Mathematics heads of departments as instructional leaders in Limpopo secondary schools

by

Nchima Freddy Mashapa

Mini-dissertation

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Supervisor: Dr RN Marishane

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DECLARATION

I hereby declare that the mini-dissertation, which I hereby submit for the degree Magister Educationis in Educational Leadership at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

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DEDICATION

This studyis dedicated to my children, Khomotso, Dineo, Kgolofelo and Bontle for all the sacrifices they made while I was studying. My gratitude for all my family members: my late father Lebena Alpheus Mashapa who was my pillar of strength in my years of elementary schooling and to my mother Mamaropeng Mashapa for her continuing support. It is also dedicated to my spouses Joyce and Ruchell, without whose support I could never have completed it.

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ABSTRACT

In this study the instructional leadership role of Mathematics heads of department in Limpopo secondary schools was examined. As the middle manager, the Mathematics heads of department (HoDs) need to have a vision that is underpinned by an aspiration to strive for academic excellence in their subject area as well as a consideration of a holistic development of learners. This vision should be transparent to the learners, parents, educators and management. Accordingly, if the Mathematics HoD envisions his/her role as that of an instructional leader, the Mathematics teacher should have the necessary support to make learning successful and ultimately learner performance should improve. A qualitative study was employed wherein data were collected in four secondary schools in Sekgosese East Circuit of Mopani District in Limpopo Province. For the study, thirteen (13) individuals were interviewed, of whom four (4) were Heads of Departments, five (5) were teachers and four (4) school principals. Semi structured individual interviews were held with Heads of Department for mathematics and school principals, while focus groups were held with mathematics teachers. In addition to the interviews, an analysis of documents such as academic performance of learners in mathematics over a number of years was conducted. For the purposes of triangulation, documents such as classroom observation reports, records of academic performance of learners in mathematics and annual plans were consulted and analysed to check if HoDs comply with educational policy. The study has found that the instructional leadership role of the HoDs plays an important role in the academic success of learners. The findings of the study also revealed that HoDs were ill-prepared for their new roles as instructional leaders, since they were not trained for the job. The study further revealed that the HoDs faced huge challenges of role ambiguity, workload and administration. The study recommended that both the Department of Basic Education and the school to arrange a fully flashed workshop for the new appointees in this role.

Keywords: head of department, instructional leadership, mathematics, academic performance, workload

LIST OF ABBREVIATIONS

ELRC	Education Labour Relations Council
HoD	Head of Department
IQMS	Integrated Quality Management Systems
PAM	Personnel Administrative Measures
PLC	Professional Learning Community
SDT	School Development Team
SMT	School Management Team
SIP	School Improvement Plan
TIMSS	Trends in International Mathematics and Science Study
SACMEQ	Southern and Eastern African Consortium for Monitoring Education Quality

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CHAPTER ONE

ORIENTATION TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND

Effective teaching and learning in secondary schools rest on the capability of heads of department to stimulate, encourage, and sustain educators (Muhammad, 2009: 13). Related opinions are conveyed by Hopkins (2000), who maintains that heads of departments (HoDs) must direct, maintain, excite and boost education and concentrate on procedures of instruction that produce a high level of knowledge.

In South African public schools, mathematics education is among the most ineffective in the world. The Trends in International Mathematics and Science Study (TIMSS) revealed in 2011 that South African learners have the lowest achievement among all 21 middle-income countries that took part in the study (Moloi, 2005). The Centre for Development and Enterprise (CDE) report further highlighted the poor performance as it found a rapid increase in admissions in private mathematics lessons, which was partially in reaction to ineffective instruction in public schools (McCarthy et al., 2013). Such additional determinations fail to correct the extensive deficiencies in mathematics teaching.

Spaull (2013) conducted CDE studies into the state of schools in Southern African nations as a university-based expert which started in 1994 and concluded in 2011. The above statement is further supported by a commissioned CDE independent report, concerning formal mathematics education in South Africa as of early 2013, conducted by Charles Simkins, who found that poor teaching competencies is a cause of learner underperformance. The two researchers, with access to separate but collaborating data have arrived at much the same disturbing conclusions. Although there are subtle differences in their analyses, their data and conclusions indicate that despite some improvements, South Africa is still significantly underperforming in mathematics education. The findings of this report (MacCathy, 2013) show that, a key factor is mathematics performance, which proves to be very poor in global context.

While other subjects (especially languages) face similar challenges of poor performance, numeracy and mathematics are more affected by the effects of grade inflation than other subjects, and thus arguably more reliable barometers of South African schooling performance level (CDE report, 2013).

Rising pointers on school performance and instruction disclose, to a large extent, the poor state of instruction of mathematics in the bulk of schools in the country (Spaull, 2013). Poor teaching competencies affect learners' performance in mathematics. Furthermore, South Africa's progress in mathematics is a fundamental condition for not only admission into higher education, but also for contemporary, knowledge-demanding related careers.

South Africa's progress as a significant economy rests largely on the quality of Mathematics education. Moreover, the high percentage of South African youth that are unemployed (50 percent, according to the above CDE report by McCathy) can be directly linked to the value of schooling; numerical competence and mathematics experience in particular.

In South Africa, the effort of HoDs is governed by the Employment of Educators Act No. 64 of 1996 (RSA, 1998). In terms of this Act, educators' jobs depend on educators' methods and the necessities of a particular school and this involves, but is not limited to, management, instruction, staffs additional and co-curricular events and communiqué.

1.2 PROBLEM STATEMENT

Given that the National Senior Certificate is the only externally evaluated, nationally standardised examination in the South African school system, grade progression in primary and junior secondary school is a defective pointer of authentic knowledge. Many learners progress to advanced grades without obtaining initial skills in numeracy and literacy. Analysis of data sets like TIMSS confirms this, showing that Grade Nine learners from quintiles one and two schools are at least three years behind quintile five Grade Nine learners. From the year 2012, mathematics results for grade 12 were not good, that is for learners who achieved higher than 30% were as follows: 2012,

54;0%, 2013 was 59;1%, 2014 was 53;5% and in 2015 it was 49;1%. Performance for learners who achieved 40% or more in 2012 was 35;7%, in 2013 it was 40;5%, in 2014 it was 35;1% and in 2015 it was 31;9% (NSC Diagnostic Report, 2015: 150). According to policy, schools have departmental heads whose duty it is to lead these departments. Despite the fact that schools have heads of departments, performance in some schools is still very poor.

According to a report by Education Minister Motshekga(2016) 550, 127 full time grade 12 learners wrote the National Senior Certificate and obtained 70;7%, which is a drop from 2014 results where NSC got 75;8%, also a drop from 2013 in which the nation obtained 78;2%. As the NSC outcome is the only tool to categorise schools as excellent or very poor, principals are held to be answerable by the Department of Basic Education for learners' achievements. Senior school management (the principal and deputy principal), in turn, accuses heads of departments (HoDs) for the poor learner performance, because of the mandate they have to ensure effective learning and teaching. HoDs are trapped between the high-ranking management (principal and deputy principal), educators and parents. The difficult and challenging nature of the role of HoDs is further complicated by their leadership responsibilities and enlarged educational accountability (Beerens, 2000:13). According to Senge (2007:15), their roles are challenging as they also serve as managers of educators and supervisors.

1.3 RATIONALE FOR THE STUDY

This research was prompted by the real challenges and difficulties which mathematics heads of departments encounter in the execution of their tasks as leaders. With the assumption that they are responsible for the excellence in their departments as suggested in the Personnel Administration Measures (PAM), the researcher addresses the important role HoDs have of ensuring high quality teaching and learning in mathematics. Even though one can admit that heads of departments are essential to the establishment and maintenance of a positive learning environment within a school (Beerens, 2000:13), the teachers examined were found to have no knowledge about their doings, or how they justify their decisions, and subsequent actions and how they relate to teachers they lead in their departments. When teachers feel supported, their level of commitment to the school increases, Hulpia(2011). It is on

the basis of this view that I find it important to study the role of mathematics heads of department in leading their departments. Surely this study, will offer them (HoDs) understanding on how they may exercise effective leadership in their departments.

1.4 SIGNIFICANCE OF THE STUDY

This study would benefit heads of mathematics department, especially in conducting workshops and in-service training for teachers. The report emerging from the study will also enable the Department of Basic Education to guide training service providers to place the role of heads of departments in the spotlight to be equal their knowledge and abilities they require to execute their functions.

1.5 PURPOSE OF THE STUDY

The determination of this inquiry is to examine the instructional leadership role of mathematics heads of department in the Further Education and Training Phase in Limpopo Secondary Schools.

1.6 RESEARCH QUESTIONS

The research questions are detailed as follows:

1.6.1 The main research question is:

What is the instructional leadership role of mathematics heads of department in the Further Education and Training Phase?

1.6.2 The secondary research questions are:

- How do mathematics heads of department carry out their instructional leadership role?
- What challenges mathematics heads of department experience when carrying out their instructional leadership roles?

- What strategies can be suggested to improve the leadership role of mathematics heads of department?

1.7 PRELIMINARY LITERATURE REVIEW

As schools move into the 21st century, the role of the teacher shifted from that of the prime source of information (teacher-centred) to a facilitator of learning (learner-centred) (Jaynes, 2014), the role of departmental heads also shifted. Jaynes sees these leaders engaging in coaching, evaluating and learner-centred dialogue. In Kinsella's, (2011: 109) study of independent school department heads, the role these teacher leaders play within their schools demonstrates a shift away from simple organisational tasks to that of mentoring, observing, and working with the teachers in their departments as they focus on learner achievement. This means that the teacher leaders have the responsibility for motivating and guiding the teachers they lead in their departments.

Seah (2007) argues that effective teaching is certainly the greatest significant goal in mathematics teaching in any school setting. Econometric analyses suggest that certain educators are radically more dynamic compared to others, and the variances have negative influence on learner education (Rivkin, Hanushek & Kain, 2005). According to Maduabum (2009), more time is given to studying mathematics educator efficiency because, if the potentials of these active mathematics teachers are well-known, some mathematics teachers may emulate them and ultimately all teachers will perform well in class. I concur with the above cited authors that effective teaching is important for school development and it will help the heads of department in executing their daily responsibilities, because this will lead to improvement in performance and results.

1.7.1 Effective mathematics teaching

As indicated in the Australian Association of Mathematics Teachers' Standards for Excellence in Teaching Mathematics in Australian Schools, (2006:5)."Effective schools are only effective to the extent that they have effective teachers". This study

agrees with Stanford (2001), that educator efficiency is the step to attain preferred effects upon learners. In other words, educator efficiency is exactly how far and how sound learners accomplish and exhibit assurance and resilience in the advent of diversity. In relations to mathematics education, the greatest exercise is usually assumed to be a lesson's approach that produces the preferred outcomes and encourages profound learner empathy (Stanford, 2001). Larson (2002) recognises that certain mathematics educators are more operational than others.

Effective mathematics educators perform certain tactics in common, such as good teaching skills when providing mathematics tuition, whether they prefer the learner–discovery or the educator–focused techniques. Ingvarson, L., Beavis, A., Bishop, A., Peck, R and Elsworth, G., (2004) presents four key aspects that affect the usefulness of learners' educational results in mathematics learning area. The aspects are:

a) the institution's supporting circumstances – conditions in the institution where the learners are situated;
b) the educator's empowering circumstances–educators capabilities including proficient growths;
c) the ability of the educators – the information, principles and sympathy of educators; and
d) the educator's preparation – what educators engage in their teaching.

In most cases, determining the best lesson technique is a significant characteristic of educators' creative role in a teaching space, and each educator is regarded as a resource person for his/her choice of the best and effective approaches. After all, effective instruction is a reflection of genuine knowledge. Posamenteier and Stepelman, (1999) report that effective mathematics educators help improve learners' confidence by appreciating their contributions, recognizing learners' desires for achievement, involving learners in their personal learning and building mathematics to be stimulating and exciting. Seah (2007) thinks that effective teaching and learning may well be a basis of collaborations between educators and their learners, among learners, and between the class and its setting. Effective teaching depends much on the environment. If the environment of learning is good, one is likely to produce good results, because the relationship between teachers and learners and amongst learners themselves will dictate the type of outcomes which should be anticipated.

1.7.2 Factors contributing to effective mathematics teaching

The essential factors contributing to effective mathematics instruction seem to originate from the educators themselves, while the institution's conditions appear to affect instruction efficiency to a smaller extent (Stronge, 2010). In other words, effective mathematics teaching need to be complemented by educators' profound knowledge of the topic and theme, their considerate of whatever optimizes learners' knowledge, and their finest instructional classroom training. Indeed the teacher's effectiveness is the overriding element in ensuring learners' educational development. Stronge (2010), points out that the excellence of educators is extremely significant to the academic survival of learners. "Teachers do matter most when it comes to school improvement and learners learning, and of all multiple factors within schools, there is no greater influence on learner achievement than the teacher" (Stronge, 2010: xiii). Conclusions deduced from learners also show that teachers' instructional exercise produces a reliably positive consequence on the effects of mathematics education (Stronge, 2010).

1.7.3 The role of motivation and evaluation

It is the responsibility of the HoDs to see to it that staff members in their department are well motivated to perform their daily duties. The roles of heads of department in supporting their staff members include: motivation, evaluation and exercising accountability. Below follows a short discussion of the above items.

a) Motivating mathematics teachers

Effective teaching and learning in secondary schools rest upon the skills of heads of department to influence; stimulate and encourage educators in this matter (Muhammad, 2009: 13). Related observations are articulated by Hopkins (2000), who maintains that it is necessary for HoDs to frequently pursue some means to extend

their teaching techniques and thus generate conditions that direct, maintain, and encourage education and put more emphasis on representations of teaching that produce a high level of education. From this opinion, one understands that the accountability of the head of department is important to teaching and learning, since; without the inspiration and support of the teachers by the HoD, little will be achieved. The other important issue, apart from accountability is responsibility whereby HoDs are mandated to support teachers in determining the ability in checking and weighing learners' development and achievement. Binder et al., (2000: 21) caution that learners' information of academic contents is commonly a fragile range, since educators might be tied up in a rational disempowerment of learners if they are not observant. Marzano (2003: 39-40) maintains that HoDs, together with educators, develop and evaluate structures. HoDs according to Du Four (2002: 2), need to help teachers to develop explicit, quantifiable and focused knowledge enhancement.

b) Supporting staff, monitoring assessment and evaluation.

According to Athanason in Foley (2000: 81), assessment is applicable in teaching and learning in order to guarantee that the wishes of learners are gratified, that the method is appropriate, and that the utmost effective teaching techniques are utilised. Grounded on this opinion, education of mentors is dependable with development of teaching (Zepeda, 2007: 32). HoDs will provide educators' feedback about their performance and will guarantee that suitable values of practice are being engaged.
Various questions to be probed by HoDs concerning assessment would include: Why would assessment occur? What ought to be assessed? Who must be included in assessment? What time and in what way must assessment happen? In what manner must assessment be tracked? As Everad et al., (2004: 88) advise, HoDs ought to focus on techniques of beneficial assessment that include:

a) impartiality, where standards for efficiency are established preceding a productive dialogue with educators;
b) preparedness to pay attention, meaning that they are not supposed to inform educators what stays correct or mistaken, but then to request for educators' opinions first;
c) sincerity to disapproval, where HoDs attend to any reproach and use it as a foundation for authorisation, analysis and judgement, which will allow educators

and HoDs to contemplate of techniques to develop the conditions or results; and

d) preparation, where innovative ideas and improvement procedures are supported and revised in the next meeting.

c) Exercising accountability

The head of department is accountable for; the teaching and learning operations of the department, leading and managing staff, and resourceful and effective placement of staff and resources. The head of department is also tasked to account on strengthening the community. In other words he/she should work collaboratively at both strategic and operational levels with other heads of departments, parents and learners.

1.7.4 Teacher development

There is a huge quantity of human talent amongst members of staff in an institution, and the discharge rest on the quality of the HoDs' management abilities. The role of HoDs is to influence the staff members in order to discover their potential because it is directly linked to educator efficiency and learners knowledge (Smith, 2009: 9). Staff development is a core area of the HoDs' obligation to enhance specific ability for the coordination of the school. HoDs are crucial to the practice of creating understanding and ought to encourage circumstances that allow educators to create usable knowledge (Sallis & Jones, 2002: 40-41). HoDs are required to concentrate on educator growth to establish a culture that improves and encourages educator development (Beerens, 2000: 40;

Fick & Resnick, 2001: 38). Earley & Weindling (2004: 15) add that HoDs need to be anxious about promoting and developing their departments so that knowledge produced by educators can successfully be exploited. HoDs are expected to produce values amongst mentors and develop an idea to influence every teacher to make best use of individuals to encourage effectiveness. Agreeing with Everad et al., (2004: 87), the improvement desires of educators ought to increase excellence in a current career to satisfy the necessities for new skills, develop a positive approach, and present new

technique and tactics. Whatever the needs of educators, their proficient improvement is important (Tobias & Duffy, 2009: 345), and the main duty of HoDs, according to Sallis & Jones, (2002: 29-30), is to improve and train educators with new thinking, talents and practical capabilities in their organisations.

1.7.5 The culture of teaching and learning

The essence of departmental heads is to support and stimulate teacher knowledge. As supervisors, HoDs must come up with ways and means for fostering and describing teachers' talent with a purpose to improve effective teaching and learning. They are obligated to construct and sustain a setting in which learning can occur and also to plan teaching programmes that esteem, sustain and request parents to take accountability for their own actions. Hoy &Hoy (2003: 1-12) believe that HoDs are managers who encourage the achievement of all educators by

a) promoting, fostering, and supporting culture that is helpful to educator development.
b) generating conditions that monitor, maintain, incite, and boost development among educators (Fick & Resnick, 2001: 38).

From my experience as a teacher, indeed where there is a good culture of teaching and learning, the school moves in a positive direction. Sindhvad (2009: 2-3) and Gaziel (2007: 19) agree with Fick & Resnick (2001: 38), that the HoDs produce

i) an environment that is favourable to instruction and knowledge, maintenance and administration of educators' effort in teaching and supervision,
ii) thus confirming that educator improvement programmes are operative in schools,
iii) then educators increase their skills and capability.

Kydd, Anderson, and Newton, (2003: 58) contend that HoDs need to inspire educators to participate in professional knowledge through: steering on-going self-assessment and consideration of training via the performance standard in IQMS and assessing their presentation; assessing information about the school management and supervision through clarification and debates; commissioning tasks in schools aimed

to allow them to grow and prove concrete capability; deliberating on the application with their supervisors, colleagues and instructors; arranging files of evidence and contemplative clarifications on their profession which satisfy the expressions of capacity as outlined in IQMS.

When educators and HoDs gather to deliberate on presentation requirements, it is essential to develop effective relations and improve the individual profession strategy. Loock et al., (2003: 74) is of the view that the subsequent indicators must be considered. Teachers must be permitted complete involvement during the meeting. When setting explicit performance development goals together, satisfactory outcomes will be achieved. It is essential to deliberate and resolve difficulties that may influence the educator's work performance. This will expand knowledge and excellence. It is worthy to note that most educators recognise that if the improvement on their performance in class depends on structural prizes, the more advantageous the meeting would become.

Educator development is essential for the improvement of the quality of teaching and learning. It is consequently significant for HoDs to include all educators in the preparation for, and checking of, their excellence. HoDs ought to, as Dean (2002: 12) contends, highlight the fundamentals in assessment and growth somewhat than the critical features. More often educators and learners diagnose, is educated through noticing and imitating the individuals they appreciate. The procedure originates when the HoDs display the abilities to be appreciated by educators and the practices obligatory to finish the mission. HoDs requiring a commitment and in turn are responsible for the educators in their sections should therefore model constructive characteristics of humaneness and aspiration for education. In this respect, Hicks et al., (2005: 40-52) propose that HoDs must expand classroom opportunities for excellence and conduct / behaviours that are perfect and reliable, benefit educators to create genuine time assessments through lesson preparation.

1.7.6 Professional development

Professional development is most successfully supported by the acceleration of problem-resolving, when ever educators and their HoDs, participate in reflective

practices. The HoDs and educators deliberate on presented topics and generalise about applying the skills in diverse situations. The notion of reflective practices is reverberated by Kydd et al., (2003: 33) who state that through reflective behaviour, individuals are capable to make informed choices.

Moloi (2005: 85) maintains that; if HoDs and educators can reflect on their activities, talk amenably about them and correct errors when identified, an important impression on the education of their learners would be made. As leaders, HoDs ought to use dialogue in their department to build an improved, broad understanding of staff members and learners. As an evocative instrument to interchange thoughts and understanding, Watkins (2005: 35) thinks that HoDs must thus give educators the chance to present their own opinions in topic/theme gatherings, inspire educators to realise and esteem each other's ideas, deliberate achievements and difficulties they come across in their classroom, and contribute to curriculum development activities.

Lessons from the literature on HoDs as managers in leading their departments show that HoDs play a critical role in this regard. One can assume that, HoDs' main role as managers of their departments is to guarantee that effective teaching and learning are promoted in schools

1.8. RESEARCH DESIGN AND METHODOLOGY

In this section, the philosophical assumptions and the design strategies that form the basis for this research study are discussed. The research design and methodology, including data collection and analysis methods are also discussed. The research design is based on qualitative approach that seeks to understand and interpret the world in terms of its actors (Cohen, Manion & Morrison, 2004:181).

1.8.1 Research approach

The research approach adopted for this study was a qualitative one as it is a naturalistic inquiry method (Leedy & Ormrod, 2010; Litchman, 2012). The reason for choosing a qualitative approach was that it allows the researcher to interact with participants in a face-to-face situation and this helps to obtain in-depth data which can be analysed to explain the phenomenon (Creswell, 2007; Marshall & Rossman, 2011).

In this study I seek an in-depth truth from people who have the understanding and the ability to interpret the social reality in which they live. Ritchie and Lewis (2003) affirm that qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive material practices that makes the world visible. These practices turn the world into a series of representations including field notes, interviews, conversations and recordings to the self. Furthermore the qualitative research is directed at providing an in-depth and interpreted understanding of the social world of research participants, by learning about their social circumstances and their experiences (Ritchie & Lewis, 2003).

1.8.2 Research paradigm

The study is interpretive because it is the main philosophical tradition of my research methodology, which is qualitative. In this research interpretive means that one can only understand what other people feel, think and mean by what they tell someone. Human experiences can only be understood from the viewpoint of people (Morgan, 2015: 68). Thus, the reality of the participants will be a socially constructed phenomenon, since every single participant has his/her own experience. There will therefore be multiple realities of the phenomenon investigated (Henning, 2004; Nieuwenhuis, 2007). The advantage of interpretive research is that it will give the researcher awareness into the practices and observations of the participants. It will also allow him/her to get a much broader understanding of the occurrence and it can improve the trustworthiness of the study. Furthermore the potential challenge that the researcher may face, is that the participants may not give him/her all the information needed because of the subjective nature of the approach.

1.8.3 Research design

The proposed research aims to employ a case study to examine the role of Mathematics HoDs in leading their departments. David and Sutton, (2011) claim that case studies are in-depth studies of unambiguous components such as persons, organisations, occasions or populations. Yin (2009) supports the above authors when saying that case study research aims to clarify a particular outcome, occurrence or situation. Four secondary schools have been selected to make sure that detailed

information of the experiences of Mathematics HoDs and their respective teachers is obtained.

1.8.4 Research methodology

For the determination of this study, the qualitative technique will be used. The qualitative method is chosen because it authorises the investigator to study smaller samples and ask open - questions. In this study the qualitative method allowed the investigator to sample only four schools in which the researcher interacted with participants, listening to them during semi-structured interview. Semi-structured interview with school principals and Mathematics HoDs while with Further Education and Training Phase educators focus group was employed. In this case an interview guide has been used as an instrument.

De Vos (2011) affirms that individual interviews allow the interviewee to express himself/herself clearly and freely about their personal experiences and challenges. The common goal of the individual interview is that it provides a quick and easy way to retrieve rich data, and share confidential information. Cohen, Manion and Morrison, (2007: 349), maintain that the discussion method is a flexible instrument for gathering information, discussing the interpretations of interviewees and understanding their personal experiences. It is for these reasons that the interview method was chosen so as to understand the experiences and challenges of HoDs in leading their departments. Permission to have the interviews audio-taped for subsequent transcription was requested.

1.8.5 Population and sampling

For this study, I have identified the relevant population by using all the secondary schools in the circuit**.** I would use a purposive sampling method (Merriam, 2009). In purposive sampling, researchers select sites to be incorporated into the model on grounds that they are typical or they possess those particular characteristics being sought which are acceptable to their explicit needs (Cohen et al., 2011). In this study, the sample will comprise all Mathematics HoDs from the four sampled schools

including mathematics teachers in the FET phase. Schools were sampled according to performance, measured in the past four years. The sample is made up of four principals, four Mathematics HoDs and all mathematics teachers involved in FET phase at the four schools. Schools were sampled according to their performance, measured in four years by their district office. The schools varied in performance. The study was conducted at four secondary schools, in Sekgosese East Circuit of Mopani District in Limpopo province.

1.8.6 Data analysis and interpretation

I used inductive data analysis which is in line with interpretative research. Inductive data analysis helped me to classify the representativeness of the data. All the transcribed interviews were examined by the inductive method,(Thomas, 2003). Inductive data analysis allows study results to occur from recurrent, key or single themes in raw data without restrictions forced by structural procedures.

Open coding was used to look for themes. Coding is a procedure whereby fresh data is transformed into homogenous form (Babbie, 2007). The coding of the documents and the gathering of code relations for the improvement of subjects that would flow into the research was carried out physically. The coding of the data is the “process of segmenting and labelling text to form descriptions and broad themes in the data” (Creswell, 2009), which would then be further translated into fewer themes. Therefore, important themes were identified to establish the issues that are more relevant than others.

1.9 TRUSTWORTHINESS

Cohen, et al., (2007:149) assert that in qualitative inquiry, trustworthiness can be viewed as a fit between what the researcher accounts as facts, and what really happens in the normal situation, that is presently studied. Trustworthiness involves member inspection or participant approval, questioning by peers, triangulation, undesirable event examination and review traces.

According to Newby (2010:121), credibility and confirmability are the cornerstones of any research. Metler and Charles (2011:199) are of the opinion that when researchers are dealing with validity of qualitative data, they are basically involved with triangulation-"the accuracy and believability"- of the data. These authors further add that credibility in research basically implies establishing and verifying how believable the research results are in terms of the research participants. To ascertain that the data was trustworthy, credible and reliable I applied triangulation, validity and confirmability.

1.10 DELIMITATION OF THE STUDY

This study was limited to four secondary schools in Sekgosese East Circuit of Mopani District in Limpopo Province and participants were principals, Mathematics HoDs and mathematics educators in the Further Education and Training phase

1.11 ETHICAL CONSIDERATIONS

Babbie (2007: 62) clarifies that "anyone involved in social scientific research needs to be aware of the general agreement shared by researchers about what is proper and improper in the conduct of scientific enquiry." The researcher was expected to acquire informed consent from all those who were openly involved in the research or in the locality of the study. The researcher had to get permission, using a written consent form per school and all participants.

The anonymity of all the schools, principals, HoDs and educators when conducting interviews was observed and the study only mentioned the type of programmes offered by the schools. Descriptions were kept on each school sheet in order to guarantee full anonymity for the involved participants, bearing in mind the right that some schools might choose not to participate in my study, and if such a situation arose, I would then identify an alternative representative, according to the groups and sub-groups I would use for my sample. Additionally, with regard to confidentiality of information shared and anonymity of study participants, I protected the research participants by not revealing their identity, moreover institutions involved and each school have been named as School A; School B; School C and School D. My

understanding was that as a primary instrument of research I should develop strong relationships with research participants so that accurate, valid and reliable insights could be gathered in the research location (Descombe, 2012).

1.12 STRUCTURE OF THE RESEARCH

The research consists of five chapters which are distributed as follows:

Chapter One: In this chapter I clarified the background, the problem statement, the purpose of the study, research questions, the rationale, the significance of the study, the preliminary literature review, research design and methodology, data analyses and interpretation, trustworthiness and credibility, ethical consideration and delimitation of the study.

Chapter Two: Local and international literature related to the study on the instructional leadership role of Mathematics HoDs is reviewed, and the conceptual framework is presented in detail.

Chapter Three: In this chapter I reviewed in detail the research design and methods employed. The sampling strategy used to obtain the participants is discussed. In addition to the above, ethical considerations are also discussed.

Chapter Four: This chapter is about data collection. It entails the participants' role, which are the Mathematics HoDs as instructional leaders in FET phase.

Chapter Five: This is the final chapter of this dissertation. It contains the findings of the study and suggestions for future research.

1.13 CONCLUSION TO CHAPTER ONE

The preceding chapter clarified the background, the problem statement, the determination of the study, research questions, the rationale, the significance of the study, the preliminary literature review, research design and methodology, data

analysis and interpretation, trustworthiness, ethical considerations and delimitations of the study. In the next chapter, available local and international literature on the instructional leadership role of Mathematics HoDs is examined in detail as well as the conceptual framework underpinning the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter pays attention to: the instructional leadership role of HoDs and to the conceptual framework. It is divided into three parts. In the first part leadership is

defined. The second part deals with international and national perspectives on roles of HoDs. The issues covered in the literature includes: roles of heads of departments; effective leadership for teaching and learning in mathematics; establishing a professional learning community for mathematics teaching and professional development of Mathematics teachers. The third contains conceptual framework. As part of the instructional leadership role, this chapter also shows how HoDs manage teaching and learning; how HoDs support, mentor, observe, motivate and work with teachers in their departments; how HoDs develop their teachers professionally and how they plan, organise, supervise, and coordinate instruction and knowledge of mathematics in the school.

Jaynes (2014) sees these leaders taking a coaching, evaluating and learner centred dialogue. In Kinsella's (2011: 109) study of independent school department heads, explains the role that these teacher leaders are playing within their schools. It demonstrates a shift away from simple organisational tasks to that of "mentoring, observing, and working with the teachers in their departments" as they focus on learner achievement.

Since 1994 the quality of the South African schooling system has been described as being in crisis, and the quality of learner performance is regarded as poor even when measured against the developing countries of similar status and in some cases even poorer countries in Africa (SACMEQ, 2005; TIMSS test, 1999 & 2003). The unfortunate state of teaching in South Africa has also been discussed in the past by researchers like Taylor (2008), Christie, Butler and Potterton (2007), and Bush (2008). Evidence also suggests from many International studies (PIRLS, 2006; UNESCO, 2007) that, even though this country spends more on education than many other developing countries, our results and learner performance are amongst the lowest in these studies. The literature further suggests that there are three main reasons that can account for this, namely, literacy, numeracy, and leadership (Christie, et al., 2007). In the community learning zone (schools) in South Africa, the magnitude and complexity of variation in the period after 1994 was shocking, and unhappily left many of those involved overwhelmed, and schools in confusion. Principals, school management teams and governing organisations should make a point of putting time, energy and money into refining their acquaintance and expertise of changes, because

it is an asset that can intensely alter the degree to which they can lead, and administer their schools (Clarke, 2007). Therefore it appears that the state of the schooling system in South Africa requires guidance. In order for the school curriculum to be taught in an effective way, school leadership clearly plays an important role. School leaders influence curriculum delivery in a significant way that directly and indirectly affects learner performance. The success of the daily actions of teaching and learning necessarily involve the quality of lessons and knowledge. For educators to improve and maintain their abilities of instruction, the leadership they experience must involve these elements. The level of leadership needed to do this is particularly the level which most immediately impacts on the individual teacher – and this is the departmental head.

2.2 INSTRUCTIONAL LEADERSHIP OF DEPARTMENTALHEADS

Kruger (2003), asserts that leadership is seen as a procedure that includes describing and sharing a strong sense of responsibility, goals and ideas with colleagues. He continues to argue that leadership demands handling programmes and lessons, supervision and supporting educators, as well as checking learners' progress. Leithwood and Riehl (2003) expressed that leadership is a practise that provides a way and exercise influence while on the other hand, Hoerr (2005:7) has indicated that leadership entails interactions. Yukl (2006) describes leadership as influencing staff members into committing themselves to a common goal. He further affirms that leadership is a process whereby both the leader and the members affect each other. On the other hand, instructional leadership is more about teaching and learning, as well as how educators conduct themselves as they work with learners (Bush & Glover, 2002:10). These authors further mention that, whenever instructional leadership is exercised, the Mathematics HoD focuses his/her attention on learner knowledge imparted by educators, while Dipaolo and Tschanen-Moran (2003:44) contend that this kind of leadership has arisen to define the roles and responsibilities of the principals. These two researchers saw this type of leadership as something which is intended to give an instruction on the requirements of educators to develop learner outcome. Robinson (2006) and Bush (2007) are correct to say that instructional

leadership is concerned with managing and leading instruction as the essential business of schools.

2.3 INSTRUCTIONAL LEADERSHIP ROLE OF THE MATHEMATICS HoDS

Instructional leadership is extensive in range, multifaceted in nature and broad in principle (Spillane, Dimond &Jita, 2003). For the HoD as an instructional leader, who certainly believes that educational development in the learners' lives is the decisive objective of their school task, at that moment he/she would build a leadership capacity that enables mathematics teachers to be empowered and to participate in curriculum decisions. An effective Instructional leadership is a perception that a departmental HoD shares leadership duties with their interested parties so as to produce an environment of knowledge and play a substantial role in achieving effective teaching.

An instructional leader ensures that the school delivers knowledge that enables all educators to take part in the educational events, cooperation, and peer management so that the goal of professional growth may be attained (Bush & Glover, 2003:10). Professional development can be used as a strategy to improve their leadership role of the Mathematics HoDs. In secondary schools that make use of the Professional Learning Community (PLC) approach, the instructional leader is responsible for promoting learning through the school's vision; mission and culture. A professional learning community is a group of teachers who meet frequently, share skills, and works collaboratively to advance educational abilities and the performance of learners. The PLC often function as a way to constantly demand, re-evaluate, develop, and expand lesson approaches and information. This idea of transforming schools with the PLCs' approach, to many leaders has turned out to be a remarkable justification of the many problems encountered. Instructional leaders profile their schools interested in PLCs to inspire staff development. The HoD as a head uses the PLC as a resource to inspire their educators' skills development (Robinson 2008). This type of approach has been revealed to have many benefits on educators as well as learners. Teachers need a leader who will keep on motivating them and helping them alleviate a sense of isolation at the same time reinforcing their professional identity. Teachers too need to have a sense of belonging. PLC assists teachers by consolidating their academic knowledge, practices, skills and above all their working attitude. It is important to note that

instructional leaders inspire their schools and educators' philosophies with respect to their teaching abilities. In the PLC approach the departmental heads make available development opportunities to their teachers (Printy, 2008). Effective schools within the context of a PLC approach should consider:

- collective learning in the school;
- beliefs, values, vision and mission of the school;
- management and support;
- instruction and knowledge conditions;
- personal practices in mathematics instruction.

Instructional leadership has for many years remained linked with principals. Nonetheless, according to Banda (2012), school managers do not occupy the centre stage anymore as far as instructional leadership in schools is concerned. The HoDs are regarded as being instructional leaders who are responsible for their departments. Directing staff improvement programmes is one of the most important instructional purposes of HoDs that assists educators to improve their current knowledge, help cope with dynamism, modernisation and bridge staff to the future. Hence, the head of department ought to develop staff improvement programmes to promote educational services, energise present understanding and develop knowledge. From the statement above, the work of school leaders has undergone an evolution. Researchers like Bush (2011) have noted that the current policy press aimed at education on principles and responsibility has driven policy makers and the public at large to hold teachers and schools accountable for ensuring learner education in schools by prompting a change in organisational conditions and structure for the improvement across schools as a central task of school leaders. The HoDs are the most important group as they are accountable and responsible for curriculum delivery. This idea is also supported by researchers like Halverson, Grigg, Prichett and Thomas (2005). The new instructional leader pushes beyond the boundaries of managerial and transformational practices to a new concept of creating an accountable, learning system in schools. In this case the new instructional leader is the Mathematics HoD. The HoD as an instructional leader targets teaching and learning as the essential business of education in schools.

2.4 EFFECTIVE LEADERSHIP FOR TEACHING AND LEARNING IN MATHEMATICS

Effectiveness is defined as how much and how well learners are able to achieve and demonstrate skills learned. The excellence of teaching and learning has increased through leadership efforts to inspire classroom educators, particularly in the area of literacy and numeracy. Although it is regularly admitted that leadership is essential for the development of instruction and knowledge in schools, in Africa there has been no constant commitment by investigators to study the relations amongst leadership, teaching and learning (Krause & Powell, 2002). Experience has shown that the most important objective in a school is effective teaching. Research by Stronge (2010) suggests that some of the mathematics educators are more effective than others as far as classroom management, content knowledge and the quality of teaching are concerned, and that these variances have long-lasting effects on the mind and knowledge of learners. This idea is supported by Rivkin, et al. (2005). Since it is recognised that some mathematics teachers are more knowledgeable than others, if the potentials of effective mathematics educators in terms of content knowledge and teaching skills are identified, the ineffective teachers have to be persuaded to emulate the most effective ones. I concur with the above cited authors that effective teaching is important for school development and that it helps the HoDs in exercising their daily responsibilities.

There are some factors that have been proven by researchers like Ingverson et al., (2004) to have an influence on teacher effectiveness on learner education with regard to mathematics outcomes.

In most cases the best lesson strategy is an essential characteristic of the teachers' creativeness in the classroom situation. Teachers are regarded as resource persons in a lesson and they have the power to determine teaching strategies that are best and effective for a particular topic. Effective teachers led by effective instructional HoDs are helpful in developing and instilling a positive attitude towards a lesson. Teachers are able to achieve and to instill knowledge in their learners, particularly by being considerate of their learners' feelings by means of appreciating each learner's

involvement by recognising their needs for achievement. Research conducted by Posamenteier and Stepelman (1998) supports this assertion. Teachers are able to achieve their goals when they involve learners in class to the maximum participation, thereby making mathematics exciting and interesting by presenting lessons well. Therefore one may draw a conclusion based on this argument that the value of effective teaching and learning is an interaction among stakeholders, more on teachers and learners in the classroom.

2.5 ROLES OF HoDS IN LEADING MATHEMATICS TEACHING AND LEARNING

It is the duty of the HoDs to lead teaching and learning in mathematics and to support their staff members in the form of, mentoring, evaluation and exercising accountability.

a) Mentoring mathematics teachers

Mentoring is viewed as a learning practice directed towards teaching and learning which supports human performance and acknowledges improvement (Mullen, 2005:1). A distinguishing factor of the HoDs as managers of curriculum is that they are operational leaders who support teachers diversely in teaching and learning in schools. As leaders, HoDs become architects of knowledge, pursuing improvement, constructing co-operative knowledge atmospheres, boosting reflection, and repeatedly gauging the logical development of educators and learners (Kydd et al., 2003:38).

b) Supporting staff, monitoring, assessment and evaluation

Monitoring in a school is conducted to ensure that teaching and learning acquisition take place in a satisfactory way noting that it is not a once-off process, but an on-going process throughout the academic year. The HoDs' role, according to Gunter (2001:110) is to observe and value the worth of instruction and knowledge in their institutions. HoDs examine teachers' portfolios, workbooks and check the work of learners to find out whether teachers' targets on learners' achievement are able to produce the desired and expected outcomes. The principals or deputy principals examine the HoDs' work and may also go directly to the learners work to check progress as per pace-setters. In this case principals have the right to instigate

disciplinary actions against HoDs, should they realise that the HoD fails to monitor his/her teachers effectively because these may result in poor grade scores.

Evaluation is a process of assessing the core business of education, which is teaching and learning in schools. Usually, evaluation is done through analysing tests scores and examination results. The HoD discusses the results with the teacher or teachers concerned, with the intention of finding a common strategy to improve the results. The HoD starts by addressing this problem with the individual mathematics teacher and later assembles phase educators to discuss the results holistically. If evaluation is to be effective, then it would: provide review on the performance of a grade or phase in order to overcome underperformance in the school. The purpose of the review should be to overcome the old issue of blaming the teacher or the learners by the authorities, but it should be aimed at carefully assessing how teachers and learners can work together towards the improvement of the results, and can devise strategies to evaluate learners' outcomes. This process may reach a stage of professional development for teachers.

This process may go to an extent of modelling good practices by effective educators in mathematics and observing the performance of less effective teachers, first by having school in-service training. When in-service training is conducted within a school, variation is addressed by requesting the more successful mathematics teachers and learners to mentor those who are less effective and successful. This is also echoed by Bush and Clover (2009). Effective monitoring is important here in Limpopo schools because; if a school underperforms its SMT should develop and submit a School Improvement Plan (SIP) quarterly to the District Office. All schools which perform below the Provincial target of 65% are required by policy to submit quarterly reports on learner performance. The HoD must indicate which subjects underperformed and further show which strategies to use to improve the results. Bush et al. (2010) also found this in Limpopo and Mpumalanga schools. Mbokazi's (2013) study of three secondary schools in Soweto shows how effective leadership has led to high grade scores.

c) Exercising accountability

It is the responsibility of the HoDs to see to it that staff members in their departments are well motivated to perform their daily responsibilities. Successful teaching and learning in schools under normal circumstances rest on the capacity of HoDs' personal skill to encourage, stimulate and support educators, and Muhammad (2009: 13) supports the idea. Related opinions are articulated by Hopkins et al., (2002), who maintain that HoDs need to be persistently pursuing techniques to expand their teaching skills and hence produce circumstances that direct, care, arouse and inspire learning and concentrate on new techniques of teaching that encourage a very high level of learning and quality results.

Part of the obligation of HoDs is to support educators in acquiring subject knowledge in order to be competent in demonstrating skills that help learners in the classroom (DoE, 2005). HoDs are compelled by policy (PAM) to assist their teachers to deal with specific measurable and focused learning goals that will improve teaching and learning in the school, Du Four (2002) also supports the idea. The HoD has a task at hand to see to it that effective learning methods are used in class and this is achievable when HoDs consider evaluation as an important tool to make sure that learners' needs are satisfied and the approach used in teaching is sufficient for quality learning. When HoDs engage in the evaluation process, they should aim at motivating both teachers and learners. The issue of awards for both teachers and learners bear fruits. In the case of learners, we may choose to consider the best performed learners, say position 1, 2 and 3. We also have to consider the most improved learner or teacher. In this way people of different abilities, become motivated and work hard. When HoDs engage in evaluation, they should pay special attention to constructive appraisal which includes objectivity. In this process the HoD listens to the views and criticism of the teachers and later uses it as a basis for empowerment. This affords HoDs and teachers an opportunity to think and plan ways to improve the results. Ultimately new objectives, development plans and action planning are brought forward and reviewed by all in the meeting.

2.6 ESTABLISHMENT OF PROFESSIONAL DEVELOPMENT FOR MATHEMATICS TEACHERS

In any school, there is more human talent among the members and its use rests on the quality of the HoD's leadership abilities. The HoD's role includes staff

development; because it is his/her function to connect individual talent for the purpose of improving the school. The HoDs are the pillars in the development of information construction and are responsible for the formation of circumstances that allow educators to create understanding and skills that assist them in learning new content. This is supported by Sallis and Jones (2002: 40-41). The HoDs have a responsibility to:

- ensure that in-service training attended by staff concur with the district and school's objectives acquired during professional training;
- support and encourage the establishment of structures such as Professional Learning Communities(PLCs) for teachers;
- lead teachers' in-service activities concerned with instruction;
- support the development of programmes that address contextual factors;
- foster leadership development strategies concerning skills for goal setting, assessment and accountability; and
- reserve time for developmental consultations for educators to share opinions or material from professional events.

HoD's central responsibility is to focus on teacher development, thereby assisting the principal and school governing body in establishing a strong school culture that encourages teacher growth. Apart from developing the school through their teachers, HoDs are supposed to promote their departments so that knowledge produced by well moulded educators can be successfully used and be of assistance to all in the school (RSA, 2016). HoDs may promote competence in their departments by awarding gifts (from Learner Teacher Support Material budget) for teachers who work an extra mile to achieve good results. When teachers are developed they also develop positive attitudes and are able to introduce new methods and skills in their teaching approaches. One other important task of the HoD is coaching and nurturing teachers showing new thinking, talents, methods and approaches in their departments.

The principle of teaching and learning is important in an institution because, if a school does not have a culture that is beneficial for teaching and learning, it is challenging to attain acceptable outcomes. It is one of the HoDs' responsibilities to offer teachers with the maximum learning opportunity to improve their qualifications, since qualifications impact positively or negatively upon skills development. Heads of

departments promote teaching and learning in a school, but are also responsible for cultivating and explaining teachers' talent to boost effective teaching and learning. HoDs together with the entire management team generate and maintain an atmosphere in which knowledge can occur properly and in addition they project messages that respect, care and mandate individuals (young and old) to take responsibility for their own actions. HoDs promote the success of teaching in their departments and sustain school values that are favourable to staff professional growth. HoDs must always be seen to be creating conditions that guide, maintain, boost, and encourage skills development (Fick &Resnick, 2001: 38).

Gaziel (2007: 19) and Sindhvad (2009: 2-3) support that HoDs should under normal circumstances be tasked to generate an environment that is favourable for teaching and learning, and in addition to that, support and supervise teachers' work as far as teaching and the classroom are concerned, consequently making sure that staff development programmes are effective. HoDs have a responsibility to encourage teachers in professional learning through:

- self- evaluation and reflection practices in line with IQMS performance standards;
- assessing school leadership and management;
- discussing their evaluation and reflection with mentors and peers;
- preparing portfolios of evidence with observations and reflection in terms of the IQMS standards.

Teachers and HoDs should meet to deliberate on performance and they should have one goal in mind which is to increase the achievement of struggling educators, develop their working conditions and improve the individual skill and career path. HoDs have a task to communicate classroom expectations for performance and assist educators to make valid and accurate time allowances throughout lesson organisation.

2.7 REFLECTION

In a school, professional development is often promoted through problem-solving and this happens as soon as educators and HoDs participate in the process of reflection

and knowledge construction. Mestry et al., (2009:475) state that the only substantial area in which educators ought to be skilfully advanced is based on the belief that the value of educators impacts the value of students' understanding and achievement in an encouraging manner. This kind of process affords the HoDs an opportunity to discuss what has been taught in class. The development of educators' knowledge ought to concentrate on the creation of classrooms as key centres for educator improvement (Hopkins et al., 2002:77). It is only through reflection that people are able to make informed decisions. In an ideal situation the HoD and teachers of his/her department should reflect on their actions, talk openly with the intention of correcting their mistakes, making meaningful impact on their learners. In practical terms, reflection offers all parties involved a space for positive criticism which develops critical thinking. Moloi (2005:80) concurs with this assertion. From the participants point of view it was suggested that head teachers should use classroom reflection to address instructional anxieties and that all interested parties to be informed about this practice to minimise misperceptions. Heads of departments as leaders of their subject should use dialogue to compel teachers to exhibit a desire to improve their teaching practices. Communication is a tool for HoDs may use in their departments to create understanding for both teachers and learners. HoDs should further use communication as an instrument to encourage the interchange of thoughts and in this way teachers will be afforded a chance to air their views. It is important to use communication as a tool in Mathematics to encourage teachers to respect everyone's thinking. This is supported by Watkins (2005:35). Teachers must also be encouraged to participate in curriculum development activities.

2.8 ROLES ANDRESPONSIBILITIES OF MATHEMATICS DEPARTMENTAL HEADS

The roles as well as the responsibilities of the HoDs are a core business of their department and as such it is important to outline the qualities of the HoD before the responsibilities are discussed (RSA 1999). The qualities of a mathematics head of department among others should be (RSA 1999):

- educator with the ambition to manage and lead;
- one with skills to interpret diagnostic analysis;

- one with a zeal and passion to accomplish the mission and vision of the institution;
- one with knowledge of the subject content;
- one with the eagerness to nurture, protect and persevere with the pace of Learners with Special Educative Needs(LSEN);
- one with a positive attitude and willingness to produce quality results; and
- one with ethics and values to recover, remediate and restore dignity and integrity to LSEN.

The core roles and responsibilities of the HoD as outlined (RSA 1999) are set out below:

- teaching –the first is to participate in class teaching as per workload, to be a class teacher if necessary and to measure and collect learner achievement statistics;
- extra and co-curriculum activities - the HoD is in charge of a subject, phase or departmental policy development, and coordinate home works, assignment and to induct new and inexperienced educators;
- personnel –means HoD must ensure the learners have a teacher in front of them every day in the classroom, and advise the principal on allocation of subjects to teachers in classes and to participate in systems like Integrated

  Quality Management Systems (IQMS), School Assessment Team (SAT), School Based Support Team (SBST);
- administrative – HoDs must assist with planning and management of Learning and Teaching Support Materials (LTSM) need analysis, procurement, auditing and retrieval, timetabling, submission of data in time, statistics and diagnostic analysis, interpretation of statistics and drawing conclusions to inform outcomes, conducting meetings and keeping minutes and records; and
- communication – to cooperate and collaborate with teachers in order to maintain quality curriculum delivery and conducting extra-curricular activities, to meet with parents and discuss learners progress, to participate in

professional committees, to liaise with subject education specialist on content matters and report to the principal and deputies.

Dinham (2007) discovered that HoDs' role in building teams created extraordinary outcomes in seven to ten years in New South Wales. Both qualitative and quantitative data were applied in the selection of locations with well performing schools in certain subjects or through school programmes, for a period of four years. Data included standardised tests, examinations scores, different processes and recommendations from different participants. Close to thirty-eight schools were considered, encompassing twenty-six HoDs at four public and private schools across the country. The study discovered that management and leadership are key aspects in attaining outstanding results. For HoDs to operate well in performing their roles, it seems essential to understand operational leadership for the achievement of good results.

This enquiry focuses on the study conducted in Kenya by Wanzare (2012). The initiative of that inquiry was to inspect the correctness of core regulatory practices and processes in public secondary schools, as of the view point of senior educators, educators and high-ranking departmental officials. Although the scope of the research was broad, my interest lies on head teachers and teachers. The scope covered the meaning, purpose and practices of the core instructional organisation, problems associated with this practice, documents and guidelines on the practice, skills and attributes of this practice, any variation required to improve the practice and procedures, staff improvement programmes for both educators and senior educators. He used a very big sample which was randomly selected, to take part in the study. Both qualitative and quantitative approaches were used to collect data from the participants.

Participants did not have confidence in the study because they saw supervisors as poorly-prepared, who were unable to provide them with enough professional support. It was also suggested that lesson plans be used as an alternative strategy to improve the quality of teaching. The author further suggested that instructional managers cultivate reliable assessment measures for educator performance. In outlining the processes, educators' experiences and stages of ability ought to be measured. Unskilled and inexperienced educators should be identified more regularly than skilled educators to boost their moral.

2.9 COMPETENCIES AND SKILLS REQUIRED OF HEADS OF DEPARTMENT

In adding to official planning for management positions, HoDs require self-reliant capabilities to accomplish their roles and responsibilities. Bak (2010) scrutinised the competencies of HoDs on professional development in Malaysia. The researcher established that mathematics HoDs observed saw themselves as being competent in:

a) personal skills
b) running their departments,
c) programme improvement and
d) control.

However the researcher established that certain HoDs were unable to explain the prospectus plan to educators. The HoDs agreed that the above competences were dynamic. Suggestions to the Ministry of Education to confirm that HoDs undertook professional development were made and that the training course content ought to be linked to the requirements of the job of HoDs. If a person becomes the HoD lacking the indispensable abilities, it doesn't become a shock when they encounter some difficulties in carrying out the role of instructional leadership.

2.10 CHALLENGES MATHEMATICS HoDS EXPERIENCE CARRYINGOUT THEINSTRUCTIONAL LEADERSHIP

The role of HoDs is constantly changing because of the revisions in the schooling structures globally and nationally alike.

Rosenfeld, Ehrich and Cranston (2008) examined the HoDs in Australian secondary schools to establish the varying nature in their leadership roles. In their conclusions, they noted that the HoDs cross-examined, observed this change in their role as an undesirable burden to their job. The HoDs weren't conversant with the burdens of leadership abilities. They cited lack of preparation, explaining that they were still new in their roles to justify that they are learning the job, although are aware of the impact of the role of instructional leaders. They expressed complications in accommodating change in their roles. Uncertainty in the new roles, struggle and reliance on beliefs

were discovered. The instructional leadership role of the HoD had been substituted with generic organisational services. However, the improvement of those services were not official, but, rest on the person's willingness to accept change. The new role of leadership requires professional development of skill management as suggested. There are numeral studies that focused on the part of HoDs, however the need still remains for more studies that investigate the way in which HoDs comprehend their role as managers of instruction and knowledge.

Some of the difficulties HoDs encounter in managing instruction is shown in a study piloted by Stephenson (2010), when he observed the difficulties HoDs are faced with in New Zealand secondary schools, though he used a limited qualitative approach. He composed statistics through five distinct interviews and one focus group, with participants from five metropolitan secondary schools. In his discoveries, HoDs acknowledged talents, abilities and information that the HoDs must possess in order to be capable in fulfilling their managerial part and as leaders of the curriculum. An extensive foundation of academic understanding was similarly acknowledged as an essential ability for HoDs as they lead mathematics. There was an observed necessity for HoDs to lead and improve their sections through the procedure of collective dream and tactical design. HoDs recognised the significance of group improvement by providing different types of suitable and applicable professional development as departmental managers. Individual managerial skill was recognised as an imperative role for HoDs. Participants stressed the requirement for HoDs to be flexible, sharp listeners exposed to amendment and to have wide understanding. Periodic management and organisational abilities of HoDs appeared as being important for HoDs to survive the difficulties of their title role. Delegation was regarded as an ability to promote group supporters and to support the reduction of the HoDs' amount of work.

Participants regarded assessment as one more essential role of the HoD as a head. It is perceived as a way of refining the practices of supporters of the department over and done with spotted area of necessity. Difficulties acknowledged were educational concerns observed by the HoD as role leaders in education. HoDs discovered that the rapid changes in education had strengthened and increased their amount of workload. The problem of leadership information is viewed as the second issue which focused on preparation or skilled development on the part of HoDs. Continuous training for different subjects was offered; though professional development intended to assist

HoDs as leaders was not considered. It arose that other managers within the hierarchy reviewed proficient development to help them accomplish their role as heads, again HoDs were disregarded. Lack of time and huge amount of work were also recognised as challenges that inhibited HoDs in finishing their responsibilities to the mandatory standard. The HoDs' workload comprised large sums of administration relating both evaluation and management. The research has shown that HoDs embarked on proficient dialogues with others, with an intention of tackling challenges through collective problem solving skills. The next sub-section will deliberate on the conceptual framework.

2.11 CONCEPTUAL FRAMEWORK

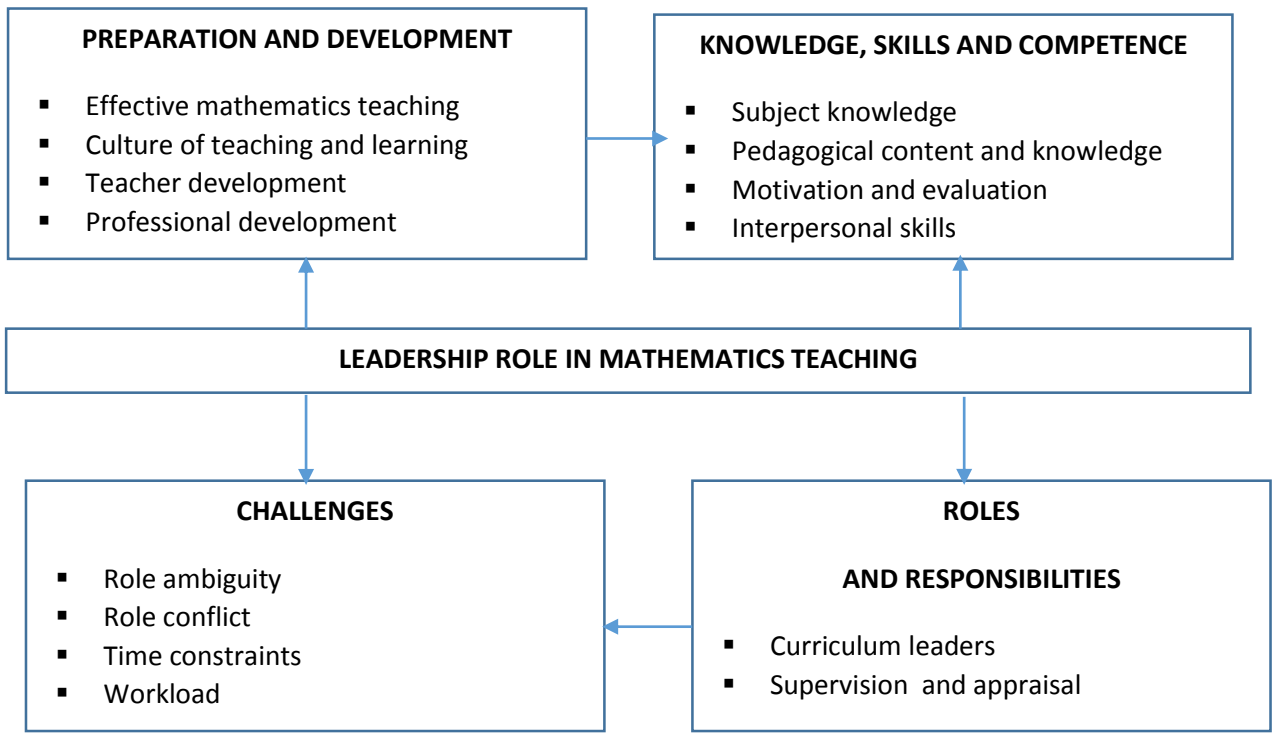
Instructional leadership has stretched for years and was used to describe successes and progresses related to leadership at school level (Heck, 1992). The perception of instructional guidance is further extended by depiction on Spillane's (2002) structure of distributed leadership, to provide a complete version of in what way the school build and convey their directive of leadership. Spillane and Orlina (2005) claim for an opinion of school leadership, that concentrates on the preparation of leadership. This opinion takes into justification that such leadership often comprises of various actors; executing related or diverse responsibilities to realise a mutual objective of instructional perfection in a specific situation. Instructional leadership is more often disseminated (Dimmock & Walker, 2000).

The perception of social disseminated instructional leadership interpretations for the idea that numerous performers were encouraged by their traditional standards, gender, race, session, societal position and natural features, whether as heads and/or supporters, would all have an influence on the manner leadership for the development of mathematics is assembled and trained. One can thus be certain of the number of groups to be involved in the programmes and methods of leadership. Spillane et al., (2003) contend that school leadership is further disseminated by theme capacity. This means the amount of instructional leadership intended and presented for the enhancement of mathematics differs from the class and amount of instructional leadership aimed at and presented for the development of any other theme in the school. To recap, this theoretical structure takes completely the squabble that instructional leadership trails along numerous proportions and integrates sums of

practices (Southwood, 2002). To comprehend instructional leadership entirely, it is necessary to deal with the diverse features that relate to produce the different kinds of guidance for the development of mathematics.

A discussion on the Conceptual Framework will follow Figure 2.1 below

FIGURE 2.1 CONCEPTUAL FRAMEWORK



2.11.1 Preparation and development

Heads of departments in educational system have various phases of development which normally initiates with in-service training, wherein teachers are prepared to impart knowledge using diverse teaching methods; that is to equip teachers in effective mathematics teaching. One notes that in the teaching profession development is continuous. In most cases when a teacher has been appointed as HoD, he/she should undergo in-service training for the new job. This training should be arranged by the circuit office if more teachers have been appointed, otherwise the school concerned will conduct own training for such teachers. The literature suggests that the majority of HoDs are not ready for the jobs they are doing (Turner, 2000).

2.11.2 Knowledge, skills and competence

Research suggests that for HoDs to lead the instruction and knowledge in schools, profound knowledge of both the teaching methods and subject matter is a necessity (Hang & Marsh, 2009). Both subject matter and educational content understanding also emerged as important assets. Understanding of educational content is defined as an appreciative way in which learners learn, and an appreciative way in which the theme is imparted to enhance their knowledge (Robinson, 2006). The detailed leadership expertise related to the job of HoDs in literature are interactive and communication abilities. Interactive skill is regarded as a very important element in managing transformation successfully, and for persuading others (Hang & Marsh, 2009).The talent is regarded as the ability to have noble connections with stakeholders. It further relates to the ability to influence and inspire team work in a school situation (Bak, 2010). The researcher proposes that interactive abilities be used to empower HoDs to gain support and the cooperation of stakeholders. Communication skill is another element that arose as very essential in the leading of instruction in education. HoDs are anticipated to explain policies into practice in their departments and classroom and are further required to discuss with senior leadership and external personnel on behalf of their departmental staff members (Harris, 2000). Therefore, the privileges of these abilities are possibly to assist HoDs to offer the kind of feedback that is beneficial to educators. Knowledge and skills are related to the effort of subject leaders because the possession of the two empowers them to be

capable in performing their job. In the literature, proficiency is defined as a cohesive set of awareness, talents, approaches and individual features (Kruger, 2009; 117). Although HoDs ought to be fitted out using information and abilities to position them for leadership positions, research advocates that HoDs are not experienced in executing most of their managerial and leadership responsibilities (Ali & Botha, 2006; Bak, 2010). Both researchers suggested proficient development for HoDs with an aim to assist them to do their work effectively and professionally.

2.11.3 Roles and responsibilities of HoDs

Departmental heads have different roles besides responsibilities placed on their shoulders in order to lead the instruction of mathematics in schools. The roles of curriculum leadership; administration; supervision and appraisal as well as support, will be the focus subjects here.

2.11.3.1 Curriculum leadership

Bak (2010), in her study defined curriculum leadership as a process of guaranteeing quality teaching and learner knowledge. She further mentioned that this role would benefit HoDs to identify if educators comprehend the topic/theme for them to take the necessary action when there is a need. Supervision is a component of curriculum leadership as both are done to make certain that educators deliver quality education to learners in the classroom. The most important thing is that HoDs ought to assure that educators have all the essential teaching resources to impart knowledge. One important resource is the subject policy. Harris (2000) maintains that it is the responsibility of the HoDs to clarify the policies to educators. Poopedi (2011) believes that HoDs should be up to date with the necessities of the policies in order to make certain that they are obeyed by educators. Heads of departments by virtue of their position as subject heads, are compelled to provide support to educators at all times.

2.11.3.2 Supervision and appraisal

Teaching necessitates HoDs as leaders to administer and assess educators in their departments and this is viewed as alternative method of monitoring and valuation. It

is the responsibility of the HoDs to see to it that staff members under their departments are well motivated to perform their daily duties. Effective teaching and learning in secondary schools has been shown to rest upon the ability of HoDs to influence, stimulate and sustain their educators (Muhammad, 2009: 13). Related opinions are voiced by Hopkins et al., (2002), who maintain that HoDs must frequently be looking for new means to extend their teaching skills and consequently construct circumstances that direct, sustain, arouse and support learning with the emphasis on approaches of instruction producing great level of understanding. Zepeda and Kruskamp (2007), in their study discovered that the departmental leaders that took part in the research used their institutions in executing their duties, due to the lack of planning and training. The researchers propose that HoDs should make orderly, official classroom and non-official classroom observations, for departmental heads to have knowledge of what happens in the classrooms; and that supervision of educators is administered the way it is required by policy. Bennet, Newton and Wise (2003) established that the subject heads were not happy with the idea of monitoring the work of educators especially classroom observations. They regarded classroom observation as an attack of confidentiality and a lack of reliance.

Supervision and assessment has a lot in common, which is seen as very essential in order to recover quality teaching and learning. Assessment of educators is one of the approaches used to give assistance for their continuous development (Education Labour Relations Council, 2002). In South Africa, the Integrated Quality Management Systems (IQMS) is a policy intended to make certain for excellence in schools. HoDs are anticipated to head the Developmental Support Groups (DSGs), in IQMS which refer to a team of evaluators during the appraisal process (DoE, 2005). The roles and responsibilities of DSGs among others include mentoring and giving support to appraises. HoDs are also compelled to support the educators when they generate their Personal Growth Plans (PGPs). HoDs are also expected to instigate investigative valuation of educators for developmental purposes, as well as the yearly cumulative appraisal for performance capacity.

2.11.3.3 Support

Educators continuously need support from HoDs in executing their daily duties. Fletcher and Bell (1999), contend that subject heads have to attend to educators'

challenges and offer them assistance required. HoDs ought to enable channels of communication with senior management and officials from the department on behalf of educators. HoDs are further expected to exchange thoughts with educators, to be friendly and thoughtful. To support educators, HoDs should facilitate chances to be in contact with other educators teaching the same subject topic.

2.11.3.4 Coordinating professional development

Bak, (2010: 464) states that educators have an obligation to learn, unlearn and re-learn. I totally agree with the above researcher on this matter because the wrongs we do must be corrected, so that we are able to learn new ways of doing things. Thus, HoDs are anticipated to assist educators so that professional development takes place. Mundry (2005) confirms that professional development is instrumental in supporting good practices and to help teachers' achieve goal for learner knowledge. Several studies have highlighted that HoDs require undergoing skill development to empower them to achieve their job successfully (Ali & Botha, 2006). Normally development takes place in various forms such as; in-service training, workshops, seminars, courses and conferences, for instance AMESA (The Association for Mathematics Education of South Africa).

Mundry (2005), asserts that if educators are to improve understanding of instruction, the proficient growth should include subject themes and instructive information. Emphasis ought to turn to learner education since, for educators to be effective in teaching; they have to comprehend the themes and topics. It means that lesson activities ought to address how to deal with the themes and topics. Guskey (2009) suggested that educators be afforded an opportunity to practise what they have learnt in the classroom.

2.11.3.5 Administration

It is the responsibility of every HoD to maintain the smooth running of his/her department. It is understood that administration involves the analysis of results whereby HoDs are responsible to check the performance of educators. Poopedi (2011) is of the opinion that administration includes inspection of lesson strategies, educators' documentations, work programmes and the control of assessment tasks. Some of the HoDs are not fruitful in carrying out their responsibilities due to lack of

understanding of the subject matter (Zepeda, 2002; Ali & Botha, 2006) but literature suggests that HoDs need to conduct departmental meetings; organise and assign financial plans for the year; procure and look after the teaching and learning properties; should also draft programmes and assign educators to guarantee that programmes are effected commendably (Bak, 2010). It is known that HoDs are facing some difficulties in executing their daily duties.

2.11.3.6 Challenges

In the first place, HoDs are teachers who are also administrators. Researchers such as Zepeda, Kruskamp, (2007) and Rosenfeld et al., (2008) have found that HoDs are encountering role ambiguity and stiffness. Role ambiguity is defined as insufficient information of whatever is projected in an allocated position (Huse 1980, as cited in Zepeda, 2002). Alternatively, role tension is defined as a condition whenever a person has to accomplish two or more prospects of a given character such that if he/she acts in accordance with one prospect, it makes it difficult to conform to the other prospect (Katz &Kan, 1978, cited in Zepeda, 2002). These researchers revealed that HoDs remained subjected to time limitations, to deal with managerial activities. The above findings were also established by a study conducted in South Africa by Ali et al., (2006). Role uncertainty and conflict were seen as an obstruction to heads of departments (Bennet et al., 2003). . Role conflict refers to leaders wavering between superiors and educators (Bennett, Newton & Wise, 2003; Zepeda, 2007). Concepts discussed above suggest that HoDs require information and talents in order to prepare them for their positions for effective performance.

2.12 CONCLUSION TO CHAPTER 2

Both the national and international literature designates that HoDs ought to play a main role in teaching besides learning in schools. It advocates that most of the HoDs at no time received official preparation nonetheless the role of instruction is given or allocated to them. Their responsibilities embrace the following:

- Heads of department must be supervisors dealing with a lot of administration;
- they are suppliers of resources making sure that educators are in possession of the required educational resources;

- they must be of assistance to educators making sure that they are motivated; and
- they act as supervisors and managers of educators' activities making certain that there is teaching and learning daily in the school where as are supposed to be in class, teaching.

Heads of department as leaders are supposed to make sure that plans and programmes are followed. The literature proposes that due to the lack of preparation, HoDs are confronting many challenges in executing their daily activities in schools. The challenges involved the lack of knowledge to fulfil their responsibilities, role ambiguity and role conflict. Furthermore studies suggest that HoDs lack the skills and time to accomplish their role to the required standard. Fundamentally studies suggest that; education authorities put individuals in positions are not ready for and in turn expect a lot from them. In the next chapter, research methodology and design will be discussed in detail.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The foregoing chapter gave a comprehensive review of the literature on the instructional leadership role of the Mathematics HoDs. In this chapter I reviewed the design strategies which make the foundation of this inquiry, the investigation plan and procedure, together with data collection and analysis. The research design is centred on a qualitative approach which helps to comprehend and construe the world in relation to the participants (Cohen, Manion & Morrison, 2000:18). In this study, methodology is about investigation by means of which we derive to obtain valued knowledge. It involves the concrete, real world "tools" to obtain credible information. It furthermore involves the fundamental ideologies and skills applied by the investigator (Oosthuizen 2009: 10).

Methodology is further viewed as a research belief. The investigator's understanding of the procedure is applied when data is collected, for example, the use of questionnaires and interviews. Techniques may also be seen as explicit research practices utilised by researchers to conduct a study on a specific problem. They can be contemplated as being the "tools" by which the study is administered. Creswell (2009:54) views the research strategy as a procedure for picking themes, research places and data gathering measures to account on the study enquiry. Oosthuizen, (2009:10), liken a study proposal to the designer's illustrations and plans in the structure of a construction. Equally, research designs entail drafting of a certain study project.

This part deals with the structure of the research methodology and approaches involved in detail during data collection. The researcher started by looking at the approach and design utilised in this study. Thereafter data collection strategies followed, which in this case were semi structured interviews, focus group and document analysis (Creswell, 2009:54). The sampling strategy and participants involved in the study were further discussed, and data analysis followed afterwards. Lastly in this chapter the researcher discussed the importance of ethical considerations surrounding the study.

3.2 AIM OF THE STUDY

The aim of this study is to examine how Mathematics HoDs carry out their instructional leadership role in Limpopo secondary schools. The study therefore intends to gain an improved understanding of the approaches they use to overcome the challenges they experience in leading mathematics teaching.

3.3 RESEARCH APPROACH, PARADIGM AND DESIGN

A detailed explanation of the research approach, research paradigm and research design will now follow.

3.3.1 Research approach

For collection of data and solution to the research question, this study made use of a qualitative research approach. Qualitative method is renowned by its capability to characterise the opinions and perceptions of participants as emphasis is employed on

hearing their voices (Yin, 2011:18).The qualitative approach empowers investigators to gain a deeper understanding of this occurrence, through collaborations with participants in a normal location. This research method is seen as the right one to study this phenomenon. The approach was chosen because the researcher has an interest in comprehending the manner in which people construe their practices, how people create their world and whatever importance they give to their practices. In other words, the researcher would like to perceive the world through the eyes of the participants.

The qualitative research focuses on investigating the personal experiences of individuals and recognising the significance of responses individuals make to specific events, manifestation and behaviours. The qualitative research approach was used in order to learn more from participants through exploration. Newby (2010:115) viewed qualitative research as focused meaning people attach to their experiences and the understanding of how they choose to live their lives. McMillan and Schumacher (2010:23) and Devetak, Glazer and Vogrinc (2010:78) believe that "qualitative research has much to do with collecting data on a logically occurring impression". This type of research is conducted in a natural setting, observing participants and at the same time not interfering in their everyday lives. Since in qualitative research, data appear in the form of words rather than numbers, the investigator needs to examine and discover a number of ways till a good understanding is achieved (McMillan & Schumacher, 2010:23; Patton & Cochran, 2002:2) and on the same note Creswell (2012:16) is of the belief that qualitative research enables the investigator to explore and acquire more knowledge from the participants to address a research problem. Punch (2009:117), Johnson and Onwuegbuzie (2004:20) argue that in a qualitative inquiry, the investigator has a duty to collect data in a natural setting. In this study, secondary schools in Limpopo Province are naturalistic settings and this really afforded the researcher an opportunity to understand the participants' experiences.

In qualitative research, as noted by Creswell (2012:16) "a fundamental occurrence is the key concept to be studied" which is, in this case the instructional leadership role of the Mathematics HoD. This approach also permits the researcher to clarify behaviours not easy to measure by using survey (Creswell, 2012). This approach further allows the investigator to study samples which are small in size to ask open-ended questions. The researcher in this case used a small sample to explore this phenomenon. In this

study, the qualitative approach was used to sample four secondary schools in order to interact with the participants, by listening to them during individual semi-structured interviews.

3.3.2 Research paradigm

A research paradigm is a set of philosophical assumptions which researchers hold when doing research (Myers, 2009). The theoretical beliefs are ontological, epistemological and methodological. Ontological assumptions are perceived as reality in relation to a given occurrence and what contributes to reality (Grix, 2001). This study was based on the belief that multiple realities are revealed through collaboration between the researcher and the participants. According to Wahyuni (2012), the reality of a phenomenon is determined by the perception and experiences of the participants, while what contributes to acceptable knowledge is the subjective meaning of the social phenomenon.

In this study the researcher used an interpretive research paradigm as its suitable framework. Wilson (2013:293) argues that “research based on a view that all knowledge is based on interpretation is seen as interpretive”. Interpretive approaches concentrate on the interpretation of evidence and bringing meaning (Burton, Brundett & Jones, 2014:7). In addition to the above statement, the authors (2014:7) are of the opinion that research evidence only becomes useful when findings are explained, interpreted and contextualised. On the other hand, Reeves and Hedberg (2003:32) support the idea that the informational model is concerned more with accepting the area as it is from the personal practices of individuals called participants. In the words of Cohen et al., (2007:2), the interpretive paradigm encapsulates the understanding of the independent world of social experience, on the other hand Walter (2013:17) asserts that the interpretive perspective emphasises the beliefs specific participants have about societal interpretations and the use of language in the construction of that knowledge. Wilson (2013:293) advanced the explanatory viewpoint that the social world on which events takes place is a world of intellect in which our activities are the basis of collective understanding.

This study used interpretive research paradigm to find solutions on the study inquiries. This paradigm is based on an individual’s interpretation of events occurring in his/her subjective world. Through this paradigm, it was possible to ascertain different realities

from the participants with respect to the instructional leadership role of the Mathematics HoDs and to interpret data collected from participants. It was very interesting to interact with participants in an attempt to answer the research questions.

3.3.3 Research design

A research design is according to Walter (2013:361), a formalised process of how a researcher intends to conduct a research. Research designs are the detailed actions elaborated in the study process, the practice of data collection, data exploration and report writing. According to Walter (2013:362), a research design should also include any potential limitations or difficulties a researcher may encounter in conducting the proposed research. The research design for this investigation is a case study. A case study may be explained as an experimental survey that examines a modern occurrence confined by its actual existence framework. In fact a research design is seen as a layout plan to carry out an investigation. This layout plan ought to be simple and easy to follow. A research design is a strategy that the investigator devises in order to regulate the method in which he/she will conduct the research with the purpose of generalising the findings and to construe the implication of the experiences of the participants.

The term research design, as defined by Punch (2009:112) in general terms, implies that all the issues involved in the preparation for and implementation of a study task after noticing the difficulties through reporting and publishing the results. Denzin and Lincoln (2011:245) state that in the research design, methods used to obtain information, information used to unravel the research question and the rationale for the study are explained. The design was chosen because multiple sources of evidence were consulted to collect data from the participants' natural settings and acquire their experiences of instructional leadership role of Mathematics HoDs.

3.4 STRATEGIES USED FOR DATA COLLECTION

Data collection involves the precise processes the researcher has chosen for the purpose of finding appropriate reviews. The investigator usually uses several techniques to collect data. All techniques have strengths and weaknesses. The investigator was careful in picking out the applicable techniques of gathering information. In investigating the instructional leadership role of Mathematics HoDs,

certain procedures and techniques were considered. The following strategies were employed in collecting data: semi-structured interviews, focus group and document analysis.

This was a participant triangulation study providing a cross-validation amongst the data sources as an exercise of validation and a way of making sure of data collection through interviews. The interviews were recorded after consent had been obtained from participants. The voice recordings were to ensure that data was collected and stored in the same manner in which it had been given (Blaxter et al., 2001:172). This was to make sure that the voice of participants was never lost. The investigator accumulates words and descriptions about the fundamental occurrence; bearing in mind that the data are collected for people submerged in the location of routine existence in which the study is outlined (Maree, 2010:259). The process of data collection from participants in this study was through interviews and document analysis. A study interview is regarded as a conversation between two people that serves to elicit information pertaining to the research (Merriam, 2009:87). At times interviews are conducted with more than two participants simultaneously. This type of interview is called focus group. On the same note Maree, (2007:87) argues that an interview involves discussions aimed at obtaining information from participants by the interviewer in order to study their behaviour, beliefs, opinions, views and ideas. Newby (2010:338) adds that interviews can be conducted either with individuals or with groups on a collective basis.

According to Niewenhuis (2006:22), qualitative interviews aim to see the world through the eyes of the participants and, in addition, Cohen et al., (2007:349) are of the opinion that interviews provide a great deal of detailed and useful information as well as being a flexible tool for data collection. During the interviews, the researcher exercised empathy as participants were relating their experiences. This built and established trust and confidence from participants.

3.4.1 Semi-structured interview

Semi-structured individual interviews were conducted5f using principals and heads of department from four selected schools. These interviews took place in their offices. Heads of department were the key informants, being the ones regarded as having expert knowledge in the subject under investigation. Interviews took an hour and a half

for both principals and heads of department. All the participants were guided by an interview guide.

The interviews were intended to cover the instructional leadership. The semi-structured interviews held with heads of departments facilitated the triangulation of responses regarding the instruction, leading and the teaching of mathematics. This was considered an appropriate approach as the focus of this research was the educational setting. For this reason sampling was on four secondary schools which were different in size and academic performance. The four schools were purposively chosen on the basis of being in the same geographical area and for displaying very similar socio-economic characteristics, while achieving a wide disparity in their results. The mathematics heads of department in each school were well experienced teachers and qualified in their subject. This allowed for a clear focus on the heads of department's perceptions and implementation strategies.

3.4.2 Focus group

The quality of focus group is their unambiguous usage of group contact that yield data and understanding that wouldn't be reachable short of contact set up in a group (Morgan, 1997:2). Focus groups were conducted with mathematics teachers in four sampled secondary schools who teach in the FET phase. The interviews were conducted after school hours as per arrangement with the school principals and took place in the boardrooms. The interaction lasted for an hour. Conducting focus group with the teachers helped the investigator to increase understanding and produced records related to the study questions. Each of the teachers was requested to answer formulated questions. These questions were meant to stimulate vigorous dialogue amongst participants on the instructional leadership role of the mathematics heads of department.

Prior to focus group with the teachers, they were informed that their feelings, views and opinions were of great importance. Grade 10, grade 11 and grade 12 mathematics teachers in School A, School B, School C and School D were interviewed. Focus group with teachers was conducted at each school to determine

the strengths and weaknesses in the instructional leadership role of the mathematics head of department in his/her daily work execution. This has assisted in drawing useful conclusions on the instructional leadership role of the Mathematics HoD in general. Focus group has the benefit of providing explanations in voices, explicit to every group. Focus group allows the researcher to collect evidence from several data bases in a short period of time. Group dynamics encourage conversations besides responses.

3.4.3 Sampling strategy and participants

For this study, the relevant population was identified by using all the secondary schools in the circuit**.** Purposive sampling method was selected. In purposive selection, the investigator chooses cases to be integrated in the sample because they are typical, or they possess particular characteristics being sought, which are suitable to their specific requirements (Cohen et al., 2011). Schools were sampled according to performance and size. The research was conducted in four selected secondary schools; in Sekgosese East Circuit of Mopani District in Limpopo province. There were 13 participants in this study. The number comprised four principals, four mathematics heads of department, and five mathematics teachers. From School A, the school principal, mathematics head of department and one mathematics teacher who teach Mathematics in the Further Education and Training phase were interviewed. The same format went on to School B, but in School B, the head of department is also responsible for teaching Mathematics in the FET phase, due to the small size of the school. School C had about three teachers in the FET phase and in School D there was one teacher and a Mathematics HoD. Demographics were not important as all teachers were considered in the focus group. HoDs continued focused on the information that they were the heads of mathematics instruction in schools and possessed “expert knowledge” of the subject. The subject teachers were selected on the basis that they teach the subject under investigation. School principals were selected due to the fact that they supervise both HoDs and teachers.

3.4.4 Purposive sampling

For this study, data were collected from four sampled schools in the circuit, in which four school principals, four heads of department and five mathematics teachers were interviewed. Purposive sampling method was used because, in purposive selection, the investigator picks out certain components from the inhabitants that will be illustrative of, or helpful about, the subject of concern, McMillan and Schumacher (2006:126) support the idea. Purposive sampling is normally piloted to enlarge the evidence gained from lesser samples. The investigator in this study has looked for people with relevant information (HoDs) and places (schools). They are experienced and helpful concerning the instructional leadership role of the Mathematics HoDs which the researcher investigated. There were 13 participants in this study. The number was made up of four school principals, four heads of department and five mathematics teachers. Sampling is viewed as a method used to choose a portion of participants in the inquiry. Purposive selection was applied in this study because the selected participants have characteristics that are of interest to the researcher that makes them the owners of the information needed for the proposed inquiry. On this issue, Merriam (1998:6) asserts that in purposive sampling, it is assumed that the researcher desires to make certain and understand the sample from the entire population. In this study, participants were purposively selected on the base that they supplied appropriate and rich information to the research questions.

3.4.5 Document analysis

Document analysis is seen as a logical process for revising and assessing available files/documents, the statement is supported by Bowen (2009). Records were checked and interpreted in order to increase insight and cultivate new suggestions. Document analysis assisted in constructing the picture of schools' general performances to be known, because they are regarded as being very advantageous in longitudinal inquiry, as it can display how conditions have changed over time. The above statement refers to forms such as the comparative investigation of results over the previous years to date. Documents in this case refer to written proof in the form of records. Principals of the sampled schools were requested to inform the HoDs to share documents with the investigator in order to check the degree of interaction with policy documents in the process of implementation of their roles. The following files were collected for analysis: the School Development Plan (SDP), the School Learner Performance Plan (SLPP) and the School Valuation Policy (SVP). In addition to the above documents, the school

development programme, was requested to find out if HoDs complied with curriculum requirement and educational programmes, teacher assessment and evaluation including staff development.

3.5 DATA ANALYSIS

Data analysis is, according to McMillan et al., (2006:364), a continuous, recurring process that is integrated into all stages of qualitative research. Data analysis denotes a procedure of reducing and inferring data (Vithal & Jansen, 2001). In qualitative enquiry, documents analysis denotes to constructing logic of documents from the perspective of participants, considering design, topics and classes (Cohen et al., 2007). Document analysis is also seen as the practice of carrying directive, arrangement, and in addition sense to the bulk of the collected data throughout the study. Data analysis is further regarded as a method that compels the investigator to capture the understanding of written data. In this study, the main research question seeks to answer “how mathematics heads of department carry out their instructional leadership roles”. Bogdan and Biklen (2003:141) view data inquiry as a procedure of scientifically probing and ordering the interview transcriptions and supplementary resources collected, so as to allow the investigator to come to conclusions. According to the statement above, data analyses thus involve the organisation of data and breaking them into convenient elements, coding and blending them. On the other hand, Best and Kahn (2003:259) argue that, in an evocative data inquiry, the investigator defines all the essential characteristics of the study, comprising the location, roles being considered, observations and properties of any activity by participants. As the main focus of this study is outlined in the introduction above, the leading phase in examining records is to scrutinise and comprehend the facts collected from interviews in order to produce the main concepts contained in the files.

The investigative instrument used to study files is the generic qualitative approach, which according to Henning (2004:115), affords a set of inductive stages that would lead the investigator from reviewing tangible truths to interpreting abstract knowledge about them. The investigator started by first reading all the answers and remarks that addressed the study questions. All the developing themes were gathered and compacted, according to their relative to each other, and coded. Furthermore all the records that linked to each grouping were put together and an initial inquiry was

achieved. In this study semi-structured single interviews, focus group and document analyses were used as methods to collect data. All the school principals, Mathematics HoDs and mathematics educators in the FET phase from the purposively sampled schools, comprised the participants for the research.

In this research, data analysis involved breaking down large amount of data into vital pieces; the purpose being to allow the investigator to give meaning to the study theme. The records were related to the evidence from the literature review and this was also validated amongst the four schools to look for similarities and differences. The data collected from the process were cross-examined for subject matter compatible to the themes recognised in literature reviewed. The recognised topics were planned, and characterised as well as structured since this research followed thematic analysis. Thematic analysis is a technique meant for classifying, investigating, as well as recording themes (configurations) inside data. Braun and Clarke (2006) define thematic analysis as a method of scientifically classifying, consolidating, and offering insight into forms of significance across a data set. The advantage is that the configurations of significance that thematic analysis allows the investigator to discover the need significant relative to the specific subject and study inquiry being discovered. There are two core motives to practise thematic analysis namely user-friendliness and agility. Thematic analysis as a method is so flexible that it can be conducted in diverse ways. The process of thematic analysis originates as soon as the researcher begins to recognise and look for data meant for provisions of logic and matters of possible attention, normally this happens throughout data collection (Patton, 1990). The end point is the reporting of the content and the significance of forms in the records. Analysis consists of a continuous moving back and forward between data acknowledged. Writing does not happen at the end, but is an integral part of analysis.

According to my view, writing, therefore, ought to originate in stage one, with the writing down of concepts and possible coding themes, and remain through the coding practice. Phase one is where the investigator familiarises himself/herself with the data. Phase two is a stage of generating initial codes, whereas phase three involves searching for themes (Braun & Wilkinson, 2003). Phase four is about reviewing themes, and phase five deals with defining and naming themes. For each individual subject, one is required to conduct and transcribe a full investigation as well as

categorising the story told about the data. Phase six is about producing the report and is definitely the last stage.

3.6 TRUSTWORTHINESS OF THE STUDY

For the purpose of this research project, the focus in this topic was placed on credibility and dependability to ensure the truthfulness of the findings.

3.6.1 Credibility of the study

Trustworthiness refers to the communication between what participants of the study said as well as how the researcher represents their view points. Binder et al., (2006) define credibility as the “internal legitimacy in quantitative inquiry”. It has much to do with the confirmability of the outcomes of the study. Credibility was confirmed by doing triangulation and member checking. According to Binder et al., (2006), triangulation talks about using additional methods or participants and groups in the inquiry. For this determination, in this inquiry three groups of participants were interviewed, namely, school principals, Mathematics HoDs and mathematics teachers. In other words, member checking talks about a method whereby the investigator requests the participants to assess and evaluate data for precision and sense and is used in a qualitative investigation approach as a quality control method by which an investigator follows to expand the accuracy, reliability and legitimacy of what has been documented during a study interview. It is proper to allow the participants to take into account the recordings and the analysis, this statement is supported by Loh (2013). Member checking is often seen as participant authentication, informer comment, participant justification and relevance (Harper & Cole, 2012), though, Loh (2013) argues that participant examination is a complement data collection and an addition of investigator’s inquiry. In order to ensure validity of this study, member checking was used.

After each interview, records of the discussions were sent to the participants for validation and participants were given sufficient time to amend the texts. On conclusion of the whole study, report was taken to the participants as a technique of talking to them to ensure that their voices and views are represented the way it was told. This was done to ensure that the participants had a reasonable opportunity either

to approve or disapprove that the extractions of the data is the same as their visions, feelings and practises.

After this assurance, one then depended on the participants to validate the truthfulness and inclusiveness of the information summary and that facts were confirmed to be reliable. For this study, two participants were requested to check the accuracy of the report and to check if the explanation of their justification was satisfactory and illustrative, and if the subjects on the report are correct, and if my interpretation was fair and representative.

3.6.2 Dependability

The term dependability is used in qualitative inquiry to denote the magnitude where discrepancies can be described or traced. Dependability is known in quantitative research as reliability. Binder et al., (2006) advocate that dependability can be realized through an inspection trace. Transcriptions, summaries and audio-tapes have been preserved in order to be capable to talk about them in future should the need arise. Participants were treated as partners in presenting all perspectives equally and accurately to guard against power relations. The issue of asking leading questions to the participants was avoided at all cost. The previous practices and prejudices that might have had an influence on the explanation of the discoveries and to ensure any association between the interview and the research questions were acknowledged.

3.7 ETHICAL CONSIDERATIONS

Walter (2013:73) is of the opinion that ethics is concerned with the establishment of a set of moral standards that govern behaviour in a particular setting or for a particular group. Gray (2009:192) adds that the dignity, privileges and privacy of the participants in a study project all have to be respected during the collection, analysis and publishing of research findings. De Vos et al. (2005:57) maintain that ethical issues function as moral values and a foundation upon which each investigator should gauge his/her own behaviour and they are therefore to be continuously borne in mind and be internalised in the researcher's personality. O'Leary (2004:50) and Punch (2009:49) concur that investigators are absolutely accountable for the honesty of all features of the study practice.

The intention of the investigator in collecting data for a study is to collect a detailed explanation of events, which in most cases require participants to talk or tell someone about their private and most personal experiences. It is important to note that anybody taking part in social science study ought to be conscious of the universal arrangement agreed upon by researchers on what is appropriate and inadequate in the behaviour of technical and controlled study, Babbie (2007: 62) agrees with this assertion. For the determination of this research project, emphasis was put on the following ethical guidelines: informed consent, access to participants, voluntary participation, anonymity and confidentiality:

3.7.1 Access to participants

The interview guide was given in to the University of Pretoria Ethics Committee for consent. At schools, the heads of departments and principals were approached verbally and thereafter letters of consent formalised the agreement of participation. The teachers were approached verbally by the principals and once they had expressed their willingness, letters of consent also formalised the agreement.

Access to the schools was discussed at the early stages towards building a relationship with Mathematics HoDs and teachers but, more importantly, with the principals and their school governing bodies. The process originated with gaining consent from Limpopo Province Department of Education. Letters to the principals and school governing bodies of the four schools followed requesting permission to conduct study. The letters defined the study focus and purpose, and informed the participants of their right to take part or withdraw from the research in case of any distress. Before the initiation with data collection, official consent from the Research Ethics Committee is mandatory, and the approval came before the engagement of the participants. Communication asking for permission to carry out the research in schools was submitted at the Circuit Office for District Director's approval, and approval was granted within 14 days. Lastly letters to the principals, HoDs and teachers of the four research sites were submitted, inviting them to take part in the research.

3.7.2 Voluntary participation and informed consent

In any research, participants should decide willingly to take part without physical or emotional pressure, and must be aware of the period, means, likely dangers and the

purpose of the investigation. In fact, the study participants have the right to be well-informed about the environment and the significance of the study in which they are involved.

Before the commencement with data collection, the letter from the Department of Education approving the study to be piloted was produced for the participants to view. The importance of the consent letters to the participants was fully clarified. Cohen et al.,(2007:52), Basit (2010:60) and Neuman (2014:157) refer to informed consent as the permission individuals grant to participate in research after all facts pertaining to the study are given to them. The consent approval stated that participants were welcome to withdraw from the study should they feel uncomfortable to remain participating in the interview and the production of school official papers. The consent form made it clear that they would be audio taped during the interview and that would be finished through their consent. The purpose and aim of the investigation were clearly shown in the consent letter.

3.7.3 Anonymity and confidentiality

Confidentiality is a concern in interviews that require discussions. Confidentiality, belief and privacy are ethical issues that are crucial (Brynman, 2009:31). Participants' rights may be secure through the assurance of confidentiality. Before the commencement of the interviews, assurance was given to all the participants that their names or the name of their school would not appear in the study or any other publication and that no data discussed would be used against them. Pseudonyms were used throughout the study. Walter (2013:82) conceptualised the concept of anonymity to refer to the investigator's guarantee and responsibility not to reveal the study participants. A subject or participant is therefore, considered anonymous when, in the words of Cohen et al., (2007:64) "the investigator or another person cannot identify the participant from the evidence delivered". There were a total of 13 participants comprising of four principals, four HoDs and five mathematics teachers. Their anonymity was ensured because none of their identities and that of their schools were revealed (Burton & Bartlett, 2009:70).

3.8 THE PILOT STUDY

The investigation began with piloting the interview questions to make sure that the questions were vibrant and unambiguous. Kim (2010) refers to a pilot study as being a small – scale methodology test done in planning for the authentic study. This kind of study is conducted to make sure that the planned methods and possible ideas would be practical. The study was planned for four secondary schools and one of the schools in the circuit (not one of the sampled schools) granted access to use the pilot on them. In piloting, the researcher managed to interview the school principal, the Mathematics HoD and two mathematics teachers. Interviewing the principal on sub-question one, which is on how do mathematics heads of department carry out their instructional duties, and then the following theme emerged.

Managing curriculum and instructional programme

On the issue of managing the curriculum, the principal expressed satisfaction with his head of department. He commended his work in this regard. He mentioned that the HoD takes responsibility for his actions and is a good role model who knows and understands his department very well, and allocates resources effectively. He communicates well with teachers and provides direction when needed. In the interview with the teachers on how they view handling the curriculum and lesson programme, they praised an encouraging learning environment, but they talked much about social interaction between learners and managing classroom activities. They stressed that the role of the teacher is not to put more attention on administration, but on learning and teaching. This theme led me to press them further on learning space and learner involvement.

Learning Space:

Kruger (2003:6) views learning space as the physical setting which includes the obtainability of facilities and apparatus in a school. The author (2003) also noted that learning space is an important element in establishing a complete philosophy of teaching and learning. Teachers complained of the lack of furniture and over-crowding in the classrooms. One of the teachers said:

Most of the time, our learners are involved in suitable actions, but it is problematic to give individual attention to a pupil who may experience difficulties. It is better to monitor group work *than individuals.*

When the HoD was asked whether he was aware of the difficulties teachers experience in class, with regard to learning space, he said:

Certainly, I know about that and really it is painful to reflect on it. The principal and the SGB communicated with the circuit about that shortage, but were referred to the district office. They later secured a date with the district office, but their response was that the school is on the waiting list. One of the teachers interjected and said most of the classes we use are old mobile classrooms as you can see.

Learner Involvement:

Teachers mentioned that learners are committed to learning programmes and that their HoD is a focused leader who continually supported and guided collaborative work. This learning environment is a reflection of what Burden (2006:3) views as an encouraging atmosphere, where in learners feel secure, appreciated and cherished in order to acquire new abilities. Through this interview I learnt that most of the time learners were involved in appropriate work actions and support materials such as learners' textbooks were available. The HoD about the control and retrieval of LTSM stated that:

The mandate for real learning required me to obtain, allocate, and sustain the standard existing in the school. I make sure that teachers have all the equipment needed to achieve their teaching objectives.

Based on this pilot study, the participants answered the questions well and I was convinced that they understood my questions. I was convinced that I'm ready to start with the actual study. I went back to the research sites to negotiate with the principals to gain access to their schools in the afternoon for interviews.

3.9 DELIMITATION OF THE STUDY

This research was delimited to four secondary schools in the Sekgosese East Circuit of Mopani District in Limpopo Province and participants were principals, Mathematics HoDs and mathematics teachers in the FET phase. In addition, the research was limited to one province only.

3.10 CONCLUSION TO CHAPTER 3

This chapter has outlined in detail the research design and methodology in answering the research questions for this study. An explanation of the qualitative data, the collection strategies used, which in this study were semi-structured individual interviews, focus group and document analysis to gather the required data were fully given. Sampling procedures, and data collection, as well as data analysis were discussed. Credibility and dependability for trustworthiness, ethical considerations, delimitations and limitations of the study were also reviewed to confirm that the research questions have been adequately answered. The following chapter presents the conclusions and analysis from the data collected.

CHAPTER FOUR

PRESENTATION OF DATA AND ANALYSIS

4.1 INTRODUCTION

In the preceding chapter, the research methodology and design were presented, encapsulating the research approach, paradigm and design, followed by data collection strategies, and the sampling strategy including the careful selection of participants. Data analysis, trustworthiness and the credibility of the study as well as ethical considerations were outlined. In this chapter, the literature review and empirical study results are offered and discussed in accordance with research problems and themes that arose from the data collected through the interviews. The objective of this study is to discover how Mathematics HoDs carry out their instructional leadership role in selected secondary schools and is directed by the following main and secondary questions which are set out below.

Main research question:

What is the instructional leadership role of mathematics heads of department in the Further Education and Training phase?

Secondary research questions:

- How do mathematics heads of department carry out their instructional leadership role?
- What challenges and queries do mathematics heads of department experience when carrying out their instructional leadership role?
- What strategies can be suggested to improve the leadership role of mathematics heads of department.

The records were presented in an expressive, description procedure deliberated in the succeeding section

	SUB-THEMES
1. Programme organisation and instructional plan	Formation of the constructive education setting. Information of the programme and instruction plan.
2. Observation of teachers	Assessment of teachers Teacher appraisal Observation of teachers
3. Staff development	Significance of developing teachers The environment of staff development Difficulties encountered in the process of staff development

4.2 Biographic information of the sampled schools

School D performed well in all the years under study, and School C performed well in all the years except in the first year, which was 2014. School A did well in the last two years (2016 & 2017), whereas School B performed well only in the previous year, which was 2017.

Table 4.1: Presentation of the results in mathematics for the participating schools for the past four years

Site	2014	2015	2016	2017
A	45%	50%	71,4%	90%
B	25%	23,1%	28,6%	60%

C	38%	83,3%	91,7%	66,7%
D	92,3%	92,9%	79%	60%

4.3 ANALYSIS AND REPORTING OF DATA

The explanation of analysis and reporting of data will follow after the introduction of participants.

4.3.1 Biographic information of school principals

All the principals had Bachelor of Education Honours degrees as the highest qualification. Two of the principals had never taught mathematics in their career. Three of them are about to exit the system due to retirement. They all have experience in management.

Table 4.2: Introducing research participants (principals)

SCHOOL	Years in teaching practise	Years in Mathematics instruction	Years in Leadership	Qualifications
A	34	06	28	JSTC, BA, Bed
B	27	-	14	STD, FDE, BA, ACE in Management
C	34	-	19	JSTC, ACE in Management, HED, BA, Bed (Hons)
D	36	01	31	JSTC, SED, BA, Bed (Hons), PGD

4.3.2 Responses from principals

On research sub-question one: **How do mathematics heads of department carry out their instructional leadership roles?**

The following themes: administration, curriculum management, supervision and support arose from the above question.

Participants (principals) noted that it is part of the HoD's responsibility to administer some of the duties, either to assist them as principals or to do such duties when the principal is not at school. One participant (principal) mentioned that:

HoDs should admit learners in the beginning of school term. He/she should control the attendance register, the admission register and the stock register.

Other principals agreed with the participant mentioned above, but they stressed the issue of curriculum management. Principals believe that HoDs have one big responsibility, which is to make sure that learners perform well in mathematics at school. When mentioning good achievement in mathematics one principal noted that:

If learners do not obtain good results in mathematics, they will not pass a grade especially the GET band which is the foundation for FET phase. She (the principal) said that for a learner to pass a grade he /she must obtain 40% plus in mathematics.

One noted that the Department of Basic Education has good programme for mathematics. If HoDs can bring programmes into their schools which support the DoE policy on mathematics it means that, by the time learners get into the FET phase they will not have difficulties in understanding the basics in mathematics. Another participant mentioned the issue of supervision and support. He stressed that sometimes HoDs are not doing enough to supervise educators. As part of his evidence for this he said that:

One day a mathematics curriculum advisor arrived at school as part of the school support programme. The curriculum advisor demanded written books from learners to check if the work of teachers complies with the mathematics pace setter. The visitor found that the teachers did their work, and they have more homework and class work activities. He asked if the HoD does monitor her work. The HoD agreed that he often goes with her (the teacher) in class and sometimes checks the teacher's work. The answer was still yes, but the HoD could not produce any evidence to prove his

allegation. I was called in as the principal to come to the rescue of the HoD, but I was embarrassed because I put all my trust in him since I don't understand mathematics subject.

Principal from school D highlighted that, as principals, we should constantly be checking and supervising our HoDs so that they are always kept on their toes as far as supervision and support are concerned.

On research sub-question two: **What challenges do mathematics heads of department experience when carrying out their instructional leadership role?**

Supervision of teachers emerged as a theme. Principals agreed that HoDs have very large classes to supervise. In most cases the classes are over-crowded. One principal (school B) said:

The HoDs are not the only ones to blame alone but even the Department played a part in the challenges that are persistent in our schools. This group of HoDs did not receive any formal training from the Department after their appointments. Our school tried to organise in-service training by out-sourcing local talent.

Two principals (school C and school D) differed from the statement from the principal above in the sense that their HoDs lack the skills and knowledge to execute their duties. They mentioned that immediately after their HoDs were appointed, they took them to high performing schools to learn how to manage their curricular activities. All the principals agreed that the lack of classrooms and over-crowding both remain a serious challenge. A principal participant from School B, a school that had not performed well in the past three consecutive years except in 2017 complained that her HoD was not doing enough as far as supervision of teachers was concerned. She mentioned that:

For the past eight years since I got this principalship post, my HoD has never appraised the teachers, nor did he observe them in classes but evaluation was conducted. Late in 2016, I decided to take my HoD and visited a school that was known to be good in mathematics results. We sat down with the HoD and principal from that school and discussed how to achieve good results in this subject. It was after this meeting that I started seeing good results in 2017. My HoD is now having a programme on how to observe teachers in class. The teachers were given this programme.

On research sub-question three: **What strategies can be suggested to improve the leadership role of mathematics heads of department?**

Staff development is one of the themes that emerged with the sub-theme: Problems encountered in the process of staff development. Authors like Brandsford, Brown and Cocking (2001:61) stressed that educators are inspired when they see the value of what they do or have and that the information influences others positively. One HoD noted that staff development gave them problems. HoDs mentioned that the difficulties experienced in staff development are not as a result of school management only, noting that the programmes are conducted after school or on weekends.

One of the things principals mentioned as a strategy was to engage the Department of Basic Education to erect more classrooms to alleviate over-crowding. One of the themes that arose from this research question was staff development. The importance of staff growth and the difficulties encountered in the process of staff development emerged as sub-themes.

Staff development

Staff development comprises numerous facets, and some of the HoDs questioned the piloted programmes at their schools using gatherings, staff improvement events, and both formal and informal classroom observations.

Conclusion

Principals concurred that HoDs didn't get any official training from the department after they were appointed, however they further praised their HoDs for the good work done at schools. HoDs as instructional leaders are obviously the most important role players for the establishment of a progressive learning atmosphere in their departments. In that process HoDs have an obligation to ensure good principles of teaching and learning in mathematics as prescribed in the PAM document (RSA, 1998). Thus, I agree that HoDs are described as learning leaders and this idea is supported by Du Four (2002:12-15).

4.3.3 Biographic information of the Mathematics HoDs

Two of the heads of department had studied the Advanced Certificate in mathematics. Furthermore, three of them had completed postgraduate diplomas while the fourth one had studied a B.TECH degree and their experience in leadership ranged from six (6) years to twenty one (21) years. They are all experienced mathematics teachers.

Table 4.3: Introducing research participants (Mathematics HoDs)

School	Years in teaching practise	Years in Mathematics instruction	Years in Leadership	Qualifications of Mathematics HoDs
A	24	-	10	SPTD, ACE in Natural Sciences, PGD
B	23	23	07	STD, ACE in Maths, BEd (Hons), PGD
C	18	16	06	STD, ACE in Maths, PGD
D	36	36	21	JSTC, SED, NHDIP, B.TECH

4.3.4 Responses from Heads of Department

On research sub-question one, the theme of managing the curriculum and instructional programme emerged a sub-themes:

Programme information and learning plan

Ayers and Gray (2000:15) assert that HoDs and educators must be well-informed about their programme area, have appropriate instructional talents, and be prepared with professional practices. Data collected proved that it is apparent that HoDs valued

programme provision as their key concern. Participants identified conceptual understanding, teaching knowledge and attitude towards the subject. HoDs established high hopes for both learners and educators to guarantee the extraordinary achievement of learners, effective teaching and learning which the programme endorsed.

I discovered from the interview that the HoD from School A had a problem with mathematics content, but the HoDs from other three schools did not experience any problem. Sallis and Jones (2002:24) are convinced that HoDs are duty-bound to support educators in producing new information and abilities that promote values of the schools as high as possible but it seemed impossible for the HoD at School A to keep up with all the challenges and growing difficulties over time. Sometimes it is difficult for HoDs to implement their roles due to the absence of necessities. In addition, the HoD at School A said:

I want to be equipped on how to provide educators with direction and sustenance in their effort.

In addition he said:

The in-service training prospects organised by the district never incorporated deliberations about content knowledge and training procedures.

On research sub-question two, a theme about the supervision of teachers emerged with the sub-themes: appraisal, observation and evaluation of teachers.

Assessment of educators

Educators should be exposed to assessment in order to sustain the ethics of good performance. Mercer et al.,(2010:14), view the main goal of assessment as to advance learner results and excellence instruction. It was encouraging to discover that HoDs plan their lessons together with their educators. In this respect a teacher from school D said:

Our HoD assists in developing talents for curriculum delivery in an effective and competent way. She goes further and helps us with the interpretation of the syllabus, lesson preparations, evaluation and the assessment of learners.

All HoDs applauded the Department of Basic Education for developing such an amazing tool called IQMS, but unfortunately it is not properly practised at schools. One HoD said:

We only sit down in the boardroom to fill in IQMS forms. The purpose of appraisal is not achieved due to the lack of support from the principal.

Observation and evaluation of teachers

The role of heads of department as asserted by Gunter (2001:110) is to display and assess the value of teaching and learning in their schools. HoDs have to assess educators by focusing their attention on the value of programme fulfilment, instructional and learning structures for determining programmes as in the PAM document. The HoD from one of the schools under study said that:

I'm doing my best on evaluation, but due to heavy workload, it is not easy to achieve the desired results.

Two HoDs agreed saying that they are able to evaluate their teachers because their schools are big and they have enough teachers in the phase. They disputed the issue of heavy workload.

It is not so simple to observe teachers due to a heavy workload but to a minimal extent, I do observe my teachers in class, one HoD said.

On research sub-question three, the theme of staff development was seen as a strategy to overcome the problems or challenges encountered by HoDs. Staff development is a concept that was endorsed throughout the course of the interview process. It validated the schools' obligation to improve educator usefulness and to ensure job satisfaction (Dean, 2002:4). In this view, some HoDs showed that it is their duty to maintain educators in the acquisition and presentation for new teaching strategies which are vibrant to improve performance in schools. A sub-theme that emerged was:

The importance of staff development

Beerens (2000:6) is of the opinion that. The educator capability is essential for learner attainment. To increase learners' performance, the nurturing of the excellence of educators over development was regarded as very important (Beerens, 2000:6). All the HoDs interviewed agreed that staff development is an essential aspect and inspiration for work performance, abilities, and increasing the specialised awareness to fulfil their duties successfully.

Conclusion

In conclusion, HoDs are of the view that the Department of Basic Education did not do them justice due to the fact that they were not prepared for the new job. They all confirmed that they had received assistance from the district office. It was the curriculum advisors who talked to HoDs telling them what kind of expectations was demanded from them. It was evident that schools which took steps to organise in-service training for their newly appointed HoDs, paid off, because their schools produced better results in mathematics.

4.3.5 Biographic information of the mathematics teachers

The years in mathematics teaching experience range from four (4) to twenty (20). All the teachers were well qualified, with the exception of one educator. There was a teacher who had a Bachelor of Science degree and one who had a B.TECH and a master degree. In School B the HoD was the only teacher in the FET phase. The experience in leadership of the teacher in School A, was back in his home country Zimbabwe.

Table 4.4: Introducing research participants (mathematics teachers)

	Years in teaching experience	Years in Mathematics instruction	Years in Leadership	Qualifications
A	21	21	12	BSc (Maths & Stats), DSE
B	-	-	-	-
C	17	17	-	STD, ACE (Maths)
D	04	04	-	PGCE
D	10	10	-	SPTD, ACE (Maths)
D	27	20	-	STD, B.TECH, MBA

4.3.6 Response from mathematics teachers

On research sub-question one, most of the teachers praised their heads of department. Teachers mentioned that the HoDs help them with resources to facilitate teaching. Teachers agreed on the issue of the lack of training on the side of HoDs, but even if their HoDs had no formal training to help them overcome problems in class, they still do their best to guarantee teaching and learning. One teacher said:

If I experience any shortage of resources like learner teacher support material, my HoD will move around schools to get one, so to me that shows commitment on his side.

A teacher from School A, said:

Even if my HoD does not have mathematics as one of his major subject, he does his best to see to it that our learners learn mathematics as well as possible.

On research sub-question two, the sub-theme of observation and evaluation emerged. Teachers at School C and School D were happy that their HoDs are able to observe them in class noting that they see this process in a positive way because it is designed to assist them as teachers. At school A and B, teachers mentioned that their HoDs have heavy workloads, so it is difficult to get time to observe them in class. They further mentioned that during subject meetings, they discuss strategies to help each other. Teachers agreed that evaluation is done at schools but on a minimal level. Some just said that they are not evaluated at all. Another sub-theme that emerged was discipline during lesson presentations. Some teachers saw discipline as a challenge in their classes. They mentioned that they were experiencing difficulties with learners who misbehaved in class. They highlighted that time was lost on addressing the conduct of rude learners. A teacher from School B said:

I find it very difficult to deal with unruly learner conduct. These learners seem to intentionally disturb learning, so that more time is wasted to calm them down. An educator from School C added that, *should you reprimand these rude learners you are also inviting problems from their parents or guardians.*

I asked the teacher if the school does not have a code of conduct for learners, the educator said: The *school has a code of conduct, but the process of disciplining learners is lengthy and takes a lot of time.*

A teacher from School D said that at their school, the school governing body has a sitting every two weeks to deal with troublesome learners. A teacher from school A said that*:*

HoD helps us address negative behaviour in the classes. I require some induction workshop to deal with classroom management because HoDs are always committed.

On research sub-question three, the only strategy teachers suggested was that of forming a mathematics body called Professional Learning Community. In this body, a group of teachers would gather to discuss content and strategies on how to approach certain topics. It is at this kind of meetings where less effective teachers can find assistance. A teacher from one school said:

It is here where our HoD can be assisted as to how to support us. It is here where he can increase his mathematics knowledge.

Conclusion

All teachers agreed that their HoDs are hard-working professionals, who are always willing to assist them. Some of the teachers felt that principals should try hard to help them with class discipline because more work is done by HoDs. Obviously it is confirmed above that the most substantial motive of educators should be professionally advanced is based among others, on the belief that the value of educators completely influence learners' experiences and achievement. Therefore HoDs as instructional leaders have a responsibility to motivate, encourage and develop the skilled educators, since it directly relates to educator effectiveness.

4.4 DOCUMENT ANALYSIS

I received documents that were used by heads of department in all the four selected schools. From all schools, I received documents only prepared at district office, which were; Pre-Moderation Form (PMF) for the FET and the Class Units Monitoring Instrument (CUMI). When I looked at the PMF, I realised that the content is about checking if teachers are assessed according to the recommended principles. The CUMI forms check the content of the teachers' files and classroom practice of teachers. The Teacher File Monitoring Tool (TFMT) is for monitoring if any document needed is obtainable in the educators' file, for instance, the time-table, the yearly teaching plan, lesson plans, mark-sheets, assessment tasks and memoranda. One important document that I received was the Learner Monitoring Tool (LMT) which helps to monitor the given activities to learners; if they are in accord with the work programme and lesson strategies for educators. It further checks whether learner books are controlled and feedback given in time. The last document was the Class Visit Tool (CVT) which helps to check if there is a class time-table, and classes are properly organised to manage discipline. I was impressed to find that each school has a copy of the mathematics subject policy for FET band. When trying to find out about the similarity of the policy, I was informed that the circuit subject committee has a responsibility to assemble all teachers of that phase to make policy draft and the committee makes a point that a final product is produced. All schools had these templates because they were supplied from the district office.

4.5 CONCLUSION TO CHAPTER 4

In this chapter, data analysis has been made available. The data collected demonstrated how heads of departments were not prepared for their new role after promotion. Data from interviews showed that HoDs had unmanageable workload and they also required time to be acquainted with their leadership roles. This study has revealed that schools need to create opportunities for HoDs to gather, and possibly to cultivate leadership abilities and talents in order to cope with their new roles. The study further revealed that HoDs needed a great deal of knowledge on how to develop their staff. Heads of department confirmed that it was difficult for them to introduce staff development programmes due to lack of time and heavy workloads. It was discovered that their roles comprised unstructured activities including the controlling of assets and assisting in classroom discipline. It was further discovered that HoDs failed to show accountability and staff development programmes when confronted by curriculum advisors. This chapter, including the preceding chapters, has discussed suggested proficient improvement for HoDs as leaders of instruction to boost teaching and learning in their respective schools. The next chapter will pay more attention to the discussion and summary of the findings, conclusions, interpretation and recommendations for future research studies.

CHAPTER 5

SUMMARY, RECOMMENDATIONS AND CONLUSION

5.1 INTRODUCTION

The preceding chapter conveyed an analysis of the data and the subjects that arose from the empirical study. The determination of this chapter is to synthesise and consolidate the outcomes of this study by providing a summary and to make recommendations.

Chapter 1 provided an outline of the study which included the rationale for the study, the problem statement, the purpose and aim of the research. Research methods, trustworthiness as well as ethical considerations were also highlighted.

In Chapter 2 an examination of the appropriate literature was undertaken which reflected the findings of studies focusing on the instructional leadership role of the Mathematics HoDs in the South African context, as well as the international literature. The literature review concentrated on the instructional leadership role of heads of departments, instructional leadership and professional learning community, effective leadership for teaching and learning in mathematics. The literature further dealt with the role of HoDs in leading mathematics teaching and learning, professional development for mathematics educators, professional development and reflection, roles and responsibilities for Mathematics HoDs, the competences and skills required of HoDs, and the challenges Mathematics HoDs experience when carrying out their instructional leadership roles and conceptual framework.

In chapter 3, I discussed the research design, and methodology used in this study. The motivation for choice of research methodology, data collection methods and data analysis were given in detail. Strategies for enhancing trustworthiness of the study were also outlined.

Chapter 4 provided a detailed analysis of the data. The research conclusions were presented in terms of the themes and subjects which arose from the data collected during the interviews. The aim of this study is to examine the instructional leadership role of Mathematics HoDs in Further Education and Training Phase in Limpopo secondary schools.

5.2 SUMMARY OF RESEARCH FINDINGS

One of the essential matters South African secondary schools are faced with is to acknowledge the instructional leadership role of Mathematics HoDs in the establishment of quality education. The reorganisation of schools to boost educators has led to the decentralisation and sharing of leadership, keeping teaching and learning at the centre of all their activities. Expectations from the authorities, criticism from stakeholders and problems from institutions have resulted in rendering the instructional leadership role of HoDs very difficult and unstable. Their role has become challenging over time and the amount of work expected from them is too great and is in contrast with their thinking and as a result a breach is generated between their managerial tasks and the accomplishment of their role as instructional leaders. The demands made on their workload, the lack of training and experience in the job, further compounds the problems of implementing their roles as instructional leaders.

Semi-structured individual interviews were conducted with school principals and Mathematics HoDs at the four sampled secondary schools in Limpopo Province, as well as focus group with mathematics educators. Important documents were also checked and scrutinised.

The outcomes from the empirical study indicate that, whereas HoDs have an understanding of their role as instructional leaders, aspects like workload and new responsibilities hamper their performance. These HoDs are unable to function effectively as instructional leaders, because preparation has been insufficient and unsuitable. The outcomes also showed that the managerial tasks of HoDs leave inadequate time for them to put enough consideration to instructional responsibilities, teaching and learning. The results, hence, suggest a necessity for capacity building of Mathematics HoDs, concentrating on fostering the talent of HoDs as instructional leaders to improve genuine teaching and learning. The manner in which professional developmental programmes for HoDs are organised should be revisited by service providers. Thus the outcomes are essential for the creation and application of school-based measurements, constructing strategies for the planning of professional growth programmes meant to support HoDs as instructional leaders.

On closer examination of the themes and subjects that arose from the data collected, the results founded on the empirical study on the instructional leadership role of the

Mathematics HoDs and the effects related to teaching and learning will be checked and outlined in detail so that suggestions can be made.

5.3 OUTCOMES FROM EMPIRICAL STUDY

The findings presented below arose from the qualitative data collected and analysed.

- HoDs have a responsibility to ensure that effective curriculum delivery is prioritised in schools. It is important for them to collaboratively advance diverse learner assessment with educators collaboratively and assist them to make suitable intervention strategies for specific learners based on assessments results.
- Overcrowding is found to be one of the factors that hamper quality learning in schools. It is an external factor to the work of HoDs, but school governing bodies should come in to assist on this one. This issue is coupled with furniture for the effective arrangement of our classrooms.
- HoDs have a task to supervise teachers on curriculum delivery. It is part of the HoDs' formal accountability to guide educators to learn from evaluating and reflecting on classroom practices. HoDs have to involve educators in teaching space observation, to evaluate achievement of mathematics educators. It was discovered that the HoDs should involve educators in deliberations to launch support to advance their teaching practice. It is also important for HoDs to communicate the intentions of lessons observation accurately.
- All mathematics educators have to be appraised to advance learners' outcomes and the quality of teaching. HoDs ought to ensure that appraisal programmes are linked to the school development plans for the purpose of professional development of their teachers.

- Mathematics HoDs should be encouraged to assist on School Development Teams (SDT) to maintain chances created for staff development. HoDs should develop special capabilities in instructional leadership in order to have a good understanding of their individual teachers and to support ways of refining certain features of their teaching performance.

For schools to provide quality results, they require effective teachers. The main function of HoDs as instructional leaders is to inspire and encourage teachers to

produce the required results. Grounded on the discoveries from the experimental study, the investigator will now make recommendations on how to report the results.

5.4 RECOMMENDATIONS BASED ON FINDINGS

The critical aspect of HoDs as curriculum leaders is the focus of their social setting in which they are located in order to advance teaching and learning. I assumed that they are placed in their positions because of their capabilities. It is necessary for them to have expert knowledge and anatomy to use this knowledge and skills to support teachers in designing favourable conditions to further advance the quality of teaching and learning.

Based on the findings from qualitative records, the following are recommendations emerging from the study:

- Mathematics HoDs as instructional leaders should continuously strive to acquire new methods of imparting knowledge to enable them to assist educators in handling curriculum and instructional programmes professionally. It is suggested that HoDs show correct subject knowledge to assist educators in establishing significant knowledge capabilities for their learners. This information will assist HoDs to deal with the challenges educators are experiencing in the application of the teaching strategies. It is the obligation of HoDs as instructional leaders, to help educators in creating good conditions in which learning can take place. HoDs ought to work collaboratively with educators to improve learner achievement in mathematics. It is the obligation of HoDs as instructional leaders to focus their attention on the physical formation of classrooms, the availability of LTSM and encourage educators and learners to table classroom instructions that are helpful and are dedicated to meeting their needs. Subject meetings by educators need be used as a platform to interchange thoughts to solve situations in the classroom. Their deliberations should embrace how to apply the diverse types of assessment and to make use of assessment to monitor learners' progress.
- HoDs as instructional leaders have to inspire the performance of educators by supporting and assisting them to provide effective teaching. They must give

service collaboratively with the educators to encourage cooperation in order to foster conditions for enhanced teaching.

- HoDs must engage in and promote teacher appraisal. HoDs should advance staff appraisal structures and plans for educators after detecting the areas in which educators require development. Educator appraisal structures should concentrate on the implementation of educators' teaching capabilities with a view for development. Since HoDs have been complaining of limited time to engage teachers for appraisal due to managerial tasks, time should be put aside to engage educators. They should plan carefully to use their free periods to assist teachers in the classrooms.

HoDs should focus on specialised improvement for educators. HoDs must motivate and encourage the professional growth of educators because it is important for teachers to expand their subject knowledge and talents during the course of their teaching careers. The methodologies for staff development should be categorised by means of mutual negotiation, dialogue and cooperation.

Bearing in mind the strong evidence that points to the key role the HoDs play in the successful schools investigated in this study, together with the gaps that exist in the literature, several conclusions can be drawn as to the effectiveness of the Mathematics HoDs and their department at any school. Certain characteristics of instructional leadership appear to be necessary for the Mathematics HoDs to influence classroom practice and positively influence learner performance and these include:

- coordinating the coverage of FET mathematics curriculum;
- observing teaching, supervising and evaluating the quality of mathematics teaching;
- monitoring learner progress through learners' books, assessment programmes and report cards;
- planning the setting of important targets with teachers;
- developing a departmental plan to improve learners' results in the FET phase;
- promoting academic standards and providing incentives for learners;
- effective sourcing and management of learning and teaching support material in the department; and
- promoting professional development amongst teachers.

It is clear from data collected that HoDs experienced difficulties in achieving their roles as instructional leaders and this is attributed to the lack of training. The next section will report problems by setting out suggestions for future research.

5.5 SUGGESTIONS FOR FURTHER RESEARCH

While conducting this study I identified several aspects that require further research. Those are:

- discipline in the classroom; (educators who have skills to teach, do not have discipline problems in class)
- continuing professional development for HoDs; and
- evaluation of mathematics teachers by HoDs.

It is exciting to realise that the qualitative data initiated that educators claim instructional leadership from the HoDs to improve the school environment and boosting their confidence. The challenges identified from the leadership role were inadequate training and professional development of HoDs.

Instructional leadership in Limpopo secondary schools demands reconceptualisation of leadership practice. The department should search for relevant models of leadership to improve mathematics teaching. However, the investigation highlighted that instructional leadership has more to offer in secondary schools.

I am of the opinion that this study will promote curiosity and attentiveness amongst stakeholders and the Department of Basic Education, including policy makers, with regard to the significance of instructional leadership for effective school transformation in Limpopo secondary schools.

5.6 DELIMITATIONS OF THE STUDY

The study was conducted in four secondary schools in one circuit of Limpopo Province and the strength of the findings would be improved if a wider population of HoDs within this subject area were investigated. Nonetheless, it must be recognised that the findings of this study may shed light to many South African secondary schools. This study has looked at four HoDs from the selected secondary schools and found that

they were experienced teachers. Evidence from this study shows that, Mathematics HoDs lead their departments without knowledge as required.

5.7 CONCLUSION TO CHAPTER 5

The aim of this inquiry, which was to examine the instructional leadership role of the Mathematics HoDs in the FET phase in Limpopo secondary schools, has been accomplished. On the basis of the findings reported in this study, the instructional leadership role can be defined as the deliberate and focused attempt by a superior such as an HoD to lead, manage, guide, mentor, coach and engage with subordinates in an educational setting. The intention thereof is to bring about improvement and better performance of learners in a school. The ability and strategies required to motivate staff members are an integral part of the leader's role so that their morale can be boosted, which can help to improve job satisfaction and ultimately raise level of the performance of staff members.

Data analysed in this study suggested that the formation and utilisation of Professional Learning Communities have a positive impact on the improvement of learner achievement. Accordingly, PLC should be used to share and transfer knowledge, promote professional fulfilment, capitalise on positive diversity and provide for lateral leadership. The challenge however remains that the HoDs were not trained to perform their duties. This lack of proper training for HoDs created a gap that proved to be difficult to close and this has led to poor performance by the learners.

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ANNEXURE A: Request for permission to conduct research in the province

University of Pretoria
Private Bag X20
Hatfield
0028

The Head of Department
Limpopo Provincial Government
Private Bag X 9489
POLOKWANE
0700

Dear Sir / Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN THE PROVINCE

My name is Nchima Freddy Mashapa, a student at the University of Pretoria, Faculty of Education, in the Department of Education Management and Policy Studies. The research I wish to conduct for my Master's dissertation is titled "**The instructional leadership role of mathematics heads of department in Limpopo secondary schools".** The purpose of the study is to examine the instructional leadership role of the Heads of Department in supporting teachers in their departments.

I am requesting permission to conduct research in some sampled schools in Sekgosese East Circuit, Mopani District. All information that may result in identifying individuals or schools will be removed and false names or codes be used where specific reference may be made to a school or individual.

Participation in the study is voluntary and the participants have the right to withdraw at any stage of the study with no negative consequences to them. All participants will be given letters of informed consent which will explain the nature, purpose and objectives of the study.

This study will be conducted under the supervision of Dr RN Marishane (University of Pretoria). If you require any further information, please contact me at 083 391 1053 or nchimamashapa@gmail.com.

Thank you for your time and consideration in this regard

Yours sincerely

Nchima Freddy Mashapa

Student number: 12258696

ANNEXURE B**:** Department of Education Limpopo approval letter

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

Ref: 2/2/2 Enq: MC Makola PhD Tel No: 015 290 9448 E-mail: MakolaMC@edu.limpopo.gov.za

Mashapa NF
University Of Pretoria
Private Bag X40
Pretoria
0002

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

1. The above bears reference.
2. The Department wishes to inform you that your request to conduct research has been approved. Topic of the research proposal: **"THE INSTRUCTIONAL LEADERSHIP ROLE OF MATHEMATICS HEADS OF DEPARTMENT IN LIMPOPO SECONDARY SCHOOLS ".**
3. The following conditions should be considered:

3.1 The research should not have any financial implications for Limpopo Department of Education.

3.2 Arrangements should be made with the Circuit Office and the schools concerned.

3.3 The conduct of research should not anyhow disrupt the academic programs at the schools.

3.4 The research should not be conducted during the time of Examinations especially the fourth term.

3.5 During the study, applicable research ethics should be adhered to; in particular the principle of voluntary participation (the people involved should be respected).

CONFIDENTIAL

Cnr. 113 Biccard & 24 Excelsior Street, POLOKWANE, 0700, Private Bag X9489, POLOKWANE, 0700
Tel: 015 290 7600, Fax: 015 297 5920/4220/4494

The heartland of southern Africa - development is about people!

ANNEXURE C: Request for permission to conduct research in the circuit

University of Pretoria
Private Bag X20
Hatfield
0028

The Circuit Manager

Sekgosese East Circuit

P.O.BOX 136

MOOKETSI

0825

Dear Sir / Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN YOUR SCHOOL

My name is Nchima Freddy Mashapa, a student at the University of Pretoria, Faculty of Education, in the Department of Education Management and Policy Studies. The research I wish to conduct for my Master's dissertation is titled "**The instructional leadership role of mathematics heads of department in Limpopo secondary schools**". The purpose of the study is to examine the instructional leadership role of the Heads of Department in supporting teachers in their departments.

I am requesting permission to conduct research in some sampled schools in your circuit. All information that may result in identifying individuals or schools will be removed and false names or codes be used where specific reference may be made to a school or individual.

Participation in the study is voluntary and the participants have the right to withdraw at any stage of the study with no negative consequences to them. All participants will be given letters of informed consent which will explain the nature, purpose and objectives of the study.

This study will be conducted under the supervision of Dr R N Marishane (University of Pretoria). I further request you to allow Mathematics HoD and his/her teachers to participate in this project. If you require any further information, please contact me at 0833911053 or at nchimamashapa@gmail.com.

Thank you for your time and consideration in this regard

Yours sincerely

Nchima Freddy Mashapa

Student number: 12258696

Signature……..

Supervisor's Signature ……

ANNEXURE D: Permission to conduct research in the circuit

LIMPOPO
PROVINCIAL GOVERNMENMENT
REPUBLIC OF SOUTH AFRICA

Enq: Mashimbye TS
Tel : 0716793339

Sekgosese East Circuit
House No. 483
SENWAMOKGOPE TOWNSHIP
0815
08 NOVEMBER 2017

TO WHOM IT MAY CONCERN

PERMISSION TO CONDUCT RESEARCH: MASHAPA NF

This is to certify that MASHAPA NF ID. No. 6504275511082 has been granted permission to conduct research within the schools in Sekgosese East circuit.

This permission is granted on condition that it will not compromise learning and teaching time and hope that Principals and all stakeholders mentioned in his research will assist in him realizing his ambition to complete his studies.

The circuit wishes the researcher good luck in his endeavor to complete his studies

Yours Faithfully

…Mashimbye TS…….
CIRCUIT MANAGER
SEKGOSESE EAST CIRCUIT
P.O.BOX 136 MOOKETSI Tel: 015 8740032/ FAX: 0158742121
"Working together we can do more in providing quality education"
Education is a Pre-condition for development

The heartland of Southern Africa – development is about people

ANNEX**URE E: Request to SGB/principal to conduct research in the school**

University of Pretoria
Private Bag X20
Hatfield
0028

LETTER TO THE SGB/ PRINCIPAL

Dear Sir / Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN YOUR SCHOOL

My name is Nchima Freddy Mashapa, a student at the University of Pretoria, Faculty of Education, in the Department of Education Management and Policy Studies. The research I wish to conduct for my Master's dissertation is titled "**The instructional leadership role of mathematics heads of department in Limpopo secondary schools**". The purpose of the study is to examine the instructional leadership role of the Heads of Department in supporting teachers in their departments.

I am requesting permission to conduct research in your school. All information that may result in identifying individuals or your school will be removed and false names or codes be used where specific reference may be made to your school or individuals.

Participation in the study is voluntary and the participants have the right to withdraw at any stage of the study with no negative consequences to them. All participants will be given letters of informed consent which will explain the nature, purpose and objectives of the study.

This study will be conducted under the supervision of Dr R N Marishane (University of Pretoria). I further request you to allow Mathematics HoD and his/her teachers to participate in this project. If you require any further information, please contact me at 0833911053 or at nchimamashapa@gmail.com.

Thank you for your time and consideration in this regard

Yours sincerely

Nchima Freddy Mashapa

Student number: 12258696

Signature……..

Supervisor's Signature …….

ANNEXURE F: invitation and consent form for principals

University of Pretoria
Prvate Bag X20
Hatfield
0028

The Principal
Sekgosese East Circuit
P.O.Box 128
MOOKETSI
0825

INVITATION AND CONSENT TO PARTICIPATE IN A STUDY

I hereby invite you to participate in my study with a title**: The instructional leadership role of mathematics heads of department in Limpopo secondary schools.** The purpose of this study is to examine the instructional leadership role of the Heads of Department in supporting teachers in their departments. Please be informed that participation in the study is voluntary and you are free to withdraw from the study at any stage. However, I would like to assure you that should you volunteer to take part in the study, all information will be kept confidential and your name will not be disclosed to anyone.

Should you be willing to take part in the study, please, attach your signature below.

Regards,

NF Mashapa (Student No: 12258696)

Student Signature: ……

Supervisor's Signature: ……

CONSENT: I have read the information on this page and I understand that I am not waving any of my legal rights by signing this form.

Name: …….

Signature …….

ANNEXURE G: Invitation and consent form for Mathematics HoDs

University of Pretoria
Prvate Bag X20
Hatfield
0028

Head of Mathematics Department
Sekgosese East Circuit
P.O.Box 128
MOOKETSI
0825

INVITATION AND CONSENT TO PARTICIPATE IN A STUDY

I hereby invite you to participate in my study with a title**: The instructional leadership role of mathematics heads of department in Limpopo secondary schools.** The purpose of this study is to examine the instructional leadership role of the Heads of Department in supporting teachers in their departments. Please be informed that participation in the study is voluntary and you are free to withdraw from the study at any stage. However, I would like to assure you that should you volunteer to take part in the study, all information will be kept confidential and your name will not be disclosed to anyone.

Should you be willing to take part in the study, please, attach your signature below.

Regards,

NF Mashapa (Student No: 12258696)

Student Signature: ……

Supervisor's Signature: ……

CONSENT: I have read the information on this page and I understand that I am not waving any of my legal rights by signing this form.

Name: …….

Signature ……..

ANNEXURE H: Invitation and consent form for Mathematics teachers

University of Pretoria
Prvate Bag X20
Hatfield
0028

Mathematics Teacher
Sekgosese East Circuit
P.O.Box 128
MOOKETSI
0825

INVITATION AND CONSENT TO PARTICIPATE IN A STUDY

I hereby invite you to participate in my study with a title**: The instructional leadership role of mathematics heads of department in Limpopo secondary schools.** The purpose of this study is to examine the instructional leadership role of the Heads of Department in supporting teachers in their departments. Please be informed that participation in the study is voluntary and you are free to withdraw from the study at any stage. However, I would like to assure you that should you volunteer to take part in the study, all information will be kept confidential and your name will not be disclosed to anyone.

Should you be willing to take part in the study, please, attach your signature below.

Regards,

NF Mashapa (Student No: 12258696)

Student Signature: ……

Supervisor's Signature: ……

CONSENT: I have read the information on this page and I understand that I am not waving any of my legal rights by signing this form.

Name: ……..

Signature ……..

ANNEXURE I: Interview protocol for principals

University of Pretoria
Private Bag X20
Hatfield
0028

INTERVIEW PROTOCOL FOR SCHOOL PRINCIPALS

Questions

1. What preparations did HoDs receive before occupying their positions?
2. Did HoDs receive any professional development on the job?
3. Are you satisfied about the preparedness of your HoDs concerning their roles and responsibilities?
4. Do you think HoDs need further development at present?
5. From your perspective, what are the roles and responsibilities of HoDs in general?
6. What are the roles and responsibilities of HoD as leaders of Mathematics teaching?
7. What do HoDs do to provide leadership for the teaching of Mathematics?
8. Would you elaborate on how they go about providing leadership for Mathematics teaching?
9. Do you think the HoDs are having challenges in providing leadership in Mathematics teaching?
10. Would you please mention those challenges?
11. How do you assist them in overcoming those challenges?
12. Is there any challenge you would like to add about HoDs leading Mathematics teaching?

ANNEXURE J: Interview protocol for Mathematics HoDs

University of Pretoria
Private Bag X20
Hatfield
0028

INTERVIEW PROTOCOL FOR HEADS OF DEPARTMENT

Questions

1. How long have you been a Mathematics teacher?
2. What kind of training did you receive after being promoted to become HoD?
3. What kind of professional development did you receive as HoD?
4. Which areas do you think you need further development at present?
5. How prepared do you feel you are about carrying out your responsibilities as HoD?
6. What are your roles and responsibilities as HoD (in general)?
7. What is your instructional leadership role in Mathematics teaching?
8. What do you do to provide leadership for Mathematics teaching?
9. Would you elaborate how you provide leadership for Mathematics teaching?
10. What challenges do you face in leading Mathematics teaching?
11. Explain how you address the challenges you have identified?
12. Is there any challenge you would like to share about leading Mathematics teaching?

ANNEXURE K: Interview protocol for Mathematics teachers

University of Pretoria
Private Bag X20
Hatfield
0028

INTERVIEW PROTOCOL FOR MATHEMATICS TEACHERS

Questions

1. Have you ever applied for an HoD position?
2. Have you ever been invited for the interviews of an HoD position?
3. Did HoDs receive any professional development for Mathematics teaching?
4. What is the HoD doing to support you in the teaching of Mathematics?
5. In which areas of development can your HoD improve in providing support/assistance?

6 Is there anything you would like to add on the leadership of your HoD in providing support for the teaching of Mathematics?