BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE EDUCATION

BACHELOR OF SCIENCE EDUCATION HONORS DEGREE IN MATHEMATICS

AN ANALYSIS ON FACTORS INFLUENCING POOR PERFORMANCE BY MATHEMATICS ORDINARY LEVEL LEARNERS AT ZENGEZA 3 HIGH SCHOOL

BY

CHIKUHWA VIMBAI

B225515B

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE BACHELOR OF SCIENCE HONORS DEGREE IN MATHEMATICS EDUCATION

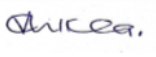
30 JUNE 2024

RELEASE FORM

Title of the dissertation: An analysis on factors influencing poor performance by mathematics ordinary level learners at Zengeza 3 high school.

1.To be completed by the student:

I certify that this dissertation is in conformity with the preparation guidelines as presented in the Faculty Guide and Instructions for Typing Dissertations.



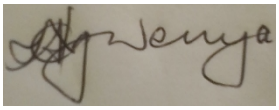
26/06/2024

_____ _____

(Signature of student) (Date)

2. To be completed by the Supervisor:

This dissertation is suitable for submission to the Faculty. This dissertation show checked for conformity with Faculty guidelines.



26/06/2024

_____ _____

(Signature of the Supervisor) (Date)

3. To be completed by the Chairman of the Department:

I certify, to the best of my knowledge that the required procedures have been followed and the preparation criteria have been met for this dissertation.

_ _ 17 / 10/ 24

(Signature of the Chairman) (Date)

APPROVAL FORM

Name of the student **:** CHIKUHWA VIMBAI

Registration Number **:** B225515B

Dissertation Title **:** An analysis on factors influencing poor performance by mathematics ordinary level learners at Zengeza 3 high school.

Degree Title **:** Bachelor of Science Honours Degree in Mathematics Education

Year of Completion **:** 2024

Permission is hereby granted to Bindura University of Science Education to single copies of this dissertation and to lend or sell such copies for private, scholarly scientific purposes only. The author reserves any publication rights and neither dissertation nor extensive extracts from it be granted or otherwise be replicated without the author's consent.

Signed…… Date……../...……/……...

Permanent Address **:** CHIKUHWA SECONDARY SCHOOL P BAG 663 MUREWA.

ACKNOWLEDGEMENTS

I would like to thank God for guiding me and protecting me throughout the entire process of my learning up to this level.

I also dedicate my sincere acknowledgment with gratitude to the critical role played by my supervisor, Dr Ngwenya for his priceless help and guidance through inspiration and encouragement during all stages of the study. He gave me constant support and motivation with patience to remain focused.

Special thanks to my husband Farai Nyagurungo and lovely daughters Benevolence and Tanyaradzwa who were always by my side supporting me financially and emotionally. I would also like to offer special thanks to my friends Farirai Matemavi, Loice Chamboko and Shine Chipunza for being my inspiration in giving me unceasing encouragement and attention throughout the course. I thank the administrators of Zengeza 3 High school for allowing me to carry out the researches at their institutions and also the staff and learners for their cooperation and assistance rendered during interviews.

DEDICATION

This research is dedicated to all my family members and friends who gave me the courage throughout this research project.

ABBREVIATIONS AND ACRONYMS:

ZIMSEC- Zimbabwe School Examination Council

SES- Socio Economic Status

UNESCO- United Nations Educational Scientific and Cultural Organization

ABSTRACT

This study aims to investigate the various factors that contribute to poor performance in mathematics among ordinary level learners at Zengeza 3 high school. Mathematics is a crucial role in shaping the academic and professional future of learners. Many learners struggle with this subject leading to poor performance and limited opportunities for further education and careers prospects.

This research employed a mixed approach combining quantitative data through questionnaires and qualitative data through interviews. This study explores factors such as poor teaching methodologies, learners' attitude towards mathematics, lack of educational resources, peer pressure, absenteeism, motivation and the need to do arts subjects at advanced level that influence poor performance in mathematics.

Findings from this study provided valuable insights into the specific challenges faced by mathematics ordinary level learners at Zengeza 3 high school in their pursuit of mathematical proficiency. The results were instrumental in developing targeted interventions and strategies to improve the teaching and learning of mathematics, ultimately enhancing the academic performance of learners.

This study was crucial not only for Zengeza 3 high school but also for educators, policymakers and researchers seeking to address the pervasive issue of poor performance in mathematics among ordinary level leaners in similar educational settings. By understanding and addressing

the underlying factors, educators can create a supportive and conducive learning environment, empowering learners to excel in mathematics and beyond.

TABLE OF CONTENTS

Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER 1
THE PROBLEM AND ITS SETTING

1.1 Introduction

It has been noted that at Zengeza 3 High School learners are performing badly in mathematics. The cause of factors influencing poor performance by ordinary level mathematics learners at Zengeza 3 high school might be absenteeism of both teachers and learners. Lack of money for school fees result to absenteeism by learners since they always send back home to collect school fees. Lack of educational resources for example textbooks, calculators, mathematical instruments like geometrical instruments. Poor teaching methodologies. If a teacher always uses one method when teaching therefore it becomes difficult for the learner to comprehend and apply concepts for them to understand. Learners regard mathematics as a difficult subject so they perform poor since they already label it as the challenging one. Learners exposed to domestic violence and physical abuse in their homes can experience emotional trauma, physical and psychological barriers to learning hence ultimately impact educational outcomes.

1.2 Background to the study

The researcher noted that learners at ordinary level fail Mathematics and had a close analysis to find out factors responsible for continued poor performance in mathematics at Zengeza 3 High School. The researcher traced the trend for the previous years pass rate by checking from the record of marks, internal test and statistics of the ZIMSEC results which were wrote for the past years being shown at the school. The researcher's concern is also spearheaded by the concerned hearts of teachers, parents and friends in Zimbabwe as a whole. Therefore, it is the intention of this study to attempt to find out the factors which contributed to poor performance in Mathematics which has reached a climax at the school and ways to overcome the problem.

1.3 Statement of the problem

This study is aimed at investigating the reasons why learners at ordinary level fail mathematics. This has been seen as a problem because it affects learners' careers since mathematics is a requirement of most job entries. Also, at universities and colleges they don't consider those applicants without mathematics to pursue their studies. The study also seeks to identify ways to overcome the problem of failing mathematics and the ways proposed by the researcher to improve on the current situation.

1.4 Research Questions

1. What are the difficulties or challenges that learners are facing in learning Mathematics?

2. Why learners' performance in Mathematics is low at Zengeza 3 High School?

3. What are the school related factors contributing to the low performance of Mathematics by learners at ordinary level?

1.5 Objectives of the study

1. To identify difficulties faced by learners in the teaching and learning of Mathematics.

2. To investigate the root causes of high-rate Mathematics failure at Zengeza 3 High School.

3. To investigate on factors that contribute learners to perform poor in Mathematics.

1.6 Significance of the study

This research is very important and it is going to change the pass rate because it outlined the root causes of Mathematics failure and ways to be taken to help learners to pass Mathematics. The

information obtained may benefit the following stakeholders; parents, learners, the researcher and the school, institutions of higher learning and the nation at large in attempt to solve the problem.

1.6.1 The Researchers

The researcher herself will benefit from the study in many ways. The researcher will be in a better position to motivate learners to have interest in the subject. The researcher is going to be equipped with basic research skills for further studies. Also is the requirement of the researchers' programme. The research study also benefits other researchers in Zimbabwe and the world who are interested in such issues. It can provide literature and findings that can be used as future reference when similar issues arise.

1.6.2 The Teachers

The mathematics teachers will benefit from the study as it brings out the causes why ordinary level learners perform poor in Mathematics. It helps teachers to improve where necessary especially on motivational techniques, application of correct methodologies. The teachers can also evaluate their teaching methodologies which might be the causes why learners perform poor in Mathematics.

1.6.3 The Learners

The learners may come to understand the effects of failing the subject considering their career aspirations. Considering that measures are taken on the researchers' findings, learners may be assisted by their teachers, parents and the school towards improving their performance and attitudes towards the subject.

1.6.4 Parents

Parents will become aware of their children's performance towards the subject. Therefore, parents may be in a position to motivate, guide and encourage their children so that they develop positively towards Mathematics.

1.7 Assumptions of the study

Learners at ordinary level were doing Mathematics from form one level. Failure is being assumed on poor implementation of the teaching strategies, poor planning by teachers which demotivate learners, the availability of inadequate resources, parents may pay fees late hence learners miss lessons since they were send back home to collect fees and also absenteeism. The attitude of learners towards the subject is also assumed to be the contributing factors.

1.8 Delimitations of the study

The research is only confined to Zengeza 3 High School which is under Chitungwiza district in Harare Metropolitan province. This is the work place of the researcher. The research is going to cover a small group that is focusing on learners at ordinary level and maths teachers to represent the number of potential respondents.

1.9 Limitations of the study

The researcher faced financial constraints which resulted to lack of adequate resources needed during the research process. As a result, a small sample size that can be catered for by available

resources has been chosen. Since there was no library and the school was not electrified hence there was no access to the internet. Another problem was the negative attitude that some qualified teachers portrayed to the researcher. This was reflected on questionnaires given to them as some of them were not returned and also, they were reluctant to offer information concerning my research.

1.10 Definitions of terms

In this section the selected terms are defined contextually as follows:

1.10.1Ordinary level Mathematics

It is a science that specializes in delivering concepts in form of numbers, time, and space that is learned in two levels: level one is form 1 and 2 then level two is form 3 and 4 inclusively (Zimbabwe School Examination Council, 2015).

1.10.2 Poor performance

It refers to a learner's inability to meet the educational standards and expectations of their school or grade level (Willis, 2014). This can be due to a variety of factors which are lack of effort, lack of ability or lack of appropriate support and resources.

1.10.3 Learner

Binet and Howe (2022) defined a learner as an individual who is actively engaged in the process of acquiring knowledge and skills through formal and informal education. This may be at any stage of life and can take place in a variety of settings such as schools.

1.11 Chapter Summary

Subject failure is not recognised in most educational institutions. The researcher's intention was basically to gather information on the factors influencing poor performance by mathematics ordinary level learners at Zengeza 3 high school which will benefit learners, parents, teachers and the school. In this chapter the gap to be filled by the study was identified through the interrogation of the following: research questions, research objectives, statement of the problem, the significance of the study, delimitation of the study, and limitation of the study. The next chapter focuses on the review of the related literature.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

Education is a fundamental aspect of human development, providing individuals with the necessary knowledge and skills to navigate the complexities of the modern world. Mathematics, in particular, is a subject that plays a critical role in various academic and professional pursuits. This review aims to analyze the factors influencing poor performance among Mathematics Ordinary level learners at Zengeza 3 High School. By delving into the existing body of literature, we seek to identify the multifaceted aspects that contribute to learners' difficulties in mastering mathematical concepts and skills. Understanding these factors is crucial for devising effective strategies and interventions to address the issue and enhance learners' performance in mathematics. Numerous studies have been conducted to explore the underlying causes and shed light on possible solutions. By synthesizing and critically examining these studies, this review aims to provide valuable insights into the specific context of Zengeza 3 High School and contribute to the broader understanding of factors influencing mathematics performance. In the following sections, we will delve into the existing literature, highlighting key findings and themes related to factors influencing poor performance among Mathematics Ordinary level learners. The synthesis of these studies will provide a foundation for understanding the challenges faced by learners at Zengeza 3 High School and inform the development of targeted strategies to improve mathematics education.

2.2 Theoretical Perspective

The sociocultural theory, as proposed by Vygotsky (2018), provides a relevant framework for understanding the factors influencing poor performance in Mathematics among Ordinary level learners. According to this perspective, learning is a socially mediated process, and individuals acquire knowledge and skills through interactions with their social and cultural environment. In the context of this study, the sociocultural theory suggests that the performance of Mathematics learners at Zengeza 3 High School can be influenced by various factors embedded in their social and cultural contexts. These factors may include socioeconomic status, parental involvement, peer interactions, and cultural beliefs about mathematics and will be examined in the following key factors.

2.2.1 Socioeconomic Status (SES)

Research has shown that learners from low socioeconomic backgrounds often face economic challenges, limited access to educational resources, and less parental involvement (Sirin, 2015). These factors can hinder their academic achievement, including in Mathematics.

2.2.2 Parental Involvement

Parental involvement has been consistently linked to learners' academic success. Parents who actively engage in their child's education, provide support, and establish high expectations tend to have children with better academic outcomes (Desforges & Abouchaar, 2020). Lack of parental involvement may contribute to poor performance in Mathematics among learners at Zengeza High School.

2.2.3 Peer Interactions

Peer interactions can significantly influence learners' academic performance. Positive peer relationships, collaborative learning, and peer support can enhance students' motivation, engagement, and understanding of mathematical concepts (Wentzel, 2016). Conversely, negative peer interactions, such as peer pressure or exclusion, may contribute to poor performance in Mathematics.

2.3 Causes of poor performance in Mathematics

2.3.1 Poor teaching methodologies

Learner poor performance is attributed to teachers' use of poor teaching methods. Poor teaching pedagogical methods is a recipe for failure by learners hence it can lead to learner's failure in grasping the concepts. When teaching, mathematics confirms findings by Hande et al (2014) who reported that some of the methods that teachers use does not help learners to develop conceptual understanding of mathematics hence learners perform poor. Kasambira (2016) defined a teaching method as a way of delivering a lesson in order for learning to be more effective. Teaching methods are the various strategies that can be used by a teacher in a bid to bring about the required teaching and learning conditions. The teaching method that a teacher can use must have a great bearing on the understanding of the learners.

Boisvert (2017) stated that a teacher has to adopt a method that involves learners much, for excellent results to be obtained like child centred which is the best method to be adopted because it involves learners a lot in their learning. Also, Romiszowski (2014) argues that for a teacher to improve pupil's performance he or she has to adopt acceptable style of teaching that enable learners to recall back and enumerate what they experience during the lesson.

Hill (2014) points out that, failure by the teacher to use the required methods of teaching the subject can have disastrous effects on the ability of the pupil to perform well and hence cause learners to fail the subject. This idea was also supported by Timperley (2018) who posits that the teacher should search for methods and techniques which stimulate learners' interest as well as enhancing the teaching and learning process.

Goldhaber (2015) points out that the use of only one method in teaching of mathematics does not enable learners to comprehend the concepts and unable to follow abstract theories in mathematics, ultimately resulting in poor achievement. Variety of teaching methods should be employed so that learners comprehend and apply the concepts for them to understand.

2.3.2 Attitude towards the subject

Attitude towards the subject can be of both teachers and learners. According to Meyer & Herscovitch (2016), attitudes are learned throughout life and are held in the way children are socialized at home and at school. Children have been observed as good observers in many educational programmes. They assess and easily copy the attitudes of those people around them and easily become like those around them. Perception about the difficulties associated with numerate subjects has thus led some learners having preconceived ideas about numerate subjects such as maths. Munn (2014) posits that most learners will regard maths as a difficult subject so they already labelled the subject as a challenging one therefore developing negative attitude towards it as a result, they will not put much effort on it.

Effective education involves the values and attitudes the learner has, on the subject. Due to the fact that the subject had low pass rate in the previous years, the learners take the subject with the belief that they will perform poorly. This caused them to develop negative attitude towards the subject. According to Too (2017), an attitude is a point of view about a situation; it is a way of

thinking. It is an inward feeling expressed by outward behaviour. Attitudes are formed as a result of some kind of learning experiences. They may also be learned simply by following the example or opinion of parent, teacher or friend. This is mimicry or imitation, which also has a part to play in the teaching and learning situation. In this respect, what the learners draw from their teachers' disposition enables them to form their own attitude, which may likely affect their learning outcomes.

Bandura (2015) in his observational theory demonstrated that behaviours are acquired by watching another (the model, teacher, parent, mentor, friend) that performs the behaviour. The model displays it and the learner observes and tries to imitate it. Some learners generally have a negative attitude towards mathematics that is they hate the subject because of what they have been told by their parents and relatives who found mathematics as a difficult subject when they were still at school so this is a reason why they perform poorly in the subject.

Teachers are, invariably, role models whose behaviours are easily copied by learners. What teachers like or dislike, appreciate and how they feel about their learning or studies could have a significant effect on their learners. Unfortunately, however, many teachers seldom realize that how they teach, how they behave and how they interact with learners can be more paramount than what they teach. So, teachers' attitudes directly affect learners' attitudes.

Henslin et al (2017) found that the effect of teachers' attitude towards assessment practices on learners' achievement and their attitude towards mathematics should be positive. In the same vein Onocha, (2021) reported in one of his findings that teachers' attitude towards Mathematics is a significant predictor of learners' mathematics achievement as well as their attitude.

Chako (2016) reported in a study of teacher and pupil characteristics as correlates of learning outs in mathematics that teachers' attitude towards teaching significantly predict learners' attitude as well as achievement in Mathematics. Robbins and Frare (2015) found that teachers' attitude towards mathematics teaching is one of the major contributors towards explaining the variance in learners' cognitive achievement. Ng and Feldman (2018) confirmed that teachers' attitude towards Mathematics teaching affects learners' attitude to and achievement in the subject. Teachers' attitude towards the teaching of Mathematics plays a significant role in shaping the attitude of learners towards the learning of Mathematics. Ogunniyi (2017) found that learners' positive attitude towards Mathematics can be enhanced by teacher- related factors like teachers' grounded knowledge of the subject-matter and making the learning quite interesting, teachers' resourcefulness and helpful behaviour and teachers' enthusiasm.

According to Jones (2019), it is a general belief that positive attitudes towards a subject lead to more effort put and develop interests to it. A negative attitude and lack of interest to mathematics leads to lower achievements and unwillingness to pursue the subject.

From the above we can say that the role of the teacher as facilitator of learning and the contributions to students' achievement is paramount. The quality of mathematics learning depends on the way it is presented to the learner, the way the learner actively interacts with the learning experiences presented to them and the environment within which the learning takes place. Teachers' attitude towards Mathematics is a significant predictor of learners' maths achievement as well as their attitude towards Mathematics. The attitude of the mathematics teacher can mould the attitude of the learners to want to learn or not.

2.3.3 Motivation

Among the factors influencing learners' learning, motivation is a very important factor which determines the success or failure in mathematics. Motivation is commonly thought as an inner state of need or desire that activates an individual to do something to satisfy them. Motivation is typically defined as the forces that account for the arousal, selection, direction, and continuation of behaviour. Weiner (2006) also give a proposed definition of motivation as a state of cognitive and emotional arousal, which leads to a conscious decision to act, and which gives rise to a period of sustained intellectual and physical effort in order to attain a previously set goal. Also, Bernard (2016) proposed his definition of motivation as, the stimulation of interest or action towards a particular objective where previously there was a little attraction to that goal.

Motivation can be either intrinsic or extrinsic motivation. Deci and Ryan (2016) put forward intrinsic and extrinsic motivation theory and define intrinsic motivation as the motivation to engage in an activity which the learner thinks are enjoyable and satisfying. In other words, it is the motivation within oneself and learners only perform an action for the sake of enjoyment. Learners who are intrinsically motivated are not trying to earn a reward, they don't need praise or treats for doing well, incentives or punishments because the activity itself is satisfying and rewarding (Woolfolk, 2017), since their objective is to have enjoyment. The enjoyment they experience would be sufficient for them hence performing well. So, the view of intrinsic motivation is based on the need to attain mastery, use self-adopted standards and self-regulation.

According to Woolfolk (2017) extrinsic motivation is the behaviour that is motivated by rewards or punishments administered by external forces and are determined without much consideration being taken into account to inner satisfaction or dissatisfaction. In other words, isa motivation that comes from outside an individual. Learners become motivated by external factors or tangible

rewards such as tokens, merit badges, praise. These are given to learners rewarding every good performance. It encourages learners to work extra hard towards their goals as they are rewarded at the end. Learners who are extrinsically motivated may not enjoy the subject but they may only wish to receive some external rewards hence excellent results are obtained.

Motivation can also be from teachers. Teachers can motivate learners by explaining how materials being taught relate to life outside the classroom. For instance, the teacher can emphasize the importance of Mathematics knowledge to the learner's future careers like engineers, doctors. Teachers might show a lack of expectations to leaners by giving low-level work, not following up on work and not believing that learners have the aptitude to do work as a result learners become demotivated, may have low self-esteem and low expectation in achievement hence performing poorly.

As mentioned above, motivation is one of the key variables which play an important role to the success teaching and learning of mathematics. The source of motivation can be derived from pupil's interest; teachers and parents which then fuel the learners desire to learn and continue to influence the learners' conscious decision to act and the effort that he or she will put.

2.3.4 Absenteeism

Absenteeism can be of the teacher or the learners. Chang (2016) says that, excessive absenteeism by learners may result in unlearned course material hence result in poor academic achievement. Excessive absenteeism by the teacher can drastically hinder the academic achievement of the learners. So, attending school regularly by both the teacher and the learner plays an integral role in the academic success of the learners. Gottfried (2019) postulates that regular attendance is essential for learners to fully engage with the learning process. When learners miss lessons, they

may struggle to catch up on missed material which can impact their academic performance. They also miss out on direct instruction, explanations and discussions that are crucial for learners understanding of the subject matter. This can hinder learners' ability to perform well in assessments and exams.

According to Kearney (2018), when learners are not in the school, they miss opportunity to grow academically, socially and emotional well-being leading to feelings of isolation and disconnection from the school community. This can have a negative impact on their overall academic performance since they are necessary for continued success in the school, in the community and on ward into adulthood. He further says that learners with excessive absence have lower achievement.

Burnmaster (2019) argues that there are some learners who have no reason to be at school as a result they frequently absent themselves from lessons to do other things that they thought would help in life. Absenteeism can contribute to poor performance in mathematics. Attitude of learners towards the subject of mathematics determines their commitments to mathematics.

2.3.5 Peer pressure

Allen and Fraser (2016) assert that every individual has a ceiling above which he/she will not be able to profit from experience in a particular activity. Researchers contend that adolescents' value judgments, are often influenced by their fear of rejection by the group. In order to fit in their chosen social circles, learners often involved in activities that are not morally upright such as drug abuse or reckless driving based on what is socially acceptable to the peer group which can distract them from their studies and lead to poor academic performance since the learner's

attention of studying is diverted. Constant pressure to conform to peer norms can lead to a decrease in self-esteem and confidence. Therefore, failure of mathematics is also influenced by peer thus asserted by DeLay et al (2016). The consequence of such actions has been evidenced by many learners who fail mathematics at ordinary level.

2.3.6 Lack of educational resources

The school is held to be more responsible for mathematics failure. At Zengeza 3 High school there are limited teaching and learning resources and this affects the quality of teaching mathematics since the teacher find it very difficult to plan effectively. There are few textbooks and learners have nothing to turn to, hence it badly affects them when they are trying to pursue homework and private study at home since textbooks availed have illustrations, exercises and examples which assist learners understanding so their unavailability poses problems to learners' concept formation and development. It also lacked library facility which caused a problem to teachers for they cannot develop mastery of concepts to learners with limited facilities. Mwamwenda (2020) says, "inadequate resources lead learners to develop negative attitude towards the subject". From the quote, it is clear that when resources are few learners will not be eager to learn.

UNESCO (2015) discovered that the high failure rate in South African secondary schools was caused by inadequate teaching facilities. Teachers in schools with limited resources like textbooks, charts, chalks face challenges in delivering quality education due to scarcity of teaching resources. Hence lack of funds to purchase the necessary equipment and textbooks result in poor quality textbooks hence ineffective teaching and learning.

2.3.7 The need to do arts at Advanced level

Most of the learners at Zengeza 3 High school are not putting effort in mathematics as a way of relieving themselves from the load hence concentrates on subjects which they need to do at advanced level. So, this result to poor performance in mathematics.

2.3.8 Guidance and counselling

Lack of guidance and counselling can have a significant impact on learners' performance in several ways. Clinchy and Handelsman (2015) states that guidance and counselling help students explore their interests, strengths, and weaknesses, and make informed decisions about their future career paths. Without proper guidance, learners may struggle to choose a suitable career leading to confusion and indecision that can negatively affect their academic performance.

Guidance and counselling provide learners with the necessary support and resources to overcome academic challenges. Without this assistance learners may not receive the help they need to improve their skills, manage their time effectively and address learning difficulties. As a result, they may underperform academically and struggle to reach their full potential.

In the same vein Reddy (2014) postulates that lack of guidance and counselling can play a vital role in motivating learners by helping them set realistic goals and providing encouragement. Without this guidance, learners may feel demotivated and disconnected from their studies leading to a decline in their performance and engagement in the learning process.

According to Brown and Dunn (2017) guidance and counselling services addresses learners emotional and social well-being. They provide a safe space for learners to express their concerns, manage stress and develop healthy coping mechanisms. Without access to these services learners

may struggle to deal with emotional or social challenges which can impact their overall well-being and consequently their academic performance.

2.3.9 Abuse

The abuse of learner can have a detrimental effect on their academic performance at school, impacting their social, emotional and psychological well-being as well as their ability to engage in learning and succeed academically. According to Wilson and Scher (2021), abuse is defined as any act that causes harm or distress to another person, either physically, emotionally or s

2.4 Chapter Summary

The main focus on this chapter was to review what other authors say about causes of mathematics poor performance. The researcher analysed the different authorities under the following sub-headings: poor teaching methodologies, absenteeism, motivation, attitude, guidance and the need to do arts at ‘A’ level. The next chapter focuses on the research methodologies that shall be used to collect data.

CHAPTER 3

RESEARCH METHODOLOGY

3.1Introduction

This chapter focuses on giving an overview on how data was collected in order to obtain possible answers to the research questions. An explanation of research design, research instruments and information gathering techniques will be given as well as thorough justification for the selected research instruments. Data collection procedures will be explained and analysed.

3.2 Research Design

To design is to plan. A research design is a detailed plan that assists research to map out the direction in order to come up with solutions of a problem affecting a particular population. Borg and Gall (2018) states that the research design is a process of creating an empirical test to support or refine knowledge. Patton (2015) defined research design as the plan that researchers follow to conduct their investigation. It constitutes the blue print for the collection, measurement and analysis of data. It is also a strategy that one chooses to integrate the different components of the study in a coherent and logical way, thereby, ensuring the researcher problem.

A research design typically include how data is to be collected, what instruments will be employed, how the instruments will be used and intended means for analysing data to be collected. A mixed methods research design was employed to gather both quantitative and qualitative data. This design allows for a comprehensive exploration of the factors influencing poor performance in considering both numerical data and the insights and perspectives of the participants. The qualitative data offer a deeper understanding while quantitative data provide

statistical information of the factors influencing poor performance from both learners and teachers' viewpoints. Questionnaires and interviews are tools which were used to collect data.

3.3 Research Methodology

A method is a way of accomplishing an end result. Bryman (2016) define research as performing a methodical study in order to prove a hypothesis or answer a specific question. Leedy (2019) suggested that research is a process through which we attempt to achieve systematically and with support of data that provide answer to a question or resolution of a problem. Therefore, research methodology as defined by Cohen and Manion (2019) refers to ways one uses to collect original data from the sample population. In other words, research methodology is the systematized set of procedures, techniques and tools used to conduct research. This study was grounded in the mixed methods approach in data generation, analysis and discussion. The researcher used both qualitative and quantitative research methods in this study in order to gain a comprehensive understanding of the research topic.

3.4 Population

In a statistical enquiry, one often need information about a particular group. This group is known as the population or the target group as defined by Crawshaw and Chambers (2014). The group could be small, large or even infinite. It is also a collection of objects or subjects that are of interest to the individual carrying out research. The targeted population was forty ordinary level learners that is form 3's and form 4's and ten ordinary level mathematics teachers making a total of fifty.

Teachers are considered because are the ones who facilitate the teaching and learning of the subject and they have direct contact with learners in the classroom as well as assessing their

work. Learners were also selected because they are the main focus of study. They helped the researcher to draw information which shall be used to improve the learners' current performance.

3.5 Sampling

According to Borg and Gall (2018), sampling means selecting a given number of subjects from a defined population as a representative of that population. It also means selecting the members from a defined population usually with the intention that the sample accurately represents the whole population.

3.5.1 Sampling Procedure

The researcher used a simple random sampling to obtain the sample of learners. Random sampling is defined as a method of selecting a sample from a statistical population in such a way that every element of the population has an equal chance of being selected. Crawshaw and Chambers (2014) refer random sampling as all possible sample size is equally likely to be selected. In other words, random sampling is a procedure in which all the individuals in the defined population have an equal chance of being selected, (Borg & Gall, 2018).

The researcher wrote yes or no on small pieces of paper therefore put all small pieces of paper in a hat. Each pupil had to pick from the hat without looking from the hat. The learners picked them after they have been mixed. Those who picked papers written yes were taken as the sample size. Random sampling restricts against selection of bias and results were applied to all learners and learners admitted as a fair method of selecting the sample size. On the teachers, the researcher used stratified sampling. According to Crawshaw and Chambers (2014), stratified sampling is used when the population is split into distinguishable layers or strata that are quite different from

each other and which together cover the whole population. Mathematics teachers were only be selected.

3.5.2 Sample size

A sample refers to a smaller, manageable version of a larger group. In other words, it is a representative of the population meaning that it accurately reflects the characteristics of the larger group. Therefore, sample size refers to the number of individuals, items or data points selected from a larger population to represent it statistically. Forty ordinary level learners and ten mathematics teachers making a total of fifty was a sample size being used to collect data.

3.6 Research Instruments

Leedy (2019) defines an instrument as a device that an investigator or researcher uses to collect data. It simply means tools that were used in gathering information that is valid for this research. Questionnaires and interviews were used to collect data in this research.

3.6.1 Questionnaires

According to Oluoch (2020) a questionnaire is a tool for collecting and recording information about a particular issue of interest. It mainly made up of list of questions including clear instructions and space for answers or administrative details. It is also a set of questions on a form submitted to a number of people in order to collect statistical information. The questionnaires had a definite purpose that is related to the objectives of the research. The questionnaires were used to obtain information from teachers as well as learners concerning the causes of poor performance in mathematics at Zengeza 3 High School.

3.6.1.1 Benefits of using questionnaires

- Questionnaires ensure great anonymity which enables respondents to answer even sensitive questions as a result respondents give accurate information about their thought hence limited biased information.
- Large amounts of information can be collected from a small number of people in a short period of time and in relatively cheap, quick and efficient way of obtaining large amounts of information from a sample of people.
- The results of the questionnaires can usually be quickly and easily quantified by either a researcher or through the use of software package.
- When data has been quantified, it can be used to compare and contrast and may be used to measure change.
- It can be carried out by the researcher or by any number of people with limited effect to its validity and reliability.

3.6.1.2 Problems faced on the use of questionnaires

- Questionnaires are costly to prepare since they need to be typed.
- If the respondent is not willing to disclose his or her information, he or she ignores or leaves certain questions, giving half answers and tick all the boxes hence getting inadequate information.
- There were some questions needing true or false answers may not give room for respondents to express their views.
- It is argued to be inadequate by Oosthuizen (2017), since some forms of information that is changes of emotions, behaviour and feelings were not portrayed.

- The respondents may read differently into each question and therefore their responds based on their own interpretation of the question. This is due to misunderstanding because of jargon being used in questioning.
- Respondents easily lie because no identification.
- A questionnaire consumes time on the side of the researcher in trying to construct questions which are reliable to the respondents in terms of terminology which suits their level of understanding.

3.6.2 Interviews

An interview is one of the techniques to be used in collecting data in this study. According to Oliver (2019) an interview is a conversation in which the interviewer questions the interviewee in order to gain information. In other words, it is a one-on-one verbal interaction between the researcher and the respondent. The purpose of interviewing is to find out what is in someone's mind.

3.6.2.1 Procedures in carrying out interviews

The interview schedule is prepared for learners to give their responses to why they are performing poor in mathematics. The researcher insured that the place or venue used for the interview process is properly arranged, have adequate furniture and convenient without disturbances.

3.6.2.2 Benefits of using an interview

- Sufficient information was collected through the interview process because the researcher was doing probing that is further questioning.
- The researcher got first-hand information through face-to-face interviewing.

- The interview helped the researcher in capturing interviewees' emotions and behaviours like gestures, facial and bodily expression, comments and attitude concerning the current situation.
- Quick feedback can be obtained through interview.
- Interviews can allow the researcher to clarify or explain questions further therefore the researcher can get relevant answer.
- The interviewer is the one that has control over the interview and can keep the interviewee focused on track to completion.

3.6.2.3 Problems encountered during the interview session

- Interview consumes time as compared to other instruments. This is so because the participants need to be interviewed one by one.
- The respondents can give biased information in order to please the interviewer especially if the aim of the research is known by the respondents
- Cost is another drawback faced by the researcher for face-to-face interview. It requires a staff of people to conduct the interviews, which means there was personnel costs.
- The quality of data the researcher received was depended on the ability of the respondents. Some interviewees have their natural ability to conduct an interview and then the researcher gather data well but the likelihood of the entire interviewing staff having those skills is low hence the researcher had her own biases that impact the way they input responses.
- The size of the sample is limited.

3.7 Data Presentation and Analysis

Schilling (2016) defined data analysis as a process that systematically interrogates the sourced experiences, views, and opinions about the issue under study. In addition, it involved data generation, and sorting of raw data to extract meaningful insights that support the basis of an argument (Stevens, 2021). The data was collected through interviews and questionnaires and analysed and presented using tables and graphs.

3.8 Integrity of the study

It is a critical aspect that ensures the research is conducted honestly, ethically and adheres to the highest standards of scientific inquiry. In this study research integrity is grounded on the trustworthiness of the study and ethical consideration that are to discussed in detail below:

3.8.1 Trustworthiness of the study

Trustworthiness of the study refers to its credibility, dependability, confirmability and transferability (Silverman, 2022). Demonstrating trustworthiness is crucial for ensuring that the research findings are reliable, valid and worthy of trust. Thus, this study the researcher shall establish credibility by using rigorous research methods, employing appropriate data collection techniques and ensuring the accuracy and validity of the data. Also, there shall be use of multiple data sources, employ triangulation methods and maintain detailed records to enhance trustworthiness. The researcher triangulated document analysis with the view to extract valuable information on the factors influencing poor performance by mathematics ordinary level learners. In order to maintain the trustworthiness of the study the researcher shall adhere to ethical guidelines and principles throughout the research process.

3.8.2 Ethical Consideration

When conducting research, it is essential to consider and adhere to ethical guidelines to ensure the protection and well-being of participations and the integrity of the study (Zindi, 2018). Ethical consideration is defined as the accumulation of values and principles that address questions of what knowledge, skills and attitudes to be acquired relevant to life needs (Lavrakas, 2018). Thus, participants' confidentiality is going to be maintained by using anonymized data and ensuring that individuals cannot be identified. The researcher shall handle and store data securely, ensuring that only authorized personnel have access to the information. The researcher shall take measures to minimize any potential physical, psychological, or emotional harm to participants. This includes using appropriate data collection methods, ensuring the privacy and comfort of participants during interviews or surveys, and providing debriefing or support mechanisms if necessary.

Ethics are systems of moral values that are concerned with the degree to which research procedures adhere to professional, legal and social obligations (Bem, 2017). The researcher is going to maintain professional integrity by conducting work in an unbiased and objective manner and report findings accurately and avoid misrepresentation or fabrication of data. Participants are to be approached with an introductory letter from the Bindura University of Science Education. Information in the letter is about the researcher and the department in case the participants had queries or wanted to verify the identity of the researcher. In this research, the researcher shall seek authority and permission from school authorities and the respondents.

The researcher is going to seek informed consent from participants so that the participation in the study should be a voluntary, and individuals should not face any negative consequences or coercion for choosing not to participate. The researcher is going to respect participants' right to

decline or withdraw from the study without any penalty. Clear information about the purpose of the study is to provided.

3.9 Chapter Summary

The main focus of this chapter was on research instruments which are to be used to collect data concerning the analysis of poor performance of mathematics. The instruments chosen are justified by giving the advantages and disadvantages. The following chapter which is chapter 4 presents interprets and analyse data to be collected.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSIONOF FINDINGS

4.1 Introduction

This chapter focuses on the presentation, analysing and interpretation of the generated data. The data presented was obtained from teachers and learners through interviews and questionnaires. The collected data focuses on answering questions raised in chapter one. The findings are presented narratively according to the emerging themes in a clear and organized manner utilizing tables, charts and diagrams to facilitate understanding and analysis.

4.2 Demographic Data

This refers to information that describes the characteristics of a population or a specific group. In this study the specific groups are mathematics teachers and ordinary level learners. It provides insights into specific aspects such as level of education, age, sex and teaching experience, qualifications on the side of teachers. This data helps in making informed decisions and policies, understand the diversity and dynamics within different groups and it is also essential ensuring fairness, equity in the research process.

Table 4.1: Demographic characteristics of selected learners (n=40)

Attribute(s)		(n)	%
Sex	Females	22	55
	Males	18	45
Age Range (years)	14 – 15	10	25
	16 – 20	25	62.5
	Above 20	5	12.5
Level of Education	Form 3	14	35
	Form 4	26	65

From the above table selected learners 22 were females and 18 were males with ages ranges from 14 years to 20 years and are mathematics ordinary level learners at Zengeza 3 high school. The majority of the learners are between the age range of 16 years to 20 years with a percentage of 62.5 this shows that this is the correct age for the ordinary level learners, followed by 25% which falls between 14 years and 15 years and the least 12.5% is in the age range of 20 years and above. Females were more than males.

Table 4.2: Demographic characteristics of mathematics teachers (n=10)

Attribute(s)		(n)	%
Sex	Females	4	40
	Males	6	60
Professional qualification(s)	Diploma in Education	8	80
	Bachelor in Education	2	20
	Master's in Education	0	0
Teaching experience (years)	0 – 10	2	20
	11 – 20	4	40
	21 – 30	2	20
	Above 30	2	20

Table 4.2 above presents the distribution of participants according to sex, professional qualifications and teaching experience. There were both female and male teachers and been shown that female teachers were fewer than males teachers meaning that males dominated in mathematics. The researcher also noted that diploma holders constituted 80% whilst those with bachelor's degree were 20%. Participants teaching experience ranged from 0 to above 30 years. From the table 4.2 it is shown that a larger number of teachers are more experienced hence they

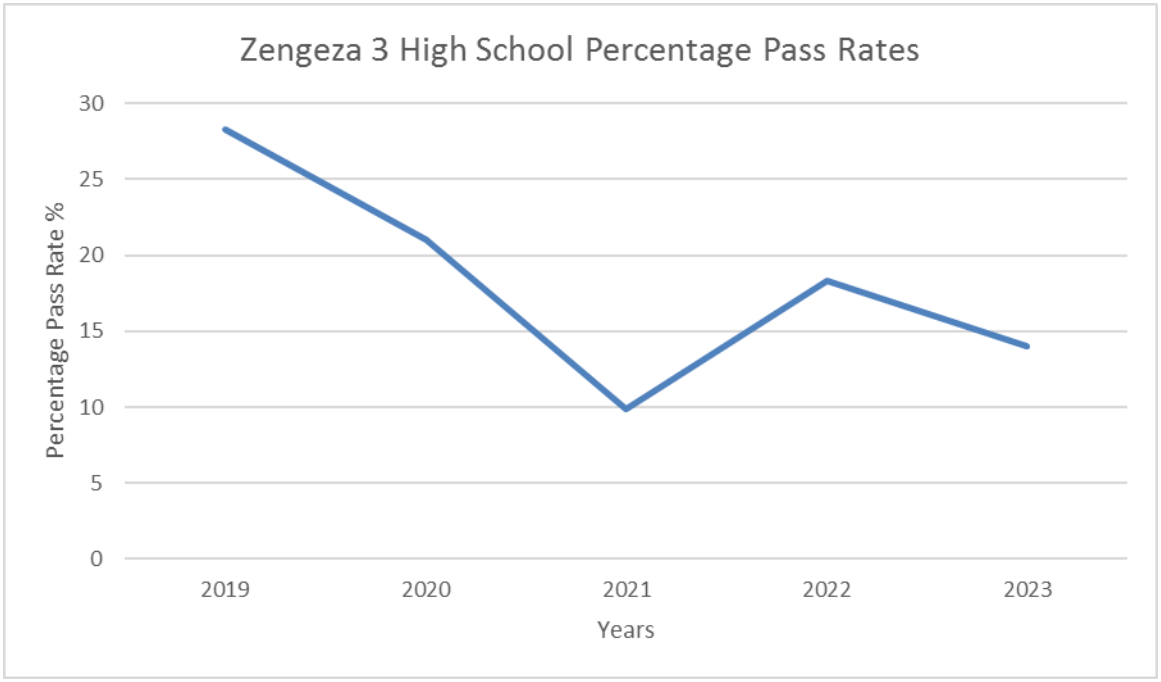
are capable to produce good results because by these number of years in-service they had come across with the workshops and seminars trained on the techniques, strategies and methods to use when teaching mathematics so that learners can perform better.

4.3 Causes of poor performance in mathematics

4.3.1 Findings from document review

From document review, the researcher traced the trend for the previous years pass rate by checking from the record books, internal tests and statistics of the ZIMSEC ordinary level examinations results which were written for the past years.

Fig 4.1 <u>Showing percentage pass rate from 2019-2023</u>



From fig 1 above, the failure of mathematics is still on-going because the percentage pass rate is still low even though it is shown to be changing. This increase can be attributed to pupil

perception and attitude towards the subject. Munn (2014) argued that, pupil's perception about the subject as being difficult is mostly a result of poor pass rate.

4.3.2 Home environment

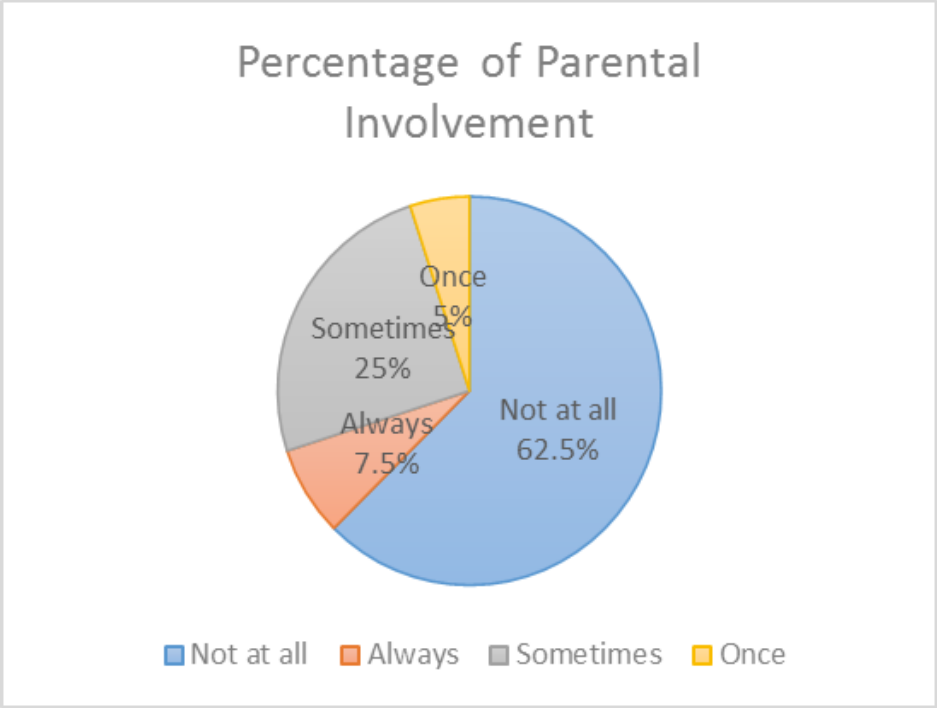
Most of the respondents were not receiving much assistance from their homes. The role played by parents determines the achievement and success of the children at school. The findings from the sample of 40 learners showing the varying level of parental involvement in their children's day to day learning of mathematics are as shown in the table below.

Table 4.3: Parental involvement in the learners learning of mathematics

Parental Involvement	Frequency	Percentage (%)
Always	3	7.5
Sometimes	10	25
Not at all	25	62.5
Once	2	5
Total	40	100%

The pie chart below summarizes the percentage of parental supervision on learners learning of mathematics.

Fig. 4.2 Showing percentage of parental involvement in pupil's learning of Mathematics



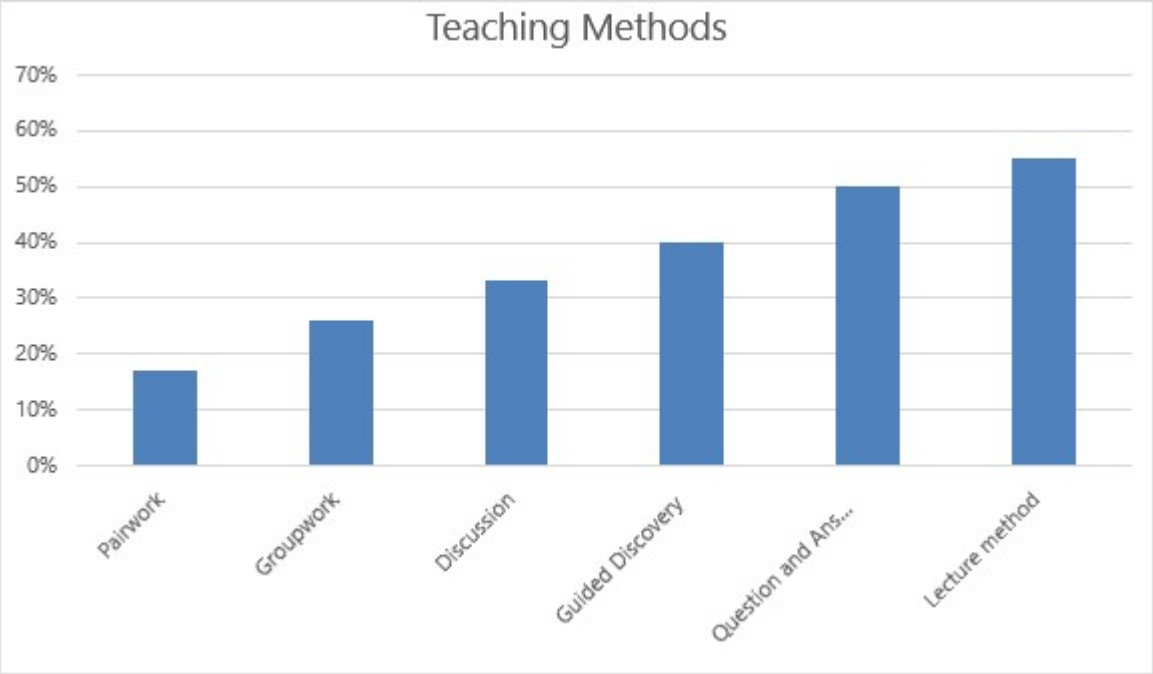
From the pie chart above 62.5% of the respondents do not get any help from their parents because they lack mathematics knowledge. 25% of the respondents get assistance sometimes, 7.5% always get assistance from their parents and 5% said that they get help once.

Parental involvement can be by way of reading activities at home with child, assisting a child with homework or communicating with a child about learning experiences at school. According to Haralambos and Holborn (2017), the school should be an extension of the home. Whatever learning activity that takes place in the school should be reinforced by support from home. Parental involvement in childrens education has a direct bearing on child's performance. Children who failed to get assistance to their school work at home got frustrated.

Learners need close monitoring when they are at home particularly after school and during weekends so that they do their homework and private study. Lack of such close supervision by parents results in learners engaging in uncontrolled behaviour therefore result in lack of individual practice and promiscuity. The level of parents educational attainment plays a major role in determining their contributions to their childrens education. The major reason behind their failure for getting assistance from immediate family members was lack of mathematics knowledge. Lack of adequate support from home strongly impedes the learner perfomance as learning is restricted to the school only.

4.3.3 Teaching methods

Fig. 4.3 Showing the teaching methods used by mathematics teachers



From the above diagram it is shown that mathematics teachers used lecture method and question and answer more than pairwork and groupwork. The recommended teaching methods which involves learners more on the learning process of mathematics are being used on a minimum rate

which might be the causes of poor performance in mathematics. Boisvert (2017) stated that a teacher has to adopt a method that involves learners much, for excellent results to be obtained like child centred (group work, pair work) which is the best method to be adopted because it involves learners a lot in their learning. Learner poor performance is attributed to teachers' use of inappropriate teaching methods. Poor teaching methods is a recipe for poor performance by learners hence it can lead to learner's failure in grasping the concepts. When teaching, mathematics confirms findings by Goldhaber (2015) who reported that some of the methods that teacher use does not help learners to develop conceptual understanding of mathematics hence learners perform poor like the lecture method being used by most of the teachers. The teaching method that a teacher can use must have a great bearing on the understanding of the learners.

Also, Romiszowski (2014) argues that for a teacher to improve pupil's performance he or she has to adopt acceptable style of teaching that enable learners to recall back and enumerate what they experience during the lesson. Hill (2014) points out that, failure by the teacher to use the required methods of teaching the subject can have disastrous effects on the ability of the pupil to perform well and hence cause learners to fail the subject. This idea was also supported by Timperly (2018) who posits that the teacher should search for methods and techniques which stimulate learners' interest as well as enhancing the teaching and learning process. Variety of teaching methods should be employed so that learners comprehend and apply the concepts for them to understand.

4.3.4 Inadequate resources

From the interviews conducted all intervieews commented on the issue of resources as adversely affecting the teaching and learning of Mathematics thereby learners would not be able to reflect examples on the work covered.

From the questionnaires about 70% of learners revealed that the school has few textbooks available and they remain under the custody of the teacher. The learners spend a lot of time and even spend a term without having access to Mathematics textbooks as a result learners eagerness and curiosity towards mathematics is driven away hence demotivates to aim high. Mwamwenda (2020) says, “inadequate resources lead learners to develop negative attitude towards the subject”. From the quote, it is clear that when resources are few learners will not be eager to learn.

UNESCO (2015) discovered that the high failure rate in South African secondary schools was caused by inadequate teaching facilities. These include textbooks and necessary equipment. Hence lack of funds to purchase the necessary equipment and textbooks result in poor quality textbooks hence ineffective teaching and learning. Therefore, the school is held to be more responsible for pupil’s mathematics failure. If there are few textbooks, learners have nothing to turn to.

Table 4.4: Views of teachers on the causes of poor perfomance

Causes of failure	Responds
Absenteeism of teachers and learners	6
Lack of resources	10
Peer pressure	7
Poor teaching methodologies	5
Teacher-pupil relatioship	2
Guidance and counselling	6
Limited time frame	10
Learners attitude towards the subject	8
Gender roles	2
Motivation	7

From the teachers' point of view on what could be the main causes of mathematics failure, it is shown that six teachers argue that absenteeism is the major cause of learners failure. Absenteeism which can be of both teachers and the learners. Chang (2016) says that, excessive absenteeism by learners may result in unlearned course material hence result in poor academic achievement. Excessive absenteeism by the teacher can also drastically hinder the academic achievement of the learners. So, attending school regularly by both the teacher and the learner plays an integral role in the academic success of the learners.

Lack of adequate resources has been seen as a contributing factor to pupil's failure because there will be a poor learning. Attitude of learners towards the subject of mathematics determines their commitments to mathematics. Seven teachers said motivation is one of the key variables which plays an important role to the success teaching and learning of mathematics. The source of

motivation can be derived from learner's interest, teachers and parents which then fuel the learners desire to learn and continue to influence the learners' conscious decision to act and the effort that he or she will put. Therefore, from the findings this has been clearly shown that lack of motivation causes poor performance. Two of the teacher's states that there must be a good teacher-pupil relationship meaning that the teacher should have a good rapport with learners so that good results can be obtained and also two teachers states that gender roles contribute to learners' poor performance. This shows that teacher-pupil relationship and gender roles are minor factors in affecting learners' performance.

4.4 Chapter Summary

This chapter was mainly on the presentation, analysis and discussions on the data collected by researcher. The data was analysed to answer the research questions. Data results were presented in the form of diagrams, tables, graphs and pie charts. The researcher attempted to provide answers to the research questions raised in chapter 1.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS.

5.1 Introduction

In previous chapter the data was presented, analysed and discussed. This chapter will focus on the summary, conclusion and recommendations. Areas for further research will also be suggested.

5.2 Summary of the Project

The purpose of the study was to find out the reasons why learners perform poorly in mathematics at ordinary level. Chapter 1 of the research looked at the research problem and its setting through the following: background to the study, definitions of terms and chapters layout. Chapter 2 looked at literature review which provide literature on factors influencing poor performance. Chapter 3 looked at research methodology which involves the research design, methods or tools, sample and sampling procedure, data analysis and research integrity. The research was carried out at Zengeza 3 High School in Chitungwiza District, Harare. The research methodology employed in this study includes both quantitative and qualitative approaches. The research instruments used were questionnaires and interviews. Questionnaires were given to both learners and teachers to gather data on their perspectives and experiences regarding mathematics performance. Additionally, interviews were done to learners only to obtain more in-depth insights. To find out why learners perform poorly in mathematics at ordinary level, the researcher used 40 learners from form 3 and 4 and 10 mathematics teachers as sources of information. Strengths and weaknesses of each instrument were explicitly laid down. In chapter 4 the researcher looked at data presentation, analysis, interpretation and discussion of findings. Several factors were identified as potential influences on poor performance in mathematics.

These factors encompass both individual and contextual aspects. Individual factors may include a lack of motivation and a negative attitude towards the subject since they perceive mathematics as a difficult subject. Contextual factors may involve poor teaching methodologies and strategies being employed by the mathematics teachers, lack of adequate educational resources, absenteeism by both teachers and learners which result in the incompletion of content and limited parental involvement in pupil's learning of mathematics. The data collected was analyzed using statistical techniques and thematic analysis to identify patterns and themes within the responses. The findings of this study provide valuable insights into the specific factors that contribute to poor performance in mathematics at Zengeza 3 High School. These findings can guide the development of targeted interventions and strategies to address the identified challenges and improve learners' mathematics performance.

5.3 Conclusion

Some learners generally have a negative attitude towards Mathematics subject that is they hate the subject because of what they have been told by their parents and relatives who found the subject hard when they were still at school hence, they perform poorly in the subject.

This chapter summarized all chapters of the study. Conclusion were drawn from data collected in chapter 4. The presentation and analysis of data was made in the previous chapter (chapter 4). Recommendations based on the findings were made to the various stakeholders who are beneficiaries of this study.

5.4 Recommendation

- The researcher identified that most of learners fail the subject because there is no access to learning resources so the school is encouraged to reduce the rate of failure through provision of adequate resources including textbooks, reference materials, and technology resources, to support effective mathematics instruction. Establish a well-equipped mathematics resource centre where learners can access supplementary materials and engage in independent study.

- The use of poor teaching methods has been found to be one of the causes of poor performance in mathematics so the researcher recommends that teachers should use interactive teaching methodologies discovery method in mathematics which enables learners to participate fully in lessons since it involves them more so that they can perform better.

- Pupil-centred approach should be used by teachers to enable collaborative learning like group work, field trips and pair work so that learners understand the subject content easily and hence improve their performance.

- The researcher encourages both teachers and learners to attend the lessons because attending the lessons regularly plays an integral role in the academic success of the learners and the learners cannot miss the opportunity to grow academically, socially and economically.

- Parents and guardians should make an effort to provide personalized mathematics coaching, learning resources as well as emotional and moral support for their learners.

- The parents should be encouraged to pay fees in time so that learners will not miss lessons.

- Teachers should stablish a system for continuous monitoring and evaluation of learners' mathematics performance. Regularly assess learners' progress, identify areas of improvement, and adjust teaching strategies accordingly. Use assessment data to track the effectiveness of interventions implemented and make informed decisions for future improvements.

5.5 Areas for further research

As the study was only limited to one school in the Ministry of Primary and Secondary Education Chitungwiza District. Therefore, it will be necessary to carry out a wider study to other provinces in Zimbabwe in order to investigate on the challenges that other schools are facing. This will give insight to the policymakers and other stakeholders on how to overcome these challenges.

5.6 Chapter Summary

In this chapter, the research study was summarized, the conclusion was articulated, recommendations were made and the area for the study was identified.

REFERENCES

Allen, J., & Fraser, B. (2016). *Peer influence on science learning: The importance of peer-motivated tasks.* International Journal of Science Education, 38(1), 45-61.

Bandura, A. (2015). *Social Cognitive Theory: Handbook of social psychological theories.*

London. Sage.

Bem, D. J. (2017). Ethics in quantitative research: Protecting participants, advancing science. Annual Review of Psychology, 62, 121-141.

Binet, J., & Howe, M. (2022). Learning in the digital age: How digital technologies can transform education. London: SAGE.

Borg, W. R. & Gall, M. D. (2018). *Education Research: An Introduction*. London, Longman.

Brown, E. S. & Dunn, J. (2017). *School counselling: Are we doing what matters? Professional School Counselling, 21(1), 1-13.*

Bryman, A. (2016). Research. In A. Bryman & D. Bell (Eds.), Business research methods (5th ed., pp. 4-17).

Burmaster, E. (2019). *What is the Wisconsin school of performance report?* Wisconsin:

Department of Public Instruction: State Superintendent

Chako, I. (2016). *Learning outcomes in secondary schools' mathematics as related to teacher*

and student characteristics. Unpublished PhD Thesis, University of Ibadan, Ibadan.

Chang, H. N. (2016). *The effects of student absences on academic achievement: A meta-analytic review*. Journal of Education for Students Placed at Risk, 21(1), 36-59.

Clinchy, K. A., & Handerson, M. (2015). *The effects of guidance and counselling programs on academic achievement, attendance, and behavior*. Journal of Educational Research, 108(5), 314-333.

Crawshaw, J. & Chambers, J. (2014). *A Concise Course in Advanced Level Statistics*.

Cheltenham. Stanley Thornes.

Cohen, L. &Manion, L. (2019). *Research Methods in Education.* London. Routledge.

Deci, E. & R, Ryan. (2016). *Intrinsic Motivation and Self Determination in Human Behavior*.

NY: Plenum Press.

DeLay, D., Zhang, L., Hanish, L. D., Miller, C. F., Fabes, R. A., & Martin, C. L. (2016). *Peer influence on academic performance: A social network analysis of social-emotional intervention effects.* Prevention Science, 17(8), 903-913.

Desforges, C., & Abouchaar, A. (2020). The impact of parental involvement, parental support, and family education on pupil achievements and adjustment: A literature review. Research Report No 433. Department for Education and Skills

Goldhaber, D. (2015). *The mystery of good teaching.* Education Next. 2(1): 50-5.

Gottfried, M. A. (2019). *Evaluating the relationship between student attendance and achievement in urban elementary and middle schools*: An instrumental variables approach. American Educational Research Journal, 47(2), 434-465.

Hande, H. S., Kamath, S. R. & D'Souza, J. (2014). *Students' Perception of Effective Teaching Practices in a Medical School.* Education in Medicine Journal 6 (3) 63-66

Heslin, P. A., Vandewalle, D., & Latham, G. P. (2017). Keen to help? Managers' implicit person theories and their subsequent employee coaching. Personal Psychology, 59(4), 871-902.

Hill, L. M. (2014). *Graduate Students' Perspectives on Effective Teaching*. Adult Learning, 25 (2) 57-65.

Kasambira, K. P. (2016). *Teaching Methods.* College Press. Harare.

Kearney, C. A. (2018). *School absenteeism and refusal behavior in youth: A contemporary review*. Clinical Psychology Review, 28(3), 451-471.

Lavrakas, P. J. (2018). *Ethical considerations in social science research*. Annual Review of Sociology, 34, 431-450.

Leedy, P. (2019). *Practical research, planning and design.* New York: MacMillan.

Meyer, J. P., & Herscovitch, L. (2021). *Commitment in the workplace: Toward a general model.* Human Resource Management Review, 11(3), 299-326.

Munn, V. (2014). *Beliefs about teaching mathematics*. New York. MacMillan.

Mwamwenda, T. S. (2020). *Psychology: An African Perspective*. (7^{th} Impress.). Cape town

: Lebone.

Ng, T. W., & Feldman, D. C. (2018). *The relationship of age to ten dimensions of job performance*. Journal of Applied Psychology, 93(2), 392-423.

Oluoch, G.P. (2020). *Learning Mathematics Issues: Theory and classroom practise*. London. Cassell Education.

Oliver, V. (2019), *301 smart answers to tough business etiquette questions*. New York: Skyhorse Publishing.

Onocha, C. O. (2021). *Patterns of Relationships between Home and School Factors and Learners' learning outcomes in Bendel Primary Science Project*. Unpublished Ph.D Thesis. University of Ibadan, Ibadan.

Oosthuizen, L. (2017). Online surveys and the post-survey focus group interview: Approaches to mitigate traditional survey limitations.

Patton, M. Q. (2015). Qualitative research & evaluation methods (5th ed.). Thousand Oaks, CA: Sage Publications.

Reddy, M. C. (2014). *A meta-synthesis of evidence on relationship between school-based counselling and student academic performance*. Journal of School Counseling, 12(6), 41-62.

Robbins, S. B., & Frare, L. (2015). *Examination of the association between academic motivation, generic study strategies and math achievement using structural equation modeling. Structural Equation Modelling*, 7(2), 204-226.

Romiszowski A. (2014). *The Selection and use of instructional media*. New York. Nichols

publishing company.

Saunders, M & Thornhill, A. (2018). *Research methods for business students* (6th ed.). London: Pearson Education.

Silverman, D. (2022). *Qualitative research: Theory, method and practice* (4th ed.).

Sirin, S. R. (2015). Socioeconomic status and academic achievement: A meta-analytic review of research. Review of Educational Research, 75(3), 417-453.

Timperley, H. S. (2018). *The knowledge base of effective teaching*: A critical review. Review of Educational Research, 78(4), 491-531.

Too, K. (2017). *Challenges of Teaching Mathematics in Secondary Schools in Kenya: A Case study of Nandi and UasinGishu Districts.* The Educator, 1(2) 17-26. Journal of the school of education, Moi University.

UNESCO. (2015). *Education for All Global Monitoring Report 2015: Education for All 2000-2015: Achievements and Challenges.* UNESCO Publishing.

Vygotsky, L. S. (2018). Mind in Society: The Development of Higher Psychological Processes. Harvard University Press

Weiner, B. (2016). *An attributional theory of motivation and emotion*. New York. Springer-Verlag.

Wentzel, K. R. (2016). Peer relationships, motivation, and academic performance at school. In Handbook of motivation at school (2nd ed., pp. 323-348). Routledge.

Willis, J. (2014). Underachievement in schools. Explaining and combating it. London: Routledge.

Wilson, D. B., & Scher, M. (2021). The impact of adverse childhood experiences on educational attainment. Child Abuse & Neglect, 113, 104158.

Woolfolk, A., Hughes, M., & Walkup, V. (2017). *Psychology in Education*. (2nd ed.).

England. Pearson.

Zimbabwe Schools Examination Council (2015). *Ordinary Level Mathematics syllabus*. Harare: Zimbabwe Schools Examination Council.

Zindi, F. & Ruparanganda, F. (2018). Evaluation of barriers to the integration of ICT in teaching and learning of science and mathematics in Zimbabwe's secondary schools. *Zimbabwe Journal of Educational Research, 23(3), 235-245.*

APPENDICES

APPENDIX 1

SAMED

P Bag 1020
BINDURA
ZIMBABWE

Tel: 0271 - 7531 ext 1038
Fax: 263 - 71 - 7616

BINDURA UNIVERSITY OF SCIENCE EDUCATION

Date: 10 MAY 2024

TO WHOM IT MAY CONCERN

NAME: CHIKUHWA VIMBAI REGISTRATION NUMBER: B2255158

PROGRAMME: HBSc Ed MATHS PART: 2.2

This memo serves to confirm that the above is a bona fide student at Bindura University of Science Education in the Faculty of Science Education.

The student has to undertake research and thereafter present a Research Project in partial fulfillment of the Bachelor of Science Edu programme. The research topic is:

An analysis on factors influencing poor performance by Mathematics ordinary level learners at Zengeza 3 High School.

In this regard, the department kindly requests your permission to allow the student to carry out his/her research in your institutions.

Your co-operation and assistance is greatly appreciated.

Thank you

BINDURA UNIVERSITY OF SCIENCE EDUCATION
DEPARTMENT OF EDUCATIONAL FOUNDATIONS
9 APR 2024
P. BAG 1020
BINDURA

Z. Ndemo (Dr.)
CHAIRPERSON - SAMED

APPENDIX 2

Zengeza 3 High School

P. O. Box ZG 100

Zengeza, Chitungwiza

10 May 2024

The Head of Department

Bindura University of Science Education

P Bag 1020

Bindura

Dear Sir / Madam

REF: Permission to carry out a research

Chikuhwa Vimbai EC number 1988310F is a mathematics teacher at Zengeza 3 High School. She has been granted permission to carry out a research at the school on **"An analysis on factors influencing poor performance by Mathematics Ordinary level learners at Zengeza 3 High School"**.

Yours faithfully

Nyabadza Philemon (Head)

Phone Number 0775627791

Signature

THE HEAD
ZENGEZA 3 HIGH SCHOOL
10 MAY 2024
P. O. Box ZG 100, Zengeza
Chitungwiza, Zimbabwe

APPENDIX 3

QUESTIONNAIRES FOR LEARNERS

My name is Chikuhwa Vimbai a student at Bindura University of Science Education carrying out research on the analysis on factors influencing poor performance by mathematics ordinary level learners at Zengeza 3 High School. Your views towards this investigation are greatly appreciated. The information obtained from this exercise remains confidential and to be used only for the purpose of this research. No names of respondents shall be disclosed in reporting results.

INSTRUCTION

Do not write your name on the questionnaire.

Answer all questions by either ticking in the appropriate boxes or writing in the spaces provided.

1) Gender Male ☐ Female ☐

2) How old are you?

14-15yrs ☐ 16-20yrs ☐ 20yrs and above ☐

3) Form 3 ☐ 4 ☐

4) Do you like mathematics? Yes ☐ No ☐

5) Do you attend all lessons? Yes ☐ No ☐

6) Does your mathematics teacher attend all lessons? Yes ☐ No ☐

7) Did you join mathematics willingly or you were forced?

Willingly ☐ Forced ☐

8) How often do you revise your work?

Always ☐ Sometimes ☐ Not at all ☐

9) How often do your parents supervise your mathematics work at home?

Always ☐ Sometimes ☐ Not at all ☐ Once ☐

10) Do you have access to mathematics textbooks at your school?

Yes ☐ No ☐

11) Does your school provide guidance concerning the subject of mathematics towards your career aspirations?

Always ☐ Sometimes ☐ Not at all ☐

12) List teaching methods that your mathematics teacher uses in the teaching and learning of mathematics?

……
……
……
……
……
……
……

APPENDIX 4

INTERVIEW QUESTIONS FOR LEARNERS

1) Which form are you?
2) Most learners are failing mathematics. What could be the possible causes of mathematics failure?
3) What are the possible solutions to overcome failure of mathematics?
4) Do you value this subject as compared to other subjects? Choose the most appropriate answer.

   Very important

   Slightly important

   Not important at all
5) What are the effects of mathematics failure towards your career goals?
6) What kind of teaching aids does your teacher uses in the teaching and learning of mathematics?
7) What do you think can be done to achieve better understanding of mathematics?
8) How do you improve the understanding of this subject at home?

APPENDIX 5

QUESTIONNAIRES FOR TEACHERS

My name is Chikuhwa Vimbai a student at Bindura University of Science Education carrying out research on the analysis on factors influencing poor performance by mathematics ordinary level learners at Zengeza 3 High School. Your views towards this investigation are greatly appreciated. The information obtained from this exercise remains confidential and to be used only for the purpose of this research. No names of respondents shall be disclosed in reporting results. You are therefore requested to honestly answer the questions below.

INSTRUCTIONS

Answer all questions by either ticking in the appropriate boxes or writing in the spaces provided.

1). Gender Male ☐ Female ☐

2). Marital status Single ☐ Married ☐

3). What is your age?

Below 25yrs ☐ 26-35yrs ☐ 36-45yrs ☐ over 45 yrs ☐

4). For how long have you been in the teaching profession?

0-10yrs ☐ 11-20yrs ☐ 21-30yrs ☐ 30yrs and above ☐

5) What is your academic qualification?

Diploma in Education ☐

Master's in Education ☐

Bachelor of Education ☐

Untrained ☐

6). Do you attend all the lessons? Yes ☐ No ☐

7). Do you employ variety of teaching methods and strategies in the teaching and learning of Mathematics?

Yes ☐ No ☐

If yes, list them

……

……

……

……

……

……

……

8). At Zengeza 3 High there is high rate of Mathematics failure at Ordinary level. What do you think are the causes of poor performance in mathematics?

……

……

……

……

……

……

…….

9). In your own opinion, suggest possible solutions that could be done to overcome the high rate of poor performance Mathematics.

……

……

……

……

……

10). Is your school well equipped with adequate resources?

Yes ☐ No ☐