learners

At times it is not easy to learn in the classroom. Learners need assistance from others when they experience difficulties. Teachers and parents should not be angry with learners who cannot achieve the desired academic goals; instead, they should offer them assistance. Vatankhah and Tanbakooei (2014) posit that learners need to be motivated and encouraged to do well in the future by their parents and teachers. Therefore, teachers need to re-teach concepts that were not well understood by learners and give them class/homework, projects,

and assignments so that they may be able to understand the concepts (Srinivas & Venkatkrishnan, 2016).

2.11.7. Time management

Effective time management by secondary school learners is important as learners have a busy academic schedule (Wurdinger, 2016). The majority of Grade 12 learners in public schools finish school at 16h00. They are further required to complete homework and assignments after school. Learners are also engaged in sports and extra-curricular activities. Kapur (2018) states that getting involved in extra-curricular activities and playing stimulate learners concentration and their mindsets. This suggests that learners should implement appropriate time management skills. Learners must create a balance between assessment tasks, extra-curricular activities, and sports. Kapur (2018) further argues that learners need to prioritise crucial activities by giving them sufficient time to focus on these activities.

2.11.8. Teaching-learning methods

According to Astuti (2015), teachers and learners should use teaching-learning approaches and strategies that are adequate and motivating. Teachers play a vital role in stimulating learning among learners. They must ensure that their teaching approaches and strategies benefit the learners. For instance, if the learners learn better through the transcription of notes, then teachers should offer notes. However, if they learn better through verbal explanation, then teachers should use verbal explanation as their teaching strategies.

2.11.9. Approachability and professionalism of teachers

Kapur (2018) cites that teachers need to conduct themselves in an approachable and professional manner because learners approach them when they face difficulties. Learners feel comfortable approaching their teachers only when they are friendly and approachable. Dana and Yendol-Hoppey (2019) support this notion. They state that teachers' professionalism and sociable attitude is of importance in positively influencing the learners' academic performance.

On the other hand, parents or private tutors oversee the studies of learners at home; therefore, it is important to conduct themselves professionally. Noddings (2017) further adds teachers, parents, and tutors need to implement teaching calmly and respectfully, and should avoid any form of harshness as this may demoralise the learners

2.11.10. Distribution of management tasks

Amanchukwu, Stanley and Ololube (2015) state that one of the qualities of effective managers is their capacity to engage all staff members in decision-making processes. Mestry (2017) concurs by stating that SMT members need to reach a consensus with other staff members and share duties and accountability for decisions. In schools where the SMT promotes high distribution levels and division of duty, they are likely to achieve desired academic goals. The principal must ensure that the roles and responsibilities of each SMT member are clearly defined. The principal must also ensure that the school has an organogram showing all management structures and lines of authority.

2.11.11. Learner discipline

Learner behaviour problems are a universal issue and have been a concern for schools for many years around the world, including South African schools (Oakes, Lipton, Anderson & Stillman, 2015). Educators are confronted with severe problems of unacceptable learner behaviour more than ever before. They encounter intolerable learner behaviour and intimidating situations daily. Learners' bad behaviour negatively affects the school environment. These disruptive behaviours from learners also affect educators' safety, progress, and security of fellow learners (Oakes, Lipton, Anderson & Stillman, 2015). Zvauya, Oyebode, Day, Thomas and Jones (2017) are of the view that learners who are ill-disciplined seldom perform well in their studies, thus affecting the overall school performance. They further assert that learners are frequently absent from school. This suggests that a correlation exists between learner discipline and learner absenteeism.

Section 10 of SASA states the abolishment of corporal punishment. Therefore, the abolishment of corporal punishment fosters all educators to deal with disruptive learner behaviour innovatively. This new approach to positive behavioural support enables learners to be responsible for their behaviour, builds a strong relationship between learners and teachers, and promotes a better sense of well-being. This new approach is imperative for the complete development of the learner. Therefore, it is essential for the SMT to understand the management of learner discipline and how to handle unacceptable learner behaviour. Burden (2020) suggests the following effective ways that the SMT may implement to manage learner discipline in schools:

- Ensure that teachers, learners, and parents are well oriented on policies concerning positive learner behaviour.
- Develop a learner code of conduct.
- Ensure that class managers develop classroom rules.
- Ensure the implementation of a policy regarding disciplinary measures.
- Ensure regular discussion with the staff about the behaviour of learners.
- Keep a record of learner conduct at all times.
- Organise sessions on staff development about the management of learners' conduct.
- Interview parents about the academic progress and learners' behaviour.
- Develop a reliable orientation programme for beginning learners, particularly Grade 8.
- Ensure that disciplinary procedures are consistent and fair.
- Ensure the establishment of a school culture characterised by positive discipline.
- Offer support and guidance concerning good discipline to learners.
- Constant communication with parents to discuss the conduct of learners and needs.

2.11.12 Teacher and learner absenteeism

Komakech and Osuu (2014) state that teacher and learner absenteeism is one of the major causes of poor performance. If a learner is frequently absent from school, there will be a considerable content gap, and eventually, he/she fails or drop-outs and thus leading to overall poor academic performance. Similarly, when the teacher is continually absent from school, the performance of learners can be negative. Tomlinson (2014) concurs by stating that the more an educator is absent from the classroom, the lesser their learners tend to score marks on formal tasks.

Teacher and learner absenteeism is a huge concern both globally and locally. A study conducted by Aucejo and Romano (2016) revealed that teachers in public schools in the USA are absent from school 5% to 6% of the school calendar days. However, this percentage is relatively low compared to other developing countries, where the rate is 20% on average. On the other hand, Wills (2014) reveals that, on average, South African teachers are absent from school between twenty to twenty-four days of an entire school calendar. However, the absenteeism of teachers differs widely by the school quintile. He further states that teacher absenteeism is 60% on average in the poorest schools, while this is 20% in the low-poverty

schools in specific South African provinces. In a study conducted in 2012, Chisholm revealed that the annual teaching time was only 52 out of 140 days in the North West Province. This represents only 40% coverage of the ATP.

Managers of schools, particularly principals and deputy principals, need to play a role in managing the absenteeism of teachers (Ramalepe & Zengele, 2014). They need to create a positive school climate and culture in a manner that teacher absenteeism is effectively managed. The school will experience a low rate of teacher absenteeism if managers adopt a culture of refraining from offending teachers and avoid imposing penalties on teachers immediately. Rewarding and appreciating good work by teachers will motivate them to come to school regularly and on time, thus reducing teacher absenteeism. Teachers are, however, entitled to leaves as stated in the Basic Conditions of Employment Act 75 of 1997, Labour Relations Act 66 of 1995 and PAM. It is therefore crucial for the principal to ensure proper management of leave. The SMT should ensure that teaching and learning are not compromised if a teacher goes on leave.

2.12 FACTORS INFLUENCING ACADEMIC PERFORMANCE OF MST SCHOOLS IN MPUMALANGA

2.12.1 Language barrier

Language proficiency is a delicate yet significant issue, which influences achievement in the learning of MST. Research conducted by the TIMSS in 2016 showed a link between poor achievement levels in Mathematics and Physical science and home language, which is different from school language. Nyika (2015) further supports this notion by asserting that learning becomes more difficult for learners when one's mother tongue is not used as a medium of instruction.

The Language in Education Policy (LiEP) by the DoE supports additive multilingualism; however, schools are not carrying out this exercise appropriately. In many instances, educators utilise a generally spontaneous code-switching technique. Monteith, Gerber, Brownstone, Soberay and Bahraini (2019) cite that there is a danger of high failure rate in MST as basic concepts in MST may be misunderstood or are lost and, therefore, learners should be conversant in the language of learning and teaching to have complete admittance to MST terms, concepts, and the related thinking abilities. Likewise, Nyika (2015)

demonstrated the significance of language in learners' performance in MST. He further argues that there are contentions that the mother tongue, for instance, is the foundation of all teaching, and that should be the vehicle of guidance since bilingualism cannot be set as the focus area of teaching.

2.12.2 Learner attitudes towards MST

Çìl (2016) asserts that the generation of positive attitudes towards MST is a vital and fundamental goal of MST education. On the other hand, Majamana (2018) argues that most learners avoid MST because of their fear of these subjects and lack confidence in subject concepts, leading to poor performance (Tsanwani, Harding, Engelbrecht & Maree, 2014). Bell (2016) concurs by stating that the fear of MST by learners has caused a decrease in the number of learners taking these subjects both at the secondary and tertiary level.

2.12.3 Poor laboratory facilities

One of the factors that cause poor performance in MST is inadequate laboratory facilities. According to Tomlinson (2014), most learners in MST schools do not perform well in Physical science because:

- Most laboratory activities are inadequate and not planned according to learners' levels of understanding, hence learners tend to manipulate laboratory equipment but not concepts.
- Some laboratory practices are poor and ineffective.
- A lot of time is usually squandered in a laboratory when students take part in information gathering without understanding why they are doing it.
- Learners are not given sufficient time for handling and interpreting the results of experiments.

2.12.4 Overcrowded classes

The quality of teaching for MST teachers, their interaction with learners, the process of learning and involvement, and learner participation declines in an overcrowded class. This is supported by Howie (as cited in Mazana, Montero & Olifage (2019) who states that performance in smaller MST classes of twenty or fewer learners is better than a class of

thirty or more learners. Dreyer (2017) concurs by stating that overcrowded classes are common in South African schools, and negatively impact teaching and learning of MST. Çelik (2018) supports this by stating that MST teachers who teach a few learners in their classes usually experience learners with more positive attitudes, and their performance is always better compared to bigger classes.

2.12.5 Content knowledge and qualifications of a teacher

Dlamini (2017) is of the view that the poor performance of learners in MST schools is due to the significant shortage of appropriately qualified and capable MST teachers. Ngwenya (2018) concurs by stating that although the DoE has made considerable effort in development and induction, there is still a significant lack of content knowledge by MST teachers. This lack of content knowledge forces the DoE to hire foreign teachers. These foreign teachers are usually overworked, which impacts the quality of teaching.

Gumbo (2020) argues that an effective MST teacher does not only have subject content but methods of teaching too. This means that only having subject content knowledge (without methods) does not make one an effective MST teacher. Kwon, Wardrip and Gomez (2014) support this view by stating that an MST teacher should have the knowledge and teaching methods to simplify concepts in order to make them accessible for learners and easy to understand by sharing them in contexts that are easy to understand.

2.12.6 Poor foundation on MST subjects from primary school level (feeder schools)

Difficulties in learning MST shows up at the beginning phase in children, generally in primary school, and later in secondary school (Yuill & Little, 2018). It is therefore important to address such problems as early as the primary level. Furthermore, teachers of MST subjects in primary schools need to ensure that their learners have a good foundation and basics of the subjects so that they will better understand new concepts at the secondary level. This is supported by Butakor and Dziwornu (2018) who state that a lack of basics in Mathematics and Science at the primary level leads to poor performance at the secondary level.

The researcher contends that there should be a strong relationship between an MST feeder school and the secondary school. This suggests that teachers from MST secondary schools

need to be familiar with learners' challenges from the primary school before they enrol at the secondary school. Teachers need to work together in helping learners from primary schools understand what is expected of them at the secondary level while still enrolled at the primary level.

2.12.7 Lack of district support system

One major cause of poor academic performance in MST schools is the lack of support from the DoE, particularly the district office. A good support system from the district is necessary to improve results in MST schools. Learning materials, technological equipments, training of teachers with regard to MST content, and supply of excellent and relevant human resources is one key responsibility of the district.

Rivas, Gonzalez-Briones, Hernandez, Prieto and Chamoso (2021) argue that lack of a district support system contributes negatively to the academic performance of MST learners. This is supported by Day, Gu and Sammons (2016) who state that if all stakeholders, together with the DoE, play their part in education, there would be a much improvevement in the academic performance of learners MST schools only have practical yet difficult subjects; therefore, they need more support from the district than other schools.

2.13. THE ROLE OF SCHOOL MANAGEMENT TEAM IN THE TEACHING OF MATHEMATICS SCIENCE AND TECHNOLOGY.

SMT Members are regarded as curriculum managers. Teaching of MST subjects requires HODs to be subject leaders and subject coordinators who will exercise appropriate leadership in these subjects. According to Leithwood, (2016). SMT members of of MST schools need to provide assistance for strategies to be implemented in the classroom and the development of the subject matter. They provide monitoring and evaluation of the instruction and resources that can enhance teaching and learning for MST subjects. They also involve teachers in improving school results and decision making.

HODs have the responsibility of providing guidance and leadership in MST subjects since they have a direct influence on quality teaching and learning in their departments (Leithwood, 2016). The core duties of HODs, according to the Personnel Administrative Measures (PAM), include facilitating the learning process and support teaching and learning.

They are responsible for closing the gaps or challenges faced by subject teachers. HOD's are also in charge of MST subjects and they are required to engage in class teaching, according to the workload for their subjects. This therefore requires HOD's and all SMT's of MST subjects to have better knowledge of MST subjects . They need to express confidence and have necessary skills in teaching MST subjects to give necessary support to teachers. This is also supported by McLaren, (2017). When he mentioned that HODs are responsible for empowering teachers with MST skills and knowledge particular to teaching. They are also expected to be the most knowledgeable in curriculum delivery.

SMT's are also expected to have pedagogical content knowledge. It is very important for SMT's of MST schools to be well informed about pedagogical content knowledge of the curriculum in order to be able to manage the dynamics in the classroom context (Chick, and Beswick, 2018).

2.14. THE ROLE OF THE SMT IN ENSURING GOOD ACADEMIC PERFORMANCE

It appears that MST subjects are global challenges as many learners struggle to meet the requirements needed to pursue studies relating to them (Darling-Hammond, 2015). For instance, the majority of learners are not doing well in Grade 12 Mathematics in the USA and other European countries. This is supported by Schonfeld, Adams, Fredstrom, Weissberg, Gilman and Voyce (2015) in their study conducted in the United States (US) that revealed that more than two thirds of students living in the low income urban areas in the USA have not demonstrated basic levels of Mathematics achievement. Likewise, in South Africa, many learners perform poorly in Mathematics and Physical science in Grade 12. According to Spaull (2013), South Africans, particularly Black Africans, generally perform poorly in Grade 12 examinations. Benoliel (2017) argues that the primary cause for this poor performance in the MST subjects is the failure by the SMT to perform their management roles effectively.

The key role of the SMT is to offer an effective academic environment that will promote quality learning and teaching (Towns, Cockerill, Dahan, Foster, Gaither, Grimshaw & Roskies, 2014). The SMT, therefore, need to engage in activities that will contribute positively to the academic performance of learners. Mthiyane, Naidoo and Bertram (2019)

concur by asserting that the SMT must offer help to teachers in particular subjects. They further stated that the SMT is to an extent accountable for improving learner academic performance. Chisholm, Baloyi and Carnoy (2015) concur by stating that effective management by the SMT makes a considerable change on the performance of learners and the school as a whole. Thus, MST schools require effective SMTs that will offer education of high quality to their learners. Therefore, MST schools need well-functioning SMTs with a vision for improving the school's learning and teaching environment.

According to Knowles, Holton III and Swanson (2014), the following are the roles and duties of the SMT in ensuring good achievement by learners:

- Curriculum management
- Staff development
- Management of physical and human resources
- Management and planning of school finances
- Implementation of school policies
- Establishing school committees
- Setting up procedures
- Building capacity to staff members
- Records keeping
- Building strong professional learning communities
- Profiling of learners

2.14.1 Curriculum management

Curriculum management contains managing the content that is being taught. The SMT needs to know precisely how the content will be taught and assessed, and what resources are required for teaching and learning (Maharajh, Nkosi & Mkhize, 2016). The SMTs are therefore regarded as curriculum managers and are expected to perform their management roles effectively in order to produce curriculum delivery that may lead to the improved academic performance of learners.

In 2013, the DBE offered training programmes to the SMT on the current Curriculum and Assessment Policy Statement (CAPS). A study conducted by Ramraj, Jackson, Dinh, Olorunju, Lombard, Sherman and Magasana (2018) reveals that although the SMT training

workshops on curriculum makes them feel empowered, some still have doubts about their curriculum managers' role. The study further reveals that the SMT interprets the curriculum differently in schools and, leading to the confusion about curriculum management and implementation. Mestry (2017) argues that the SMT needs to engage in daily activities based on the prescribed curriculum. Ajani (2019) concurs by indicating that if the SMT is involved in teaching and learning, it supports teachers, and the SMT will know what teachers are experiencing in the classroom situation. They also need to monitor and supervise the curriculum by checking daily teaching and learning activities. Dogra, Bhatti, Ertubey, Kelly, Rowlands, Singh and Turner (2016) concur by stating that monitoring and supervision of the curriculum will help the SMT to develop and implement strategies that will help improve academic performance. Teachers need to plan on how to deliver the curriculum, and the SMTs must therefore provide support to them so that they will be able to deliver the curriculum effectively.

2.14.2 Development of staff

According to Glaister (2014), the SMT needs to ensure that all staff members are professionally developed. This calls for the SMT to ensure the establishment of the Staff Development Team (SDT) that consists of the principal and democratically elected members of the staff, which will be responsible for development of all staff. According to collective agreement no 8 of 2003, the SMT and the SDT are responsible for:

- Organising all activities relating to the development of staff.
- Ensuring that all staff members are adequately trained on the processes of Integrated Quality Management System (IQMS) and Continuing Professional Teacher Development (CPTD).
- Mentor and support newly appointed staff members or any member that may need mentorship.
- Ensure the development of the Whole School Evaluation.

2.14.3 Management of physical and human resources

Maharajh, Nkosi and Mkhize (2016) state that the SMT needs to ensure proper management of learning and teaching resources. Resources such as textbooks, stationery, and equipment are to be controlled and properly allocated by the SMT as per the needs of each department.

The Science department usually requires extensive teaching and learning materials for laboratory experiments. It is the responsibility of the SMT to know where to find these resources. In addition, schools with ample resources are likely to produce quality results. Wang, Gurr, Drysdale and Bryant (2016) argue that for the school to achieve its academic goal, it also needs to manage human resources such as teachers, learners, non-teaching staff, and parents. Maharajh, Nkosi and Mkhize (2016) support this by stating that the proper management of human resources will create a sense of belonging to school staff and will help make them feel responsible for the school. They further contend that if human resources are properly managed, the staff protect the school from vandalism and theft.

2.14.4 Management and planning of school finances

The financial position of the school needs to be understood by all SMT members. This allows all SMT members to have an input on financial matters of the school (Bhengu & Ncwane, 2014). Planning and financial management involves allocating resources, drawing up departmental budgets, managing budget, and managing and controlling of expenses. Vasquez Heilig, Ward, Weisman and Cole (2014) argue that the SMT's role is to provide support to the SGB in the management of school finances. They further argue that communication on the management of financial matters of the school is vital to ensure that all stakeholders know when to forward their submissions and how to use finances allocated to them. Therefore, a finance policy and the school budget are the most critical tools containing information relating to school financial matters.

2.14.5 Implementation of school policies.

School policies are formulated by the SGB and implemented by the entire school. The principal and the SMT must ensure the implementation of school policies developed by the SGB. School policies are crucial as they help the SMT in managing their daily school activities. School policies also help the SMT in managing activities that require problem-solving or decision-making (Woods, Jeffrey, Troman & Boylem, 2019). This is also supported by Mestry (2017) who asserts that policy formulation is one of the critical functions of the SMT, and plays a vital role in implementing the developmental planning strategies in the school. Therefore, the SGB of MST schools must plan and formulate and the SMT must implement school policies that will lead to the good academic performance

of learners. These school policies formulated and implemented serve as an outline for a plan of action used in areas like the instructional programme of assessment.

2.14.6. Establishing school committees

The SMT needs to establish committees that will help them manage the school towards realising the academic goals (Cox, Kennan, Lyon & Pinfield, 2017). In the past apartheid education system, there were no structures/committees for learners and staff members to participate in school management. The SASA 84 of 1996 calls for the establishment of management and governance committees such as the SGB, finance committee, staff development committee, SBST, learner representative council, etc. In addition, the SMT needs to ensure the establishment of such committees and that they are functional. These committees will therefore encourage the participation of stakeholders in the management of schools.

2.13.7. Setting up procedures

Gysbers and Henderson (2014) define procedures as rules and guidelines that ensure the functioning of all school committees. These committees usually agree on rules that guide them and how they make a decision. The committees also need to know which immediate supervisor to report to and how to report. The role of the SMT is to monitor if the committees are adhering to rules and guidelines set for them, and that the rules are fair and consistent.

2.14.8 Building capacity to staff members

Capacity building is the development of a persons' combined abilities necessary to bring about change (Haywood & Getchell, 2019). It is evident that many MST schools need change. This change is set to bring about positive academic improvement through capacity building. The SMT is responsible for the capacity building of all staff members to ensure learners' academic progress. Marsh and Farrell (2015) posit that capacity building that effects change includes thorough reflection of practices, abilities, proficient responsibilities, and motivations.

2.14.9 Records keeping

Keeping school records such as financial records, information relating to learners and teachers, and records of all school assets is a legal requirement from the SMT. Thompson,

Hickey and Thompson (2016) argue that record keeping of school information is crucial and helps for analysis. He further states that records that are well-kept help in problem-solving, planning, and school development. For example, if the school has correct learner records regarding learners' performance, it will be easy to analyse how they performed and devise a strategy to improve their results. Moreover, Maher (2018) concurs by stating that the SMT should also have accurate records for the parents so that they will be able to communicate with them regarding the education of their children. Information about mental and physical health, sporting, and learners' academic progress must also be kept.

2.14.10 Building strong professional learning communities

A professional learning community is a group of professional individuals or stakeholders who work collectively to bring about change that directly impacts learners' performance (Olivier & Huffman, 2016). Effective SMTs play a vital role in building professional learning communities. Benoliel and Schechter (2017) concur by stating that as managers of the school, the SMT have a crucial role to play in developing professional learning communities. Furthermore, Hod and Ben-Zvi (2014) assert that changing a school into a professional learning community cannot be done without the assistance and encouragement of the SMT to further the staff as a learning community. Silva and Bodstein (2016) further add that the role of the SMT in developing and promoting school vision, values, and beliefs of the school is the cornerstone of developing professional learning communities. The SMT members must instigate the idea of a professional learning community and play a positive role in the development of the staff to ensure that professional learning communities are successful.

2.14.11. Learner profiling

According to Griful-Freixenet, Struyven, Verstichele and Andries (2017), learner profiling includes information about skills, weaknesses, strengths, and learners' interests. They further stated that it helps to discover learners' barriers to learning in order to know what to do in when addressing such barriers to learning. On the other hand, Benoliel (2021) argues that learner profiling helps the SMT and the other staff build relationships with learners and understand things from their viewpoint. The researcher contends that learner profiling will help teachers plan so that they can choose the best teaching strategies as they would be in a position to know the kind of learners they are dealing with. Therefore, the SMT will draft a

timetable that will cater to learners' individual needs. Furthermore, learner profiling will help the SMT and other staff understand the importance of differentiation teaching and develop inclusive classrooms.

2.15. CREATING ENVIRONMENTS OR CLIMATES CONDUCIVE FOR QUALITY TEACHING AND LEARNING

Le Fevre (2014) indicates that for a school to be effective, the SMT needs to ensure continuous constructive teaching and learning climate or environment. He further stated that the role of an effective SMT is to ensure that there is a favorable environment for teaching and learning within the school. Collins and Halverson (2018) agree by asserting that a workable, constructive school environment promotes student development and learning required for a productive and pleasing life in a democratic community. They further assert that learners and all staff members work as a team to develop and contribute to a shared vision of the school.

Everyone contributes to the running of the school and the care of the physical environment. The researcher argues that the school's environment is one of the key factors determining how learners perceive life and, therefore, how they respond to daily challenges. This argument is supported by Collins and Halverson (2018) who contend that a positive and supportive school environment promotes a sense of belonging and reduces potential undesirable circumstances in the home environment. They further maintain that emotional and social needs are congruent with learning needs. Therefore, the SMT needs to ensure that these needs are addressed in order to facilitate learning accordingly.

On the other hand, Cook-Sather, Bovill and Felten (2014) argue that undesirable circumstances at home such as violence, poverty, failure of parents to be involved in the education of their children negatively impact learners perception of learning, including the manner in which they respond to learning objectives in the school environment. A positive and supportive school environment helps learners who experience undesirable circumstances at home to realise their potential

2.15.1. Create a supportive learning and teaching culture

Debono (2015) states that it is the role of the SMT to ensure that everyone has a feeling of affinity in the school. The SMT should therefore make everyone feel that they are making an input to the school's environment as a whole. Wlodkowski and Ginsberg (2017) concur by stating that the SMT should develop an adequate support system in the school environment that will offer necessary support to everyone when needed.

2.15.2. Meet the needs of learners

Ryan and Deci (2017) state that everyone has psychological needs; thus, teachers need to consider learners' needs for order and safety, love and belonging, authority and competence, originality and self-determination, and entertainment. The researcher's argument is that it is the role of the SMT to address learners needs and support them in order to improve their learning. Duker, Gawboy, Hughes and Shaffer (2015) concur by saying that a positive school environment in which the SMT addresses these fundamental needs makes learners happy and more engaged. This will minimise ill-discipline incidences.

2.15.3. Offer feedback to learners and teachers

The SMT needs to offer feedback to learners and teachers. When monitoring curriculum and doing class visits, the SMT must immediately offer feedback and discuss the findings to teachers (Ashdown, 2014). After the discussion of findings, the SMT must come up with the development plan for teachers. Brookhart, (2017) regards feedback as the best approach to associate with learners and to shape teaching and learning in the correct direction. (Kumashiro, 2015) also agree by stating that, feedback is fundamental for learners because it assists them in reflecting on their performance and decide on the suitable strategy of learning accordingly. It also assists learners to diagnose their weakness and strength).

2.15.4. Reward good performance

Another way the SMT could create a constructive learning and teaching atmosphere is to reward good performance by both learners and teachers. A sense of attainment and good learning behaviour can be easily created when the teachers acknowledge and celebrate learners' achievements (Dweck, Walton & Cohen, 2014). The researcher contends that the SMT can take time out to recognise exemplary performance by learners and teachers alike, such as awarding the top ten learners per subject and grade, and the best teachers of the

month by giving them certificates and trophies. Castillo and Jiménez (2014) argue teachers must also consider discussing learning methods applied by other learners with fellow learners to attain the desired learning outcome. They further assert that this will motivate other learners to apply the same learning methods to improve their academic achievement.

2.15.5. Ensure the safety of everyone

Bush and Glover (2016) state that the role of the SMT is to ensure a positive learning environment for all learners. Kutsyuruba, Klinger and Hussain (2015) concur by stating that learners and teachers always need to feel mentally and physically safe in order to be effective.

It is crucial for the SMT to always remember that the safety of everyone in school is a priority and goes beyond physical welfare. To sustain a safe and positive teaching and learning environment, the SMT must make learners and teachers feel supported, welcomed, and respected.

2.16 CONCLUSION

This chapter reviewed the body of literature related to the roles of the SMT in the academic performance of learners. Both the national and international literature reviewed reveal that the SMT plays a significant role in improving learners' academic performance. This chapter presented perspectives on the SMT in different countries, with particular reference to the emergence and composition of the SMTs in South Africa, functions of the SMT, duties of each SMT member in South African schools, the NSC Performance overview for MST schools in Mpumalanga, factors influencing academic performance in the MST schools, roles of the SMT, and the theoretical framework of the study.

The literature review helped to outline the significance of the SMT in the academic performance in MST schools. Development and implementation of school policies, curriculum management, and management of human and physical resources are among the most important roles of the SMT to improve learners' academic performance. This chapter also indicates that the study is grounded on the human relations theory of management. The human relations theory concludes that all learners and staff alike are unique and have different values and moral characters. The next chapter will explain the study’s research methodology and design.

CHAPTER 3:

RESEARCH METHODOLOGY AND DESIGN

3.1 INTRODUCTION

This chapter discusses the research methodology and design used in this study. Issues such as research paradigm in which the study is located, research approach, data collection techniques, analysis of data, and population and sampling strategies used in the selection of participants are discussed in this chapter. This chapter further discusses trustworthiness and research ethics. The strategies and research instruments used in this study are presumed to have qualities that may help the researcher investigate the role of the SMT in the academic performance of MST schools in the Whiteriver Circuit.

3.2 RESEARCH PARADIGM

Ahmadi, Nilashi, Shahmoradi and Ibrahim (2017) define research paradigm as frameworks or models developed from a perspective or belief system about the idea of information and existence. Ryan (2018) supports this view by asserting that there are various qualitative research paradigms which the researcher can employ in his/her study, such as interpretivism, positivism, and post positivisms. However, this study was located in the interpretivism paradigm; data were gathered, reviewed, and examined within an interpretive paradigm framework.

The reason for utilising interpretivism was to co-operate with the participants in the investigation process, and assess and investigate how the participants construct meaning out of the specific situation. Thorne (2016) states that the motivation for using the interpretivism paradigm is for a qualitative case to achieve validity. Therefore, it ought to be conducted utilising participants who have effectively interpreted their own situation. The interpretivism paradigm assists the researcher in finding the nature of the behaviour of the SMT and teachers towards the academic performance of learners in MST schools from their roles and individual experiences (Mack & Thanh, 2015). Through interviews, document analysis, and observation, data collection was conducted face-to-face with SMT members, senior teachers, and PL1 teachers to understand their perspectives in respect of what they view as truth and knowledge about the roles of the SMT in the academic performance of MST schools. This

means that an interpretive paradigm supports close interaction between the researcher and his participants, and acknowledges that individual behaviours and views are complex qualities and could be better interpreted in a relative situation.

3.3 RESEARCH METHODOLOGY

Fusch and Ness (2017) define research methodology as a blend of methodology or tools and strategies used by the researcher to gather data for the study mediated through a specific worldview. This is confirmed by Pauwels (2017), who clarifies research methodology as a meticulous data collection process and analysis, which researchers skillfully use to achieve their research objectives. A qualitative research approach was employed in this study. This study utilises a qualitative approach since it attempts to make sense of individual experiences, views, beliefs, mentality, and behaviour in a particular social setting. The motivation behind the utilisation of the qualitative research approach in this study was to explore participants' feelings, views, and attitudes concerning the roles of the SMT in the academic performance of MST schools.

Anders, Hardy, Pauen and Steffensky (2017) state that the purpose of the qualitative approach is to look for a superior comprehension of complex circumstances, and their work is frequently exploratory in nature. Hennink, Hutter and Bailey (2020) confirm this by asserting that the qualitative approach is based on a naturalistic methodology that tries to investigate the phenomenon in context in a real world setting and overall whereby the study is conducted in reality. Through semi-structured interviews, observations, and document analysis, the researcher gained an understanding of the views and attitudes of participants' understanding of the roles of the SMT in the academic performance of MST school.

The researcher found the qualitative approach appropriate for this study since it could ordinarily be utilised to respond to questions concerning the intricate idea of phenomena (Smith & McGannon, 2018). The researcher additionally chose a qualitative approach to describe and comprehend the phenomena from the participants' perspective. Furthermore, the qualitative approach is suitable for this study since the study was conducted in five MST schools in the Whiteriver Circuit. The researcher collected data from members of the SMT who were in their natural habitat, their schools, and had to provide the researcher with data, which is situated within their everyday work environment. Another significant component of the qualitative research approach is that it doesn't attempt to control the phenomenon

being studied (Merriam & Grenier, 2019). Therefore, the qualitative approach is reasonable for this study since it ponders the circumstance of the members of the five selected MST schools that participated in the study.

3.4 RESEARCH DESIGN

As O'Leary (2017) indicated, a research design is an organised plan of action utilised by the scholars for their study. It would serve as a catalyst for data collection and evidence that can give appropriate clarifications and answers to the research problem and questions. He further argues that it is a methodology of inquiry mediated through an organised way to ensure that the outcome of a study isn't confused with blemishes and bias. Creswell and Poth (2016) support the perspectives by stating that research design is a part of logical research concerned about the rationale of collaborating with evidence (body of knowledge) gathered. They further argue that an appropriately established research design increases opportunities for producing real data and results. The main objective of research design is to articulate an activity plan concerning the data at hand. Creswell and Poth (2016) state that research design limits ambiguity of research evidence, serves to help researchers to make a substantial inference that can stand hypothesis testing, and help foresee competing clarifications prior to data gathering. Bally, Dendukuri, Rich, Nadeau, Helin-Salmivaara, Garbe and Brophy, (2017) contend that an adequately instituted research design increases the chances of generating authentic data and results.

3.4.1 Case study

This study employed a case study research design. Wilson (2017) defines a case study research design as the methodical investigation into an occasion or set of related occasions which aims to describe and explain the phenomenon of interest. According to Eldin (2015), the purpose of a case study is to comprehend one circumstance in incredible profundity: a specific individual, programme, and or event. He further contends that a case study can be something generally concrete like an association, a gathering of individuals, or something more dynamic like an occasion, an administration choice, or a change programme. On the other hand, Hancock and Algozzine (2017) argue that when conducting a case study, the researcher needs to identify the case first and specify the kind of case that must be carried out. The researcher identified the SMT, senior teachers, and PL1 teachers of rural MST schools of the Whiteriver Circuit in the Mpumalanga Province.

During the data collection period, the researcher visited each participating school twice each month. During those visits, the researcher collected broad data on the people, programmes, or events on which the study was focused. These data frequently consist of interviews, observations, and documents analysis. The researcher likewise recorded details regarding the context encompassing the case, including data about actual climate and any verifiable, financial, and social factors that have a course on the situation. George (2019) contends that a contextual investigation can advance agreement or educate practice for the comparative situations.

3.5 DATA COLLECTION METHODS

As indicated by some investigations (Cunningham, Menter & Young, 2017), several related data collection techniques were employed in this research to accumulate sufficient data, namely interviews, observations, and document analysis. The decision of more than one data collection technique is considered adequate to strengthen the reliability and quality of data. The process of using more than one data collection technique is called triangulation. These data collection techniques allow the researcher and his participants to exchange thoughts and co-operatively develop significant reality from the data (Saldaña, 2021).

3.5.1. Interviews

According to Deterding and Waters (2021), an interview is the most flexible instrument that can produce a lot of data and is of more value in a more limited timeframe from participants. They further state that the interview schedule allows the researcher to investigate the hidden perspectives, sentiments and practices from participants (individuals or groups) in various settings, and pose questions regarding facts and individuals' convictions. The individual interview offers the researcher a chance to test the assertions from the interviewee immediately, saves time for the interviewee, and empowers them to connect effectively until they finish the interview with minimal actual weariness experienced (Karp, 2017). He further states that focus group interviews are utilised to understand how a group of individuals feel or consider an issue being investigated. The technique is well known for its flexibility to trigger reactions or thoughts that might have been missed in the individual interviews. Focus group interviews can light issues such as collective insight of the interviews and proficiency to obtain data with less complexities from a different group of individuals in terms of costs, time, and speedy outcomes (Liu, Van Nederveen & Hertogh, 2017).

The researcher administered an individual interview in this study as it is considered ideal for giving rich data and in-depth analysis from the participants (Ranney, Meisel, Choo, Garro, Sasson &Guthrie (2015). Principals, HODs, and senior teachers who are typical SMT members and PL1 teachers were interviewed individually by the researcher. The semi-structured interview was utilised for all interviewees with a similar set of arranged questions, to guarantee consistency and standardisation in the questions asked and responses and results produced. Senior teachers and PL1 teachers were interviewed using a similar set of arranged questions, while principals and HODs were interviewed using a similar set of arranged questions but slightly different due to different management duties between the principal and HODs.

The reason for engaging the principals, HODs, senior teachers, and PL1 teachers in individual interviews lies in the interpretive paradigm, which focuses on understanding the individual experiences and social development with more profound knowledge (Myende, Ncwane & Bhengu (2020). Similarly, principals are regarded as Chief Executive Officers (CEO) charged with the obligation of driving the school in policy implementation. Subsequently, the researcher required more time to draw their unique experiences, interpretations, plans, and clarifications of their experience as MST schools managers. According to Enosh and Ben-Ari (2016), the critical goal of interpretive research is to help the researcher investigate and comprehend individual emotional experiences with the conviction that knowledge construction is personal. In addition, they further state that knowledge construction can prompt innovative reasoning and discovery of new thoughts and opinions that are important to give relevant responses to the research problem.

COVID-19 protocols were observed during interview sessions. The researcher ensured that all participants were wearing masks during the interview session; they also sanitized their hands before, during, and after the session (the researcher provided the hand sanitizer). The researcher also ensured that there was 1,5 metre social distancing between participants and the interviewer. The researcher brought additional disposable masks in case they were needed.

The researcher utilised the cellphone and laptop voice recorder during the interview process to capture information from the participants. These recordings assisted the researcher in taking field notes. After each interview, the researcher rehearsed the recordings of the

interviewee contribution to reflect on the data obtained and simultaneously set it up for the data analysis stage. In the event of unclear points or unclear sound recordings, the researcher had to call an interviewee to try to find clarity on his/her standpoint. All participants were guaranteed confidentiality before any interview session, and they were requested not to mention any specific place, person, or even a name. Prior to each interview session, the researcher explained to participants that the main purpose of using an audio recording is to ensure quality and strengthen the evidence for objectiveness, record, and reference for data analysis at a later stage. The researcher saved all audio records on a personal laptop with a protected password so that no one would access any of this information.

Interviews took place in five selected MST schools. A total of 25 participants, including five principals (one in each school), ten HODs (two in each school), five PL 1 teachers (one in each school), and five senior teachers (one in each school from the five selected schools) were selected to take part in the study. Each participant was given semi-structured interview schedules consisting of ten questions different from each other. PL1 teachers and senior teachers used the same interview schedule. Principals and HODs used the same interview schedule but slightly different. Each interview session took 30 minutes.

3.5.2. Observations

According to Hedayati (2019), an observation of participants is an instrument utilised by the scholar to collect data in primary research using their intellect by observing the activities and conduct of the participants in their workstations. The qualitative observation approach was applied at schools using observation procedures to write down field notes on the conduct of staff and different transformations necessary to prepare the SMT on its roles to perform in the academic performance of MST schools. In these field notes, the researcher recorded the phenomena of interest in a semi-structured way utilising some earlier questions that the researcher needs to know about (Moser & Korstjens, 2018). Observations at schools was done before and after the interview sessions, and during the school visit on set occasions as agreed with the principals on the following aspects: observe lesson presentation; use of technology devices and other teaching and learning materials to enhance learners' understanding; attend SMT and staff meetings to acquire more information on what is being discussed; observing the school culture so that the researcher will know how often and when

teachers attend classes; and also observe if there is any late coming by learners and teachers at school.

3.5.3 Document analysis

According to Smulowitz (2020), the researcher can use plenty of document types to provide extra rich data. Through document analysis, the qualitative researcher is able to assess their meaning to support the findings of the research. Since this research was conducted in schools, the researcher analysed documents such as minutes of SMT and staff meetings, agendas, lesson plans, annual activity plans, annual assessment plans, subject and school policies, monthly reports by HODs, analysis of results, SIP, and time books. Minutes of SMT and staff meetings provided the researcher with data relating to the roles of the SMT in the academic performance of learners. The minutes indicate challenges SMT members face in the MST schools. Strategies to improve results are also indicated in the minutes of meetings. Class registers provided a picture of learner attendance. The teacher attendance registers enabled the researcher to determine the extent of teacher presence or absence during school hours. The researcher used the following document analysis checklist: pens, notes taking forms, envelopes, alcohol-based sanitizer, and face masks.

3.6 POPULATION AND SAMPLING

A researcher should clearly define the target population. A population is a group of elements or cases that adjust to explicit standards and to which the researcher expects to sum up the results of the study (Hancock & Algozzine, 2017). The population is often too large; thus, it is not possible for the researcher to survey all the members. As a result, a sample ought to be selected from the population to represent the population. As indicated by Mujere (2016), sampling is the act, procedure, or method of choosing a representative part of a population to determine limitations or characteristics of the entire population. Sampling techniques can either be probability (statistical) or non-probability (non-statistical). Probability sampling is logical, and each individual from the population has an equal opportunity of being chosen (Sarstedt, Bengart, Shaltoni & Lehmann, 2018). Probability sampling comprises random sampling, stratified sampling, and systematic sampling. Smith and Dawber (2019) contend that in non-probability sampling, participants are chosen from the population non-randomly or subjectively, depending on how easy the researcher can have access to participants.

Examples of a non-probability sample are convenience sampling, quota sampling, snowball sampling, and judgement sampling.

The researcher employed purposive and convenience sampling in this study. This means that the researcher selected participants based on their expertise and knowledge relevant to the topic being investigated. Not all teachers were selected; however, some members of the SMT and PL1 teachers who had prior working experience at schools were purposively selected for the reason that they are at liberty to provide data relevant to the research question on their understanding of the roles of SMT in the academic performance of MST schools. The researcher did not consider gender, age, and race when selecting participants because the study focused on experience and understanding of their role in the academic performance of MST schools.

The study was conducted in five MST schools in the Whiteriver Circuit at Ehlanzeni district in Mpumalanga of South Africa. These schools were purposively and conveniently selected. These schools were purposively selected because their SMT was appropriate for the design and purpose of the study. Convenient sampling was used because the five MST schools were easily accessible and within close proximity to the researcher's residence. Twenty-five participants from the five sampled schools were purposively selected to participate in the study.

The table below shows how the participants were selected.

TABLE: 3.1 Selection of participants.

SCHOOL	DESIGNATION	POST LEVEL	GENDER
A	Principal	4	Female
	HOD (Mathematics)	2	Female
	HOD (Science)	2	Male
	Teacher	1	Female
	Senior teacher	2	Male
B	Principal	4	Male
	HOD (Science)	2	Male
	HOD (Mathematics)	2	Male
	Teacher	1	Male
	Senior teacher	2	Male
C	Principal	3	Male
	HOD (Mathematics)	2	Male
	HOD (Science)	2	Male
	Senior teacher	2	Female
	Teacher	1	Female
D	Principal	4	Female
	HOD (Mathematics)	2	Male
	HOD (Accounting)	2	Female
	Senior teacher	2	Male
	Teacher	1	Male
E	Principal	3	Female
	HOD (Mathematics)	2	Male
	HOD (Science)	2	Female
	Senior teacher	2	Male
	Teacher	1	Female

Total participants = 25

3.7 DATA ANALYSIS, DISCUSSION AND PRESENTATION

According to Kenny, Kashy and Cook (2020), data analysis is a process of describing data in a significant manner. Bengtsson (2016) defines data analysis as an interpretation of figuring out the information and the translation of what individuals have said on a specific phenomenon through different research strategies. This simply indicates that it is a process of making sense of what has been uttered by participants. Moser and Korstjens (2018) concur that data analysis is a cautious examination of data to acquire an in-depth understanding of

the meaning of data that has been generated through various data collection strategies. In this study, the analysis of data was a continuous process. The researcher started the data analysis process by first transcribing data generated through interviews. The researcher carefully and extensively listened to the voice recording of interviews from all interviewees to make meaning of their responses concerning the roles of the SMT in the academic performance of MST schools, in ensuring that the research question is answered. The researcher was jotting down notes as he was listening and grouped all participants' responses, and further summarised all responses accordingly. Therefore, the researcher checked data developed from the interviews against data collected through observations and document analysis to ensure that they supplement one another and are in accordance with the research question (Tracy, 2019). Documents were analysed through thematic analysis. Important and distinct facts were noted as themes (Kukano, 2020) and facts were linked to each another.

3.7.1 Data transcription

Moser and Korstjens (2018) define data transcription as the process whereby the researcher jots down all interview information recorded through an audio voice recorder into notes. They further contend that data transcripts allow an investigator to conduct a thorough review and verification of participants' responses. In this study, the researcher followed-up with the participants for clarification of information in cases were audio recordings were not clear. After jotting down all participants' responses from the interview session, the researcher later reconciled the recorded inputs and responses.

3.7.2 Reading through data

Immediately after the interview sessions, the researcher read through data collected while it was still clear and new. As stated above, where the audio recordings were not clear, the researcher contacted the participants for clarification and verification of information and no follow-up interviews were scheduled. Nyumba, Wilson, Derrick and Mukherjee (2018) argue that reading through the data approach helps to sustain impartiality or to check whether the views and information of participants are well represented.

3.7.3 Thematic content analysis

Thematic content analysis is described by Friese, Soratto and Pires (2018) as a qualitative approach for identifying, examining, and reporting patterns (themes) developing from data. In line with this suggestion, the researcher gathered data into controllable units. The qualitative data collected in this study helped the researcher identify themes related to the main research question, sub-questions, and aims of the study. The researcher used the research question to determine information relevant to themes (Atkins, Francis, Islam, O'Connor, Patey, Ivers, Foy, Duncan, Colquhoun, Grimshaw & Lawton, 2017). From transcribed data, a pattern of unique interpretations from the interviewees became evident and were noted in particular themes for better descriptions and understanding of the phenomena under research (Hoffmann, Gustafsson & Tommaso, 2020). For effective thematic analysis, Xu and Zammit (2020) mention the following steps that need to be taken into consideration: familiarising yourself with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. The researcher considered all these strategies mentioned above during data analysis; they helped the researcher to come up with conclusions that are appropriate to the aim and purposes of the research questions. These strategies are briefly discussed below:

- **Familiarising yourself with data:** Data collected by means of interviews will be recorded on a cellphone or laptop voice recorder and transcribed verbatim. The researcher will familiarise himself or engage with the data by transcribing and then re-reading the transcript and/or listening to the recordings. From the transcribed data, a pattern of unique interpretations from the interviewees will be clear and noted in particular themes for better descriptions and understanding of the phenomena under research (Hoffmann, Gustafsson & Tommaso, 2020).
- **Generating initial codes:** After being familiar with the data, the researcher will then start identifying initial codes, which are the data features that appear interesting and meaningful.
- **Searching for themes:** The researcher will then start the interpretive analysis of the collated codes by ensuring that relevant data extracts are sorted according to overarching themes.
- **Reviewing and naming themes:** The researcher will review and check themes in relation to the coded extract and the overall data set.

- **Defining and naming themes:** The researcher will refine and define the themes and potential sub-themes within the data. Analysis of data will be an ongoing process to enhance the identified themes further. The researcher will provide theme names and clear working definitions that capture the essence of each theme briefly and effectively. At this point, a cohesive story of the data needs to emerge from the themes.
- **Producing the report:** Finally, the researcher will transform the analysis into an interpretable piece of writing by using vivid and compelling extract examples related to the themes, research question, and literature.

Data collected through observations will be classified according to the pre-determined topics as they appear in the observation grid. Points and descriptors that appear on the observation grid will serve as themes (Patten, Martens & Fitch, 2018). All the observation grids collected from the five selected schools will be merged together to form a single informative grid.

Data collected from the documents will be added to pre-determined themes, with descriptors serving as themes. The researcher will analyse documents through thematic analysis. Important and distinct facts will be noted as themes (Kukano, 2020), and facts will be linked to one another.

3.7.4 Data coding

Wort (2019) explains data coding as the process of breaking down and re-arranging data themes or categories that enable the researcher to compare or organise patterns in the same category which aids the development of concepts. In support of this, Beyers (2020) defines data coding as an interpretive act where a huge volume of data is arranged by applying codes to text in order to make meaning to participants' responses and descriptions. The researcher used data coding to evaluate data inductively and to discover the value they bring to answer the research questions and sub-research questions (Gupta, Chauhan, Paul & Jaiswal, 2020). In this case, data from interviews, participants' observations, and documents were compared and organised to develop categories. The researcher used the descriptive code approach because its features resemble closely and meet the requirements of a qualitative interpretive research approach of this study. The purpose of using descriptive code strategy was to describe and understand social phenomena in terms of the meaning people bring to them (Mbhele, 2018).

3.8 TRUSTWORTHINESS

Although this study is an account of what was studied, the researcher has the duty to present the truth. Trustworthiness is described by Nowell, Norris, White and Moules (2017) as the quality, validness, and honesty of findings. It is the researcher's obligation to complete the research process accurately. The researcher utilised triangulation to guarantee credibility and validity of the data. In addition, the researcher collected data through semi-structured interviews, observations, and document analysis. The primary reason for the utilisation of triangulation was to link the participants' responses during the interview session to data collected from observations and document analysis. Should there be any relationship between the three data collection techniques, then internal validity is strengthened (Handley, Lyles, McCulloch & Cattamanchi, 2018).

3.8.1 Credibility

Bengtsson (2016) defines credibility as an attempt of the researcher to prove that a real picture of the phenomenon under study is being presented. Firstly, in this investigation, grounded research techniques were adopted. For instance, the line of questioning in the data collection sessions and the strategies for analysis of data were derived from studies that have been effectively used in past comparative investigations (Bengtsson, 2016). Secondly, triangulation was utilised by including a wide range of sources. Above all, individual perspectives and experiences were checked against others with the goal that a rich picture of the mentalities needs or conduct of those under investigation could be built dependent on the contributions of a range of individuals (McKenney & Reeves, 2018). Thirdly, the researcher employed strategies to ensure honesty in participants during interview sessions. Moreover, every individual who was drawn nearer was offered a chance to decline their participation in the study to guarantee that data collection sessions only includes individuals who were able to participate (McKenney & Reeves, 2018). Participants were urged to be frank from the beginning of every interview session, with the researcher intending to set up a rapport in the opening moments and indicating that there were no correct responses to the posed questions. This process included checking the accuracy of the data with each participant. Participants were also requested to read any transcript of the interview session where they had taken part (Mai, Goebel, Jentschke, van Oorschot, Renner & Weber, 2018).

3.8.2 Transferability

Cho (2017) defines transferability as the provision of adequate detail of the context of an investigation for a reader to have the option to decide whether the prevailing condition is like another circumstance with which the individual in question is familiar and whether the findings can legitimately be applied to the next setting. Cho (2017) adds that transferability concerns how the outcomes of the research can contribute to other circumstances. To achieve transferability, the researcher used purposive sampling and thick rich descriptions were imparted in this investigation to take into account continuation or understanding that may emerge in other research sites and population (Gatti, Brownlee & Bricker, 2021).

3.8.3 Dependability

The researcher reported in detail all the processes within the study in order to address dependability. Future researchers will repeat the work if not necessarily to get a similar outcome (Zwaan, Lucas & Donnellan, 2018). Moreover, this in-depth coverage allowed the reader to evaluate the degree to which legitimate study practices have been followed. As indicated by Schweiger, Albers, Vanderstraeten and Gibb (2020), the study has areas devoted to the research design and its execution, describing what was planned and executed on a tactical level, the operational detail of collection of data, addressing the little details of what was done in the field, and reflective evaluation of the project, assessing the adequacy of the process of the study conducted.

3.8.4 Confirmability

Confirmability refers to the researcher finding ways to show the outcome that arises from the data and not his/her own but of participants (Abdalla, Oliveira, Azevedo & Gonzalez, 2018). To this end, beliefs, supporting choices made, and strategies embraced were recognised within the research report. The purpose behind preferring one methodology over another is clarified, and shortcomings in the procedures utilised were mentioned (Lindlof & Taylor, 2017). Triangulation of sources, which is inspecting the consistency of various data sources from within a similar technique, was utilised. To ensure confirmability in this study, cellphone audio and laptop recorder were utilised, and the researcher jotted down notes during the interview sessions to ensure the validity of the data.

3.9 RESEARCH ETHICS

According to Alderson and Morrow (2020), all educational studies contain research ethics, as they comprise data obtained from people and about people. Ethics is described by Awad, Dsouza, Kim, Schulz, Henrich, Shariff, Bonnefon and Rahwan (2018) as a set of moral principles that are commonly accepted and may offer rules and social expectations about the most appropriate behaviour, about experimental subjects and respondents. According to Birchley, Huxtable, Murtagh, Ter Meulen, Flach and Gooberman-Hill (2017), research ethics are centred around what is ethically appropriate and inappropriate when engaged with participants or while accessing recorded data. Regarding research ethics, this study guaranteed that all participants and sampled schools were treated in a manner that considered this investigation morally and ethically legitimate through respect and consideration for the constitutional rights of all participants.

3..9.1. Informed consent and voluntarily participation

According to Patten and Newhart (2017), informed consent involves providing an explanation to the participants about the nature of the study, withdrawal of their participation from the study any time without punishment or without providing any reason for their withdrawal, and also explain if there are any risk factors in the study. The researcher set up a meeting with each participant informing them of the nature of the study. The researcher indicated the data generation instruments used in the study and indicated that all interviews were to be recorded using a cellphone or laptop audio recorder.

The researcher made an application to conduct this study at UNISA and MDoE. After the application, the researcher received a clearance certificate from UNISA, and the MDoE granting permission to conduct the study. The researcher was also granted permission by the principals of the five selected schools to conduct this study within their schools. All selected participants granted the researcher informed consent and permission to be audio-recorded during interview sessions. Regarding appropriate research ethics, participants were informed that participation in this study is voluntary and may withdraw their participation anytime without providing reasons for withdrawal (Lynch, 2020). The researcher also invited all participants to check the data transcript before continuing with data analysis.

3.9.2 Harm and risk

According to Mounk (2018), freedom of harm emphasises not exposing participants to risk. Fiske (2020) singles out that the researcher should do no harm, either emotional, physical or other harm to any participant. In this study, the researcher strived to work within the limitations of the research problem and not harm the participants. Moreover, the researcher observed the principle of beneficence. This investigation was of social benefit, although the participants might not benefit from participating directly (Chen, Wu, Peng & Yeh, 2015). The researcher refrained from using this study as an opportunity to expose other participants' weaknesses; instead, he encouraged all participants to focus on making a significant contribution to the study.

3.9.3. Privacy, confidentiality and anonymity

The researcher ensured that all participants' right to privacy, confidentiality,, and anonymity were respected (Lancaster, 2017). This means that the names of all participants and their respective schools were anonymous and protected. Schools were mentioned as School A, School B, School C, School D, and School E. The researcher ensured confidentiality, ensuring all participants that nobody has access to the data provided by each participant except the researcher. All participants were interviewed individually to ensure privacy. All recordings of interviews were saved safely in the personal researcher's laptop, and a password for protection was used.

3.9.4 Carefulness, honest and integrity

Levitt, Motulsky, Wertz, Morrow and Ponterotto (2017) posit that integrity means conducting research so that readers could have certainty and trust in the techniques and research findings. This implies that researchers ought to be transparent, open, honest, and accountable to their participants about the purpose and content of their research. To ensure integrity, the researcher treated all participants with respect and care, and conducted himself in a very professional manner (Wiener, Battles, Zadeh & Pao, 2015). In addition, the researcher ensured that all participants were given equal opportunities to access the outcome of the study in which they participated.

3.10 CHAPTER SUMMARY

An overview of the research design and approach utilised was outlined in this chapter. This chapter discussed the qualitative research approach using interpretivist paradigm, in which the study was located, together with its significance and reasons for its relevance in the study. The sampling method was discussed with reasoning for using convenience sampling and purposive sampling for this study. The data collection method such as semi-structured interviews, observations, and document analysis was discussed. This chapter also outlined the process of data analysis with the use of thematic content analysis. Issues of trustworthiness such as credibility, transferability, dependability, and confirmability were outlined. The chapter further discussed research ethics with the approval of informed consent from all participants in this study. The next chapter outlines data presentation, analysis and interpretation in detail, and the themes and patterns identified by the researcher in this study.

CHAPTER 4:
DATA PRESENTATION AND DISCUSSION

4.1 INTRODUCTION

The previous chapter discussed the research methodology that was used to collect data in the study. Issues such as the research paradigm in which the study is located, research approach, data collection techniques, analysis of data, and population and sampling strategies used in the selection of participants were discussed in the previous chapter. This chapter is based on the thematic analysis of data obtained from the research sites. The researcher used three data collection methods in this study, namely semi-structured interviews, observations, and document analysis. This presentation and discussion of data integrates the reviewed literature in Chapter 2 and the theoretical and conceptual framework that guide the study. Data collected through semi-structured interviews are presented and discussed in seven main themes; the direct quotations of responses from the participants were included in themes. These quotations or views of the participants are italicised and serve as evidence. Before the discussion and presentations of themes, the researcher presented the profiles of the participating schools and the participants. The chapter concludes with a chapter summary.

4.2 PROFILING OF PARTICIPATING SCHOOLS AND PARTICIPANTS.

This study was conducted in five MST schools in the Whiteriver Circuit at Ehlanzeni District, Mpumalanga Province, South Africa. To maintain anonymity, the participating schools were named School A, School B, School C, School D, and School E. The real names of the participants were not used in the study. Moreover, one principal from each school participated in the study, and they were named Principal 1, Principal 2, Principal 3, Principal 4, and Principal 5. Two HODs from each school also participated, and they were named HOD 1, HOD 2, HOD 3, HOD 4, HOD 5, HOD 6, HOD 7, HOD 8, HOD 9, and HOD 10. In addition, one senior teacher in each school participated, and they were named Senior Teacher 1, Senior Teacher 2, Senior Teacher 3, Senior Teacher 4, and Senior Teacher 5. Finally, only one PL1 teacher participated in each school, and they were named PL1 Teacher 1, PL1 Teacher 2, PL1 Teacher 3, PL1 Teacher 4, and PL1 Teacher 5. A total of 25 participants participated in the study. All the participants from each school were profiled.

Participants were purposively sampled based on their experience and knowledge relevant to the phenomenon being explored. The researcher applied the purposive sampling technique to interview the SMT members, senior teachers, and PL 1 teachers who are well-informed and understand the research topic being studied. Principals were selected because they are senior managers and accounting officers at their school; hence, they can provide rich data relevant to the research question. HODs were purposively selected because they are responsible for managing the curriculum in various departments; hence, they provided rich data on curriculum management and the functionality of their respective departments. For PL1 teachers, teachers who were selected were those who had worked for many years in the school; therefore, they were purposively selected because they were knowledgeable about the school and had worked with different SMT members with varying styles of management. These PL1 teachers shared their experience about the different management styles of the different SMTs. The 25 participants added value to this study since they are directly involved in MST schools in which the study took place.

It was advantageous to use these different categories of participants because they shared their experiences concerning the management of schools, thus helping to remove potential external variables and ensure the generalisability of the study's findings. In addition, these various participants helped best inform the research question and enhance understanding of the phenomenon being studied.

4.2.1 Profiling of participating schools

TABLE 4.1: profile of participating schools

Characteristic of schools	School A	School B	School C	School D	School E
Province	Mpumalanga	Mpumalanga	Mpumalanga	Mpumalanga	Mpumalanga
District	Ehlanzeni	Ehlanzeni	Ehlanzeni	Ehlanzeni	Ehlanzeni
Circuit	Whiteriver	Whiteriver	Whiteriver	Whiteriver	Whiteriver
Type of school	MST secondary school	MST secondary school	MST secondary school	MST secondary school	MST secondary school
Section	21	21	21	21	21
Staff enrolment	31	45	27	43	28
Number of SMT members	8	9	4	10	5
Number of Support staff	4	5	4	7	2
Learner enrolment	752	1298	469	1475	711

4.2.2 Profiling of participants

TABLE 4.2: School A participants

Characteristic of schools	Principal 1	HOD 1	HOD 2	Senior Teacher 1	PL1 Teacher 1
Gender	Female	Female	Male	Female	Male
Age	58	50	46	59	53
Qualification	STD, HED, ACE, BED HONS	STD, HED, ACE	DIP ED BSC HONS IN CHEMISTRY	PTD, FDE, ACE	BED
Experience in current position	12	28	3	33	28
Subject taught	English	Mathematics	Physics	NS & SS	Mathematics
Grade taught	Grade 11	Grade 8&10	Grade 11&12	Grade 8&9	Grade 10-12
Management responsibilities	Head of the institution	HOD Maths	HOD Sciences	Class manager	Class manager

TABLE 4.3: School B participants

Characteristic of schools	Principal 2	HOD 3	HOD 4	Senior Teacher 2	PL1 Teacher 2
Gender	Male	Male	Male	Male	Female
Age	53	31	48	53	56
Qualification	BED HONS Post grad dipl In public Management	BED HONS	BED	BED HONS	STD, HED, ACE
Experience in current position	11	4	9	30	33
Subject taught	NS	SS	Mathematics	Life Sciences	Accounting
Grade taught	Grade 8&9	Grade 8&9	Grade 10	Grade 11&12	Grade 11
Management responsibilities	Principal	HOD Languages and Social Sciences	HOD for Mathematics and Maths Literacy	Class manager	Class manager

TABLE 4.4: School C participants

Characteristic of schools	Principa1 3	HOD 5	HOD 6	Senior Teacher 3	PL1 Teacher 3
Gender	Male	Male	Male	Female	Female
Age	38	46	50	51	49
Qualification	BED, HED HONS, MA	BED	STD, HED, ACE	STD, HED, ACE	BED
Experience in current position	2 years	7 years	5 years	27 years	26 years
Subject taught	Mathemati cs	accounting	Accounting	Technolog y	EMS
Grade taught	Grade 10-12	Grade 10-12	Grade 10-12	Grade 8&9	Grade 8&9
Management responsibilities	Head of the institution	HOD Commerce	HOD Commerce	Class manager	Class manage r

TABLE 4.5: School D participants

Characteristic of schools	Principal 4	HOD 7	HOD 8	Senior Teacher 4	PL1 Teacher 4
Gender	Female	Male	Female	Male	Male
Age	56	32	35	56	50
Qualification	BED, HED HONS, MA	BED	BED	BED	BA, HED, ACE
Experience in current position	2 years	5 years	3 years	30 years	29
Subject taught	Life Sciences	Life Sciences	Mathematics	Life Sciences & Mathematics	Mathematics
Grade taught	Grade 10-12	Grade 10-12	Grade 10-12	Grade 10-12	Grade 10&12
Management responsibilities	Head of the institution	HOD Sciences	HOD Sciences	Class manager	Class manager

TABLE 4.6: School E participants

Characteristic of schools	Principal 5	HOD 9	HOD 10	Senior Teacher 5	PL1 Teacher 5
Gender	Female	Male	Female	Male	Female
Age	55	52	46	54	51
Qualification	Dip, ACE, BED HONS, Post graduate	STD, HED, ACE	BED HONS	BED	BED
Experience in current position	5 years	10 years	6 years	28 years	27 years
Subject taught	EMS	Physical Sciences	English	Physical Sciences & Mathematics	Physical Sciences
Grade taught	Grade 9	Grade 10-12	Grade 10-12	Grade 10-12	Grade 11
Management responsibilities	Head of the institution	HOD Sciences	HOD Languages	Class manager	Class Manager

The researcher highlighted the qualifications and experience of the participants to determine whether they could contribute to this study through the answers they provide. The researcher focused on the SMT and PL1 teachers who had worked for many years at their schools because they would be able to provide detailed information on their understanding of the roles of the SMT in the academic performance of MST schools. The researcher did not focus on issues of gender and age when selecting participants because the study focused on

experience and understanding of their role in the academic performance of MST; however, the researcher tried to get views from both genders. As for age, the researcher wanted to get the opinion of senior teachers who had worked for many years as well as those who were recently appointed. In addition, the researcher wanted to use teachers from varying grades to understand school management roles better.

4.3 PRESENTATION AND ANALYSIS OF DATA COLLECTED TROUGH INTERVIEWS

To achieve the research objectives, the researcher used semi-structured interviews as the primary data collection instrument. The semi-structured interviews were triangulated with observations and document analysis. These semi-structured interviews allowed every participant to be asked the same questions, and the researcher ensured that there was flexibility in how the questions were asked, at times, additional probing questions were asked. The researcher looked for behaviour patterns among the participants in the schools to understand their assumptions, values, beliefs, experiences, and make sense of the social dynamics. The interview schedule consisted of ten interview questions in each category of participants. Participants were requested to respond to the interview questions according to their experience, knowledge, and perspectives on the research topic. The time and venue for these interviews were arranged according to the participants' availability did not disturb the teaching and learning process. The HOD and principals offices were used as the interview venue. Some teachers, particularly senior teachers, preferred their offices. In addition, the HODs' and deputy principals' offices were used for interviews with PL1 teachers who do not have offices.

As mentioned in the previous chapter (refer to cf.3.7), the researcher started the data analysis process by first transcribing data generated through interviews. The researcher carefully and extensively listened to the voice recording of interviews from all interviewees to make meaning of their responses. The researcher jotted down notes as he was listening, grouped all participants' responses, and summarised all responses accordingly. The researcher, therefore, gathered the transcribed data into themes. Moreover, the researcher categorised and analysed themes for similar interview questions but responded to by different participants as one theme. The following themes were derived from data collected through interviews:

THEME 1: Understanding the relationship between management roles and academic performance of Mathematics, Science, and Technology subjects

THEME 2: Key role of the School Management Team

THEME 3: Curriculum management

THEME 4: Challenges in managing Mathematics, Science, and Technology schools

THEME 5: Factors influencing academic performance of Mathematics, Science, and Technology subjects

THEME 6: Improving the academic performance of Mathematics, Science, and Technology subjects

THEME 7: Development of staff by the School Management Team

4.3.1 THEME 1: Understanding the relationship between management roles and academic performance of Mathematics, Science, and Technology subjects

Participants responded to the following question:

According to your understanding, do you think management styles by the SMT contribute to the academic performance of learners?

Senior teachers responded as follows:

Senior Teacher 3: *I think they do sir, for example, if the SMT or the school's management make decisions that do not involve teachers, it may come back and affect the school's academic performance.*

Senior Teacher 2: *Yes, the SMTs' management style contributes to the learners' academic performance. It can negatively affect the academic performance of the learners. The question is, how? Firstly, if the SMT is divided, the school can perform poorly, for example, in my school, most of the senior teachers are teaching Grade 12, but the SMT is afraid of them, so the school has been underperforming for the past three years. On the other hand, if the SMT is not divided, the school can improve the learners' academic performance, whereby they can introduce the newly appointed educators in the school, particularly in Grade 12, as they are eager to learn and are devoted to teaching. In addition, the SMT should avoid giving teachers the privilege of owning a grade, particularly in Grade 12,*

where most of them are only motivated to teach Grade 12 because they want to do or want to go marking.

PL1 teachers responded as follows:

PL1 Teacher 1: *Yes, I think they do contribute because they don't use the autocratic leadership style. They leave room for us as teachers to express ourselves so that we can give the learners what is expected from us.*

PL 1 Teacher 3 - *Yes, I do believe the management style that is used by the SMT especial here in our school does contribute a lot to academic performance since their management styles sometimes do not involve teachers and learners more especial in issues which involve the learners and the educators they just take decision on their own without sometimes consulting the educators so it does affect the academic performance of the school.*

PL1 Teacher 4: *Yes, because their management style is flexible. They are able to listen to their teachers' views about the schools' academic performance.*

The participants' responses above suggest that there is a positive relationship between school management and the academic performance of learners (participants indicated that if the SMTs play their roles effectively, schools are likely to produce good academic performance). The suggestion is that the SMT needs to ensure that they carry out management tasks effectively to positively contribute to learners' academic performance. Failure by the SMT to carry out management tasks effectively will negatively affect academic performance. This is supported by Senior Teacher 2, who states that the SMT needs to carry out the management role adequately; otherwise, learners' academic performance may be negatively affected. Benoliel (2017 refer to cf. 1.7.2.6) further adds that the SMT play a considerable role in the performance of MST schools. He further stated that, if the SMT fails to execute their management roles effectively, their school is likely to perform poorly. This is also supported by Principal 2, who states that:

"*There must be results because we're being assessed based on the results. Thus, if the school is performing poorly, it means that the management is not doing enough. However, if the school is doing well, it means the management is doing a good job."*

The discussions above suggest that the SMT has a responsibility and is accountable for improving the academic performances of learners. However, it also appears that the management roles of the SMT in the MST schools focus more on the Grade 12 learners to improve academic performance since the SMT is assessed based on the Grade 12 learners' performance. Senior Teacher 1 added that:

"*The SMT should also organise motivational talks for the lower grades and not only for Grade 12 learners as the lower grades also need to be motivated."*

Based on the above, it is evident that most schools tend to focus more on Grade 12 learners, ignoring the other lower grades. Therefore, this leads to learners lacking a foundation in their content and creates more workload for teachers in the higher grades, particularly in Grade 12. In support of this notion, Butakor and Dziwornu (2018, refer to cf.2.12.6.) state that a lack of basics in Mathematics and Science at the primary level leads to poor performance at the secondary level.

4.3.2 THEME 2: Key role of the School Management Team

The HODs and Principals were requested to respond to the following question:

According to your own understanding, what is the key role of the school management team?

The HODs responded as follows:

HOD 1: *The role of the school management team is to manage the school, give direction to the school, and provide guidance to ensure that the school is functional.*

HOD 3: *The key role of the school management team is to give direction and control in the school and to make sure that teaching and learning take place accordingly.*

HOD 8: *The key role of the school management team is to manage the curriculum accordingly by following the policies that the departments have developed and ensure that the teaching and learning environment is conducive. In addition, ensure the daily functioning of the school by giving direction to teachers and learners.*

HOD 9: *The key role of the school management team is to ensure the smooth running of the school and ensure curriculum implementation, ensuring that all learners can attain*

knowledge or understand the curriculum. The SMT also manages learners' books and teachers' files, checks teachers' work, including lesson plans. It then depends on the school programme; some schools monitor lesson plans weekly and others every fortnight (depending on the school programme); the key role is to ensure that teachers do what they are supposed to do, which is teaching learners.

The Principals responded as follows:

Principal 2: *The school management team, usually known as the SMT, ensures that the school is well-managed. The core business of going to school, learners coming to school, and teachers going to school is for teaching and learning to occur; thus, school management teams are responsible for ensuring that teaching and learning are taking place.*

Principal 3: *The key role of the SMT is curriculum management, where the SMT influences teaching in many ways by establishing a climate conducive to learning, ensuring quality professional development for teachers, and providing ongoing feedback to help teachers improve their practice. The SMT develop plans for school improvement that align with the SIL, which is developed, implemented, and reviewed regularly. The SMT also has do instructional leadership by monitoring teachers and learners' work to assess schools' progress towards delivering the curriculum. The SMT also engages in facilitative leadership where the SMT leads without controlling while making it easier for all school community members to achieve the agreed-upon goals. Finally, the SMT must ensure that the school networks with other schools to learn good practices and benchmark their achievements.*

Principal 4: *School management teams are responsible for the quality of teaching and learning. To improve the quality of teaching and learning, they should be able to manage their roles successfully. School management teams need to assist educators in imparting knowledge to the learners. This will only happen if the school management teams are trained and inducted in their roles and functioning. They are responsible for the daily management of activities in the school. They should understand departmental policies and Acts to enable them to perform their duties well with confidence.*

Principal 5: *Set goals that can be achieved by learners, teachers, parents, and other stakeholders who are directly and indirectly attached to the school. Develop a mission and vision of the school together, with the SGB to ensure that teaching and learning of the school is effective. Moreover, manage the personnel of the school, develop the school policies and*

interpret them, lead and manage the school in an expected manner, and oversee the school's nine areas of evaluation.

The data generated from the interviews with the HODs and principals revealed that some of the management roles in the academic performance of MST subjects include curriculum management, monitoring of learners and teachers' work, correct allocation of workloads, drafting of timetables, management of exams and learner's discipline, and ensuring the daily functioning of schools. Knowles, Holton III and Swanson (2014, refer to cf.1.7.2.6) also support this, when they mention setting of school directions concerning learners and teachers, development of teachers, monitoring of curriculum, allocation of materials and financial resources, developing annual SIP, and actively liaising with the district office and other agencies to obtain assistance as required (as key roles of the SMT). However, most of the SMT members highlighted "ensuring daily school functionality" as the key role of the SMT.

Most of the SMT members that were interviewed stressed the issue of proper management of the school by the SMT to ensure quality teaching and learning as the key role of the SMT. It is evident that all the SMT members exercise their roles to achieve good learner performance. Mthiyane, Naidoo and Bertram (2019, refer to cf.2.13) concur by asserting that the SMT is accountable for improving learner academic performance. HOD 6 also confirmed this, stating that:

"*The key role of the school management team is to manage and ensure the good functionality of the school. Good school functionality refers to ensuring that teaching and learning are taking place, teachers are coming to school and leave on time; thus, the school should produce good results."*

The responses from the interviewed SMT members suggest that although there are many roles of the SMT, they are all centred around learner performance. Towns, Cockerill, Dahan, Foster, Gaither, Grimshaw and Roskies (2014, refer to cf.2.13) also confirm this, stating that the key role of the SMT is to offer an effective academic environment that will promote quality learning and teaching. They further state that the SMT, therefore, needs to engage in activities that will positively contribute to learners' academic performance. HOD 7 supported this too, stating that:

"*Firstly, it is the responsibility of the school management team to introduce and safeguard the schools' improvement culture. Therefore, the SMT need to plan for the functionality of the school, including their academic activities such as allocation of the educators according to subject specialisation."*

4.3.3 THEME 3: Curriculum management

As mentioned in Chapter 2 (refer to cf.2.13.1), the SMT's are regarded as curriculum managers. They are expected to perform their management roles effectively to produce curriculum delivery that may lead to the improved academic performance of learners. The SMT members who participated in this study view curriculum management differently. However, they all agree that the rationale behind curriculum management is to achieve good learner academic performance. It is evident that a well-managed curriculum leads to better learner academic performance and vice versa. HODs and principals were expected to respond to the following question:

"*How do you manage the curriculum?"*

The HODs responded as follows:

HOD 1: *The department ensures that each subject has the ATP; so, we follow the ATP. I ensure that every educator has the correct ATP for their subject. Moreover, from the ATP, we have designed our own tool to assess the content coverage. We want to ensure that the content is covered during teaching instead of waiting to teach it before the exam. We also monitor progress; for example, one may have four chapters to cover in a term. We discuss whether this will be possible. If not, we devise a plan to see how we can cover the incomplete work, even if it means having extra classes to cover the curriculum.*

HOD 2: *We develop a year plan that details how we will monitor the curriculum coverage. The pacesetter is designed in such a way that it highlights what should be covered after a certain period we usual track the curriculum coverage over a forthnightly period; every second week of each month, we assess whether the curriculum has been covererd according to the pace setter outlines.*

HOD 3: *We have an operational plan which contains all the activities that must be conducted at the school such as class visits and teachers' portfolios assessed by the HOD.*

For learners, a portfolio or classwork book must be submitted to the HOD. Teachers must control the books and submit them to the HOD.

HOD 6: *I check the ATP, curriculum coverage, and also use the tool that I developed to check the number of classwork and homework given to learners. Moreover, I also check the quality of work assigned to learners and whether it is controlled. In collaboration with the teachers, we also draft informal tests for learners to practice writing tests.*

The principals responded as follows:

Principal 2: *The curriculum is fundamental because it's the main that we go to work. Learners must learn, and we must give results. In controlling the curriculum, we believe it is everyone's duty, not only the principal. It is the duty of the SMT and the teachers as they must ensure that do formal and informal activities in their subjects. They report to their departmental heads, who report to the deputy and the deputy reports to me. Therefore, we control the curriculum by ensuring that there are assessments that take place and learners are given feedback on this assessment. If you give learners work, you must mark their work so that the learners will know where they stand as far as the feedback is concerned. So, we control the curriculum, we monitor the progress of learners. If learners are not performing well, we will follow up and establish the reason why they are not performing well. If there's a need, we involve their parents and other stakeholders. We even ask for assistance from the circuit and teachers from other schools.*

Principal 3: *I meet with the HODs. Secondly, I conduct class visits with the HOD; they visit the teachers in class to check whether the lesson plan has been done, whether it has been implemented in class, whether the assessments are conducted as expected, and whether formal assessments like Maths classwork or homework is done accordingly. Furthermore, I do sporadic visits without informing the teacher or HOD. This is how I control the curriculum.*

The above discussion shows that curriculum management involves monitoring curriculum coverage and learners' and teachers' work. This is confirmed by Principal 3 when he said that:

"Firstly, I meet with the HODs. Secondly, I visit the HODs classes, and they visit the teachers. Part of my class visits are to check whether the lesson plan has been done, whether

it has been implemented in the class, whether the assessment is conducted as expected, and whether formal assessment like Maths classwork or homework is done accordingly."

The literature review revealed that "the SMT need to know exactly how the content is going to be taught and assessed, and what resources are required for teaching and learning" (Maharajh, Nkosi & Mkhize, 2016 refer to cf.2.13.1). Therefore, curriculum coverage and monitoring of teachers' and learners' work requires the SMT members to be well-informed about the content being taught. This, therefore, suggests that curriculum management differs from one school to another, and from one department to another. Senior Teacher stated that:

"*In my case, my HOD is part of the SMT, but is not familiar with the Life Sciences content; therefore, I don't get the necessary support from him."*

According to Senior Teacher 2, his department lacks curriculum management because the HOD cannot manage the content he doesn't understand. On the other hand, some HODs are familiar with the content taught in their departments; this is confirmed by PL1 Teacher 4 when she stated that:

"My HOD is specifically supporting me because I am able to go to her if I have any challenges in my subject."

The discussion above indicates that curriculum management is one of the important roles of the SMT as it is inextricably linked to learners' academic performance. The primary reasons for learners to come to school is to learn the curriculum and teachers to teach the curriculum. Most SMT members stressed the issue of the completion of the curriculum or ATP. The ATP needs to be monitored daily to ensure that all topics are taught as planned, and that all daily teaching and learning activities are done accordingly. Dogra, Bhatti, Ertubey, Kelly, Rowlands, Singh and Turner (2016, refer to cf.2.13.1) concur by stating that monitoring and supervision of the curriculum will help the SMT to develop and implement strategies that will help improve academic performance.

The SMT need to monitor and supervise the curriculum by checking daily teaching and learning activities. Dogra, Bhatti, Ertubey, Kelly, Rowlands, Singh and Turner (2016, refer to cf.2.13.1) concur by stating that monitoring and supervision of the curriculum will help the SMT to develop and implement strategies that will improve academic performance. It is also clear that the SMT needs to be involved in learners' daily teaching and learning to

improve academic performance. Ajani (2019, refer to cf.2.13.1) concurs with this notion, indicating that if the SMT is involved in teaching and learning, it supports teachers. Moreover, the SMT will also be familiar with the teachers' experience in the classroom.

4.3.4. THEME: 4 Challenges in managing MST schools

The HODs were requested to respond to the following question:

What challenges do you come across when managing your department?

The HODs responded as follows:

HOD 2: *Managing the department is not only about resources; you also manage personnel and deal with people. People come in with many emotions and other baggage.*

HOD 3: *I think the first one is educators stubbornness. Most teachers are quite stubborn, especially in terms of submission. Most do not stick to submission dates; we always fight with teachers regarding submission. In most cases, teachers are absent, and we don't always get notified; this is a serious problem.*

HOD 7: *Some of the challenges that I have encountered are that teachers don't honour their periods. They tend to go to class 10 minutes late and leave 5 minutes early. In other instances, learners walk out of the class, and some fight because the educator leaves the class before the period ends.*

HOD 8: I *have two challenges; the absenteeism of teachers and the non-compliance of submission. If a teacher is absent, this affects the learners and other staff at school. In addition, teachers are well aware of submission dates and requirements, yet they still miss the deadline.*

HOD 9: *The challenges I am encounter are teacher absenteeism, learner absenteeism, and the unwillingness of teachers to attend classes, which SACE has termed indolence (for example, when a teacher is absent at work but present at school, where the teacher doesn't go to class or when they go to class but don't teach).*

The Principals were asked the following question:

What challenges do you come across when managing your school?

The Principals responded as follows:

Principal 2: *At times there are teachers who do not respond positively towards our management style. Some across as rebellious, but you realise that this is their management style. Thus, teacher development is important. As managers, we assist in developing them to minimise such those challenges."*

Principal 3: *Regarding teacher absenteeism, I control the time book. I expect a teacher to have reported by 07h00 if they will not be coming to work so that we can make alternative arrangements to find a substitute. They are also familiar with the available kinds of leave.*

4.3.4.1. Teacher absenteeism

Teacher absenteeism is a common problem in all schools, and in some cases, the absent teachers tend do not report when they are absent. The interviewed principals and HODs agree that teacher absenteeism has a negative impact on the daily functioning of the school and impacts academic performance negatively. Komakech and Osuu (2014, refer to cf.2.11.12) support this notion, stating that teacher and learner absenteeism is one of the major causes of poor performance. In addition, Principal 3 indicated that the absenteeism of the teachers is compromising curriculum days. Weis (2018, refer to cf.2.11.12) concurs with Principal 3, stating that learners' performance is negatively impacted when the teacher is continually absent from school.

4.3.4.2. Learner absenteeism

Learner absenteeism is another challenge in MST schools, as mentioned by participants. Participants also indicated that if a learner is frequently absent from school, there will be a huge content gap, and eventually, they fail or drop-out; thus, leading to overall poor academic performance in the school. Tomlinson (2014, refer to cf.2.11.12) concurs by stating that the more days an educator is absent from the classroom, the lesser their learners tend to score marks on formal tasks.

4.3.5. THEME 5: Factors influencing academic performance of Maths, Science and Technology subjects

The PL1 Teachers and Senior Teachers were asked the following question:
Which subjects in your school are poorly performed, and what are the causes?

The PL1 Teachers responded as follows:

PL1 Teacher 1: *Learners are failing Maths and Physical Sciences. I believe the reason is that some learners are not gifted; many learners experience challenges with both subjects. Therefore, if both are compulsory, learners will experience difficulty. Perhaps, if they had History as an option, they would perform well.*

PL1 Teacher 2: *I would say Mathematics because the learners are not putting enough effort into their studies.*

PL1 1 Teacher 3: *Mathematics, Physical Sciences, and Accounting are poorly performed in our school. I think that this is a result of the type of learners and the number of learners that we have per class. Our classes are overcrowded, particularly in Grade 10; we have approximately +/- 80 learners per class, which is the class that I'm teaching. The Grade 11 and Grade 12 class is also overcrowded.*

The senior teachers responded as follows:

Senior Teacher 1: - *It has to be Maths and Physical Sciences, and I believe this is a result of their attitudes towards the subjects and lack of commitment . Most of our learners are not Science material. MSTA thinks that all learners can do Maths and Science, which is not true; they impose the subject on learners.*

Senior Teacher 3: *In our school, it's Maths and Physical Sciences. Those are the most challenging subjects, and as I have said before, the environment plays a role in the situation. It is mainly because the parents of these learners are uneducated.*

Senior Teacher 4: *Definitely Maths and Physical Sciences. The first thing that leads to failure is that learners don't understand the subject and have no background knowledge.*

From the interviews, it became evident that almost all the senior teachers and PL1 teachers shared a common understanding, but different views about factors influencing the academic performance of MST subjects. The majority of participants cited Mathematics and Physical Sciences as subjects that are poorly performed at their school. They also indicated factors causing such poor performance: learners' attitude towards Maths and Science, lack of learner-teacher support materials, lack of commitment to learners, school location, learner-teacher ratio, content gap due to COVID-19, compulsory Mathematics and Science subjects in all MST schools, teachers' social problems, and lack of parental involvement.

4.3.5.1. Attitudes of learners towards Mathematics and Physical Sciences

The majority of participants have mentioned that learners in the MST schools have a negative attitude towards MST subjects, affecting their academic performance. Çìl, (2016, refer to cf.2.12.2) asserts that the generation of positive attitudes towards MST is a vital and fundamental goal of MST education. Senior Teacher 1 stated:

"Learners poorly perform in Maths and Science as a result of their attitude towards the subjects, and lack of commitment."

HOD 7 concurred with Senior Teacher 1, stating that:

"Mathematics tends to be a poorly performed subject, but what I can say is that learners have a negative attitude towards it, and the environment is not conducive."

Majamana (2018, refer 2 cf.2.12.2) concurs by stating that most learners usually avoid MST subjects because of fear and lack of confidence in the subject concepts, which may lead to poor performance. Bell (2016) adds that the fear of MST subjects has caused a decrease in the number of learners taking these subjects both at the secondary and tertiary levels.
Principal 2, on the other hand, stated:

"The attitude is the cause of this poor performance. Learners have a negative attitude towards these two subjects; they believe that Maths is difficult – this is as a mindset that they adopt from society. Our responsibility is to teach them that this is not true; with the right support, they can excel."

4.3.5.2. Lack of commitment by learners

Some teachers and SMT members are of the view that learners are not committed to their studies. HOD 2 stated the following regards to lack of commitment by learners:

"*It's all about commitment and lack of practice from learners. They don't revise the work that they are given, and it's a question of commitment to learning more Physics and Science."*

Learners are expected to put more effort into learning to improve their academic performance. However, the indication by the participants is that some learners do not put in as much effort as their teachers. This is supported by PL1 Teacher 2, stating that:

"The reason is that the learners are not putting in as much effort in their studies. Luckily, I share the library with the Maths teacher, and he is putting in more effort."

Principal 5 is also of the view that learners are lazy and do not do their homework.

"*Learners are not motivated; we have overcrowded classrooms; hence, it is difficult for a teacher to focus on individual learners; the shortage of resources such as calculators; laziness; learners don't practice Maths and don't write homework."*

4.3.5.3. Location of the school

The participants indicated that the schools are located in deep rural areas where parents are uneducated, and thus they cannot help their children with Maths and Science. HOD stated that:

"*There are many causes; one of them is the social background or socioeconomy of this area. Some of them include drug and alcohol abuse whereby parents spend more time consuming alcohol and do not have time to help the learners.*"

Senior teacher 4 agreed with HOD 9, stating that:

"I think the first thing that leads to learners' failure is that they understand the subject, but don't have the background. For instance, this is a rural area; they may not be exposed to a Maths and Science background, but enrol in a school that only offers such subjects."

It is evident that the school environment affects learners' academic performance. In communities that are affected by drug and alcohol abuse, learners are not likely to perform. Therefore, it is the responsibility of the SMT to create an environment conducive to teaching and learning because a school environment is one of the key factors that determine how learners perceive life and how they respond to challenges they face daily. Collins and Halverson (2018, refer to cf.2.14) concur by stating that a positive and supportive school environment promotes a sense of belonging and reduces potential undesirable circumstances in the home environment.

4.3.5.4. Compulsory Mathematics and Science subjects in MST schools

From the discussion with the participants, it is evident that most teachers are of the view that learners in the MST schools are not capable of doing Maths and Science subjects. These teachers believe that the DBE has imposed Maths and Science on learners and made them, whereas only a few are capable of doing Maths and Science. Therefore, they blame the Mpumalanga DBE for suddenly changing the schools to be fully MST schools. In support of this, Principal 3 stated:

"An MST school is a school where all the learners are expected to do pure Maths and Science. We sometimes receive overaged learners from primary schools. These learners may be aged 21, but we can't turn them back. The learner's report doesn't indicate whether the learner has been promoted; it only indicates their age, which suggests that the learner is being pushed to the next grade, so how can such a learner excel in Maths and Science?"

From the response cited by Principal 3, it is evident that the DBE did not consider learners different capabilities before deciding that all learners in MST schools must do Maths and Science subjects. Imposing Maths and Science on all learners disadvantages some learners who might do better in other subjects. Senior Teacher 2 shares the same view as Principal 3, stating that:

"Most of our learners are not Science material. MSTA thinks all learners can do Maths and Science, which is not true; they impose the subject as if everyone can do it."
Senior Teacher 1 concurs with Senior Teacher 2 and Principal 3, stating that:

"Learners should be given a choice; this will improve their performance. Our school offers Maths and Science, which is difficult for other learners; not everyone is capable of doing Maths and Science."

4.3.5.5. Learner-teacher ratio

One factor that influences academic performance, as mentioned by PL1 Teacher 3, is the overcrowding of classes. PL1 Teacher 3 stated:

"Classes are overcrowded, especially in Grade 10; we have an average of +/- 80 learners per class. I believe the Grade 11 and Grade 12 classes are also overcrowded."

Dreyer (2017, refer to cf.2.12.4) concurs by stating that overcrowded classes are common in South African schools, and negatively impact teaching and learning. Overcrowded classes are likely to be ill-disciplined, and teachers may not easily reach out to every learner's individual needs. Mazana, Suero Montero and Olifage (2019 refer to cf.2.12.4) stated that performance in smaller MST classes of 20 or less learners better than the performance in a class of 30 or more learners. Çelik (2018 refer to cf.2.12.4) supports this by stating that MST teachers who teach a few learners in their classes usually experience learners with more positive attitudes and the performance is always better as compared to bigger classes.

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4.3.5.6. Lack of commitment by teachers

Teachers did not mention any factors relating to them that could negatively influence academic performance. However, this is contrary to what HOD 7 and HOD 9 mentioned, that teachers are not willing to attend classes; sometimes they go to class late or leave before the period ends. To support this, HOD 7 stated:

"Some of the challenges that I have encountered are that teachers don't honour their periods. They tend to go to class 10 minutes late and leave 5 minutes early. In other instances, learners walk out of the class, and some fight because the educator leaves the class before the period ends."

HOD 9 agrees with HOD 7, stating that:

"The challenges I am encounter are teacher absenteeism, learner absenteeism, and the unwillingness of teachers to attend classes, which SACE has termed indolence (for example, when a teacher is absent at work but present at school, where the teacher doesn't go to class or when they go to class but don't teach)."

HOD 2, HOD 3, HOD 8, HOD 9, and Principal 3 mentioned the non-compliance of teachers, particularly when it comes to the submission of schoolwork. Principal 3 mentioned that sometimes his HODs fail to submit monthly reports timeously, which also delays him to submit at the circuit. HOD 3 and Principal 2 mention the issue of teachers being stubborn or rebellious. However, Principal 2 argue that some teachers do not respond positively to their management styles; hence, they challenge them. Principal 2 also suggested that these teachers receive professional development. In conclusion, it can be suggested that some teachers do not always contribute negatively to learners' academic performance, although this was not mentioned.

4.3.5.7. Content gap due to COVID-19

Learners academic performance was impacted in 2020 as a result of the COVID-19 pandemic; hence, some of the content was not covered. For example, in Grade 12, all the learners are expected to be examined on all the topics, including the ones they did not study in the previous grades. In support of this, Principal 3 stated:

"There are learners that did not learn well because of COVID-19 last year. As a result, the papers they wrote last year did not include most of the content."

4.3.5.8. Lack of learner teacher support material

As mentioned by most participants, one other factor influencing academic performance is the lack of learner-teacher support materials. This also includes the unavailability of laboratory facilities. HOD 9 stated:

The provision of resources is a challenge. Most learners in our school do not have a calculator, so we cannot do without a calculator, which is a lack of resources. When it comes to the likes of Technology and Natural Sciences that require practicals, how do they

participate if we don't have a laboratory? How will they know what a glass beaker is? Therefore, it becomes difficult for them to understand because our teaching is conducted theoretically.

HOD 6 concurs with HOD 9, stating that:

"We do not have a laboratory in my school; therefore, we encounter challenges when learners need to do practicals for Physical Sciences and Life Sciences. As a result, everything is conducted as theory, which makes it difficult for learners to understand, resulting in them failing."

Principal 3 supports HOD 2, stating that:

"*As an MST school, we are expected to excel in Maths and Science, but we don't have a laboratory for Maths, Science, and Life Sciences, which makes it difficult for us to deliver as expected."*

HOD 10 stated that:

"The school has a lack of teaching resources and materials for other subjects. For example, there's no laboratory in the school. Physical Sciences teachers face a challenge when it comes to conducting experiments, which impacts the teaching time as we have to outsource equipment from other schools."

However, Laurens, Batlolona, Batlolona and Leasa (2017, refer to cf. 2.11.1) argue that the SMTs need to provide teaching and learning material that can be used to improve the academic performance of learners. These teaching and learning materials include textbooks, study guides, notes, hand-outs, and laboratory equipment, particularly for science subjects. Mestry (2017, refer to cf. 2.11.1) concurs, indicating that the provision of necessary Learner Teacher Support Material (LTSM) by the SMT helps learners to acquire a better understanding of concepts in their respective field of study and how to perform the experiments. On the other hand, Rivers (2018, refer to cf.2.11.1) agrees with HOD 9 who states that learners cannot afford the necessary books and materials for learning due to their family's economic background. Therefore, the SMT needs to ensure that they have programmes to assist such learners in improving their academic performance. HOD stated that:

"I believe we could do better if we are adequately resourced. For example, if you look at our school, we don't have a functional laboratory; the practical aspect of Science is overlooked. Practicals will assist learners in understanding the theoretical aspect of Science. I am running a department with three main subjects, namely Agriculture, Physical Sciences, and Life Sciences, but we only have one projector in the department. Staff end up fighting for that one resource. We also lack smartboards and interactive boards where we can show learners some of these illustrations and observations which are scientific in nature".

4.3.5.9. Professional development of teachers

Participants indicated that teachers' professional development is the responsibility of the SMT and DBE. Glaister (2014, refer to cf.213.2) mentioned that the SMT needs to ensure that all staff members are professionally developed. HOD 9 stated:

I think it would be better for us to be well-equipped or well-skilled through workshops.

As mentioned in Chapter 2 (refer to cf. 2.13.2), the responsibility of the SMT is to establish an SDT that will be responsible for staff development, organising of activities relating to staff development, ensuring that all staff members are well-trained on IQMS and CPTD processes, mentor and support newly appointed staff members or any member that may need mentorship, and also ensure the development of the SIP. It is clear from the discussion with the participants that professional development also requires content development. HOD 8 stated:

The MSTA should come up with content workshops; I think these would help a lot.

Dlamini (2017, refer to 2.12.5) agrees with HOD 8, stating that learners' poor performance in MST schools is due to a significant shortage of appropriately qualified and capable MST teachers. Ngwenya (2018, refer to 2.12.5) concurs by stating that although the DoE has made a considerable effort in development and induction, there is still a lack of content knowledge by MST teachers; this forces the DoE to hire foreign teachers. However, these foreign teachers are usually overworked.

4.3.5.10. Teachers social problems

From the discussion with the participants, it is evident that the social problems of teachers affect the academic performance of learners. Principal 3 stated:

"*The other challenge is that we find ourselves in a position where time and again, we underperform because the teachers are dealing with personal issues. For example, in the Mathematics and Science department, most of the teachers have mashonisa problems. Come month-end, these teachers don't come to school because they know that the mashonisa will come looking for them here. Once you have that kind of problem, you will be at work for two hours, and before we know it, you have disappeared again. This causes problems for the learners, who need support from their teachers. The learners also have their own issues; so we end up with a dilemma at the end of the day.*

HOD 2 stated that:

"Managing the department is not only about resources; you are also managing personnel and dealing with people. People come in with many emotions and other baggage."

The discussion above reveals that teachers are human beings with social needs and social problems. Participants mentioned that teachers cannot be effective in their teaching if they have social problems, which would negatively impact learners' academic performance as the teachers would be away from school.

4.3.5.11. Lack of parental involvement

Participants mentioned lack of parental involvement as another factor influencing the academic performance of MST schools. HOD 9 stated.

"It seems as though teachers are the ones who are responsible for the learning of the kids, so if parents are not involved or are not willing to take part in the learning process then they are unable to assist learners after the school hours. Therefore, learners are lacking support, and they end up not doing well."

Senior Teacher 3 shares the same view as HOD 9, stating that:

"In this area, the learners' parents are uneducated; therefore, how will a learner studying Maths be assisted at home if the parents are uneducated?"

Simonson, Zvacek and Smaldino (2019, refer to cf2.11.4) mentioned that the foundation of learning and education is expected to take place at home. They further argued that for a school to achieve good academic performance, the SMT needs to ensure that the parents are responsible for providing help to their children whenever they experience problems in their subjects. HOD 7 shared the following regarding parental involvement:

"The parents do not encourage learners and ask questions such as why they are learning Mathematics or what its use is. Therefore, they do not see the value of Mathematics."
In support of this, Cook-Sather, Bovill and Felten (2014, refer to cf.2.14) argues that undesirable circumstances at home such as violence, poverty, and failure of parents' involvement in learners' education negatively impact learners' perception of learning and how they respond to learning objectives in the school environment.

4.3.5.12 Lack of foundation from primary level

As mentioned by Yuill and Little (2018, refer to cf. 2.12.6), difficulties in learning MST show up at a beginning phase in children, and proceed up to secondary school. Senior Teacher 5 stated:

"In the high school, the subjects are well taught, but the problem is in the lower grades (like Grade 1 and Grade 2). There is a Mathematics gap; the learners in the higher grade can't relate Mathematics with their day-to-day life."

Butakor and Dziwornu (2018, refer to cf. 2.12.6) support the above comment by Senior Teacher 5, stating that a lack of basics in Mathematics and Science at the primary level leads to poor performance at the secondary level. Therefore, the SMT need to address such issues as early as the primary school level. MST teachers of primary schools should ensure that their learners have a good foundation and basics of the subjects so that they will better understand new concepts at the secondary level

4.3.6. THEME 6: Improving the academic performance of Mathematics, Science, and Technology subjects

Interviews were conducted with the participants to solicit information on their strategies to improve academic performance in the MST schools.

Senior teachers were expected to respond to the following question:

What strategies do you use to improve academic performance in your subject?

Senior Teacher 1: *I used to provide them with terminologies, explain them, ask learners to go through them and memorise them so that they are familiar with them as we discuss the particular chapter. In addition, I conduct practicals if the particular topic requires illustration. In the past, I used to provide them with the illustration or pictures to make it easier for them to understand it.*

Senior Teacher 2: *I usually avoid ostensive teaching strategies where teaching and learning are teacher-centred. Secondly, my teaching is not textbook oriented, where I don't depend on the textbook. I also avoid the traditional approach, which is chalk and talk. Instead, I engage learners in heuristic teaching and learning, where I encourage learners to assist each other; therefore, the teaching becomes learner-oriented and not teaching-oriented. I also integrate all the necessary teaching and learning repertoire to expose my learners to different learning materials in order to better understand Life Sciences concepts and the content to improve their academic performance. I also engage my learners in practical work as stated in the Life Sciences CAPS document that learners should understand phenomena in Life Sciences to improve their academic performance. Lastly, I Provide learners with activities from the previous question papers, organise field trips, and arrange extra classes if necessary.*

Senior Teacher 3: *I mostly do extra classes, and I have created a WhatsApp group where learners ask questions if they experience challenges with activities.*

PL1 teachers were requested to respond to the following question:

What strategies do you use to improve academic performance in your subject?

The PL1 teachers responded as follows:

PL1 Teacher 1: *I involve learners a lot in the classroom. I make sure that they are hands-on. The classroom environment should be learner-orientated so that learners are comfortable asking questions and standing in front of the class to explain something.*

PL1 Teacher 3: *We use team teaching to improve learners' academic performance, and also conduct extra classes. We think that giving the learners more time will improve their performance.*

The HODs were requested to respond to the following question:

What strategies do you use to improve academic performance in your department?

The HODs responded as follows:

HOD 2: *To improve academic performance, we try to ensure that there is continuous assessment of these learners. We usually give them two weekly tests. Sometimes we adopt a weekly test that we offer as a series of assessments to assess their performance and level of understanding – similar to what we do with learner profiling. We understand that learners are different and learn differently.*

HOD 3: *We have extra classes approximately four times a week, and we provide learners with past question papers to train them. At times, we invite teachers from other schools who are experts in the particular subject.*

HOD 4: *The best strategy thus far is outsourcing. We outsource educators to come with strategies from their schools and fuse them with our strategies. Thus, we have extra classes and informal tests.*

HOD 6: *I use different strategies. For example, I use team teaching, outsourcing of teachers, extra classes etc., but I prefer team teaching because it allows us to teach learners in their areas of strengths. I then discuss this with my colleagues so that one of us focuses on a particular strength, while the other takes on another area of strength. We are here to support the learners so that they pass.*

HOD 7: *We have extra classes that extend to Saturday; although we encounter poor attendance from the learners because of the environment. They don't see a need to attend school on Saturday; hence, parental involvement is not enforced. When you ask a learner why they didn't attend school on Saturday, they will tell you that they were at a funeral. I also think that parents must help us, by ensuring that learners come to school on Saturday.*

There's a lot that learners can gain by attending school on Saturdays – they are taught by the teachers we outsource.

Principals were requested to respond to the following question:

What strategies do you use to improve academic performance in your school?

The principals responded as follows:

Principal 2: *A few; there isn't a lot. To improve the performance in my school, sometimes we outsource skills (we invite teachers from other schools to come and assist our teachers). Our teachers are also working hard to improve, sometimes they conduct extra classes after school, and on weekends they are here until 17h00. As the management, we also assist. We do what we call team teaching; as the principal, I go to class, teach, and then support the teachers. The deputy principal does the same, and we are also involve the parents. We are doing all of this to help our learners excel.*

Principal 3: *As a school, we engaged with the parents at the beginning of the year and agreed on extra classes in the morning, particularly in summer and spring. On holidays and weekends (Saturdays and Sundays), we are at work. Currently, I am teaching Grade 12 learners, but I need to first cover the Grade 11 content before I proceed with Grade 12 content 12 content. Furthermore, our teachers separate the learners according to their strengths so that they get the relevant assistance.*

Principal 4: *As the school principal, I use the following strategies to improve academic performance: profiling learners is critical at my school; this usually assists us in knowing our learners' strength and weaknesses before we can assist them. After every task, teachers are also expected to do item analyses in order to draft the subject improvement plan that will be strictly monitored by HODs and therefore develop the School Improvement Plan. In addition, we provide learners with an opportunity to partake in extra-curricular activities. We also invite motivational speakers and successful alumni to motivate our learners, and track our learner's performance from as early as Grade 8.*

From the above, it was revealed that strategies to improve academic performance in the MST schools include the use of different teaching strategies, building strong professional learning communities, developing the School Improvement Plan, conducting extra classes, and learner profiling.

5.3.6.1. Use of different teaching strategies

These different teaching strategies help to meet the needs of different learners. Senior Teacher 2 and PL1 teacher 1 use the same teaching strategy, a learner-centred teaching approach. They both engage the learners in their learning. They also provide the learners with an opportunity to help each other.

Principal 3 cited that they use differentiated teaching, where they separate learners according to their potential. HOD 9 concurs with Principal 3, indicating that they use this differentiated teaching during extra classes only.

5.3.6.2 Building strong professional learning communities

Another strategy participants indicated is outsourcing teachers from other schools, particularly those performing well in their subjects. This outsourcing helps to build strong professional learning communities. As mentioned in Chapter 2, a professional learning community is a group of individuals or stakeholders who work collectively to bring about change that directly impacts learners' performance (Olivier & Huffman, 2016, refer to cf.2.13.11). Effective SMTs play a vital role in building professional learning communities. Benoliel and Schechter (2017, refer cf.2.13.11) concur by stating that the SMT, as school managers, have a crucial role in developing professional learning communities. Furthermore Hod and Ben-Zvi (2014, cf.2.13.11) assert that changing a school into a professional learning community cannot be done without the assistance and encouragement of the SMT to develop the staff as a learning community. Principal 2 stated:

"As the management, we also assist. We do what we call team teaching; as the principal, I go to class and teach and then go to the teachers and support them. The deputy also does the same; so we are also involving the parents."

The above response by Principal 2 suggests that he is leading by example. Participants also mentioned the issue of team teaching as another strategy to build strong professional learning communities. HOD 6 indicated that teachers, particularly in Physical Science, divide topics in subjects according to their strengths.

5.3.6.3 Developing of School Improvement Plan

The development of a SIP is another strategy indicated by participants to improve academic performance. The principal and the SMT develop the SIP annually at the beginning of each academic year as per Section 58(b) of the South African Schools Act 84 of 1996. The aim of developing the SIP is to set out how to improve learners' academic performance. Principal 4 stated:

"After every task, teachers are also expected to do item analysis to draft the subject improvement plan that will be strictly monitored by HODs; and therefore develop the School Improvement Plan."

5.3.6.4 Conducting extra classes

From the discussion with Principal 3, it is evident that curriculum coverage is one of the priorities. He mentioned that they cover Grade 11 work that was not done in the previous year in Grade 12, and also ensure that they cover the Grade 12 work in the same grade. Moreover, he added that this curriculum coverage is only possible with the extension of teaching time or conducting extra classes. Conducting extra classes is one of the strategies commonly used by all participants to improve academic performance. The morning, afternoon, Saturday, and holidays classes were identified as the best strategies participants use to improve academic performance. HOD 2 also indicated that during extra classes, they group learners according to their abilities so that they can attend to their unique challenges. He further indicated that during normal school hours, they teach them without necessarily grouping them. HOD 1 further stated:

"In my department, once we identify that the performance is poor, we then proceed with arranging extra classes in the morning, after school or on Saturdays. Our school also organises camps for the learners so that they may be taught in the evenings. In addition, we have winter school and summer school; we go the extra mile to help our learners pass Maths."

5.3.6.5. Learner profiling

The discussion with the participants revealed that learner profiling is one of the strategies schools use to improve learners' academic performance. According to Griful-Freixenet,

Struyven, Verstichele and Andries (2017, refer to cf.2.13.12), learner profiling includes information about learners' skills, weaknesses, strengths, and interests. Principal 4 stated:

"The profiling of learners is critical at my school; this usually assists us in knowing our learners' strengths and weaknesses before we can offer the necessary individual assistance."

HOD 2 concur with Principal 4, stating that:

We do learner profiling so that we deal with the challenges that a learner has because learners are different. As a result, we profile the learners so that we deal with specific learner challenges when adopting extra classes and morning classes.

In support of the above, Griful-Freixenet, Struyven, Verstichele and Andries (2017, refer to cf.2.13.12) concur with Principal 4 and HOD 2, stating that learner profiling helps to discover learners' barriers to learning to know what to do to address such barriers to learning.

4.3.7. THEME 7: Development of staff by the School Management Team

The SMT is responsible for ensuring that staff members are developed through the SDT (Glaister, Wong & Clausi, 2014, refer to cf.213.2). From the discussion with the participants, it is clear that they have different experiences about the professional development of staff in their respective schools. Some mentioned that they received developmental training and workshops from their schools, while this was not the case for others. Senior teachers and PL1 teachers were requested to respond to the following question:

Does the SMT conduct workshops to develop teachers?

The senior teachers responded as follows:

Senior Teacher 1: *Based on my experience, the SMT used to call monthly subject meetings to assist us to develop areas we don't understand. They would also guide us on how to conduct ourselves during invigilation. At the start of COVID-19, they also guided us on managing teaching during such difficult times.*

Senior Teacher 2: *No, they don't. My HOD, who is part of the SMT, is not familiar with the Life Sciences content; therefore, I don't get the necessary support from him.*

Senior Teacher 4: *They support us as educators, particularly in managing the curriculum, checking learners' work, and that teachers can teach according to the ATP. However, sometimes they instruct you to implement certain activities, but don't show you how to do it because they are inexperienced.*

The PL1 teachers responded as follows:

PL1 Teacher 3: *They conduct workshops to develop teachers; my HOD conducts workshops to develop her team. Additionally, she does class visit, provides feedback in meetings, and guidance us. For example, I recall when she conducted a workshop on the code of conduct of educators.*

PL1 Teacher 4: *It is mostly my HOD because she visits me during class. She guides me on where to improve. This is the most development that I receive.*

From the above discussion with participants, it is clear that the SMT conducts workshops to develop teachers. These workshops are commonly content-based, and emanate from the class visits made by the SMT members. Moreover, participants view the one-on-one discussions after class visits as a content workshop. However, Senior Teacher 2 is if the view that he is not developed as far as content is concerned because the HOD does not know the content for Life sciences. However, Senior Teacher 2 mentioned that the SMT conducts invigilation workshops to remind them of what is acceptable and unacceptable regarding invigilation. He further indicated that the SMT also conduct IQMS workshops for teacher development.

Another workshop conducted by the SMT is on the use of technology, where teachers were taught how to conduct a lesson using Microsoft Office on their laptops. PL1 Teacher 2 stated: *I remember the last Microsoft Office workshop e had, where we were given a lesson on how to conduct a lesson using our laptop.* PL1 teacher 3 also mentioned that their SMT trains them on the educator code of conduct.

4.4 PRESENTATION OF DATA COLLECTED THROUGH DOCUMENT ANALYSIS

The researcher requested permission to analyse the documents of five MST schools. Data collected from the documents were added to pre-determined themes, with descriptors serving as themes. The researcher analysed the documents through thematic analysis. Important and distinct facts were noted as themes (Kukano, 2020, refer to cf.3.7) and the facts were linked to one another.

The researcher reviewed documents such as minutes of the SMT and staff meetings, agendas, daily class attendance registers, lesson plans, annual activity plans, annual assessment plans, subject policies, school policies, monthly reports by HODs, analysis of academic performances of the schools, the SIP, and time books.

4.4.1 Minutes of SMT and staff meetings

The researcher analysed the minutes of the SMT and staff meetings of the participating schools. The most common item discovered in the minutes was strategies to improve the academic performance of schools. These strategies are in addition to the quarterly analysis of the schools' results. Almost all the schools first analysed their performance per quarter and per subject, then identified their challenges per subject, and developed strategies to improve. As mentioned by Principal 3, HOD 2, HOD 9, and HOD 6, the researcher also discovered that most strategies discussed were extra classes, outsourcing, and team teaching. The staff meeting minutes also indicated that some schools were struggling with late coming of learners, and strategies to address the challenges were discussed. Some of the strategies discovered were strict gate control, parental involvement, and recording of latecomers in the black book. A duty roster of gate control was also available.

4.4.2. Daily class attendance registers

According to the class attendance registers analysed, none of the schools achieved 100% learner attendance. Learner absenteeism was high, particularly in the lower grades (Grade 8 to 10). Moreover, schools used different daily attendance routines; some used weekly attendance per grade, while others used a two or three day cycle per grade. Some learners were absent for a day or two, while some were absent for the whole week. Concerning Grade 11 and 12, most learners in the participating schools attend morning classes; hence, it was

not easy for them to come late. Period registers were also checked, and the researcher realised that some learners were bunking classes. To support the above, Principal 4 stated:

"Regarding learner absenteeism, I am assisted by class teachers who control the learner's attendance using class and period registers. I control this on Fridays by monitoring the frequency of their absenteeism. For example, if a learner is absent for five consecutive days, a message is sent to their parents via the school bunking SMS system. Should the parents not respond in ten days, their number is deregistered from the system."

The participants also indicated that at times learners attend come periods, but bund the others. This is confirmed by Senior Teacher 2, who stated:

"I take attendance register in my class to see whether there are learners who did not attend my lessons."

Senior Teacher 3 also confirms this by stating:

"The absenteeism of learners is controlled by marking the register. If the learner is absent for a certain number of days, we follow up to ascertain what the problem is, and if they continue to be absent, the learner is removed from SA SAMS. That's how we control absenteeism."

4.4.3. Lesson plans

The researcher checked lesson plans, particularly for Mathematics, Physical sciences, Life Sciences, and Accounting. Some lesson plans were up to date, and some were not. The researcher realised that some lesson plans were drafted a while ago, but teachers kept them in their files for compliance purposes only. In some cases, some lesson plans indicated topics that would be done in the coming terms; this is due to a change of topics as per the ATP and educators that did not update their lesson plans. This indicates that some HODs were not checking the teachers' lesson plans. However, some assessed the lesson plan and ensured that teachers carried them in class and implemented them as planned. This is confirmed by HOD 1 and Principal 3:

HOD 1: *"We conduct class visits to ensure that they are aligned to their lesson plans."*

Principal 3: *Firstly, I meet with the HODs. Secondly, I visit the HODs classes, and they visit the teachers. I visit their classes to check whether the lesson plan has been done, whether it has been implemented in the class, whether assessment is conducted as expected, and whether there are there any formal assessments?*

HOD 9 concurs with the above, stating:

"The SMT also manage learners' books, teachers' file, and checking or managing teachers' work, including lesson plans. It also depends on the school programme; some schools monitor lesson plans weekly, others every fortnight, depending on the school programme."

4.4.4 Annual activity plan

The researcher noticed that the schools' annual activity plans or operational plans were available, but some were not followed as planned. This activity plan details school activities to be done by the school each year. Principal 3 stated:

"I develop programmes, which includes the school's operational plan, which directs all the school's activities. It is a microcosm of all the plans that have been developed either by the department or by the SGB. In essence, it is the operational plan of the school. All the activities, meetings, and motivational sessions for teachers and learners are included in that plan."

The COVID-19 impact that resulted in some schools closing for fumigation in the second term affected the implementation of the annual activity plan. As a result, some activities had to be postponed for later dates. Principal 3 stated:

"If an activity is not done, we reschedule it for another date."

Teachers' non-compliance in submitting schoolwork timeously also impacted the annual activity plans. This is also supported by Principal 3, who mentioned that if teachers do not submit their schoolwork on time, they also delay him in submitting to the circuit.

4.4.5 Annual assessment plan

The annual assessment plan contains the formal tasks of all subjects that need to be administered by the school. Only two of the five schools had annual assessment plans. The

principals indicated that teachers and HODs ensure that all formal tasks are administered. The annual assessment plan for school A includes the weekly informal tests. HOD 2 stated:

"*Sometimes we adopt a weekly test which offers a continuous series of assessments to check their performance and level of understanding."*

4.4.6 Subject policies

Although some departments did not have subject policies, the HOD and their teachers in the department developed subject policies. Others relied on the CAPS document, but did not have a subject policy. In some instances, some have a subject policy and comply with it. These subject policies include the number of classwork and homework per subject, number of hours per week, formal and informal tasks per term, and targeted percentage pass rate. The subject policy guides teachers on how to teach and assess learners. Subject policies that are not developed according to CAPS documents negatively affect academic performance. Whereas, subject policy documents developed according to CAPS documents positively affect academic performance.

4.4.7 School policies

The SGB develops school policies. Almost all schools had school policies available; however, not all policies were updated. Some policies had been developed and signed by previous SGBs, while others were not signed at all. These policies include the safety policy, finance policy, procurement policy, language policy, admission policy, and code of conduct. The school policies are critical because they assist the SMT in managing the school. Therefore, this calls for the SMT to ensure that school policies are well developed and implemented. HOD 8 supported this notion by stating:

"I think the role of the SMT is to manage the curriculum accordingly by following all the policies that the departments have developed."

Principal 2 stated:

"I control absenteeism, as guided by the school policy."

4.4.8. Monthly HOD reports

Another document that was analysed was the monthly reports by HODs. These reports provide brief updates on the functioning of various departments at the schools. Almost all the reports were of a good standard, perhaps it is because they are submitted monthly to the circuit. These reports include formal tasks administered that month, class visits, workshops attended, and minutes of departmental meetings. However, not all reports were submitted on time. Principal 3 stated:

"*Another challenge we face is that you write a submission programme, but don't receive what you expect from the HOD. If I'm expecting something from the HOD, for example, a monthly report, and I don't receive it, then it delays my submission to the department."*

4.4.9. Analysis of academic performances of the schools.

All schools analysed their performance each term; this analysis indicated the number of learners who passed and failed (per grade and per subject). The analysis helps to identify subjects that are poorly performed. The challenges and strategies to improve academic performance were also highlighted.

Principal 5 stated:

"SWOT analysis. Analyse results. Do item analysis. Develop the Subject Improvement Plan and School Improvement Plan."

4.4.10. School Improvement Plan

One of the critical functions of the SMT is to develop an action plan for the school, which is the SIP (Done, Murphy & Watt, 2016, refer to cf.2.13.6). Almost all the schools, except one, were in a position to produce the SIP. It is the duty of the SMT to develop the SIP at the start of each academic year as per Section 58(b) of the South African Schools Act 84 of 1996 (Strunk, Marsh, Bush-Mecenas & Duque, 2016, refer to cf.2.13.6). However, some schools only developed the SIP to comply with the act and not for implementation. Principal 4 stated: "*After every task, teachers are also expected to do an item analyses to draft the subject improvement plan that the HODs will strictly monitor. This will assist them in developing the School Improvement Plan."*

Principal 5 concur with the above by stating that they do the following to improve academic performance:

"SWOT analysis. Analyse results. Do item analysis. Develop the Subject Improvement Plan and School Improvement Plan."

4.4.11. Time book

All the schools had time books. The principals control the time book, with the exception of one school where the deputy principal controlled it. Principal 3 stated:

"*Regarding teacher absenteeism, I control the time book. I expect a teacher to have reported by 07h00 if they will not be coming to work, so that we can make alternative arrangements for finding a substitute. They are also familiar with the available kinds of leave."*

Moreover, schools were using time books to monitor and control teacher late coming and absenteeism. However, the researcher discovered that not all teachers signed the time books on arrival, and some would even go home without signing it.

4.5 PRESENTATION OF DATA COLLECTED THROUGH OBSERVATIONS

The researcher was again granted permission from schools' principals to conduct observations in their schools. The researcher developed the observation schedule related to the research question and the aims and objectives of the study. According to the observation schedule, the researcher observed the following: lesson presentations, the arrival of learners at school and in class, staff and SMT meetings, and the arrival of teachers at school and in class. The rationale behind the use of observation was to verify data collected from the face-to-face interview. By using observations, the researcher wanted to ensure the validity and reliability of data. All data collected through observations were classified according to the pre-determined topics as they appear in the observation grid. Points and descriptors that appear on the observation grid served as themes (Patten, Martens & Fitch, 2018). The observation grids collected from the five selected schools were merged to form a single informative grid. The observation took place in the five selected schools on the agreed-upon days.

4.5.1 Lesson presentation

The researcher observed lesson presentations by teachers, particularly for Mathematics, Science, and Accounting, for 45-minutes per lesson. The findings from the lesson presentations was that teachers were using different teaching methods and teaching materials. Some teachers preferred using smartboards, particularly young teachers in Schools A and C, whereas some teachers preferred the traditional way of using a chalkboard and textbooks. In addition, the majority of teachers went to class without their lesson plans.

4.5.2 Learners' arrival at school and in class

The late coming of learners is still a problem in four schools observed. Some of the SMTs are not doing enough to address this problem. Controlling the gate, marking class registers and period registers, and involving parents are the most common strategies used by schools to manage the late coming of learners and learner absenteeism. The researcher also observed that some learners were dragging their feet to go to class during the first period after the break, and it was only a few SMT members seemed concerned about this. The researcher observed once again that class attendance was poor in the first period.

This is what HOD 3 said:

"*We use weekly attendance registers for learners. If the learner is absent for a certain period or consecutively, we call the learners' parent and we discuss it with them."*

HOD 8 supported the above by saying, *"For learners, we normally use a class attendance register where we track the learner's attendance, if the learner is absent for a certain number of days then we invite the parents to intervene and assist us."* HOD 9 added, *"I ensure that learners have period registers so that we can track the number of days that the learner is absent. Once the learner is absent for a number of days, we intervene and communicate with the parent and ensure that parents are also playing a role in the learning of their children."*

4.5.3 Staff and SMT meetings

During staff and SMT meetings, the researcher observed that some of the SMT members and teachers were not united. Some SMT members would argue with each other in the staff meeting as if they did not first discuss their points in the SMT meeting. Some meetings did not yield fruitful results as a result of the disagreements between teachers and the SMT. The disagreement is due to teachers not approving the management styles of the SMT.

Principal 2 said:

"At times, there are teachers who do not respond positively towards our management style. Some across as rebellious, but you realise that this is their management style. Thus, teacher development is important. As managers, we assist in developing them to minimise such challenges."

Some teachers felt that the SMTs were overloading them with work. However, a lot was discussed in the staff and SMT meetings. Some of the things discussed include curriculum coverage, challenges faced by teachers, analysis of results, strategies to improve academic performance, and COVID-19 preventative measures. To confirm this, Senior Teacher 1 stated:

"Based on my experience, the SMT used to call monthly subject meetings to assist us in developing areas we don't understand. They would also guide us on how to conduct ourselves during invigilation. At the start of COVID-19, they also guided us on managing teaching during such difficult times."

During the staff meeting, the researcher witnessed two schools analysing the academic performance of learners. In both schools, the academic performance of learners was poor, particularly in the lower grades (from Grade 8-10). The performance improves as we proceed to Grade 11 and 12. The researcher discovered that the schools put more effort into Grade 12 learning, at times for Grade. This creates a workload for Grade 12 teachers because they have to first fill the content gap from the previous grades before teaching the Grade 12 content.

4.5.4 Arrival of teachers at school and class attendance

Late coming and teacher absenteeism is another major challenge observed by the researcher. In all the schools observed, none of the schools achieved a daily teacher attendance of 100%. In some cases, a lot of teachers left the school early; this impacts the functioning of school. This is what Principal 3 had to say:

"*The challenge I encounter is the high rate of educator absenteeism. Which compromises curriculum days. At times, the teacher is absent without informing anyone. We then assume that he will be here tomorrow, but even then, when you try to phone the following day, his phone is still off. The learners are yet again left without the teacher."*

The researcher also observed that some teachers do not honour teaching time as they get to class five or 10 minutes late. Some teachers do not go to class at all. This is confirmed by HOD 9 ho stated:

"The challenges I am encounter are teacher absenteeism, learner absenteeism, and the unwillingness of teachers to attend classes, which SACE has termed indolence (for example, when a teacher is absent at work but present at school, where the teacher doesn't go to class or when they go to class but don't teach)."

4.6 CHAPTER SUMMARY

This chapter presented the data obtained from the five participating MST schools in the Whiteriver Circuits. In addition, the findings from the literature and interviews are presented in this chapter. The primary data collection tool was face-to-face interviews. The researcher supported the evidence of the data collected through interviews with document analysis and observations. All data collected through interviews were arranged into seven themes that were related to the research question and that guided the study; these themes emanated from the transcribed data. In each theme, the researcher presented direct quotations of responses from participants. From the themes and sub-themes, the researcher discovered that there is a relationship between management roles and academic performance. If the SMT execute their management roles effectively, they are likely to produce good academic performance and vice versa. Findings from the second theme indicate that the SMT members perceive ensuring the day-to-day functioning of the school and curriculum management as key responsibilities of the SMT. Teacher and learner absenteeism and teachers' non-compliance

in submitting schoolwork are seen as the significant challenges the MST schools face. It has emerged from themes that most learners have a negative attitude towards Mathematics and Science; hence, their poor academic performance. Lack of parental involvement, the location of the school, lack of commitment by teachers, overcrowding classes, content gap due to COVID-19, and lack of teacher-learner support materials emerged as factors affecting the academic performance of learners. From the emergent themes, it has been discovered that using different teaching strategies, building strong professional learning communities, developing a SIP, professional development of staff, conducting extra classes, and profiling learners are some of the strategies MST schools use to improve academic performance.

The next chapter summarises findings and conclusions, and makes suggestions and recommendations for future research.

CHAPTER 5:

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. INTRODUCTION

The main purpose of this study was to examine the roles of the SMT on the academic performance of Mathematics, Science, and Technology schools in the Whiteriver Circuit of Mpumalanga province. School principals, HODs, senior teachers and PL1 teachers were sampled as participants of the study. In the previous chapter, data that was generated through the semi-structured interviews, document analysis, and observations were thematically presented and discussed. The key findings of the research are discussed in this chapter, and recommendations based on these key findings are made. For confirmation and validation of the results, literature in Chapters 1 and 2 were used. Conclusions were drawn from the findings. This chapter presents a summary of the first four chapters. This chapter further presents recommendations and suggestions for future research. The limitations which emerged during the research process are discussed, and the chapter ends with a conclusion. The following research questions were answered through interviews and verified through document analysis and observations:

Main research question

What is the role of the School Management Team on the performance of Mathematics, Science, and Technology schools?

The following sub-research questions emanated from the main research question:

- What are the aims and objectives of Mathematics, Science, and Technology schools?
- How does the School Management Team create conditions convenient enough to ensure a high standard of teaching and learning?
- What factors restrain the academic performance of learners in Mathematics, Science, and Technology schools?
- What challenges face the School Management Team in managing learner performance in Mathematics, Science, and Technology schools?

5.2. OVERVIEW OF THE CHAPTERS

The key concepts of the study that covered in the study's five chapters were discussed in chapter one. These concepts cover the introduction and background of the study, the reviewed literature, the conceptual and theoretical framework in which the study is guided, the research methodology and design, and the study's findings.

5.2.1 Chapter 1 (Orientation of the study)

The introduction and the background of the study was presented in this chapter. The problem statement, research question, and sub-research questions were also discussed in this chapter. These were followed by aspects such as the study's problem statement, aims and objectives, and significance of the study. The theoretical framework in which the study is guided and preliminary literature review were also discussed. Moreover, the research methodology and design of the study, limitation, and delimitation were also discussed. Lastly, this chapter also provided definitions of the study's key concepts and the study's chapter division.

5.2.2 Chapter 2 (Literature review)

This chapter provided a critical review of the body of literature and studies on the role of the SMT in the academic performance of MST schools. To achieve this, the chapter began by presenting the theoretical framework that guided the study, which is the "human relations theory." The chapter then presented the conceptual framework in which the study is grounded. The conceptual framework illustrated the research approach to ease the readers' understanding of the study. The concepts of distributed leadership and instructional leadership were also clarified in this chapter. This chapter further presented the perspectives on the SMT in different countries, emergence and composition of the SMT in South Africa, functions of the SMT, duties of each SMT member in South African schools, NSC Performance overview for the past five years, the importance of MST in schools, teaching strategy for MST, assessment strategies for MST, general factors influencing academic performance, factors affecting academic performance in MST schools, and the roles of the SMT in ensuring good academic performance. It concluded with the creation of an environment or climate conducive for quality teaching and learning.

5.2.3 Chapter 3 (Research design and methodology)

This chapter discussed the research methodology and design used in this study. The research paradigm in which the study is located was also discussed (this study was located in the interpretivism paradigm; hence, data were gathered, reviewed, and examined within an interpretive paradigm framework). The interpretivism paradigm was used because the study is qualitative in nature. This would assist in co-operating with the participants in the investigation process, assessing and investigating how the participants construct meaning out of the specific situation. In addition, the research approach (which is qualitative), data collection instruments, analysis of data, population, and sampling strategies used in the selection of participants were also discussed in this chapter. The interview was the primary data collection instrument and triangulated with document analysis and observation. The strategies and research instruments used in this study have qualities that helped the researcher to investigate – internally and externally – the roles of the SMT in the academic performance of MST schools in the Whiteriver Circuit. This chapter concluded by discussing trustworthiness and the research ethics that were followed throughout the research.

5.2.4 Chapter 4 (Data presentation and discussion)

This chapter presented and discussed the thematic analysis of data obtained from the five participating MST schools of the Whiteriver Circuit. This presentation and discussion of data integrated the reviewed literature in Chapter 2 as well as the theoretical and conceptual framework that guided the study. The chapter presented and discussed data collected through semi-structured interviews in seven main themes, these were supported by literature quotations. From the analysis, the key role of the SMT on the academic performance of MST schools have been indicated. Prior to the discussion and presentations of themes, the profiles of the participating schools and the participants were presented. Finally, the chapter concluded with a chapter summary.

5.2.5 Chapter 5 (Summary of findings, conclusions and recommendations)

This chapter discussed a summary of the study's key findings, conclusion, and recommendations based on the data collected and literature review. From the findings, the conclusions were then drawn. This chapter concluded by presenting recommendations and suggestions for future research.

5.3 SUMMARY OF THE RESEARCH FINDINGS

In this section, the summary of research findings with regard to the reviewed literature and data collected from the five selected schools were presented. The findings were discussed under the following themes: understanding the relationship between management roles and academic performance of MST subjects, the key role of the SMT, curriculum management, challenges in managing MST schools, factors influencing academic performance of MST subjects, improving the academic performance of MST subjects, and the development of staff by the SMT.

The following themes that emerged during data analysis and presentation were discussed:

THEME 1: Understanding the relationship between management roles and academic performance of MST subjects

The data has shown that there is a positive relationship between school management and the academic performance of learners. The senior teachers and PL1 teachers indicated that if the SMT play their roles effectively, better learner academic performance can be achieved. However, if they are not, schools are likely to produce poor academic performance. It has also shown that the SMT has a huge responsibility and accountability for improving learners' academic performance. The data also revealed that the SMT focus more on Grade 12 learners and ignore the lower grades, thus leading to learners lacking foundation in their content and creating more workloads to teachers in the higher grades, particularly in Grade 12.

THEME 2: Key role of the School Management Team

The data generated from the interviews with the HODs and principals revealed that some of the key roles of the SMT include ensuring daily functionality, managing teaching, and learning and setting clear directions. Data also revealed that these key roles are centred around academic performance. Participants indicated that it is important to ensure proper school management in order to achieve good academic performance.

Data from the literature also revealed similar data generated from interviews and document analysis. Knowles, Holton III and Swanson (2014, refer to cf. 1.7.2.6) indicated that the setting of school directions concerning learners and teachers, development of teachers,

monitoring of curriculum, allocation of materials and financial resources, developing an annual SIP, and actively liaising with the district office and other agencies to obtain assistance as the key roles of the SMT.

Knowles, Holton III and Swanson (2014, refer to cf.1.7.2.6) mention setting of school directions concerning learners and teachers, development of teachers, monitoring of curriculum, allocation of materials and financial resources, developing an annual SIP, and actively liaising with the district office and other agencies to obtain assistance as required as crucial roles of the SMT.

THEME 3: Curriculum management

The findings indicate that SMT members view curriculum management differently. However, they all agree that the rationale behind curriculum management is to achieve good learner academic performance. Good management of curriculum leads to better learner academic performance and vice versa.

It has also been shown that curriculum management involves monitoring curriculum coverage, and monitoring learners and teacher's work. The indication was that curriculum management is one of the critical roles of the SMT as it has a great relationship with learner academic performance. Most SMT members stressed the issue of the completion of the curriculum or ATP. The ATP needs to be monitored daily to ensure that all topics are taught as planned, and that daily teaching and learning activities are done accordingly. Data from the literature also confirmed that monitoring and supervision of the curriculum will help the SMT to develop and implement strategies that will help improve academic performance (Dogra, Bhatti, Ertubey, Kelly, Rowlands, Singh & Turner, 2016, refer to cf.2.13.1).

The SMT members indicated that they check whether daily class and home activities are in line with the CAPS document or the ATP. They also check whether formal activities given to learners are of good quality and have all the cognitive levels as required per subject. The SMT members also mentioned that they conduct both announced and unannounced class visits to monitor and observe whether effective teaching and learning is taking place.

THEME 4: Challenges in managing Mathematics, Science, and Technology schools

The SMT members stressed the issue of teacher absenteeism as the most common problem they face. Data indicated that in some cases, those absent teachers tend not to report when they are absent. Almost all the SMT members agreed that teacher absenteeism has a negative impact on the daily functioning of the school and academic performance. Data from the literature also confirmed that teacher and learner absenteeism is one of the major causes of poor learner performance (Komakech & Osuu, 2014, refer to cf.2.11.12).

Another challenge that emerged from the data obtained from the SMT is learner absenteeism. MST members indicated that if a learner is frequently absent from school, there will be a considerable content learning gap, resulting in the learner failing or drop-out, thus leading to overall poor academic performance to the school. Data has shown that some learners are absent from school without the knowledge of their parents. At some point, teachers involve the parents to check if they are aware of the absence of their children. In some cases, parents are shocked to know that their children are not at school. Data has also indicated that some although learners come to school in the morning, they do not attend some lessons. This data was obtained from their class attendance registers and period registers.

THEME 5: Factors influencing academic performance of Mathematics, Science, and Technology subjects

From the data obtained, it became evident that almost all the senior teachers and PL1 teachers shared common understandings but different views about factors influencing the academic performance of MST subjects. The data cited Mathematics and Physical Sciences as subjects that are poorly performed in MST schools. The data has highlighted the following as factors that cause poor performance: attitude of learners towards Mathematics and Science, lack of learner-teacher support materials, lack of commitment to learners, location of the school, learner teacher ratio, content gap due to COVID-19, compulsory Mathematics and Science subjects in all MST school learners, social problems of teachers, and lack of parental involvement.

It has been indicated that many learners in the MST schools have a negative attitude towards MST subjects; hence, it affects their academic performance. Data from the literature supported that the generation of positive attitudes towards MST is a vital and fundamental

goal of MST education (Çìl, 2016, refer to cf.2.12.2). Other factors causing poor learner performance is lack of commitment by learners. It has been shown from the data that some learners lack practice, they don't revise their work, and they are lazy. Overcrowded classes were also cited as another significant factor contributing to poor academic performance. Data has also shown that MST schools are located in deep rural areas, where parents do not have a good academic background; some are victims of drugs and alcohol abuse, hence they are not involved in their children's education. Another finding highlighted is that teachers and SMT members raised concerns about imposing Mathematics and Science on all learners; they believe that not all learners are proficient in Mathematics and Science. Data has also indicated that lack of commitment by teachers is one of the major factors contributing to the poor academic performance of learners.

It was mentioned that some teachers do not go to class on time and sometimes leave the class ten or five minutes before the period ends. Failure by teachers to submit schoolwork was also mentioned as a concern. Data has also shown that the social problems of teachers, such as loan sharks who are hunting them down, contribute to academic performance as teachers sometimes need to be absent from school. It was also indicated that in most MST schools, there is a lack of teacher-learner support materials. In some schools, there are no laboratories to conduct practicals; thus, learners only use theory. Another major factor that emerged from the data is content gap due to COVID-19. It was indicated that in the previous lower grades, the ATP was reduced, while in Grade 12 all topics are to be covered, which led to a huge content gap in Grade 12, affecting academic performance.

THEME 6: Improving the academic performance of Mathematics, Science, and Technology subjects

It has been evident from the data that teachers and SMT members shared different strategies that they use to improve academic performance. The use of different teaching strategies was indicated as one of the strategies to improve academic performance. The data indicated that most teachers were using a learner-centred approach. Another strategy used by teachers is the outsourcing of other teachers from other schools, particularly those who have been producing good results in their school. It has also been shown that team teaching is also the best strategy to improve academic performance. The indication was that teachers divide topics into one subject according to their strengths. Conducting extra classes is one of the strategies used to improve academic performance. Morning classes, afternoon classes,

holiday classes, and even camps are being conducted to improve academic performance. Data has shown that another strategy used to improve academic performance is the profiling of learners. Teachers are profiling learners to deal with the challenges that individual learners have as learners have unique challenges. Teachers sometimes, during extra classes, do differentiated learning, where they group learners according to their level of understanding. Data has revealed that another strategy used to improve academic performance is developing a SIP to set out on how to improve learners' academic performance. Data has shown that, after every task given to learners, teachers do item analysis in order to draft the subject improvement plan and therefore develop the SIP.

THEME 7: Development of staff by the School Management Team

Participants viewed the development of staff differently. A discussion with the participants indicated that the SMT does conduct workshops to develop teachers. These workshops are commonly content-based. These content-based workshops emanate from the class visits made by the SMT members. Participants view the one-on-one discussion made after class visits as a content workshop. However, some indicated that they had not received proper development as far as content is concerned because the HOD does not know the content for their subject. However, some teachers indicated that the SMT conducts invigilation workshops to remind them about do's and don'ts as far as the invigilation is concerned. Moreover, they indicated that the SMT also conduct IQMS workshops for teacher development.

5.4. RECOMMENDATIONS

This section presents the recommendations based on the research question, literature review, and findings presented in themes. These recommendations aim to address the problem under study. Four sets of recommendations are made in this study. The three sets of recommendations are related to the SMT of MST schools, teachers of MST schools, the MDoE, and the MSTA. The recommendations are as follows:

5.4.1 Recommendations to the SMT of MST schools

- Ensure effective school management by ensuring that daily directions are clearly set. This includes ensuring the daily functionality of schools. This can only be possible if the SMT know what to do and when to do it. It is recommended that they should

have their operational plans in place and also ensure their implementation thereof. These activity plans explain all the activities to be done each day, guiding the SMT on what to do and when to do it. The activity plans will also help in protecting teaching time since every teacher would be in a position to know what is expected of them.

- Protect teaching time, and this can only be possible if the SMT monitors the curriculum effectively.

- Strict monitoring of learners' attendance and teachers' attendance by the SMT. The SMT should regularly check if all learners attend their class and always take action against those that are frequently absent. The SMT must regularly check the period registers and class attendance registers to identify frequently absent learners. With regards to the late coming of learners, the SMT should strictly monitor the gate and consistent involvement of parents. The SMT should use SMSes and online platforms to communicate efficiently and effectively to all parents

- Have strategies to encourage parents in the learning of their kids in order to manage learners effectively. The SMT should ensure that parents supervise their kids at home by ensuring that the schoolwork given to learners is completed, and that they create an environment conducive for the learners to learn at home. The SMT should also encourage parents to fully offer financial assistance for the educational needs of their children. Working together with parents will improve learners' academic performance. Parents should ensure that their children have a study timetable at home and ensure that it is properly followed.

- Encourage teachers to complete the ATP timeously so that they may have enough time for revision; this requires the SMT to conduct class visits to check if the content taught regularly is correct. Moreover, this will help them assess whether the completion of the ATP timeously is possible. If not, they can then devise strategies on how to ensure the completion of the ATP before formal activities are administered

- Monitor teacher's class attendance. They should monitor whether they are going to class on time and not leaving class before the period ends. It is also recommended that the SMT monitor teachers' absence at school through the attendance register and SA SAMS programme designed for South African schools.

- Ensure that teachers receive ongoing training on content to improve their knowledge; this also requires SMT members, particularly HODs, to be familiar with the content taught in their departments so that they can be in a position to provide such training.
- Teachers and learners should always be motivated by the SMT to do their best. This includes awarding the top ten learners with certificates or trophies. In addition, the SMT should award teachers who perform well in their subjects with trophies or certificates. This will always motivate them as they will appreciate that their effort is being recognised.
- Ensure the correct job allocation of teachers based on their strength and qualifications
- Strategies to improve academic performance must always be discussed with the teachers. The SMT should ensure that those strategies to improve learners' academic performance are properly followed.
- The SMT must analyse results each term to identify challenges and come up with strategies to address such challenges.
- Provision of teacher-learner support materials is the responsibility of the SMT. The SMT should always strive to support teachers by ensuring that all material needed for teaching and learning is provided. If there is a need to outsource such materials from other schools, the SMT should take the initiative to do so.
- Ensure the school is working with other stakeholders to improve learners' academic performance; this involves working with the community, police station, businesspeople, and the Department of Education.
- Organise motivational speakers to encourage learners to take up MST subjects. This will help change learner's attitudes towards these subjects; hence, improving academic performance.

5.4.2. Recommendation to teachers of Mathematics Science and Technology schools

- Ensure that effective teaching and learning is taking place in their classes. This can only be possible by first ensuring that teaching time is valued. This involves coming to school on time, going to class on time, and attending periods for the entire allocated time for each period.

- Strive for the completion of the ATP on time. Therefore, this calls for an extension of the teaching time by teachers in order to explain concepts that are not well understood without interfering with the normal teaching time allocated for each subject. In addition, completion of the ATP on time will help teachers to have enough time for revision with their learners.
- Consider learner diversity and their educational needs in order to implement relevant support and intervention strategies for effective teaching and learning. In addition, they should also profile the learners as it will help them offer the necessary individual assistance.
- Comply with submission dates for marks, scripts for moderation, teacher's files, and learners' books for checking by their HOD as this will assist the school in complying with all submission dates to the circuit.
- Set aside time to recover time lost (in case they were absent) by submitting the recovery plan to their HODs when they come back. In addition, they should also ensure that the recovery plan is implemented because some teachers tend to submit the recovery plan merely for compliance and not for implementation.
- Seek professional development for themselves as this will help them learn new concepts, skills, and knowledge that they will apply during their teaching, thus improving learners' academic performance.
- Involve parents in the learning of their children. For example, teachers should always invite parents for book viewing and discuss challenges and difficulties learners have. This will give teachers an opportunity to explain to parents what assistance learners need from their parents.

5.4.3 Recommendation to the Mpumalanga Department of Education and Mathematics Science and Technology Academy

- The MSTA and the MDoE should consider offering training to teachers on content, particularly for MST. This training should be ongoing, and not a once-off exercise.
- Leadership training should be provided to the SMT members of the SMT schools. Since the concept of MST in schools is still new, there is a need to provide regular training to the SMT members so that they know what is expected of them.
- All the necessary teacher-learner support materials, including fully functional Mathematics, Physical Science, Computer, and Life Sciences laboratories, must be prioritised in all MST schools.
- Before deciding to change the school to an MST school, the MDoE should first check if the school has an adequate number of competent MST teachers. If this is not the case, they will need to recruit such teachers.
- The MDoE and the MSTA should also check if the environment in which the MST school is located is conducive for MST subjects, and that parents have a good academic background in order to support their children.

5.5. RECOMMENDATIONS FOR FURTHER RESEARCH

This study focused on the roles of the SMT on the academic performance of MST schools. However, there researcher could not cover all the key aspects related to MST schools and learner academic performance; thus, the following topics were recommended for further research:

- Strategies used by the SMT to engage parents from rural areas in the learning of their children.
- Impact of parental involvement in all school activities.
- Training programmes initiated by the DoE to encourage parental involvement in rural areas.
- Leadership role of principals in MST schools.

5.6. LIMITATIONS OF THE STUDY

The first mitation was that there are many schools in the Whiteriver Circuit that are not performing well in MST subjects, yet the researcher could only select five schools due to limited resources. However, the researcher triangulated semi-structured interviews with observation and document analysis to address these limitations. Another limitation is the limited time spent on the research site due to COVID-19, which led to the postponement of some interview sessions. This study could not be generalised because MST schools in other provinces may not operate in the same contexts as those in Mpumalanga Province. However, the researcher reduced all these limitations on the quality of research by using the triangulation method of data collection.

5.7. CONCLUSION

This study presented the roles of the SMT on the academic performance of the MST schools in the Whiteriver Circuit. The findings of this study give rise to future studies, such as investigating strategies by the SMT to engage parents from rural areas in their children's education and investing the impact of parental involvement on all school activities. Recommendations on the strategies to improve academic performance were made. The study's findings added to the existing body of knowledge concerning the role of the SMT in the academic performance of MST schools. Data obtained from this study benefited teachers, SMT members, and other stakeholders involved in the education sector to understand better the roles of the SMT on the academic performance of MST schools. This study also provided the MDoE, MSTA teachers, and the SMT with recommendations on how they can assist MST schools in achieving better academic performance.

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APPENDIX A: ETHICAL CLEARANCE CERTIFICATE

UNISA university of south africa

UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2021/07/07

Ref: **2021/07/07/45363676/22/AM**
Name: Mr BT Sandhleni
Student No.:45363676

Dear Mr BT Sandhleni

Decision: Ethics Approval from 2021/07/07 to 2024/07/07

Researcher(s): Name: Mr BT Sandhleni
E-mail address: 45363676@mylife.unisa.ac.za
Telephone: 072 236 5277

Supervisor(s): Name: Dr N Ndou
E-mail address: ndoun@unisa.ac.za
Telephone: 012 429 4468

Title of research:

The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools In the White River Circuit.

Qualification: MEd Education Management

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2021/07/07 to 2024/07/07.

*The **low risk** application was reviewed by the Ethics Review Committee on 2021/07/07 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.
2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

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3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.
4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing.
6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
8. No field work activities may continue after the expiry date **2024/07/07**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number **2021/07/07/45363676/22/AM** *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Kind regards,

Prof AT Motlhabane
CHAIRPERSON: CEDU RERC
motlhat@unisa.ac.za

Prof PM Sebate
EXECUTIVE DEAN
Sebatpm@unisa.ac.za

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APPENDIX B: REQUESTING PERMISISION TO CONDUCT RESEARCH AT FIVE MST SCHOOLS IN THE WHITERIVER CIRCUIT

APPENDIX B: REQUESTING PERMISSION TO CONDUCT RESEARCH AT FIVE MST SCHOOLS IN THE WHITE RIVER CIRCUIT

Bheki Thulani Sandhleni

PO BOX 2131

Matsulu

1203

14 June 2021

The office of the HOD

Mpumalanga Department of Education

Private Bag X 11341

Mbombela

1200

Dear Mrs L Moyane

RE: Request for permission to conduct research at three MST schools in the White River Circuit

My name is Bheki Thulani Sandhleni and I am doing research under the supervision of Dr N Ndou, in the Department of Early Childhood Education, towards a Master's degree in Education (Education Management) at the University of South Africa (UNISA). This letter serves as a request for permission to conduct a research in three selected MST schools in the White River Circuit on the topic stated below.

Should you have any question regarding my research, Dr N Ndou may be contacted. His telephone number is +27 12 429 4468 and his e-mail address, ndoun@unisa.ac.za. My contact details are 072 236 5277 and bhekisandleni@gmail.com.

My study is titled: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the White River Circuit.*

The main aim of the study is to explore the roles of SMT members in the academic performance of Mathematics, Science, and Technology schools in the White River Circuit by investigating conditions that could be created by the SMT, that are convenient for a high standard of learning and teaching. The study also aims at investigating factors that hinder learner performances in MST schools.

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information obtained from this study will benefit teachers, SMT members, and any stakeholder involved in the education sector, to better understand causes of poor performance and how each stakeholder should play their role to improve academic performance of MST subjects. This research will also provide the DoE in Mpumalanga, SMTs, school governing bodies (SGBs), and all stakeholders in the education sector with information necessary to assist them in the proper formulation of amendments drafted in the action plan. Lastly, the findings from this research will contribute to the improvement of learners' academic performance at MST schools around the globe.

A total of 25 participants which includes five principals, 10 Heads of departments, five Post Level 1 teachers, and five senior teachers from the five selected schools will be sampled to take part in the study. UNISA has granted me an ethics clearance certificate which is attached to this letter. No predictable harm is associated with this research. Measures to minimize the possible spread of Cocid-19 will be adhered to.

There will be no compensation or any incentives for participation in the research. The feedback of the research will be provided to the Mpumalanga DoE and, upon request the link to download the full dissertation shall be provided.

Yours sincerely

Bheki Thulani Sandhleni

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APPENDIX C: MPUMALANGA DEPARTMENT OF EDUCATION RESEARCH APPROVAL ETTER

education
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

Ikhamanga Building, Government Boulevard, Riverside Park, Mpumalanga Province
Private Bag X11341, Mbombela, 1200
Tel: 013 766 5552/5115, Toll Free Line: 0800 203 116

Litiko le Temfundvo, Umnyango we Fundo | Departement van Onderwys | Ndzawulo ya Dyondzo

Mr Bheki Thulani Sandhleni
PO Box 2131
Matsulu
1203
Email: bhekisandleni@gmail.com
Cell: 072 236 5277

RE: THE ROLE OF THE SCHOOL MANAGEMENT TEAM ON THE ACADEMIC PERFORMANCE OF MATHEMATICS, SCIENCE AND TECHNOLOGY SCHOOLS IN THE WHITE RIVER CIRCUIT

Your application to conduct research study was received and is therefore acknowledged. The tittle of your research project reads: **"The role of the school management team on the Academic Performance of Mathematics, Science and Technology Schools in the White River Circuit".** I trust that the aims and the objectives of the study will benefit the whole department especially the beneficiaries. Your request is approved subject to you observing the provisions of the departmental research policy which is available in the department website. You are requested to adhere to your university's research ethics as spelt out in your research ethics.

In terms of the research policy, data or any research activity can be conducted after school hours as per appointment with affected participants and COVID -19 regulations to observed. You are also requested to share your findings with the relevant sections of the department so that we may consider implementing your findings if that will be in the best interest of the department. To this effect, your final approved research report (both soft and hard copy) should be submitted to the department so that your recommendations could be implemented. You may be required to prepare a presentation and present at the departments' annual research dialogue.

For more information kindly liaise with the department's research unit @ 013 766 5124/5148 0r nmadihlaba@mpuedu.gov.za
The department wishes you well in this important project and pledges to give you the necessary support you may need.

Moyane
MRS LH MOYANE
HEAD: EDUCATION

16 / 07 / 2021
DATE

MPUMALANGA

APPENDIX D: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT YOUR SCHOOL

APPENDIX D: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT YOUR SCHOOL

Bheki Thulani Sandhleni

PO BOX 2131

Matsulu

1203

14 June 2021

The principal

RE: Request for permission to conduct research at your school

My name is Bheki Thulani Sandhleni and I am doing research under the supervision of Dr N Ndou, in the Department of Early Childhood Education, towards a Master's degree in Education (Education Management) at the University of South Africa (UNISA). This letter serves as a request for permission to conduct a research in your school on the topic stated below.

Should you have any question regarding my research, Dr N Ndou may be contacted. His telephone number is +27 12 429 4468 and his e-mail address, ndoun@unisa.ac.za. My contact details are 072 236 5277 and bhekisandleni@gmail.com.

My study is titled: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the White River Circuit at Ehlanzeni district*.

The main aim of the study is to explore the roles of SMT members in the academic performance of Mathematics, Science, and Technology schools in the White River Circuit by investigating conditions that could be created by the SMT, that are convenient for a high standard of learning and teaching. The study also aims at investigating factors that hinder learner performances in MST schools.

A total of 5 participants in your school which includes the principal, 2 Heads of departments, one Post Level 1 teacher, and one senior teacher will be selected to take part in the study. UNISA has granted me an ethics clearance certificate which is attached to this letter. The provincial department

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of education has also granted me the approval to conduct this study in schools and is also attached in this letter. No predictable harm is associated with this research. Measures to minimize the possible spread of Cocid-19 will be adhered to.

There will be no compensation or any incentives for participation in the research. The feedback of the research will be provided to the Mpumalanga DoE and, upon request the link to download the full dissertation shall be provided.

Yours sincerely

Bheki Thulani Sandhleni

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APPENDIX E: INVITATION TO PARTICIPATE IN AN INTERVIEW

Bheki Thulani Sandhleni
PO BOX 2131
Matsulu
1203
14 June 2021

The Principal,

RE: Invitation to participate in an interview

My name is Bheki Thulani Sandhleni and I am doing research under the supervision of Dr N Ndou, in the Department of Early Childhood Education, towards a Master's degree in Education (Education Management) at the University of South Africa (UNISA). This letter serves as an invitation to you to participate in my research on the topic stated below.

Should you have any questions regarding my research, Dr N Ndou may be contacted. His telephone number is +27 12 429 4468 and his e-mail address is ndoun@unisa.ac.za. My contact details are 072 236 5277 and bhekisandleni@gmail.com.

My study is titled: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the Whiteriver Circuit at Ehlanzeni District*.

The study's main aim is to explore the roles of the School Management Team members in the academic performance of Mathematics, Science and Technology Academy schools in the Whiteriver Circuit by investigating conditions that could be created by the School Management Team that are convenient for a high standard of learning and teaching. The study also aims at investigating factors that hinder learner performances in Mathematics, Science, and Technology schools. No predictable harm is associated with this research. Measures to minimise the possible spread of COVID-19 will be adhered to. There will be no compensation or any incentives for participation in the research. The research feedback will be provided to the Mpumalanga Department of Education and, upon request, the link to download the full dissertation shall be provided.

Yours sincerely,
Bheki Thulani Sandhleni

APPENDIX F: INVITATION TO PARTICIPATE IN AN INTERVIEW

Bheki Thulani Sandhleni
PO BOX 2131
Matsulu
1203
14 June 2021

The HOD,

RE: Invitation to participate in an interview

My name is Bheki Thulani Sandhleni and I am doing research under the supervision of Dr N Ndou, in the Department of Early Childhood Education, towards a Master's degree in Education (Education Management) at the University of South Africa (UNISA). This letter serves as an invitation to you to participate in my research on the topic stated below.

Should you have any questions regarding my research, Dr N Ndou may be contacted. His telephone number is +27 12 429 4468 and his e-mail address is ndoun@unisa.ac.za. My contact details are 072 236 5277 and bhekisandleni@gmail.com.

My study is titled: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the Whiteriver Circuit at Ehlanzeni District*.

The study's main aim is to explore the roles of School Management Team members in the academic performance of Mathematics, Science and Technology Academy schools in the Whiteriver Circuit by investigating conditions that the School Management Team could create, that are convenient for a high standard of learning and teaching. The study also aims at investigating factors that hinder learner performances in Mathematics, Science, and Technology schools. No predictable harm is associated with this research. Measures to minimise the possible spread of COVID-19 will be adhered to. There will be no compensation or any incentives for participation in the research. The feedback of the research will be provided to the Mpumalanga Department of Education and, upon request, the link to download the full dissertation shall be provided.

Yours sincerely,
Bheki Thulani Sandhleni

APPENDIX G: INVITATION TO PARTICIPATE IN AN INTERVIEW

Bheki Thulani Sandhleni

PO BOX 2131

Matsulu 1203

14 June 2021

The Teacher,

RE: Invitation to participate in an interview

My name is Bheki Thulani Sandhleni and I am doing research under the supervision of Dr N Ndou, in the Department of Early Childhood Education, towards a Master's degree in Education (Education Management) at the University of South Africa (UNISA). This letter serves as an invitation to you to participate in my research on the topic stated below.

Should you have any question regarding my research, Dr N Ndou may be contacted. His telephone number is +27 12 429 4468 and his e-mail address is ndoun@unisa.ac.za. My contact details are 072 236 5277 and bhekisandleni@gmail.com.

My study is titled: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the Whiteriver Circuit at Ehlanzeni District*.

The study's main aim is to explore the roles of School Management Team members in the academic performance of Mathematics, Science and Technology Academy schools in the Whiteriver Circuit by investigating conditions that the School Management Team could create, that are convenient for a high standard of learning and teaching. The study also aims at investigating factors that hinder learner performances in Mathematics, Science, and Technology schools. No predictable harm is associated with this research. Measures to minimize the possible spread of COVID-19 will be adhered to. There will be no compensation or any incentives for participation in the research. The feedback of the research will be provided to the Mpumalanga Department of Education and, upon request, the link to download the full dissertation shall be provided.

Yours sincerely,

Bheki Thulani Sandhleni

APPENDIX H: INFORMED CONSENT LETTER

Title: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the Whiteriver Circuit Ehlanzeni District*

Dear Prospective Participant,

My name is Bheki Thulani Sandhleni and I am doing research under the supervision of Dr N Ndou, in the Department of Early Childhood Education, towards a Master's degree in Education (Education Management) at the University of South Africa (UNISA). This letter serves as an invitation to you to participate in my research on the topic stated below.

Should you have any question regarding my research, Dr N Ndou may be contacted. His telephone number is +27 12 429 4468 and his e-mail address, ndoun@unisa.ac.za. My contact details are 072 236 5277 and bhekisandleni@gmail.com.

What is the purpose of the study?

The purpose of the study is to explore the roles of School Management Team members in the academic performance of Mathematics, Science and Technology Academy schools in the Whiteriver Circuit by investigating conditions that the School Management Team could create, that are convenient for high standard of learning and teaching, and factors that hinder learner performance in Mathematics, Science and Technology Academy schools.

Why am I being invited to participate?

I selected you to participate in this research because I believe that you are at liberty to provide data relevant to my research question, based on your understanding of the experience of the roles of the School Management Team in the academic performance.

What is the nature of my participation in this study?

This study consists of face-to-face semi-structured interviews, observations of participants, and document analyses. You are kindly invited to participate in the face-to-face interviews, which will consist of 10 questions as listed in an interview schedule. You are humbly requested to be free and honest and express your own views, understanding, and knowledge when responding to questions. With your permission, the interview will be recorded by

means of a cellphone or laptop voice recorder. This interview is expected to last 30 minutes and will take place at your school or any place convenient to you on a specific date and time.

Can I withdraw from this study after having agreed to participate?

Participation in this study is voluntary, and you are therefore not forced to participate. You are also informed that you have every right to withdraw your participation anytime without penalties and without providing any valid reason for withdrawal.

Should you agree to participate in this study, you will be provided with the information sheet to keep and be asked to sign a written consent form.

What are the potential benefits of taking part in this study?

The information obtained from this study will benefit your school. It will help teachers and the School Management Team members better understand the causes of poor performance and how each one has to play their role to improve the academic performance of Mathematics, Science and Technology Academy subjects. Findings from this research will contribute to the improvement of learners' academic performances at school.

Are there any negative consequences for me if I participate in the research project?

In this study, there are no anticipated risks for you as a participant and no predictable risks/harm are related with the interviews which is for research purpose only.

With the information that I convey to the researcher, will my identity be kept confidential?

As a participant, you have the right to insist to remain anonymous. In this study, the researcher will ensure that all participants' right to privacy, confidentiality, and anonymity will be respected. Your name and the names of all participants and their respective schools will be anonymous and protected. Schools will be mentioned as School A, School B, School C, School D, and School E. I will safeguard confidentiality, ensuring participants that nobody has access to the data provided by each of them, except the researcher only. All the information obtained from the interviews will be used for research purposes only and will remain confidential. All participants will be separately interviewed to ensure privacy. All recordings of interviews will be stored safety in the researcher's personal laptop, and a password for protection will be used.

How will the researcher(s) protect the security of data?

All data obtained from each participant will be stored safely by the researcher. Nobody will have access to the data, except the researcher. All printed data will be stored in a safe locked cupboard where no one will be having the keys except the researcher. These printed data will be stored for a period of five years and will help the researcher for future academic purposes and research. All electronic data will be stored in the personal laptop of the researcher and will be protected with a password. All printed stored data will be permanently destroyed, while all electronically stored data will be permanently deleted from the personal laptop of the researcher after five years.

Will I receive payment or any incentives for participating in this research?

Participation in this study is voluntary; hence, no payment or reimbursement will be received for participation. A copy of a final dissertation/findings shall be provided to you. I would like to take this opportunity and thank you in advance for helping me by showing your interest in participating in this study. You will be requested to sign a consent form, should you be interested in participating in this study.

Has the study received ethics approval?

This study has received written approval from the research ethics review committee of the College of Education at UNISA. If you wish to obtain the ethical clearance letter, please request the researcher to give it to you.

How will I be informed of the findings/results of the research?

Should you wish to be informed of the findings or require any further information or want to contact the researcher about any aspect of this research, you may contact Bheki Thulani Sandhleni on 072 236 5277 or e-mail bhekisandleni@gmail.com. The findings are accessible for three months. Should you have concerns about the way in which the research has been conducted, you may contact Dr Ndou at +27 12 429 4468, or e-mail ndoun@unisa.ac.za. Alternatively, contact the research ethics committee review chairperson of the college of Education at www.unisa.ac.za/cedu. Thank you for taking the time to read this information sheet and for participating in this study.

Thank you.

Bheki Thulani Sandhleni

Consent form to participate in this study (return slip)

I …….. confirm that the person asking my consent to take part in this research has fully informed me about the nature, procedure, potential benefits, and anticipated inconvenience of participation.

I have read (or it had been explained to me) and understood the study as explained in the information sheet (informed consent letter). I understand that this research will attempt to explore the roles of the School Management Team in the academic performance of Mathematics, Science, and Technology in the Whiteriver Circuit in Mpumalanga. I had sufficient opportunity to ask questions, and I am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalties or negative consequences. I am aware that the findings of this study will be processed in a research dissertation, and that my participation will be kept confidential unless otherwise specified. I agree to give my consent in supplying information by means of a **face-to-face semi-structured interview recorded by an audio recorder**. My information will be stored in a safely locked cabinet for a period of five (5) years. I confirm that I was informed that if I have any question about my rights as a study participant or if I am dissatisfied at any time with any aspect of the study, I may contact Mr Bheki Thulani Sandhleni (researcher) at 072 236 5277. I have received a signed copy of the informed consent agreement.

With full knowledge of all the foregoing, I agree to participate voluntary in this study.

Participant's name and surname: …….

Participant's signature: ……. Date: ……...

Researcher's name and surname: Bheki Thulani Sandhleni

Researcher's signature ……. Date ……

APPENDIX I: SEMI-STRUCTURED INTERVIEWS SCHEDULE FOR PRINCIPALS

Research title: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the Whiteriver Circuit at Ehlanzeni District*

1. According to your understanding, what is the key role of the School Management Team?
2. How do you ensure effective management in your school?
3. What challenges do you encounter when managing your school?
4. How do you manage and control the work of other School Management Team members (deputy principal and HOD)?
5. How do you control teacher and learner absenteeism?
6. How do you control your curriculum?
7. Do you find it challenging to manage an MST school compared to a regular school?
8. Which subjects are poorly performed, and what are the causes?
9. What strategies do you use to improve academic performance in your school?
10. Is there anything you would like to add regarding improving the performance or management of Mathematics, Science, and Technology subjects?

Thank you for your support, co-operation, and valuable time!

APPENDIX J: SEMI-STRUCTURED INTERVIEW SCHEDULE FOR HOD

Research title: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the Whiteriver Circuit at Ehlanzeni District*

1. According to your understanding, what is the key role of the School Management Team?
2. How do you ensure effective management in your department?
3. What challenges do you come across when managing your department?
4. How do you manage and control the work of learners and educators in your department?
5. How do you control teacher and learner absenteeism?
6. How do you control the curriculum?
7. Do you find it challenging to manage Mathematics, Science, and Technology subjects compared to regular subjects?
8. Which subjects in your department are poorly performed, and what are the causes?
9. What strategies do you use to improve academic performance in your department?
10. Is there anything you would like to add regarding improving the performance or management of Mathematics, Science, and Technology subjects?

Thank you for your support, co-operation, and valuable time!

APPENDIX K: SEMI-STRUCTURED INTERVIEW SCHEDULE FOR TEACHERS

Research title: *The Role of the School Management Team on the Academic Performance of Mathematics, Science, and Technology Schools in the Whiteriver Circuit at Ehlanzeni District*.

1. According to your understanding, do you think management styles by the School Management Team contribute to academic performance?
2. How does the SMT support you as an educator?
3. Does the SMT conduct workshops to develop teachers?
4. How do you control the work of learners?
5. How do you control late coming and learner absenteeism?
6. How do you recover the work missed in case you were absent from school?
7. Do you find Mathematics, Science, and Technology subjects challenging compared to regular subjects?
8. Which subjects in your school are poorly performed and what are the causes?
9. What strategies do you use to improve academic performance in your subject?
10. Is there anything you would like to add regarding improving the performance of Mathematics, Science, and Technology subjects?

Thank you for your support, co-operation, and valuable time!

APPENDIX L: OBSERVATION SCHEDULE FOR SCHOOLS

	Observation	Time	Date	Responsible persons	Description of what was observed
1.	Lesson presentation			Teachers	Teaching methods, involvement of learners, assessment strategies, and teaching materials used
2.	Arrival of learners at school	Morning			How late-coming is handled Period of arrival
3.	Staff meetings			Staff members	Agenda
4	SMT meetings			SMT members	Agenda
5.	Arrival of teachers at classes			SMT members	Attendance register
6.	Arrival of teachers at school	Morning		Principal/deputy	Time book
7.	Arrival of learners in classrooms				Attendance register

Check list

- Pens
- Notes taking forms
- Envelopes
- Alcohol-based hand sanitizer
- Disposable face masks

APPENDIX M: PROOF OF EDITING

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www.nimeditorial.co.za

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Editorial Certificate

To Whom It May Concern,

This letter certifies that the dissertation entitled; **THE ROLE OF THE SCHOOL MANAGEMENT TEAM ON THE ACADEMIC PERFORMANCE OF MATHEMATICS, SCIENCE AND TECHNOLOGY SCHOOLS IN THE WHITERIVER CIRCUIT** by Bheki Sandhleni was proofread for language, grammar, punctuation, spelling, and overall style by NIM Editorial.

Signed on behalf of NIM Editorial by:

.....

Dr N.I Mabidi

Founder & Chief Editor