



FACULTY OF EDUCATION

**DEPARTMENT OF EDUCATIONAL FOUNDATIONS, MANAGEMENT AND
CURRICULUM STUDIES**

**FACTORS CAUSING LOW PASS RATE IN MATHEMATICS AT GRADE SEVEN
IN KWEKWE RURAL DISTRICT**

BY

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FACULTY OF EDUCATION

**DEPARTMENT OF EDUCATIONAL FOUNDATIONS, MANAGEMENT AND
CURRICULUM STUDIES**

APPROVAL FORM

The undersigned certify that they have read and recommended to the Midlands State University for acceptance as a dissertation entitled: Factors causing low pass rate in Mathematics at Grade Seven level in kwekwe rural district.

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RELEASE FORM

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DECLARATION

I, Mushakwe Abgirl Varaidzo declare that this research report herein is my own work and has not been copied or lifted from any source without the acknowledgement of the source.

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...../...../.....

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DEDICATION

I dedicate this work to my lovely sisters Angeline, Agatha and Adellah.

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ABSTRACT

The purpose of the study was to find out the factors causing low pass rate in Mathematics at Grade Seven level in Kwekwe Rural District. The study was of significance because of the noted trend of low pass rate in Mathematics from the year 2015 to 2017. The qualitative research design was used to generate data in detail. The interview and observation guides as well the document analysis were the data generating instruments used in the study. A sample of twenty students, four Grade Seven teachers and two School Administrators was purposively sampled from two schools in Kwekwe Rural District. The findings of this study revealed that teachers were qualified and experienced to guide Grade Seven students and hence teacher qualification and experience were not factors contributing to low pass rate in Mathematics. However teacher centred methods, negative attitudes of students towards Mathematics and inadequate teaching and learning materials in schools are the major contributing factors causing low pass rate in Mathematics at Grade Seven level. The researcher recommends the Ministry of Primary and Secondary education to call for regular in-service training and refresher courses in the teaching of Mathematics. The School Development Committees should arrange fund raising projects to procure teaching and learning materials in schools. Teachers should use learner centred methods to teach Mathematics. The School Administrators should supervise and guide teachers in teaching Mathematics.

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CHAPTER ONE

THE RESEARCH PROBLEM

1.1 INTRODUCTION

The researcher discussed the background of the study and the statement of the problem. The research questions, significance of the study as well as assumptions were outlined. Delimitation and the limitations of the study were also explained. Lastly the definitions of key terms were provided.

1.2 BACKGROUND TO THE STUDY

Mathematics has been considered to be a very important subject in Zimbabwe in all the sectors. Kitta (2004) defines mathematics as the language that helps us to describe ideas and relationships drawn from the environment. From the above definition, it clearly shows that mathematics is a very important subject since it enables in solving problems that would be impossible otherwise. However, Mathematics is regarded as a difficult subject than other subjects.

The issue of low pass rates in mathematics at grade seven has become a global phenomenon and an ever expanding problem (Mukeredzi, 2013). The greatest concern is how to deal with the factors that cause low pass rates in mathematics. Mathematical demand on students increases as they progress through school, take up their adult lives at home and in the work place (Lambin, 2009). This clearly means that mathematics is not only studied or learnt for funny, but it is an important subject in one's life. In Zimbabwe mathematics is required for

one to train as a teacher, nurse, policeman, and soldier and also it is a pre-requisite to university entry.

Despite mathematics being one of the core subjects, a large percentage of students in Zimbabwe and surrounding countries are failing to pass the subject (Chinamasa, 2008). The poor results in Mathematics have affected the economy of the country. Students are forced to do other professions which do not require mathematics. Students had been failing the subject, when the researcher was learning, when training to be teacher and even now when she is a teacher students are failing. Poor performance in Mathematics has also resulted in other students dropping the subject at High School. The researcher has also observed that most students in rural areas withdraw from school after they reach grade seven. Moreover, the students who fail Mathematics often experience many negative challenges in choosing a career. This reason has made the researcher want to carry out a study on the causes of a low pass rate in Mathematics in Kwekwe Rural District.

Mathematics has low pass rates as compared to other subjects like Shona, English and Content Subjects. Students are failing to pass grade seven as a result of failures in Mathematics. Mathematics is done daily on the class time table but still students are failing to pass the subject while other subjects like, Content subjects are only done 3 times per week but students are passing them. Mathematics is important for every student as it is a basis for other subjects. Poor performance in Mathematics is not only in Zimbabwe but it is a global problem. Research has shown that even in the United States of America principals and teachers are complaining about poor performance in Mathematics by most students (Jackson & Wilson, 2012).

Mathematics is not every student's best subject. The statistics of mass failures obtained from internal and external examinations across the country can authenticate to this fact. Below is a table showing grade seven mathematics results of two schools in the District. The results indicate that many schools are struggling in Mathematics as in the two schools; the students are performing well below average.

Name of school	Year		
	2015	2016	2017
A	15%	10%	9%
B	10%	20%	11%

Kwekwe District statistics (2018)

1.3 STATEMENT OF THE PROBLEM

Grade seven school students in rural primary schools are performing poorly in Mathematics. This poor performance has made the researcher carry out a study to find the factors that cause a low pass rate in Mathematics, particularly in Kwekwe Rural District.

1.4 PRIMARY RESEARCH QUESTION

What are the factors causing a low pass rate in Mathematics at Grade Seven level?

From the primary research question, sub research questions were formulated.

1.4.1 Sub Research Questions

1.4.1.1 What are the qualifications and experience of teachers teaching grade seven classes?

1.4.1.2 What are the methods used to teach mathematics at grade seven levels?

1.4.1.3 What are the attitudes of students towards mathematics?

1.4.1.4 What are the teaching and learning materials available in teaching mathematics at grade seven level?

1.5 SIGNIFICANCE OF THE STUDY

Mathematics is considered a core subject in Zimbabwe and a pre-requisite to entry in almost all the sectors in Zimbabwe. Mathematics has ever since been considered a compulsory subject from Primary School to ordinary level (Form Four Level) (Rudhumbu, 2014). Mathematics also enables students to be literate and numerate. Students through mathematics are able to acquire mathematical concepts and skills for use as tool in studying, work, leisure and everyday transactions (Grade seven maths syllabus). So there is need for students to pass mathematics as they use these skills in calculating change, in the buying and selling of goods.

Mathematics plays a key role in shaping how individuals deal with the various spheres of private, social and civil life (Antony & Walshaw, 2009). This reason has made many countries, Zimbabwe inclusive to consider mathematics a compulsory subject. Mathematics develops attributes of co-operation, confidence, honesty, neatness, self-reliance and perseverance through appropriately challenging mathematically related tasks. Another point to note is that Mathematics boosts reasoning faculty of students. The knowledge of Mathematics also enables students to understand their environments better through thorough analysis of the existing fact (Iren, 2015).

The former minister of education, Dr Lazarus Dokora asserts that the curriculum review seeks to position mathematics as a vehicle to acquire 21st century skills, provoke critical

thinking and develop well-rounded learners who can effectively develop through improved numeracy skills and precision of thought, (The Herald, 2014). This assertion clearly shows that mathematics is a core subject as it helps to improve the country's economy. The low pass rate in mathematics can hinder the development of the country, hence the study on the factors that cause low pass rates in mathematics.

Apart from the economic benefits of better preparing people for numeracy demands of modern work place and raising the overall skill levels of the work force they are also social benefits tied to improving access for large numbers of people to post-school education and training opportunities and laying stronger foundation to skills for lifelong learning (Manoah, Indoshi & Othuon, 2011). However, in a dynamic society, it is essential for primary students to acquire the basis of mathematics that equips them to make sense of the society. More so, Mathematics is of importance to a student who intends to pursue a career in Technology, Sciences among other professions. The study of Mathematics contributes to personal development through a deeper understanding and successful application of its knowledge and skills while maintaining appropriate values and attitudes (Rikhotso, 2015).

This study enabled teachers to be aware of the factors that cause low pass rates in Mathematics and thereby sought for ways to improve these pass rates. The research findings will encourage both the students and the teachers to perceive Mathematics as an easy subject. Furthermore, the study will help students to develop positive attitudes towards mathematics and hence an increase in the pass rate in mathematics. Zimbabwe is in a state of economic recovery and requires people with basic skills in mathematics so as to promote socio-economic transformation (Mupa, 2015). Thus, Zimbabwe needs students who are good in

mathematics so as to help in the development of the country and the basis of mathematics is at Primary level, hence if students fail mathematics at grade seven level, there won't be development in the country. The meaningful participation of learners in Mathematics will benefit the whole country by alleviating the shortage of scientists such as engineers, astronomers and many others.

1.6 ASSUMPTIONS OF THE STUDY

1.6.1 The students in Kwekwe District are more or less the same as students elsewhere.

1.6.2 The teachers' qualifications in Kwekwe District are more or less the same as the qualifications of other teachers elsewhere.

1.6.3 The resources available in Kwekwe District are more or less the same as the resources elsewhere.

1.6.4 Time allocation for mathematics in Kwekwe District is more or less the same as the time allocated for Mathematics elsewhere.

1.7 DELIMITATION OF THE STUDY

The study was confined to two schools in Kwekwe rural district with special attention to grade seven students and teachers. The focus of the study was to find out factors that cause a low pass rate in mathematics at grade seven level. The school heads, teachers and learners were sampled from the target population to elicit information for the study.

1.8 LIMITATIONS OF THE STUDY

In carrying out this study the researcher encountered several challenges. Some of the limitations are as discussed below.

1.8.1 Time

The researcher had limited time since she is a classroom teacher, a part time student, a parent and a house wife. Most of the time, the researcher worked after normal working hours so that she could carry out her studies. Since the researcher is a classroom teacher lesson observations and interviews took much of her time which was a problem to the students she was teaching and the school administrators.

1.8.2 Cost

The researcher has limited access to funds and this affected the research mobility since there was need for cash to move from one school to another. The researcher however selected schools which are closer to each other in order to minimize costs. The cost of printing interview guides for headmasters and teachers was another limitation that the researcher encountered in her studies.

1.8.3 Official Secrecy Act

Since teachers are not entitled to communicate the school's information unless there is an authority from the Ministry of Education, the researcher faced challenges in trying to obtain the correct and viable information. The researcher however got a letter from the college and she was granted permission to carry out the study by the Ministry.

1.9 DEFINITION OF KEY TERMS

The following terms were defined as they are used in the study:-

1.9.1 Performance

Michael (2015) defines performance as accomplishing or achievement of specific goals, objectives set in any academic undertaking in basic mathematics. In this study, it was also the position of schools with respect to others.

1.9.2 Resources

A resource is a source of supply from which benefit is produced (Rudhumbu, 2015). In this study resource refers to the teachers, equipment, materials and facilities that are used to enhance and aid in the process of learning and teaching.

1.9.3 Primary Education

Primary education is the first years of compulsory schooling (Usman, 2012). In this study primary education refers to the level of formal education that precedes secondary education.

1.10 SUMMARY

The situation of low pass rates in Mathematics nationally has ignited a desire for the researcher to carry out a study on factors that cause a low pass rate in Mathematics particularly in Kwekwe district. The background and statement of the study were explained. The next chapter will review related literature.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 INTRODUCTION

The researcher deals with a review of factors causing a poor performance of pupils in Mathematics at Primary Schools. The sub research questions were used as themes. These themes are qualifications and experience of teachers, teaching methods, attitudes of students towards mathematics and teaching and learning materials available.

2.1 QUALIFICATIONS AND EXPERIENCE OF GRADE SEVEN TEACHERS

The most important school-based determining factor of student achievement is the teacher quality (Harris & Sass, 2008). Teacher education colleges produce qualified teachers for primary schools and the pre-service teacher education programme is open to those who had successfully completed O' Level with five subjects including mathematics and English language (SACMEQ, 2018). A qualified teacher can be defined as one who holds a teaching certificate and or licensed by the state, owns at least a bachelor's degree from a four year institution and well qualified in his area of specialization (Usman, 2012). A study done in Nigeria revealed that lack of qualified teachers led to consistent poor performance of students in Mathematics subject (Musau & Abele, 2015). Thus, the teachers' professional qualification plays a part in the pass rate of students.

There is a severe shortage of qualified teachers in primary and secondary schools in the country which has forced the government to recruit more than 20000 unqualified personnel to

fill in the gap (Kakore, 2015) The Zimbabwe Teacher's Association Chief Executive, Sifiso Ndlovu also alluded that the number of unqualified teachers is a bad development to poor education and poor pass rates, (Herald, 11 March 2015). This reason may be a factor that cause of low pass rates in mathematics in some rural schools. An important step in improving student achievement is requiring all teachers to possess strong content knowledge in the subject area they taught (Rotherham & Mead, 2003). The three teacher quality that affect students' outcomes are graduate degrees, licensure and experience (Jacobs, 2012). She further on posits that advanced degrees were signals that teachers had advanced knowledge of how students learn and grow, and knowledge of how to best facilitate students' learning.

While teachers' academic qualification varies greatly among serving teachers, the required minimum qualification for primary school teachers is an Ordinary level certificate plus a teachers' diploma or certificate obtained after a three or four years of teacher education in a teachers' college (Mukeredzi, 2013). In developed countries, every proposal to reform or transform schools highlights teacher professional development as critical in effecting improved education quality and students outcome. Zuzovsky (2009) also laments that, reforms call for the professionalization of teacher education by making it longer, upgrading it to graduate programs, and regulating it through mechanisms of licensure certification and promotion aligned with standards.

Teachers' experiences are positively related to math and reading achievement in the middle school (Boyd, 2006). This clearly shows that there is a relationship between teachers' experience and the pass rate of students. In-service training might raise the standards of mathematical argumentation by teachers, classroom discourse, preparation, methods of

tackling given problems and skills of dealing with students with varying abilities (Mupa, 2015). On the other hand, Harris and Sass (2009) assert that, the relationship between teacher experience and students' achievement is difficult to interpret since this variable is highly affected by market condition or motivation to work during child rearing period. In many countries, teacher qualifications that are considered to be related to student learning have become desirable targets of teacher education reforms (Zuzovsky, 2009).

Teachers' qualifications are important in association with middle grades students' outcomes (Baudi, Griffin & Tadler, 2015). Thus, teachers' qualifications play a role in the pass rate of students. Middle grades teachers certified in math are associated with higher student gains in learning compared to uncertified teachers (Byrnes, 2009). The use of teachers with limited professional education has often been linked to lower quality education and poor student outcomes (Mukeredzi, 2013). Thus, in schools where teachers do not have teaching degrees and teaching at primary school may result in low pass rates in mathematics, for example someone with a degree in Developmental Studies teaching at primary school.

In South Africa and Zimbabwe alike, education in rural schools lags behind educational development in all other parts of the country (Wedekind, 2005). This can mean that pass rates in rural areas and urban areas are different. In rural areas where there is poor physical infrastructure which limits public transport availability is accepted by teachers who are either professionally unqualified or under-qualified (Mukeredzi, 2013). Therefore, one factor that can cause low pass rates in rural areas could be the type of teachers teaching there. In United States of America primary schools, especially in poor and undeserved communities, lack appropriate certification and adequate content preparation (Floden & Maniketti, 2005).

A study revealed that having a highly qualified teacher for four or five years in a row could fundamentally close the gap in student achievement (Olsen, 2003). The No Child Left behind (NCLB) Act of 2001 specifically outlined required performance and accountability measures directed at addressing concerns over teacher quality and students achievement in American Schools (Rikhotso, 2015). This shows there is a correlation between teachers' qualifications and the performance of students in the subject of Mathematics. Teachers of Science, Mathematics and Technology should be in-serviced where gaps are identified to enable them to cope with the requirements of the dynamic school curriculum (Murunga, Kilaha & Wanyanyi, 2013). On the other hand, some researchers reveal that in- service professional development for teachers has little effect on their ability to increase the achievement gains of students (Feng & Sass, 2010).

Even though, teachers' qualifications are cherished, there is need to consider the teachers' ability to teach students. Problems arise from the tendency of some teacher education programs emphasizing subject matter in the major academic disciplines of teaching methodology (Siyakwazi in Chinamasa, 2008) This implies that some teachers might have the required qualification but failing to employ suitable methods and skills to teach mathematics to students. Gatawa in Rudhumbu, (2015) also calls for the introduction of specialist mathematics teachers at all levels or alternatively at Grade 7 only. This implies that having the required qualifications does not reduce a low pass rate in mathematics. Teachers trained in subject specific areas such as Mathematics and Science had a significantly positive impact on students' achievement (Rikhotso, 2015).

Secondary school teachers blame primary school teachers for failing to develop a strong mathematics background (Chinamasa, 2008). Chinamasa further on posits that primary school teachers teach pupils for a pass at grade seven examinations without understanding. This implies that the low pass rates at grade seven examinations might be as a result of teachers failing to understand the concepts in mathematics even though they would be highly qualified. In this study, the researcher needs to find out if the teachers' qualifications play a role in the student's pass rate in mathematics.

Teachers' knowledge about teaching and pedagogy, often achieved through certification, also provides benefits to students (Hammond, 2010). Students who had a teacher major in Mathematics at undergraduate and or graduate level showed increased gains in math (Rowan, 2005). However, Staiger (2008) posits that, a study of New York City teachers found there was no statistical differences in teacher effectiveness among those certified (across different program types) and uncertified. A study carried out in Togo review that, students taught by professionally unqualified teachers performed worse than those taught by qualified teachers (Kruijer, 2010).

If one wants to change the education of learners, one needs to first change the education of the teachers (Sarason, 2000). He further on laments that, it is necessary to prepare educators for what life is like in classrooms, schools, school systems and society. All teachers should possess strong knowledge of the subject being taught because it has an essential element that positively affects teaching performance and student achievement (Goldhaber & Brewer, 2000). So the teachers' qualifications to some extent contribute to the pass rate of students.

Students perform lower in Mathematics when taught by a teacher with less than 1-year experience or a teacher without full state certification (Betts, Zau & Rice, 2003).

2.2 TEACHING METHODS USED IN TEACHING MATHEMATICS

Students' performance in mathematics is influenced by the teaching and learning methods (Michael, 2015). Most methods used by teachers are teacher centered and usually teachers follow what is in the textbooks and not what fascinate and enable the students to grasp the concepts. A teaching method is a way in which a teacher organizes and manages the teaching and learning situation, presents clear explanations and vivid descriptions, assigns and checks if learning interacts effectively with learners through questions and probes, answers and reactions, and praise and criticism (Schulman, 2009.) So there is great need to ensure that the teaching methods employed in the teaching of mathematics should be motivational so that students can actively participate in lessons. In fact, Mathematics must be made fun.

For effective and efficient teaching, learner centered methods that require teachers to actively involve students in the teaching and learning process must be applied (Mtitu, 2014). This implies that the methods that teachers use must be learner centered and interest learners so that the students can grasp what is being taught. It is therefore incumbent upon teachers to adopt methods in which students can fully participate as there are high chances of understanding and grasping the mathematical concepts. There are many individual learning styles, with most individuals being dominant in one particular style. These styles are often referred also as visual, auditory (Mupa, 2015). Visual learners prefer to see information, auditory like to hear information and kinesthetic learners learn best when physically involved (touching, doing, feeling) with their learning.

Teaching methods need to involve five senses organs in the class (Michael, 2015). This implies that the methods that teachers use in teaching mathematics must involve touching that is, use of concrete media like counters, seeing meaning the media which could be charts or chalkboard must be visible and hearing that is the teacher's voice must be audible so that the children will be able to grasp the concepts more easily. In support of this, Maganga, (2013) asserts that teachers should be able to teach students in such a way that students can practically do what they are taught, hearing it well by minimizing number of students in overcrowded classes and use of actual environments to make the students understand mathematics. In other ways, the methods that teachers use must be hands-on. Failure to expose learners to hands-on experience has resulted in their low academic achievement in Mathematics (Musau & Abele, 2015).

Teaching mathematical concepts to students can be a demanding task to teachers; however, teachers need to employ methods which are rewarding. Children develop stronger mathematic skills when allowed to develop their own strategies (Suurtamm & Vezina, 2010). From this notion, teachers need to be facilitators in classes, who can adapt to students' methods through guidance here and there. Suurtamm and Vezina further on lament that, songs, stories, and games engage and encourage children's participation. Since some students perceive mathematics as a difficult subject, teachers need to seek for ways that can make mathematics lessons interesting. Games and songs are not only interesting to students but they also promote critical thing and problem solving skills. Thus, students think they are playing but at the same time solving mathematical problems.

Teaching styles can include leading and demonstrating from the front of the class, or adopting a more pupil-centered approach where the teacher shapes the framework within which the pupils work and then encourages them to make their own decisions under guidance (Byrnes, 2009). The methods employed by teachers to teach mathematics and Science Subjects in Primary schools are to a larger extent influenced by the kind of resources and facilities available in the school (UNESCO, 2004). This can mean that, in rural areas where resources are limited, the teaching methods are mainly teacher centered and hence might be a factor that cause a low pass rate in mathematics. Teachers are unable to cope with the large numbers and concentrate on a few bright students. Parents blamed teachers for their unimaginative teaching methods which they strongly believe they cause poor performance in mathematics (UNESCO, 2004).

In this study, the researcher is going to find out if learner centered methods are more effective than teacher centered methods through participating, observations that the researcher will undertake. A necessary condition for teachers to teach mathematics was not only to know mathematics but also to be competent in understanding the basic contents, concepts and the associated skills (UNESCO, 2004). This implies that teachers ought to know methods to use for students to perform well. Student's performances are mainly affected by teaching methods, teacher's behavior, grounding in the subject at lower levels as well as their fear on the subject (Tshabalala & Ncube, 2013).

Learner centered teaching methods should be used to ensure that there is a close link between the learning needs of the learner and the teacher's teaching (Scot, 2010). This implies that teachers make employ methods which involve students to actively participate in lessons so that their performance improves. Teachers also need to vary methods when teaching

mathematics so that students are not bored and develop negative attitudes towards the subject. This is supported by Palmer, (2005) who believes that the use of a variety of teaching methods, especially constructivist ones empowers learners with skills of independent thinking and problem solving.

2.3 ATTITUDES OF STUDENTS TOWARDS MATHEMATICS

Several studies have been undertaken to reach a conclusion of the relationship between student's attitudes towards mathematics and their performance. Attitude is one of the most important areas in learning and it can act as a psychological hindrance to effective learning (Matto & De la Torre, 2010). In education, attitude is one of the vital elements which determine students' success or failure. In support of the above statement, Kuranche et al. (2013) asserts that attitudes are formed as a result of some kind of learning experience students go. This implies that attitude of students can affect their performance in mathematics. If students develop positive attitudes towards mathematics then they perform better but if students develop negative attitudes then they can perform poorly.

Attitudes towards mathematics are a positive or negative disposition towards mathematics (Zan & Martino, 2017). Primary school students might have a belief that mathematics is a difficult subject hence developing negative attitudes towards the subject. In addition, Nicolardou and Philippou (2003) say that negative attitudes of learners towards mathematics can be as a result of frequent failures or problems in class or at home. Children who develop negative attitudes fail to concentrate and even abscond from the lessons (Mupa, 2015). Students who are continuously failing the mathematics subject play truancy and mostly in rural areas drop out from school.

Students can also develop positive attitudes towards mathematics because of continuously passing the subject and getting positive reinforcement from the teacher. Some recent studies point to a positive relationship between student academic performances in the subject (Kahle, 2007). Researchers concluded that, positive attitude towards mathematics leads students towards success in mathematics (Ma & Xu, 2004). The negative attitudes and the teachers' beliefs towards Mathematics also contribute to the negative attitudes of learners towards the subject (Cater & Norwood, 2007).

There are a number of factors which can explain why attitude towards mathematics became more negative with the school grade, such as the pressure to perform well, over demanding tasks, uninteresting lessons and less than positive attitudes on the part of the teachers (Zan & Martino, 2017). This implies that students might develop negative attitudes if mathematics lessons do not capture their interest and also if the teachers are not motivating. Furthermore, the negative attitudes of parents also contribute to a negative attitude of their children towards Mathematics. Parents that are afraid of Mathematics pass that on to their children (Furner & Duffy, 2002). The teacher, peer and family attitudes toward Mathematics may either positively or negatively influence learners' confidence in Mathematics (Stuart, 2010).

The language of mathematics creates a negative attitude in some learners. Landsberg (2005) states that it is very important to remember that mathematics is about numbers and figures and a few words, it focuses on patterns and relations and has a mathematical language that the learners must become familiar with. Many children from the middle and low-ability groups appear to struggle with the language of mathematics (Ashby, 2009). Some children

might find it extremely difficult to read and understand a question at the same time even though all the information that they required was written in front of them.

Most pupils in rural areas in Zimbabwe struggle to communicate in English and put them at a disadvantage, since that is the language used in teaching and learning. Children learn better when they are taught through a language they know well. Moreover, pupils might develop negative perception and attitude due to the way teachers present their lessons or the way they convey and conduct the lesson (Mckay, 2012). Sometimes teachers do not have enough time to cover the syllabus or to use other methods of teaching. Some studies reveal that pupils with negative attitude towards the subject of mathematics inherit it from the teachers. This theory is supported by Goose (2008) who proposes that the process begins with the teacher's demonstration of mathematical attitude that is unwillingness to deal with mathematical concepts and to engage in mathematical reassessing according to the acceptable values in the community.

The challenge facing teachers, parents and education authorities in Limpopo Province, South Africa is that learners have negative attitudes towards Mathematics (Rithotso, 2015). Thus, if students face unbearable challenges or through experiences of failure during learning, they might develop negative attitudes toward Mathematics which result in the students playing truancy or not coming to school at all. Mupa further on laments that, some students feel that the subject is of no relevance to them because they are specialists in Arts. So there is need for teachers and parents to explain to students to importance of mathematics in their lives. The positive attitudes of learners develop a sense of efficacy and confidence about their ability to

do well in mathematics (Rikhotso, 2015). Thus, once students are confident of their ability to succeed, they become more engaged and like mathematics more.

The teaching method, the support of the structure of the school, the family and students' attitude towards school affect the attitudes towards mathematics (Farooq & Shah, 2008). Thus, in a school where teachers are not presenting Mathematics lessons well may result in students developing negative attitudes. The way that mathematics is represented in the classroom and perceived by students, even when teachers believe they are presenting it in authentic and context dependent way stands to alienate many students from mathematics (Furinghetti & Pekhonen, 2002).

In this study, the researcher wants to find out if attitudes contribute largely on the low pass rate in mathematics. Moreover, the differences in gender are a recurrent theme throughout the literature in academic studies in general and in mathematics studies in particular. Mathematics is often considered to be a domain in which boys are always higher achievers both in terms of attitudes and concept grasping. In support of this. Enest, (2004) says that sometimes mathematics is also considered as very important and largely masculine subject. Students' negative attitudes towards Mathematics, fear of mathematics, inadequate qualified teachers and inadequate teaching materials were some of the causes of poor performance in Mathematics in Nigeria (Tata, 2013).

2.4 TEACHING AND LEARNING MATERIALS AVAILABLE

Methods used by teachers to mathematics in primary schools depend on the resources or teaching and learning materials available. If the resources are inadequate, then the methods

used are teacher centered and hence children are not active in the lessons. The learning materials are important because they can significantly increase student achievement by supporting student learning (Maganga, 2013). This is not so in rural areas where materials in schools are not there and there is only one textbook shared among 45 students in a class.

Learning materials can also add important structure to lesson planning and the delivery of instruction (Mtitu, 2014.) This means that if learning materials like counters, work sheets among others are used by teachers in mathematics lessons, then students are not able to quickly grasp the concepts taught and hence an improvement in their performance in mathematics (Rithotso, 2015). A teaching resource is any form of specific Mathematical apparatus (structured or unstructured), image, ICT, game tool, paper or everyday material which could be utilized to provide a Mathematical teaching or learning aid (Drews, 2007). Moreover, the use of a variety of teaching aids could benefit students in the sense that the students' chances of understanding are greater than when teaching aids are not used.

The network of connections between concrete experiences, pictures, language and symbols could be significant to the understanding of mathematical concept (Haylock & Cockburn, 2003). Thus, mathematical resources also contribute to improving teaching and learners' attitude towards mathematics. Teachers should use manipulative materials regularly in order to give hands-on experience that helps them construct useful meanings for the Mathematical ideas they are teaching (Drews, 2007). He further on laments that, the long term use of concrete materials is positively related to increases in student mathematical achievement and improved attitudes towards Mathematics. It is therefore of importance that teachers are provided with sufficient resources.

Learning materials such as work sheets, group activity instructions, games or homework assignments all allow teachers to modify assignments to best activate each individual student's learning style (Suurtamm & Vezina, 2014). This implies that the availability of learning materials can enhance the acquisition of the subject matter by the students. Physical facilities like classrooms, theaters, libraries, workshops, laboratories and the orientation of the environment of learning contribute effectively to performance of the students in the subjects of mathematics. This is not always the case in rural areas, where facilities like libraries, theatres and others are not being available.

Teachers being aware that adequate resources and facilities are crucial for a qualified teacher to engage students in an exciting, captivating and enriching mathematics, strongly recommend that the government should make or enforce policies on the minimum physical facilities and teaching resources in all schools at each level (UNESCO, 2004). Lack of adequate textbooks, other resources and materials therefore makes teaching very difficult to enhance or improve the performance of learners. Good teachers as they teach, keep in mind both what they teach and what they teach with (Berthoud, 2010). It is the proper organization of learning resources that are available and use of appropriate teaching methods and learning strategies which enhance the acquisition of the subject matter.

Financing of education now is heavily dependent on parents and this result in a great disparity in students' participation and performance in mathematics. Student's performance severely depends on whether they had an opportunity to resources and facilities (UNESCO, 2004). Students who have access to educational resources are at an advantage compared to those from poor families as they are much aware of the current trends taking place around whereas the students in the rural areas cannot access such. There are many concepts in

Mathematics related to our environment; teachers in rural areas need to be innovative such that they use the environment to access learning materials. However, requiring rural children to engage with rural problems limits children in the development of increasing abstraction from situations and contexts with which children are already familiar (Long & Dunne, 2014). Using teaching learning materials is very useful to make teacher's presentation easy, effective and attractive (Suurtamm & Vezina, 2010). Teachers need to prepare "mathematics kit". A mathematics kit should contain essential equipment used in classroom teaching (Sahu, 2013).

Learning materials are also beneficial to both the teacher and the student. Drews, (2007) points out that, teachers should use manipulative materials regularly in order to give students hands-on experience that helps them to construct useful meanings for the mathematical ideas they are learning. Therefore, when learning materials are not available, children will not understand well the concepts taught and as a result, they perform poorly in mathematics. Bekker et al (2003), also suggest that lack of adequate resources (like textbooks and adequate infrastructure) hinders the accomplishment of several educational goals, which is most likely to cause failure and frustration and may lead to the withdrawal from work and reduce commitment that is create a negative attitude among pupils.

Textbook availability enhances easy teaching and learning by students (Mupa, 2015). Thus, when students have textbooks, they can easily see examples from books and share experiences on their own. Inadequate textbooks make it difficult for students to do home works, work out problems on their own and study at home. Most rural schools have hardly any teaching aid anywhere in the class during lessons, except some form of blackboard, chalk and duster (UNESCO, 2004). Teachers who face shortages of teaching materials find it very difficult to plan effectively.

2.5 SUMMARY

The literature review outlined that Mathematics requires qualified and experienced teachers as well as adequate teaching and learning resources (Mupa, 2015). It was noted that students' negative attitudes towards Mathematics and the teaching methods can cause low pass rates in the subject. The next chapter will focus on research procedures and explained how data were generated, analyzed and presented.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The researcher outlines the research design, and population and sample to be used. Data generating instruments, data generating procedures, data presentation and data analysis were considered. Ethical considerations were explained and a summary was given at the end of the chapter.

3.2 RESEARCH DESIGN

This study used a descriptive survey sample design. A research design is a strategy or plan for conducting a research study to examine specific testable research questions of interest (Babbie, 2009). A research design is also defined as a distinct plan on how a problem is tackled (Omari, 2011). The descriptive survey method which incorporates interviews and observations was used to investigate the factors that cause a low pass rate in mathematics. A descriptive survey is designed to provide a picture of a situation as it naturally happens (Burns & Groove, 2005). For the purpose of the study, descriptive research was the best method for the purposes of describing the facts and characteristics of the sample factually and accurately.

3.3 POPULATION AND SAMPLE

Chiromo, (2009) defines a population as all individuals, units, objects or events that will be considered in the research project. Population is the entire group of individuals a study is going to investigate (Springer, 2010). In this study the population comprises of all schools in

Kwekwe District. Kombo and Tromp (2006) define a sample as a set of individuals selected from a population. Ranjit, (2011) says a sample is a subgroup of a population one is interested in. The population of this study comprises of two schools. Ten students from each school were sampled out, that is 5boys and 5 girls. Two teachers from each school and two school administrators were interviewed.

3.3.1 SAMPLING PROCEDURES

Sampling is a process of selecting units from a population of interest (Kombo & Tromp, 2006). The researcher used purposive sampling to choose participants who have the uniqueness. The main concern of purposive sampling was to acquire in-depth information from those who are in a position to give it (Cohen, Marion & Morrison, 2009). Purposive sampling is deliberate, and allows the researcher to select participants with unique qualities that are under investigation (Punch, 2005). The following tables illustrate the sample of participants.

Table 1: **School A**

Category	Males	Females	Total
Teachers	1	1	2
School Admin			1
Pupils	5	5	10

Table 2: **School B**

Category	Males	Females	Total
Teachers	1	1	2
School Admin			1
Pupils	5	5	10

The reason for using purposive sampling was that the respondents were the only ones needed in the study. However, while purposive sampling may satisfy the study's needs the researcher may unconsciously miss out on important traits or be biased in choosing a sample (Gray, 2009).

3.4 DATA GENERATING INSTRUMENTS

Data was obtained through lesson observations, semi- structured interviews and document analysis. More than one instrument was used in the study because total independence on one instrument may distort or may lead to biasness on a particular piece of information (Kothari, 2000). Secondary data was obtained through analyzing documents like school performances, individual record books and ZIMSEC results to provide relevant data on the factors which contribute to poor performances by grade 7 students in Mathematics.

3.4.1 OBSERVATION GUIDE

An observation is a systematic way of observing and recording observable phenomena or behavior or behavior in a natural setting (Kawulich, 2005). In the same vein, Chiromo, (2009) views observation technique as a means to ascertain what people think and do by watching them as they express themselves in various situations and activities. Although, observation was costly, time consuming and lacking anonymity, lesson observations were used in this study to gather information on teaching and learning activities in a classroom. Observations were used as they enabled the researcher to fully understand what really took place in mathematics lessons that is, it enabled the researcher to obtain in-depth descriptive information. Non- participant observation was used such that the researcher was not

distracted from generating data. Students were observed in their classrooms during Mathematics lessons.

Observation guide enabled the researcher to record what was actually taking place either by hand or using recording or measuring equipment (Blessing & Chakrabarti, 2002). The researcher observed the teaching and learning activities. The methods used, learning materials used and the student's attitudes during lessons were also observed. A key advantage of conducting observations is that you can observe what people actually do or say, rather than what they say (Wakefield, 2008).

3.4.2 INTERVIEW GUIDE

The researcher employed the semi-structured interview guide. Semi-structured interviews are non-standardized interviews in which the researcher may have a framework of issues and questions to be covered but to some extent ensures flexibility in question forms and the manner participants address issues (Gray, 2009). The main strengths of a semi-structured interview as a research instrument is the use of open-ended questions which enables the researcher to deeply explore different dimensions to an issue (Woods, 2006). Furthermore, semi-structured interviews include standardization of some questions which result in increased reliability of data and reduction of interviewer bias (Mitchell & Joley, 2007).

Face to face interview approach allowed respondents to bring out their feelings (Shumbayawonda, 2006). The semi-structured interviews were flexible and enabled in exploring more important information that arose from interviews. Moreover, semi-structured interviews give voice to the participants (Cohen, Marion & Morrison, 2007). Thus, they also

allowed further probing and clarification of views. The researcher got first-hand information through friendly interactions on a face to face basis. The interviews were open to gestures and facial expressions.

The researcher used interviews because they were quick to generate data from participants. The researcher also established relationships with the respondents. The researcher interviewed each participant for 30 minutes to avoid boring the participants. Teachers and headmasters were interviewed and the researcher gathered useful information by asking questions relating on the factors that cause a low pass rate in Mathematics.

During the interview, the researcher had the latitude to change the order and pace of questions and introduced new questions in order to accommodate each participant's unique story and experiences (Flick, 2006). The interview format consisted of question themes whose main purpose was to introduce the topic and to guide the interview conversation. The follow-up questions which were non-scripted were used as prompts to extend, elaborate, clarify, provide detail or qualify a response (Cohen et.al. 2011).

3.4.3 DOCUMENT ANALYSIS GUIDE

Documentary research is the use of outside sources, documents to support the view point or argument of an academic work (Omari, 2011). Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009). In this study the researcher looked at mathematics syllabus, teachers' files, continuous assessment files, external and internal

examinations, textbooks as well as learning materials available. Analyzing documents incorporates coding content into themes similar to how focus group or interview transcripts are analyzed (O'Leary, 2014).

Document analysis was an efficient and effective way of generating data because documents are manageable and practical resources. Obtaining and analyzing documents is often far more cost efficient and time efficient than conducting your own research or experiments (Bowen, 2009). Furthermore, documents are stable, "non-reactive" data sources meaning they can be read and reviewed multiple times and remain unchanged by the researcher's influence or research process (Bowen, 2009). The researcher was thorough in analyzing the documents. It is important to thoroughly evaluate and investigate the subjectivity of documents and your understanding of their data in order to preserve the credibility of your research (O'Leary, 2014).

3.5 DATA GENERATING PROCEDURES

The researcher got an authority letter from the University and another letter from the Ministry of Education and visited the sampled schools. Data were generated from respondents through interviews, observations and documents analysis. Observations were done during school hours so that the researcher was able to observe behaviors of students in mathematics lessons and also get to know the methods that grade 7 teachers employ. Interviews and document analysis were done after lesson observations.

3.6 DATA PRESENTATION

Since the research used descriptive survey sample design data were generated and were presented in line graphs, group graphs and tables. Bar graphs enabled the researcher to compare data more easily. Tables were also used since they are easy to refer and data was easily interpreted. A line graph was useful in showing the percentage of grade 7 results over time that is, time will be displayed on the horizontal axis (x-axis) and the variable is displayed on the vertical axis (y-axis).

3.7 DATA ANALYSIS

Data analysis is a process of editing, coding, classification and tabulation of collected data (Kothari, 2004). The researcher used thematic data analysis. Thematic approach is one of the most common forms of analysis in qualitative research. Thematic approach emphasizes pin pointing, examining and recording patterns or themes within data (Rithotso, 2015). Thematic analysis is best thought of as an umbrella term for a variety of different approaches, rather than a singular method (Greg, 2012). Thematic analysis was well suited to large data set and allowed the researcher to expand range of study past individual experiences. The structure of the interview and observation guide helped to categorize data into themes.

3.8 DATA MANAGEMENT PLAN

The researcher used various instruments to record and store data. Data generated were written in notebooks and stored securely in files. The researcher also used her phone and laptop to record data. Media devices such as Universal Storage Bus (USB) were used as back up storage. The researcher also made sure that the data generated were treated with

confidentiality by putting passwords on her cellphone and laptop and also storing files in locked storerooms.

3.9 ETHICAL CONSIDERATIONS

For the researcher to obtain population of the study, data collection and dissemination of the study she was sensitive to research ethics and its values. In support of this Omari, (2011) asserts that this helps to ensure that good image of research enterprise in the work is to be maintained. The researcher sought for a permission letter to authorize the activity from the University and submit it to the Ministry of Education.

3.9.1 Informed Consent

The subjects must be informed about the research before they decide to take part in the research (Chiromo, 2009). This means informed consent was a major ethical issue. The respondents were informed about the purpose and importance of the study, the benefit of participating and they were requested to sign a consent form. In case of school children and all minors, the consent of parents and school personnel should be obtained (Chiromo, 2009).

3.9.2 Privacy

Privacy is the freedom an individual has to determine the time, extent, and general circumstances under which private information will be shared with or withheld from others (Levine, 2005). The researcher assured the respondents not to reveal their identity to anyone besides the researcher so that privacy was maintained.

3.9.3 Confidentiality

The information obtained was treated with confidentiality and for intended purposes only. The names or identity of participants and schools were not discussed. The respondents or subjects were assured that their responses would be treated in the strictest of confidence (Chiromo, 2009). The researcher ensured confidentiality of the participants by protecting all data gathered such that no-one had access to it except the researcher.

3.9.4 Protection from Harm

The researcher assured the participants that their participation in the study does not cause them any physical discomfort, humiliation and emotional stress. Subjects were protected from physical, social, emotional and spiritual harm or any potential harm of any nature (Chiromo, 2009).

3.10 SUMMARY

The researcher examined the research methodology in which issues such as research design, population and sample as well as research instruments that were used to generate data. The rationale on the use of observation and interview guide together with document analysis guide was explained. The next chapter will consider data presentation, analysis and discussion.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

The researcher presents and analyse the data. Data were generated from grade seven learners, teachers and school administrators from two selected schools in Kwekwe District. Interview and observation guides as well as document analysis were the generating instruments. A total number of twenty students, four teachers and two school administrators were used in this study to come up with factors that cause a low pass rate in mathematics at grade seven level.

4.2 BIOGRAPHIC DATA

The biographic data of respondents is shown by the Table 4.1 below

Table 4.1 Biographic data of respondents

Category	Learners	Teachers	School Administrators
Sex	10 boys 10 girls	1 female 3 males	1 female 1 male
Age	15years-2 females,2 males 14years-3 females,5 males 13years-4 females,2 males 12 years 1female,1 male	34 years-1 male 37 years- 1 female 37 years-1 male 41 years- 1 male	39 years- 1 female 58 years- 1 male
Qualifications		All the four teachers had a diploma in education except for two teachers (1male, 1 female) who had Bachelor of Education Degrees in Psychology and Leadership and Management respectively.	1 female head- Bachelor of Education (fabrics & textiles) 1 male head – Bachelor of Education(Mathematics)
Experience		1 male-8 years 1 female- 12 years 1 male- 15 years 1male-18 years	14 years and 33 years

(Source Field data 2018)

Table 4.1 shows that there is gender balance among students and school administrators. However, there is gender imbalance among male and female grade seven teachers. The students are young. The teachers are mature which means they are able to guide the students. The Heads of schools are mature enough to supervise teachers and to guide the students.

4.3 QUALIFICATIONS AND EXPERIENCE OF TEACHERS

All the twenty learners (100%) highlighted that their teachers were experienced to teach Mathematics at grade seven level. When all the four teachers (100%) were interviewed, they indicated that they were all qualified and experienced. This was supported by both the school

administrators (100%) who said that their teachers were qualified and experienced to teach Mathematics at grade seven level. Table 4.1 shows that two out of four teachers (50%) are degree holders and two out of four teachers (50%) have diploma in education. The documents of the teachers when analysed also indicated that the teachers were all qualified and experienced.

Basing on the data generated in Table 4.1 two out of four (50%) of the teachers had been teaching for 8 to 12 years and the other two out of four teachers (50%) were teaching for 15 to 18 years. The teachers when interviewed also indicated that there were qualified and experienced. Data generated from the school administrators also point that grade seven teachers were experienced and qualified to teach mathematics.

From the data generated, the researcher discovered that qualifications and experiences of teachers are not necessarily the factors that cause low pass rate in Mathematics but maybe there are some other factors. Students perform lower in Mathematics when taught by a teacher with less than 1 year experience (Betts, Zau & Rice, 2003). The teachers from the selected schools had both the required qualifications and experience, but the students still fail Mathematics. Properly qualified teachers increase the amount of instructional time for learners and this has affected learner performance positively (Tichapondwa, 2011).

4.4 TEACHING METHODS USED IN THE TEACHING OF MATHEMATICS

From the data generated, it was revealed that teachers use a number of teaching methods. All twenty students (100%) from the selected schools commented that their grade seven teachers use teacher-centred methods to teach Mathematics. One student said:

Our teachers do much of the talking during Mathematics lessons, the teachers demonstrate solving problems on the chalkboard and we are not given time to work out problems either on the chalkboard or in pairs.

When interviewed, two out of the four teachers (50%) commented that, they used teacher centred methods in teaching while the other two (50%) said they used student centred methods. All the four teachers (100%) indicated that the problem occurs when students are not active in lessons as they find it difficult to solve mathematical concepts and the teachers end up resorting to teacher-centred methods in teaching Mathematics. One teacher commented that:

I have to do the demonstration and give explanations because the time allocated for mathematics is too little and also these kids are too passive, they cannot work problems on their own.

Another teacher also said:

Students just dislike Mathematics and if you give them pair work they will not be active that is why we will have to apply teacher centred methods.

Data generated from the school administrators also agreed with what the students had said. Both the school administrators (100%) commented that teachers are overloaded as they are to teach quite a huge number of learners and to help individual student can be difficult that is why the teachers have to use teacher centred methods. Data generated from classroom observations also indicate that all the four teachers (100%) from the two schools use teacher centred methods. When the schemes of work were analysed, the researcher noted that, teachers scheme for pupil centred activities but these are not employed in their lessons because of the reasons noted above.

For effective and efficient teaching, learner centred methods that involves learners to actively participate in the teaching and learning process must be applied (Mtitu, 2014). The Mathematics syllabus advocates for teaching methods like, discovery, group work, project work, question and answer among others. This is not being practised by teachers in the selected schools as the teachers have opted for teacher centred methods. The teacher centred methods can therefore be one of the factors that cause low pass rates in Mathematics at grade seven level. Despite the fact that Mathematics Syllabus advocates for students participation in lessons, this is not what is on the ground.

4.5 ATTITUDES OF STUDENTS TOWARDS MATHEMATICS

The findings of the study reveal that sixteen out of twenty students (80%) confirmed that they have a negative attitude towards Mathematics and only four (20%) showed a little interest towards the subject. One student from school A said:

I hate Mathematics, everyone in my family has not passed the subject ever since and why should I bother.

Another student from school B was emotional when responding she said:

Mathematics is very confusing, there is so much matter that one needs to grasp and I find Mathematics lessons boring. I always fail Mathematics and I am not the only one who fails. In our class only two students are able to pass Mathematics.

This data was also confirmed by all the four teachers (100%) when interviewed. One of the teachers said:

The students just have negative attitudes towards Mathematics and if you try to force them, they will play truancy.

In agreement with the above statement another teacher from school B also said:

Some students dislike Mathematics to such an extent that they usually come to school after Mathematics lessons while others pretend to be sick or sleep during the lesson will only be well after Mathematics lessons.

Both the schools' administrators (100%) agreed with what the teachers had said. During classroom observations, the researcher also noticed that some students were sleepy during mathematics lessons while others were not paying attention at all to the teacher. A handful of students were also late for Mathematics lessons and the bulky of the students were not active during the lessons. The researcher also observed that other students refused to participate in group discussions while others did not write mathematics tasks given to them.

The analysis of the attendance register indicated that every day four or five students will be absent. When the researcher analysed the students' exercise books, she observed that some students did not write daily exercises and others had no Mathematics exercise books at all. In support of this Mupa (2015) says, students who are continuously failing Mathematics subject will play truancy, these students possesses a negative attitude and would not be enthusiastic to learn. Attitude is one of the vital elements which determine students' success or failure (kuranche et al., 2013). In this study, the researcher has concluded that negative attitudes of students towards Mathematics is a major factor that cause low pass rates in the subject.

4.6 TEACHING AND LEARNING MATERIALS AVAILABLE

All the twenty students (100%) said that there were no learning materials available at their schools save for the textbooks donated by UNICEF about 8 years ago. The textbooks were the only learning material mentioned by the students. Three out of four teachers (75%) confirmed that the textbooks were the only teaching and learning material available at their schools and only one teacher (25%) has introduced a resource file where researched materials for Mathematics and other subjects are kept. The researcher also saw the file during

document analysis. Teachers do not have time to create their own materials (Long & Dunne, 2014).

One of the teachers further on lamented that:

The available Step in Mathematics book 7 is not the most suitable book for students, so it is very rare for me to use it in my lessons; I rather use Ventures in Mathematics Grade 7 of which we only have one copy per grade.

During the interviews, all the four teachers (100%) said they do not have enough resources, and at times the teachers will teach from their heads. Two out of four teachers (50%) indicated that they have once encouraged their students to buy their personal copies but none had responded. Teachers from school B said they sometimes used students' copies. Both the school administrators (100%) indicated that the schools do not have enough resources to assist in the teaching and learning. The school administrators also said that the UNICEF textbooks were the only teaching resource they had in their schools. The school administrators were also complaining on the storage of these textbooks. From the data generated from teachers and school administrators, resources were very few in their schools.

One teacher reported that:

Students are not willing to bring the learning materials when they are tasked to do so and also learning materials like counters are not favoured by most grade sevens who thought they are too old to be using them.

All the four teachers (100%) were complaining that their schools are not providing them with enough teaching and learning materials and as a result teachers are applying teacher centred methods. The conditions of the schools also were not good, that is, they lacked requisite infrastructure such as cupboards to store books and many other teaching and learning materials. All the four teachers (100%) when interviewed also indicated that lack of infrastructure illustrate some of the associated challenges. One teacher commented that;

We do not have cupboards to store our teaching materials and because some classrooms are not lockable during weekends students come in and tear charts and this is discouraging and demotivating.

Data generated from document analysis indicated that (75%) of the donated textbooks by UNICEF were in bad shape, that is, most of them were torn without the first pages. Through lesson observations, the researcher noted that (75%) of the textbooks were torn and in a very bad shape.

During classroom observations, the researcher noted that, at school A five students were sharing one textbook and at school B the ratio was four children as to one textbook. All the teachers' inventories (100%) highlighted lack of resources. The attendance registers of both schools indicated a large number of learners. The teaching and learning materials in teaching Mathematics includes counters, abacuses, worksheets among others. In support of the above statement, Drews (2007) posits that teachers should use manipulative materials regularly in order to give hands-on experience that help students to construct useful meanings for the Mathematical ideas they are learning. The quality and adequacy of physical and material resources have an impact on the performance of the pupils in the subject of Mathematics. The sampled schools are struggling to make available the necessary resources for learning. These resources include textbooks, proper classrooms, libraries, computers and laboratories and their availability makes teaching teachers and pupils having a negative attitude towards the subject and consequently disliking the subject. The provision of enough instructional media or materials, conducive classrooms will assist a lot in improving the performance of primary school students in Mathematics (Usman, 2012). The researcher has concluded that this shortage of learning materials is a major factor causing low pass rate in Mathematics.

4.7 SUMMARY

To sum up, the researcher discovered that teacher centred methods, attitudes of students and lack of teaching and learning materials are the major factors which cause low pass rate in Mathematics. The following chapter will focus on the summary, conclusion and recommendations of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The researcher summed up the research findings, outlined the conclusions and put forward recommendations which can be used by the Ministry of Education, non-governmental organizations, teachers and other stakeholders to enhance high pass rates in Mathematics.

5.2 SUMMARY

The issue of low pass rate in Mathematics at grade seven for the past ten years has led the researcher to carry out this study to find out factors which cause these low pass rates. This study is of significance because Mathematics plays a vital role in solving problems and shaping how individuals deal with the various spheres of private, social and civil life (Antony & Walshaw, 2009). Mathematics is of importance to an individual's life in that it boosts reasoning faculty of students, hence there is need for the subject to be fully understood at all angles especially at Primary level. The major limitation of the study was the cost of travelling from the head office to the sampled schools and the researcher had to borrow money from other people for the study to be a success. Lastly, definition of key terms which are performance, resources and primary education were explained fully as they were used in the study.

The review of literature was established for the researcher to understand what other sources have researched on factors causing a low pass rate in Mathematics. The literature was

reviewed using sub research questions as themes; - qualifications and experiences of grade seven teachers, teaching methods employed in Mathematics lessons, attitudes of students towards Mathematics and teaching and learning materials available. The researcher discovered that Mathematics is a subject which requires highly qualified and experienced teachers who can employ student centred methods and also that adequate teaching and learning materials are of vital importance. In support of the above notion, Yara (2009) postulates that the success of pupils in public examinations and educational performance in general is the teachers' qualification, experience and commitment. Michael (2015) says students performances in Mathematics is influenced by the teaching and learning methods. For students to grasp Mathematical concepts they require adequate teaching and learning resources. In support of this Berthoud (2010) states that lack of adequate textbooks, other resources and materials makes teaching very difficult to improve performance of learners. Attitude toward Mathematics is related to Mathematics success in the classroom (Mcleod, 2002). It is therefore the duty of teachers to make Mathematics lessons exciting so that students' attitudes towards the subject will change for the best.

A qualitative research design was used where data were generated in a natural setting. Twenty- six participants consisting of twenty learners, four grade seven teachers and school administrators were purposively sampled for data generation. The interview and observation guides as well as document analysis were the data generating instruments used. The observation guide helped the researcher to get information which cannot be assessed through interviews. The thematic approach which was used to analyse generated data enabled the researcher to formulate clearly the themes from data.

5.3 CONCLUSIONS

5.3.1 Teachers are qualified and experienced to guide students for higher performance at grade seven examinations hence teacher qualification and experience were not the factors contributing to low pass rate in Mathematics.

5.3.2 Teacher centred methods are used by teachers at the expense of learner centred methods in the teaching of Mathematics, resulting in poor performance.

5.3.3 Students have a negative attitude towards Mathematics which results in them performing badly in Mathematics.

5.3.4 There is inadequate teaching and learning materials in schools which is also a contributory factor toward low performance of students in Mathematics.

5.4 RECOMMENDATIONS

The researcher made the following recommendations:

5.4.1 Parents through school development committees should procure teaching and learning materials in schools.

5.4.2 Teachers should use student centred methods to teach Mathematics.

5.4.3 Districts, circuits and clusters should be capacitated to hold staff developments at all levels where teachers can learn and share ideas on the teaching of Mathematics at grade seven level.

5.4.4 The Ministry of Primary and Secondary education should call for more regular in-service training and refresher courses in the teaching of Mathematics.

5.4.5 The school administrators should ensure that their schools are conducive for students to develop positive attitudes towards Mathematics

5.4.6 The school administrators should supervise and guide teachers on how to perform their work effectively.

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APPENDIX A

LETTER FROM COLLEGE

APPENDIX B

LETTER FROM THE MINISTRY

APPENDIX C

INTERVIEW GUIDES FOR HEADS OF SCHOOLS

INTERVIEW GUIDE FOR HEADS

My name is Mushakwe Abgirl Varaidzo a student at Midlands State University in the department of Educational Foundations, Management and Curriculum Studies. I am carrying out a research on the **Factors that cause a low pass rate in Mathematics at grade seven level in Kwekwe Rural District**. The information obtained will be strictly used for academic purposes and will be treated with confidentiality. Therefore, I kindly asks you to respond to the following questions genuinely.

1. What are the qualifications and experiences of your teachers teaching grade seven level?
2. What are the methods used to teach mathematics at grade seven level.?
3. What are the attitudes of students towards mathematics?
4. What are the teaching and learning materials available in teaching mathematics at grade seven level?

APPENDIX D

INTERVIEW GUIDES FOR GRADE SEVEN TEACHERS

INTERVIEW GUIDE FOR GRADE SEVEN TEACHERS

My name is Mushakwe Abgirl Varaidzo student at Midlands State University in the department of Educational Foundations, Management and Curriculum Studies. I am carrying out a research on the **Factors that cause a low pass rate in Mathematics at grade seven level in Kwekwe Rural District**. The information obtained will be strictly used for academic purposes and will be treated with confidentiality. Therefore, I kindly asks you to respond to the following questions genuinely.

1. What are the qualifications and experiences of teachers teaching grade seven classes?
2. What are the methods used to teach Mathematics at grade seven level?
3. What are the attitudes of students towards Mathematics?
4. What are the teaching and learning materials available in teaching Mathematics at grade seven level?

APPENDIX E

OBSERVATION GUIDE

OBSERVATION GUIDE

My name is Mushakwe Abgirl Varaidzo a student at Midlands State University in the department of Educational Foundations, Management and Curriculum Studies. I am carrying out a research on the **Factors that cause a low ass rate in mathematics at grade seven level in Kwekwe Rural District**. The information obtained will be strictly used for academic purposes and will be treated with confidentiality. Therefore, I kindly asks you to respond to the following questions genuinely.

Date

School

Class

Time

Schemes of work, teachers file, text books, learning and teaching material are going to be observed.

1. Qualification and experience of teachers

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2. Students' attitude

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Teaching and learning materials available

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3. Teaching methods

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APPENDIX F

DOCUMENT ANALYSIS

DOCUMENT ANALYSIS GUIDE

My name is Mushakwe Abgirl Varaidzo a student at Midlands State University in the department of Educational Foundations, Management and Curriculum Studies. I am carrying out a research on the **Factors that cause a low pass rate in mathematics at grade seven level in Kwekwe Rural District**. The information obtained will be strictly used for academic purposes and will be treated with confidentiality. Therefore, I kindly asks you to respond to the following questions genuinely.

Date

School

Class

Time

Schemes of work, mathematics syllabus, continuous assessment files, internal and external examinations results are going to be used.

1. Qualification and experience of teachers

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2. Teaching and learning resources

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3. Teaching methods

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School mathematics policy

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4. Attitude of students

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APPENDIX G

TURNITIN REPORT