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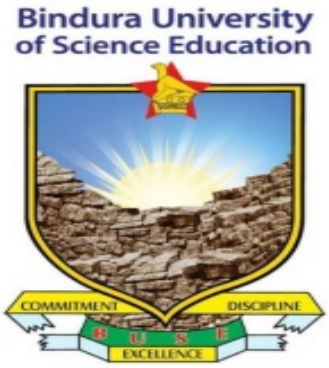

LEARNERS PERSPECTIVES ON THE TEACHING STRATEGIES USED BY MATHEMATICS TEACHERS AT A SECONDARY SCHOOL IN NYAZURA.

BY

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I declare that this research project is my own unaided work. It is submitted for the Honors Bachelor of Science Education Degree in Mathematics at Bindura University of Science Education, Bindura, Zimbabwe.

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APPROVAL

The undersigned certify that they have supervised, read and recommended to Bindura University of Science Education for acceptance a research project entitled, **LEARNERS PERSPECTIVES ON THE TEACHING STRATEGIES USED BY MATHEMATICS TEACHERS AT A SECONDARY SCHOOL IN NYAZURA.**

Submitted by **Ndaubvonga Petronella** in partial fulfillment of the requirement of the Bachelor of Science Education Honors Degree in Mathematics

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DEDICATION

This study is dedicated to my loving husband Zvidzai Chakara and my children Condoleezza , Kudiwa and Zane , for their patience, support and understanding when I was busy with my studies and they needed me most. It is also dedicated to my mother, Jane Mapurazi who gave me moral lessons from an early age.

ABREVIATIONS/ACCRONYMS

HOD -HEAD OF DEPARTMENT

ABSTRACT

This abstract presents a thorough examination of students' attitudes towards various teaching strategies employed in the realm of mathematics education. Understanding student perspectives on teaching methodologies is crucial for enhancing learning outcomes and fostering a positive academic environment. This review integrates findings from a wide range of studies and surveys that investigate the subjective opinions, preferences, and perceptions of students regarding different instructional approaches in mathematics. The study reveals that students exhibit diverse attitudes towards teaching strategies in mathematics, influenced by factors such as personal learning styles, cognitive preferences, past experiences, and motivational levels. While some learners prefer traditional methods involving direct instruction and rote memorization, others thrive in environments that promote collaborative learning, problem-solving, and hands-on activities. Furthermore, the abstract underscores the importance of aligning teaching strategies with the diverse needs and learning profiles of students to maximize engagement, comprehension, and retention in mathematics education. By recognizing and accommodating varying attitudes towards instructional approaches, educators can create inclusive and effective learning environments that cater to the multidimensional needs of learners. This comprehensive review offers valuable insights for educators, policymakers, curriculum designers, and educational stakeholders seeking to enhance mathematics instruction by incorporating student perspectives and preferences into pedagogical practices. By fostering a supportive and adaptive teaching environment that resonates with students' attitudes and preferences, educators can cultivate a deeper appreciation for mathematics and facilitate meaningful learning experiences for learners of all backgrounds and abilities. An exploratory qualitative case study research design was adopted for the study. The data for the research was collected by means interviews questionnaires. The study revealed that many learners have negative attitudes towards learning Mathematics and that there are many factors which contribute to the negative attitude. Improving on these factors and sensitization of the local community to discard practices which prohibit student’s effective participation in learning Mathematics could improve performance in Mathematics. It is anticipated that the findings of this study will give curriculum developers new insights into emerging issues on performance and influence the Ministry of Education on policy formulation. Learners are also expected to benefit from the findings; because improved Mathematics performance will give them opportunities to pursue science related courses in higher institutions of learning and middle level colleges. The situation is worsened by the inability of the heads of department and principals to guide and support educators. Finally, the researcher gave general recommendations for improving the attitudes of learners towards learning Mathematics.

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CHAPTER 1: INTRODUCTION

1.1CHAPTER INTRODUCTION

This introductory chapter gives the background of the study. The chapter presents the problem of the study. It also highlights the research questions on the learner's perspectives on the teaching strategies. Significance of the study to the schools, ministry of education and parents is given in this chapter. The scope and geographical boundaries are given under delimitation

CHAPTER LAYOUT.

1.2 BACKGROUND TO THE STUDY

The instructional strategies used by mathematics teachers have a lot to do with shaping future of the students. Instructional strategies are the ways employed by mathematics teachers for instruction in mathematics which is aimed at assisting the students to acquire the needed skills for critical thinking, problem solving and logical thinking. Similarly, a teacher who cannot motivate his or her student to learn either through teacher-student interaction or student-student interaction will produce poor students Teachers should have good understanding of the individual students in his class to enable him choose the appropriate instructional strategy or strategies that will suit every student. Learners perceive or have different attitudes towards the learning strategies used. Those learners with positive views learner better. Teachers use different teaching strategies and these shape student's perception towards the subject. In mathematics teaching, there are two broad instructional strategies, namely, teacher- centered and student-centered.

Teacher centered instruction focuses more on the subject matter than on what the teacher does. The aim is to teach content as prescribed in the syllabus or textbook regardless of whether it meets the needs of students or not. The teacher is the focus, acting as the main source of knowledge and the focal point. The teacher usually dominates the class as the authoritative expert and the students are passive. It happens to be one of the fasted ways of covering the syllabus but it does not put into consideration the individual differences among students and their attitudes towards the lessons.

A student-centered instruction focus on students. It allows for a dynamic classroom environment, and is most effective for teaching the "process than product". The focus is on learners, their cognitive abilities and interests. The teacher's concern is how to make the learners take an active role in their learning by making them to conduct their own investigations, develop their ideas, and good knowledge and mastery of the various methods of teaching science could assist the teacher to know when to use a particular method or not. Fulop, E (2015) is of the view that the combination of two or more of these strategies usually make

teaching and learning effective. Hence there is need for the use of appropriate and effective instructional strategies for the teaching and learning of science subjects in senior secondary schools.

The study focuses on the perception of students on the instructional strategies used by mathematics teachers in secondary schools

1.3 STATEMENT OF THE PROBLEM

The study focuses on the perception of students on the instructional strategies used by mathematics teachers in secondary schools. The teaching of mathematics requires one to have basic knowledge on good teaching strategies so as to enable mastery of concepts and skills. It seems that most teachers fail to use a variety of these strategies effectively due to inadequate knowledge in teaching mathematics as well as many other reasons. This article seeks to determine the teaching strategies employed by secondary school mathematics teachers in Nyazura. In order to improve the teaching and learning of mathematics, teachers have to employ a variety of teaching strategies. The way teachers teach affects students attitude towards the subject. Teachers use various strategies to teach. This study sought to find out the learner's perspectives towards the teaching strategies used in the teaching and learning of mathematics.

1.4PURPOSE OF THE STUDY

The purpose of the study is to investigate the instructional strategies employed by mathematics's teachers in secondary schools as perceived by the mathematics students. Teacher- centered and student- centered are the teaching strategies which are frequently used, and to find out which of the strategies is the most alluring to students.

1.5 RESEARCH QUESTIONS

1.-What teaching strategies are being employed by teachers at a school in Nyazura?.

2.How do the students perceive the teaching strategies used in Mathematics?

3. What could be done to improve the students' attitudes towards the teaching strategies?

1.6SIGNIFICANCE OF STUDY

One advantage could be that learners' interests to select mathematics as one of their subjects might be stimulated, which will lead them to perform well in this subject. This might also lead learners to have correct choices of careers in the field of Mathematics, such as Mathematics teachers, engineers, doctors, pharmacists and many careers that involve mathematics. Teachers could also benefit, as they would know what to do to make mathematics teaching easier. This might also include choice of methods and materials to be used to facilitate effective teaching and learning in mathematics classes.

Teachers may also would have to teach learners that have interest in learning mathematics, and they would be encouraged when there is improvement in learners' achievement during assessments. The parents as well as the community might also benefit as their individual homes and communities could be developed with learners that are more educated, working and earning a lot of money. The learners might also help other siblings and children in rural communities that are in great poverty to pay their school fees. They could also benefit, as more learners might not drop out of Mathematics. The Department of Education may also benefit as learners perform well in Mathematics, equipping them with important skills that may help national development. These include teachers who will teach learners in Mathematics, doctors that will contribute in terms of health in the country and engineers and many other professionals that would be valuable to the country

1.7 DELIMITATION OF THE STUDY

The study is going to be carried out at two secondary schools in Makoni district, Manicaland

province. The study will explore O'level students' attitudes towards the teaching strategies employed by teachers in the teaching and learning of Mathematics.

1.8LIMITATIONS

The results of the current study might have limitations in that the main variable of focus, which is learners' behavior in the classroom, cannot be measured easily, but could be studied through experiences and observation.

1.9 DEFINITION OF TERMS

1)Instructional teaching strategy

Are methods that teachers use to deliver course material in ways that keep students engaged and practicing different skill sets.

2)learner's perspective

Refers to student opinion or views regarding to various aspects of their learning

Learner

A learner in this study is a student in O level who is taking mathematics in a formal school.

SUMMARY

This chapter presented the background to the study, which covers previous studies that investigated effect of mathematics teachers and learners' attitudes on performance. The chapter further justified the need to conduct this study as well as presented the research questions the aim and objectives of the study. The

chapter also presented the rationale of the study and highlighted the significance of the study, the delimitations as well as the limitations of study. The chapter ends by defining terms and outlining the structure of the study.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The following review of research will look at the learner's perspectives on the teaching strategies used by mathematics teachers. In this chapter, various literature sources will be reviewed in order to explore the influence of attitudes on Mathematics learning in the schools. Secondly, the consequences of teaching strategies on student learning will be considered. Current research indicates that most teachers use a limited number of strategies when teaching mathematics concepts and skills. Some strategies promote active student involvement and participation in learning mathematics concepts.

Literature review also reveals that learners' attitudes play a vital role in determining their performance in Mathematics. When reviewing literature on learners' attitudes towards Mathematics, it is reviewed that several factors play a role in influencing learners' attitudes. These factors can be categorized into three distinctive groups, namely; factors associated with the students themselves, and factors associated with the school.

2.2.1 FACTORS WHICH DETERMINE LEARNERS' ATTITUDES TOWARDS MATHEMATICS.

There are several factors that determine learners' attitude towards Mathematics. These factors may be factors associated with the students themselves and factors that are associated with the school.

2.2.2FACTORS ASSOCIATED WITH THE STUDENTS THEMSELVES

(A) LEARNERS' MOTIVATION TOWARDS LEARNING MATHEMATICS

Attitude towards Mathematics plays a crucial role in the teaching and learning processes of Mathematics (Brown 2020). It affects students' achievement in Mathematics. Researchers concluded that positive attitude towards Mathematics leads students towards success in Mathematics (Effandi & Normah, 2009). Effandi and Normah ,(2009) students' attitudes towards Mathematics are very much correlated to their attitude towards problem solving in general. Negative attitudes need to be overcome, so that students do not suffer from poor problem-solving skills in future. Their views are supported by Smith , J . (2018) who states that students must have positive attitude towards problem solving if they are to succeed. Smith , J . (2018) states that solving problems requires patience, persistence, perseverance and willingness to accept risks, while Brown, (2020) claims that students with positive attitude towards Mathematics will generally

excel at it. McLeod, D, B (2003) asserts that there is a link between students' attitudes and their achievement in Mathematics. According to Saha, S. (2007) there is a relation between beliefs and learning of Mathematics and that "students reorganize their beliefs about Mathematics to resolve problems". A study done by Yasar, M. (2016) revealed that excellent students have high level of willingness to solve Mathematics problems compared to average and weak students. Tachie, S. A., & Mafhenya, M (2022) on the other hand, indicates that students with high level of positive attitude in Mathematics will ultimately have high level of success in life.

MATHEMATICS ANXIETY OF LEARNERS.

Another major source of attitudes towards Mathematics is Mathematics anxiety of learners. Anxiety can have a significant impact on a person's attitude towards mathematics. Mathematics anxiety can erode confidence in one's mathematical abilities. Lack of confidence can result in defeatist attitude, where individuals believe they are in capable of improving their mathematics skills or overcoming challenges in the subject.

2.2.3 FACTORS THAT ARE ASSOCIATED WITH THE SCHOOL

Some of the factors that influence attitudes are teacher's attitude toward Mathematics, difficulties with the language of Mathematics and teaching (Zan, 2013)

(A) ATTITUDE OF MATHEMATICS TEACHERS TOWARDS MATHEMATICS

The attitudes and teacher's beliefs towards Mathematics also contribute to the attitudes of learners towards the subject (Cater & Norwood, 2007). Teachers that are afraid of Mathematics pass that on to their students (Furner & Duffy, 2002). If the teacher does not value Mathematics, his learners certainly cannot be expected to value Mathematics either. Furner and Duffy (2002) indicate that there are many things the Mathematics teacher can do that will provoke his learners to dislike Mathematics. The teacher may be perceived as not caring about learners because he is unwilling to give extra help to students who need it. The learners need to know that their teacher is able and willing to help them. The teacher may become angry or frustrated when his class does not understand the problems. The teacher may also have unrealistic expectations of his learners. Also, giving written work every day, insisting there is only one correct way to complete a problem, and assigning Mathematics problems as punishment for misbehavior can cause students to dislike Mathematics because no one enjoys discipline (Furner & Duffy, 2002). Making learners do Mathematics as a form of discipline could very likely cause learners to dislike Mathematics. However, mathematics teachers who have a positive attitude toward the subject emphasize

problem –solving skills and critical thinking. They encourage students to think logically, analyze problems and develop strategies to find solutions independently.

(B) DIFFICULTIES WITH MEDIUM OF INSTRUCTION

Some studies revealed that the language of Mathematics creates attitude in some learners. It is very important to remember that Mathematics is about numbers and figures, it focuses on patterns and relations, hence there is Mathematical language that the learner must become familiar of (Landsberg, 2005). Learners from the middle and low-ability groups appear to struggle with the language of Mathematics (Ashby, 2009). Some children have significant problems translating this language into something useful that they can work with. For some children, it seems that the Mathematical processes themselves are not problematic, it is instead a communication issue, and how they are able to interpret Mathematical language. Some studies revealed that many learners in Zimbabwe developed a negative attitude towards learning because of the medium of instruction. Marchis, I. (2011) states that English is the preferred medium of instructions in schools because some indigenous languages do not have the linguistic complexity to enable them to be used in technical and scientific contexts. Most learners struggle to communicate in English and will put them at a disadvantage, since that is the language used in teaching and learning of mathematics.

(C) TEACHING AND ATTITUDES TOWARDS MATHEMATICS

In the area of Mathematical learning, Jerome Bruner's (1964) three modes of representing our experiences are considered important to the development of children's understanding:

- the inactive mode: It involves representation of ideas through undertaking some form of action (such as manipulating physical objects);

- the iconic mode: It involves representing those ideas using pictures or images; and

- the symbolic mode: It involves ideas represented through utilizing language or symbols. According to Bruner (2006), these modes of representation are mutually supportive in assisting the storage of 'pictures in the mind'. The use of physical resources, models and images in Mathematics teaching and learning relate well to the inactive and iconic modes of representation, with mental imagery and language supporting the understanding and use of symbols (Marchis, I. 2011). Rikhotso ,S.B (2015) argues that Mathematical understanding is brought about for all children by connections being made between these modes of representation. Haylock and Cockburn (2003) suggest that the network of connections between concrete experiences, pictures, language and symbols could be significant to the understanding of a

Mathematical concept. Central to this is the notion that 'when children are engaged in Mathematical activity, they are involved in manipulating some, or all, of the following: concrete materials, symbols, language and pictures' (Haylock & Cockburn, 2003). It is this act of manipulation that allows for connections to be made through the different experiences. Moyer (2001) supports this by stating that it is the active manipulation of materials that 'allows learners to develop a repertoire of images that can be used in the mental manipulation of abstract concepts'. It is therefore important that Mathematics teachers should be provided with sufficient resources. The use of concrete materials is recommended for teaching and learning Mathematics. Long-term use of concrete materials is positively related to increases in student Mathematics achievement and improved attitudes towards Mathematics (Drews, 2007). Research suggests that teachers should use manipulative materials regularly in order to give students hands-on experience that helps them construct useful meanings for the Mathematical ideas they are learning (Drews, 2007).

According to the research findings, the use of the same materials to teach multiple ideas over the course of schooling shortens the amount of time it takes to introduce the materials and helps students see connections between ideas. The findings also indicate that the use of concrete material should not be limited to demonstrations. It is also essential that students use materials in meaningful ways rather than in a rigid and prescribed way that focuses on remembering rather than on thinking. Bekker, Denerouti, Deboer and Schaufeli (2003) indicates that poor and lack of resources (like textbooks and adequate infrastructure) affect actual goal accomplishment, which is likely to cause failure and frustration and may therefore lead to withdrawal from work and reduce commitment.

In most schools, about three pupils share one text book. Sometimes books are delivered late due to late requisition, lack of transport or lack of capacity on the part of suppliers. Creating an ideal Mathematics learning environment begins with the teacher understanding students as learners. Teachers can create environments where knowledge is constructed by the student. This environment enables students to build their Mathematical knowledge and understanding of the subject. Teachers should create environments where knowledge is constructed by the student. This environment enables students to build their mathematical knowledge and understanding of the subject. The classroom is defined as a constructivist classroom (Capraro, 2001). A 'mild' version of constructivism, originating in the work of Jean Piaget, claims that knowledge is actively constructed by the learner and not passively transmitted by the educator (Boudourides, 2008). The emphasis is placed on the activity of the individual and reflection of the result of the activity. Students use their current knowledge to construct new knowledge. What they know and believe at the moment affects how they interpret new information. Students use a process of assimilation and accommodation. Assimilation is where new knowledge is created by building on, or reflecting on

knowledge gained previously. Accommodation is when old knowledge beliefs are reshaped to accommodate new experiences (Gadanidis, 2004)

2.2.4 ENHANCING LEARNERS' ATTITUDES TOWARDS MATHEMATICS

All the stakeholders of the school are responsible for enhancing the learners' attitudes towards Mathematics. The following can be done to develop positive attitudes of leaners towards Mathematics:

2.4.5 DEVELOPMENT OF LEARNERS' PATIENCE, COMMITMENT AND CONFIDENCE TOWARDS MATHEMATICS

A Mathematics educator should cultivate qualities of positive attitudes towards Mathematics such as patience, commitment and confidence in his or her learners. Patience towards problem solving is essential to achieve good results in Mathematics. A study conducted by Faridah (2004) revealed that students with high level of perseverance will not stop trying until they manage to get the answer and they will continue to work on a problem until they succeed in solving it. Students' commitment in Mathematics plays a key role in the acquisition of Mathematical skills and knowledge. Confidence towards problem solving also plays a significant role in Mathematics achievement and is one of the factors that influence students in Mathematics achievement. Bandura refers to such confidence as "self-efficacy" (Andrew, Salamonson & Holcomb, and 2009). According to Bandura, an individuals' self-efficacy expectation of their individual ability to successfully perform a given task is a reliable predictor of whether or not they will attempt the task, the amount of effort they will expend and their level of perseverance in the face of unanticipated difficulties (Andrew, Salamonson & Holcomb, and 2009).

2.2.6 THE ROLE OF HEADS IN DEVELOPING LEARNERS' AND TEACHERS' ATTITUDES TOWARDS MATHEMATICS.

Heads should influence the quality and attitudes of Mathematics education through arranging for meaningful professional development, mentoring teachers in order to strengthen the focus on Mathematics instruction, working to align curricular materials, technology, and assessments with goals for Mathematics education, establishing effective processes for analysis and selection of mathematics instructional materials. Cauley, Van de Walle, and Hoyt (2003) recommended practices that principals should use to promote implementation and positive teachers attitude towards Mathematics, namely; encourage Mathematics department chairs to become instructional leaders, provide time for teachers to observe one another's' teaching and collaborate in the design and evaluation of instruction, provide quality professional development focusing on specific classroom issues related to teaching Mathematics, become knowledgeable about the Mathematics Standards, supply teachers with professional Mathematics

journals and books, encourage teachers to attend conferences, workshops and university courses related to Mathematics teaching and learning, reward teachers who participate in relevant professional development(Cauley et al., 2003). According to Cauley and Seafarth, heads should also provide resources to enable teacher to acquire instructional materials such as computers, software, graphing calculators and manipulatives. All these activities will go a long way in promoting the teachers and learners' attitudes towards Mathematics.

2.2.7 GIVING LEARNER'S SUFFICIENT OPPORTUNITY TO LEARN MATHEMATICS

Short class periods of about 30-35 minutes in Mathematics, instituted for whatever practical or philosophical reason, should not be allowed (Schmidt, McKnight & Raizen, 2007). This implies that in order to perform excellently in Mathematics learners should spend more time on their learning activities. Additional time must be arranged to assist learners, for example, afternoon, morning and Saturday studies. Teaching and learning should also take place during school holidays. The Mathematics department of a school should also design several interventions to assist learners who are struggling with Mathematics. They should provide summer workshops to students free of charge, provide tutoring periods during activity periods, and meet with students regularly before school, after school and on Saturdays. Teachers should also begin a new class which requires struggling learners to have 90 minutes of Mathematics instruction every day.

2.2.8 PROMOTING POSITIVE ATTITUDES THROUGH CO-OPERATIVE LEARNING

Cooperative learning also creates positive attitudes of learners towards Mathematics. Research indicates that learner's attitudes toward Mathematics have also been shown to change in a positive manner when exposed to cooperative learning. The students enjoyed working with each other and also felt cooperative learning could help them understand and learn Mathematical ideas. In a cooperative learning environment, learners work together on a given task while still being held accountable on an individual basis. Individualistic learning situations and competitive situations create negative interdependence because they rely on only one person succeeding and that success is independent of the class' performance. Cooperative learning gives learners a common goal where the group will be rewards for its efforts (Johnson & Johnson, 1988). Cooperative learning helps learners learn how to work with each other, build up confidence and positive attitudes in their fellow peers, and learn from each other (NRC, 2001; Walmsley & Muniz, 2003). Cooperative learning does not stress individual achievements or create a competitive classroom.

2.3 CONCLUSION

Chapter 2 presented the review of literature. It started by presenting literature on sources that help learners develop positive or negative attitude towards mathematics. Presentation of literature focusing on the objectives of the study and conceptual frameworks of the study was done.

CHAPTER THREE: RESEARCH METHODOLOGY AND DESIGN

INTRODUCTION

In this Chapter, the research approach, design, and techniques are highlighted. It also covers population, sample and sampling techniques, data gathering instruments, data collection procedures, data analysis procedures, and ethical considerations.

3.1. RESEARCH DESIGN

A research design refers to the methodology or strategy used to conduct a research study or investigation. It outlines the general plan of action for how researchers will collect data, analyze information, and draw conclusions. The specific research design chosen depends on the research question, objectives, and the nature of the study. In defining what is meant by the research, Abbott, M, L and McKinney, J. (2013) describe research as the process of arriving at dependable solutions to problems through planned and systematic collection, analysis and interpretation of data.

A case study design will be used in this study to explore learner attitudes and beliefs towards Mathematics in four selected schools in Makoni district. A case study is defined by Heale, R., and Twycross,A. (2018) as the in-depth collection, examination and presentation of detailed information of some social phenomenon, such as a particular participant, a village, school, family or a juvenile gang. By looking at a range of similar and contrasting cases, a researcher can understand a single-case finding, grounding it by specifying how, where and why it carries on as it does (Miles & Huberman, 2004). A case study design is preferred in this study because the researcher believes that it would yield new insights and illuminating meanings into learners' perspectives on the teaching strategies used by mathematics teachers at a secondary school in Nyazura. The researcher believes that a case study is the best design for breaking new ground for a better understanding of the factors which contribute to the attitudes of learners towards Mathematics. The case study offers a means of investigating complex social units consisting of multiple variables of potential importance in understanding the phenomenon that can result in a rich and holistic account of a phenomenon (Merriam, 2008). Another advantage of a case study is that it is narrower in scope but more exhaustive and more qualitative in nature (Tuckman, 2003). Qualitative study is preferred as it allows to explore complex phenomena in depth. It helps in understanding the context, motivations and perspectives of participants in the study. Also qualitative research values the perspectives and voices of participants.

3.2 INSTRUMENTS USED TO COLLECT DATA

The study will use some questionnaire and interviews to collect data. The questionnaires have differently structured questionnaire items that, however, are related in terms of the information requested. In other words, I want to know the participants' opinions. On the other hand, qualitative data will be gathered by means of open-ended questions, which will be used when teachers individually complete questions from the questionnaire

The questionnaire for Mathematics teachers intends to establish contributing attitudes of learners towards mathematics. It is divided into four sections. First section solicited teachers' demographic data while second section requires teachers' views and perceptions about mathematics and Section C is about teachers' professional development. Section D is about teachers' competency for teaching some concepts/topics in mathematics. The questionnaire for Mathematics learners have two parts. First section solicited learners' demographic information and second section consists of short questions for learners to answer. Questionnaires are preferred in this research as it is an efficient way of collecting data from a large number of people. They are distributed widely and completed at the convenience of the respondents without the need for the researcher to be present. Questionnaires allow for standardization of data collection. Each respondent receives the same questions in the same format, reducing potential bias and ensuring consistency in response. Also data collected through questionnaires can be easily quantified and analyzed, making it simpler to draw conclusions. Interviews are preferred in this study as they allow researchers to delve deeply into the thoughts, feelings and experiences of participants .it also gives clarity and elaboration to the researcher as follow up questions can be asked for detailed explanations. Questionnaires are mailed to the respondents, to be answered, in the manner specified in the cover letter while interview is a one to one communication, wherein the respondents are asked questions directly

3.3. POPULATION, SAMPLE, AND SAMPLING TECHNIQUES

The study's target is two secondary schools in Makoni district. The study will use both random and convenient sampling. In random sampling a sample of schools is selected in Makoni district.In random sampling schools two secondary schools are to be conveniently selected to take part in this research. Only 120 learners and 30 teachers within these four schools will voluntarily participates in this study. The selected 120 learners and the 30 teachers will respond to the questionnaires through random sampling. For the qualitative data, the researcher will select those available and volunteering to be interviewed.

3.4. DATA COLLECTION PROCEDURE

Cohen and Swerdlik (2003) define data collection as the procedures that are followed during data gathering and measurement of data on issues of curiosity. They further explain that the process takes place in a way that is pre-established and fashioned systematically in line with specific pacts and laws. Issues on ethics are important for every investigation such that failure to abide by them can cause research to fail**.** The researcher will request permission from Ministry of Education to conduct research in the Makoni District through Buse letter. Permission will then be requested from heads of the sampled schools. Also participant information sheets and informed consent forms will be drafted and distributed to participants before the research commenced. There will be anonymity and confidentiality. In this study participants will be assured that personal identifiers, such as names, will not appear anywhere in the research. The researcher will ensure and guarantee participants that the report findings will be truthful and honest, and there will be no twisting of words. All learners are to be visited in their schools by the researcher, and their educators will administer the questionnaires after school so that there are no interruptions of teaching and learning during school periods. In all the sampled schools, the researcher approaches the mathematics Head of Departments where the questionnaires will be left for forwarding to teachers and learners. Only those learners who are willing to take part in this will be given questionnaire to fill in. All participants will fill informed consent forms before participating. Questionnaires of both teachers and learners will be handed to HODs. The researcher will collect them from the HODs after completion by learners and teachers.

3.5 DATA ANALYSIS AND PRESENTATION PROCEDURES

According to Wickham, H (2016) data analysis refers to a process of examining and interpreting data in order to elicit meaning, gain understanding and develop empirical knowledge. The following procedures as proposed by Tesch (2009) will be used to analyze the data collected by the interviews and questionnaires.

Steps	Activity
1	The information collected is firstly organized. Once I have organized and prepared the data, I will read through all the transcriptions carefully and make notes.
2	I will read through all the transcripts of the interview. I will then consider the content or underlying meaning of the information and write down my thoughts on the margins
3	I will then make a list of all the topics, put similar topics together and form these topics into columns that might be grouped as major topics, unique topics and leftovers.
4	I will take the list of topics and assign to each topic an abbreviated and identifiable code. I will then take the list of topics with abbreviated codes and go back to the transcribed data and write the codes next to the data segments that correspond with the code
5	I will write the most descriptive wording for my topics and turn them into themes or categories
6	I will make a final decision on the abbreviation for each theme or category and alphabetize these cod
7	I will assemble the data material belonging to each theme or category in one place and do a preliminary analysis.
8	I will finally start interpreting and reporting the research findings.

3.8 SUMMARY

The methodology and the research design adopted for the study was described. The chapter also outlined in detail the research design with emphasis on how it fits the approach. The sampling techniques adopted were also detailed as well the instruments used.

CHAPTER 4

4.1 INTRODUCTION

The purpose of this chapter is to present or report, analyze and interpret the results of the investigations carried out and thus provide answers to the research questions that guided this study. The chapter presented the results of the data analyses carried out to address the research questions. This study is aimed at systematic collection and interpretation of information, which will enable the researcher to suggest solutions to attitude of learners in mathematics in Makoni District of Manicaland Province. Data was collected from form three (3) and four (4), learners and mathematics teachers. Data was collected from both the teachers and learners using questionnaires and interviews

DATA PRESENTATION: EDUCATORS

TABLE 1: FACTORS THAT CONTRIBUTE TO THE ATTITUDES OF LEARNERS TOWARDS MATHEMATICS IN SECONDARY SCHOOLS.

Participants	Theme 1: Assumptions	Theme 2: Repeated failure in Mathematics	Theme 3: Lack of resources	Theme 4: Medium of instruction	Theme 5: Quality of teaching
Educator no. 1	Many students think Mathematics is difficult	Numerous learners fail Mathematics tests.	There is a shortage of textbooks in many schools	Learning Mathematics in a foreign language is a problem.	Shortage of qualified teachers in Mathematics.
Educator no. 2	Family members discourage learners	Many learners perform badly in Mathematics home works	Many schools do not have Mathematical equipment, such as Mathematical instruments, scientific calculators to assist in the teaching of Mathematics.	Most learners do not understand English Mathematical concepts.	Mathematics teachers leave teaching because of many opportunities.

Educator no. 3.	Many learners believe that Mathematics is for geniuses	Very few learners pass Mathematics at the end of the year.	Due to poverty in many families many parents are not able to buy Mathematical equipment and tools for their children.	Many learners are not proficient in English.	Primary school teachers teaching in high schools.
Educators no. 4	Some teachers tell learners that Mathematics is difficult.	Many learners in the primary school repeat because of failing Mathematics.	Schools are not capable of retrieving Mathematical equipment and tools borrowed to the learners	Mathematics is not taught in mother-tongue	Lazy Mathematics teachers discourage learners.
Educator no.5	Many learners dislike Mathematics educators	Very few learners pass the trial and half-yearly examinations	Many schools have insufficient classes which result in overcrowding which also complicates effective teaching of Mathematics.	Many learners do not understand English Mathematics textbooks.	Mathematics teachers with negative attitude towards Mathematics pass it over to learners.

According to the study findings as shown in Table 1 above, there are three primary causes of students unfavorable views on learning mathematics namely, the language of instruction, repeated failing of mathematics and quality of teaching. One of the respondent commented as follows about the influence of medium of instruction:

I believe that learning Mathematics through English language contributes to the negative attitude of learners towards Mathematics. I strongly advocate the need for a shift from an English to a mother-tongue based educational system. If the language of teaching at school is the same as the language of the home, there is a very natural continuity between the home and the school, and in some ways, the good teacher can genuinely take the place of the parent. What I have noticed is that learners who did not learn in a language they were familiar with participates minimally in classroom discussions, perform below par in relation to other students, experience feelings of inferiority and low self-esteem and experience higher rates of failure and repetition, and are more prone to dropping out from school.

According to the respondents, the problems associated with language needs to be acknowledged and addressed. The respondents also indicate that the rapid change of the language of teaching and learning is sudden without learners having acquired sufficient competence in English. As a result, there are many learners who, after many years of schooling, are not able to do basic arithmetic.

Participants	Theme 1: Negative attitude	Theme 2: Poor performance	Theme 3: Disruptive behavior
Educator no. 1	Learners always absent from class	Learners always absent from class Many learners don't pass Mathematics tests. Some learners lock the door to prevent Mathematics educator into the classes.	Some learners lock the door to prevent Mathematics educator into the classes.
Educator no. 3	Many learners don't write tasks given.	Very few learners pass Mathematics at the end of the year.	Some learners go out of the class during the lesson presentation.
Educators no. 4	Many learners don't come with Mathematics books and equipment to school.	Many learners in the secondary school repeat because of failing Mathematics.	Some learners fight during the lesson presentation
Educator no.5	Many learners dislike Mathematics educators.	Very few learners pass the end of year examinations.	Some learners destroy Mathematics books and equipment of other learner

The findings of the study show that learners at this school do not enjoy learning Mathematics. All the participants are Mathematics teachers and they indicated that learners at the school are always absent from Mathematics classes and they don't participate actively in class. One of the participants remarked as follows:

We have a problem with learning Mathematics at our school. My learners don't enjoy learning Mathematics. Many of my learners are not active during the Mathematics period. Some of them

sleep while I am teaching. Others refuse to participate in discussions and don't write Mathematics tasks given to the class.

4.2 DIFFERENCE BETWEEN MALE AND FEMALE LEARNERS WITH REGARD TO THEIR ATTITUDES TO LEARNING MATHEMATICS.

Participants	Theme 1: Assumptions of sex role	Theme 2: Cultural influence
Educator no. 1	General belief in communities that Mathematics is a male domain.	In African cultures and other cultures females are not supposed to work.
Educator no. 2	General belief in communities that the intelligence of females is inferior to that of males.	Culturally the place of a female in Africa is in the kitchen which requires no knowledge of Mathematics.
Educator no. 3	Community belief that Mathematics is not for the weaker sex (females) but for the stronger sex (males).	According to African culture women should not go to school.
Educators no. 4	General belief in communities that girls should do subjects related to caring, cooking and catering.	Culturally women are soft and tender and therefore needs soft subjects.
Educator no.5	General belief in the communities that females lack confidence.	Mathematics requires learners to constantly ask questions from the teachers and also engage in discourses with teachers. This is against African culture of not questioning older people.

The findings of the study reveal that the assumptions of sex role and cultural influences contribute to the additional negative attitudes of female learners towards learning Mathematics. One of the respondents emphasized it as follows:

I have very few girls in my class. I did an investigation to find out why many girls don't want to learn Mathematics. I discovered that their hatred is related to their traditional values.

They believe that Mathematics is for people who do hard work; namely; men. They incorrectly indicate that their careers won't involve Mathematics.

4.3 THE FACTORS THAT CONTRIBUTE TO THE LOW PARTICIPATION OF LEARNERS IN MATHEMATICS

Participants	Theme 1: Low academic achievement	Theme 2: Negative attitude
Educator no. 1	Learners get low grades in Mathematics tests.	Girls believe that it is a masculine subject
Educator no. 2	Learners are not able to do Mathematics home works and class works correctly.	Some learners hate learning
Educator no. 3	Learners have never passed any Mathematics test in high school.	.Pressure from parents and teachers to perform well and uninteresting tasks.
Educators no. 4	Learners get little or no motivation from parents, peers, siblings and community members in learning Mathematics.	Fewer women are employed in jobs requiring mathematical ability.
Educator no.5	Learners are taught by poorly qualified Mathematics teachers.	Teachers are not committed to their work.

The study revealed that there are many factors which contribute to the negative attitude of learners towards Mathematics. The respondents indicate that learners experience with mathematics contributes to the negative attitudes of many learners towards Mathematics. One of the respondents said:

I have noticed that learners in the secondary school are not negative towards Mathematics. As the learners progress to higher forms they develop negative attitudes because of the constant failure of failing Mathematics tasks, tests and examination. I truly believe that any person, including myself, who fails a subjects many times will develop a negative attitude towards that subject. I believe it is not the fault of the learners but the education system itself

4.4 THE STRATEGIES THAT CAN BE USED TO MOTIVATE LEARNERS TO LEARN AND PERFORMS WELL IN MATHEMATICS

Participants	Theme 1: Motivation	Theme 2: Staffing	Theme 3: Teaching methods
Educator no. 1	Subject specialists should be invited to motivate learners	Mathematics teachers must be recruited from other countries.	Educators must use constructivist methods of teaching.
Educator no. 2.	School heads must motivate the learners.	.Only appropriately qualified Mathematics teachers should teach Mathematics	Educators must not use lecture methods but allow learners to be active.
Educator no. 3	Involvement of parents and other stakeholders to motivate learners.	Only educators who specialized in Mathematics should teach Mathematics..	Educators should use a lot of technology when teaching Mathematics.
Educators no. 4	Educators should stop telling learners that Mathematics is difficult	Mathematics educators should be supplied to schools by the department.	They need orientation about Mathematics.
Educator no.5	They need educator whom will love them.	Only educators who specialized in secondary school Mathematics should teach the learners.	Educators must apply different methods of teaching that will cater for the learners' individual needs. needs

The interviewees recommended various strategies for motivating learners to perform well in Mathematics, such as constructivist teaching strategies, giving homework every day, teaching methods that will cater for learners' individual needs, allowing only educators who specialized in secondary school

to teach Mathematics and inviting Mathematics specialists to come and motivate the learners. The interviewees were very emphatic about the use of teaching methods which will change the attitudes of learners. One of the interviewees said:

I believe that we can change the attitudes of learners and their poor performance by using modern technology such as computers. Computers can be used in teaching Mathematics in a number of ways such as the tutorials, hypermedia, simulations and educational games. Demonstration, testing, information, and communication are the main facilities provided by computer assisted instruction

The views of the educators are supported by many specialists and researchers. For example, according Wright , G.B (2011) in order to achieve such changes, teachers should move away from traditional teacher-centered classroom practices, such as lectures and drill and practice activities, into a more student-centered context that allows students to work collaboratively and cooperatively to develop learning skills. Drijvers ,P.(2015) indicates that the increased use of technology, especially computer technology, in educational processes has been incorporated as a way to improve educational opportunities, while enhancing student performance.

4.5 DATA PRESENTATION: LEARNERS

4.5.1 THE BENEFITS OF LEARNING MATHEMATICS IN PRIMARY SCHOOL.

The findings of this study reveal that learners are aware of the benefits of Mathematics. The majority of the learners indicate that by learning Mathematics they will be able to count, read symbols, know change when they buy during breaks. One of the learners replied as follows:

Mathematics is very good for me because it helps me to count my money and the change which I get when I buy juice during break. It is very interesting that the learners do not refer to how Mathematics will assist them in their future career but it is reasonable at their age.

4.5.2 THE NECESSITY OF DECLARING MATHEMATICS A COMPULSORY SUBJECT.

The findings of the study reveal that learners are against declaring Mathematics a compulsory subject. The learners indicate that the government was very unreasonable and harsh by declaring Mathematics a compulsory subject. The reasons they advance is that it is unreasonable to make a difficult subject compulsory. They indicate that the government must consult, every student if he or she is interested in learning Mathematics instead of making it compulsory. One of the learners replied as follows:

I am very angry that the government makes Mathematics compulsory for everyone. It is against our rights. We must choose the subjects with our parents and not the government. I think that the government wants to destroy our future because we shall not pass Mathematics because it is very

difficult. My parents told me that they never did Mathematics when they were students but we are forced to learn mathematics. It is unfair.

4.5.3 HOW LEARNERS ENJOY LEARNING MATHEMATICS.

According to the findings of the study, many learners in form1 to 2 enjoy learning Mathematics, while learners in form 3 to 4 do not enjoy learning Mathematics. The learners also indicate that they do not enjoy learning Mathematics because Mathematics is a very difficult subject. Two learners indicated that they don't enjoy Mathematics because Mathematics teachers are not friendly to them. The main reason for this appears to be that Mathematics becomes more difficult as they progress to higher classes. One of the form 2 learners interviewed answered as follows:

When I was in form1 , I used to love and enjoy learning Mathematics but now I don't enjoy it because it is very difficult. I don't like it because of our Mathematics teacher. He is too strict and always punishes us when we make mistakes. I am not happier when I learn Mathematics.

The learner indicates that he used to love Mathematics in form 1, but he is no longer interested in the subject. A study conducted by Belbase,S. (2010) revealed that that attitudes tend to become more negative as pupils move from elementary to secondary school. This view is supported by a form 3 learner who responded as follows:

My teacher, I like and enjoy Mathematics because it teaches me to count my pocket money. We learn Mathematics every day in the morning and I enjoy the subject more than any other subject. My teacher makes me to love Mathematics because she is not fast. I enjoy it.

4.5.4 HOW LEARNERS ENJOY LEARNING OTHER SUBJECTS.

Mathematics is one of the subjects done by learners in the secondary school. It is therefore important to investigate the performance and attitude of learners in the other subjects. This will assist in understanding attitude of learners in learning in general. The findings of this study reveal that the majority of the learners enjoy learning in general, as one of the form 4 learners said:

I enjoy learning the other subjects because we learn while we talk, sing and play. In other subjects we sit in groups and discuss and laugh while in Mathematics there is no discussion. It is the only serious subject where you sit alone and think. In English we tell stories and jokes while we learn, unlike in mathematics where we just learn numbers. I think Mathematics is a boring subject because I enjoy all subjects except Mathematics.

The response of the above learner indicates that there are many factors that contribute to his negative attitude towards Mathematics. One of the factors is the teaching methods adopted by the teacher. The

learner indicates that there is no discussion and activities in Mathematics and this implies that the teacher is using the lecture method only. According to Miller ,C .J (2013) lecture method is ineffective in that it turns the learners into passive participants in the learning process. Discussions, project and discovery methods creates an enabling environment for the learners and ensures that individual differences are taken care of. Some of these factors that influence attitudes are teaching materials used by teacher, teachers' classroom management, teachers' content knowledge and personality, and teaching topics with real life enriched examples.

. 4.5.5 STUDENTS' PERFORMANCE IN MATHEMATICS TESTS.

The findings of this study reveal that the majority of the learners do not pass Mathematics and their performance is very poor. Only two learners indicated that they do pass tests in Mathematics. When the learners were probed as to why they do not pass Mathematics tests, they identified several contributory factors. One of the learners interviewed, in reflecting her displeasure in learning Mathematics and a need to be helped said that

"**My problem is that our Mathematics teacher is too fast. I do not understand and enjoy Mathematics and I want a teacher who is patient and does not get angry with me. I don't enjoy learning Mathematics because if I tell the teacher that I don't understand he ends up shouting and asking "how come you don't understand such an easy sum; you just don't use your brains".**

One of the two learners who pass mathematics tests responded as follows:

Yes I do pass Mathematics tests. I think I pass because of the assistance that I get from my mother at home who is a Mathematics teacher in another school. I can tell you, what I learn at home is better than what I learn at school.

I find it easy to understand Mathematics at home because I am not afraid of asking questions to my mother. She explains very slowly and using our mother tongue to explain. I just find myself passing at school. Another learner also was emotional when responding about tests and she said:

I **am afraid of Mathematics tests. Mathematics is my greatest enemy. I do write Mathematics tests but I don't pass. I am not the only one who fail Mathematics test. In our class only one learner is able to pass Mathematics test. We are not worried because the teacher always tells us that Mathematics is a difficult subject and only geniuses pass it.**

The responses of these learners about passing Mathematics tests indicate that there are several factors responsible for the learners' negative attitudes against Mathematics. The teachers' attitude is one of them. The learners' responses indicate that there are teachers that teach Mathematics in a way that merely

requires learners to listen, read and regurgitate and this depicts a negative attitude towards teaching. The learning of Mathematics depends on the way it is presented to the learner, the way the learner actively interacts with the learning experiences to him and the environment within which the learning takes place.

4.5.6 HOW LEARNERS JUDGE THE ABILITY OF THEIR MATHEMATICS TEACHER OR HOW GOOD IS THE TEACHER.

This study reveals that there are mixed feelings about their Mathematics teachers. One of the learners responded as follows:

I **sometimes wonder why our Mathematics teacher was given Mathematics to teach us. She insists that we must memorize Mathematics formula because it is the only way to learn Mathematics. When I ask her a question, she becomes very angry and accuses me of laziness. She tells us that the new curriculum doesn't allow a teacher to spoon feed learners. She says that answers are in the textbooks and not in her.**

Another learner interviewed indicates that their teacher usually struggles when solving Mathematical problems on the chalk board. In her own words she says:

Our teacher is having a problem in teaching Mathematics. She is struggling to solve Mathematical sums on the chalk board. She takes very long to complete a sum on the chalk board and sometimes she does not complete solving the problem. I don't think she is a good Mathematics teacher. She is also not kind to us. We are always punished for failing Mathematics meanwhile she is also struggling to teach us.

Surprisingly, there is one learner who protects their Mathematics teacher. The learner said: **Mathematics is a difficult subject for everyone. We struggle to learn Mathematics and our teacher also struggles when teaching us. It is not her fault because Mathematics is just a difficult subject. I don't blame her**.

4.5.7 LEARNERS' VIEWS ABOUT LEARNING MATHEMATICS IN ENGLISH AND NOT IN THE MOTHER TONGUE**.**

English is the only medium of instruction for learners in all schools. This is a major challenge facing learners in most schools. This study revealed that most learners are disadvantaged by the medium of instruction. Many learners are under-achievers in many subjects because they lack sufficient command of English, which is their second language. Most learners struggle to communicate in English. Insufficient command of English leads to problems regarding effective comprehension of the content of academic material, analysis of questions and presentations of answers. In the examination or test, a learner may

know the answer but fails to answer the question because of lack of adequate vocabulary. There are mixed feelings about learning Mathematics in English and not using vernacular as a medium of instruction. There are some learners who enjoy learning Mathematics in English because they are going to school to learn English and not their mother tongue. These learners think that it is a status to be able to communicate in English and this is supported by their parents. One of the respondents responded to the question of learning Mathematics in a foreign language as follows:

I like to learn Mathematics in English because I want to learn English. My parents say that I must learn good English because it is a sign of an educated person. I think it is good if I learn mathematics in English.

There are other learners who are against learning Mathematics in English. One of the interviewees who is a form 4 learner believes that learning in a foreign language like English; contribute to high failure rate in many schools. The interviewee said that:

Most learners are seriously disadvantaged by the medium of instruction, which is English. The first task of the learners is to master the English language, which is a serious challenge for the learner. The learners don't speak English in their homes, at school, when they play and even in social events. They speak English in class only. Many learners fail because they don't understand the language, and it is therefore difficult for these learners to acquire knowledge in a foreign language. During the examinations, they answer questions wrongly because they don't understand the questions. I surely believe that learning through your mother-tongue contribute to good performance.

4.5.8 MEASURES TO IMPROVE -LEARNERS' PERFORMANCE IN MATHEMATICS.

This question was asked to the respondents who are learners, to suggest ways to change the attitudes of learners and thereby improve Mathematics learning. The respondents suggested several strategies and one of them said that:

I think that we must start to learn Mathematics in our mother tongue. We don't understand Mathematics because it is learnt in a foreign language.

A form 4 learner who was interviewed responded as follows:

"I think that they must give us many periods to learn Mathematics because the time is not enough".

A form3 learner said that

"**our parents must teach us Mathematics at home or get teachers to teach us at home".**

4.5.9STUDENTS' VIEWS ON THE ROLE OF PARENTS IN THE TEACHING AND LEARNING OF MATHEMATICS

The majority of the learners who were interviewed indicate that parents can make a difference in changing the learners' attitudes towards learning Mathematics and also improve learning of Mathematics. One of the learners remarked as follows:

Most of our parents have passed form4 and they can help their children in Mathematics. The teachers must ask our parents to talk to us and tell us that Mathematics is important for their future. The teachers must also stop telling us that Mathematics is difficult. Another interviewee said that:

Most learners are not serious in learning Mathematics because they don't know why it is compulsory to learn it. I think their negative attitude towards Mathematics is a way of protesting why Mathematics is compulsory.

CONCLUSION

Chapter four presented the qualitative and exploratory data emanating from the responses in the interviews. The following issues were revealed during analysis of the data:

- The respondents answered all the questions in the questionnaire. This indicates that the language used in the questionnaire was understandable to all the respondents and that the questions were deemed relevant and worthy of answering.

- The respondents' responses were widely scattered across the various measuring scales used. Clearly respondents had different views and perspectives on the issues being examined. This suggests too that the instrument did not direct their answers towards any particular response. The findings of the study, recommendations and conclusions, will be presented in the following chapter.

CHAPTER FIVE

FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

5.1 OVERVIEW OF THE STUDY

This chapter begins by presenting a broad overview of the study, briefly outlining the key content or ideas of each chapter leading to this final chapter. Chapter one focused on the background of the study, problem formulation, purpose statement and research framework. Chapter two presented the review of literature on the attitude of learners towards learning Mathematics. Chapter three focused on research design and methodology. This includes a discussion of research questions, sampling, data collection and data analysis. The findings of the investigation were presented in Chapter four. The study reveals that several factors contribute to the negative attitudes of learners towards Mathematics. Chapter five, will present the findings, recommendations and concluding remark

5.2 MAJOR FINDINGS OF THE STUDY

The main focus of this study was to explore the secondary school learners' attitude towards Mathematics in Makoni district. This section presents the findings of the study, with regard to the formulated questions.

5.2.1 HOW IS THE ATTITUDE OF SECONDARY SCHOOL LEARNERS TOWARDS MATHEMATICS?

The findings of this study revealed that most learners have negative attitudes towards learning Mathematics.

5.2.2 WHAT ARE THE FACTORS WHICH INFLUENCE THE ATTITUDE OF LEARNERS TOWARDS MATHEMATICS?

The findings of this study reveal that there are several factors that influence the attitudes of learners towards learning Mathematics, namely;

- Many learners believe that Mathematics is complicated.
- Repeated failure in Mathematics.
- Lack of resources, such as textbooks, in many schools.
- Family members, parents and teachers discourage learners.
- Negative attitudes of teachers.

5.2.7 The strategies that can be used to motivate learners to learn and perform well in Mathematics.

- Subject specialists should be invited to motivate learners.

- Mathematics teachers must be recruited from other countries.
- Educators must use constructivist methods of teaching.
- school heads and heads of department must motivate the learners.
- Educators must not use lecture methods but allow learners to be active.
- Educators should stop telling learners that Mathematics is difficult.
- Educators must apply different methods of teaching that will cater for the learners' individual needs.

5.3 RECOMMENDATIONS OF THE STUDY

All the stakeholders of the school are responsible for enhancing the learners' attitudes towards Mathematics. In view of the findings of this study, namely; the literature review and the empirical investigation, the following strategies for enhancing positive attitudes of learners towards Mathematics are recommended:

(a) Use of computers

(b) Use concrete teaching materials

The use of concrete materials is recommended for teaching and learning Mathematics. Long-term use of concrete materials is positively related to increase in student Mathematics achievement and improved attitudes towards Mathematics (Drews, 2007). Research suggests that teachers should use manipulative materials regularly in order to give students hands-on experience that helps them construct useful meanings for the Mathematical ideas they are learning (Drews, 2007). According to the research findings, the use of the same materials to teach multiple ideas over the course of schooling shortens the amount of time it takes to introduce the materials and helps students see connections between ideas. The findings also indicate that the use of concrete material should not be limited to demonstrations. It is also essential that students use materials in meaningful ways rather than in a rigid and prescribed way that focuses on remembering rather than on thinking.

(c) Create effective learning environment

Learners' attitudes can also be improved by creating an effective learning environment. Creating an ideal Mathematics learning environment begins with the teacher understanding students as learners. It is not only important for a teacher to have content knowledge, but also to develop awareness of how individual students learn. Teachers must make appropriate choices with regard to pedagogy to provide learning opportunities such that students are able to construct their Mathematical knowledge.

Teachers can create environments where knowledge is constructed by the student. This environment enables students to build their Mathematical knowledge and understanding of the subject. Teachers should create environments where knowledge is constructed by the student. This environment enables students to build their Mathematical knowledge and understanding of the subject. The classroom is defined as a constructivist classroom (Capraro, 2001). The emphasis is placed on the activity of the individual and reflection of the result of the activity. Students use a process of assimilation and accommodation. Assimilation is where new knowledge is created by building on, or reflecting on knowledge gained previously. Accommodation is when old knowledge beliefs are reshaped to accommodate new experiences (Gadanidis , 2004). It is believed that the above strategies will go a long way in developing positive attitudes of learners towards learning Mathematics.

5.4 CONCLUSION

This study explored the perceptions of educators and learners the attitudes of primary school learners in learning Mathematics. The findings of the research revealed there are various factors that are responsible for attitude in Mathematics. Most of these factors are influenced by negative attitudes. McCleod (2002) said that attitude toward Mathematics is related to Mathematics success in the classroom. It is therefore important for teachers to improve student work to make a positive change in their attitude toward Mathematics. Good performance of learners also depends on the way the subject matter is presented to the learners by the educators, how the learners actively interact with the learning experiences presented to them and the environment within which the learning takes place. Much demand and emphasis is therefore placed on the teacher to commit to improving the learning outcomes of their students. Based on the analysis of the empirical data presented in this study, major causes of negative attitudes towards learning mathematics are related to.

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APPENDIX A: INTERVIEW SCHEDULE (TEACHERS)

1. In your opinion, what do you think are the major factors which contribute to the negative attitude of learners towards Mathematics in primary schools?

2. What do you think are the consequences of attitude towards learning Mathematics?

3. Is there any difference between male and female learners with regard to their attitudes to learning Mathematics?

4. Very few learners register Mathematics at ordinary level in Makoni , explain what could be the factors which contribute to the low registration of learners in Makoni district.

5. Explain the strategies that can be used to motivate learners to learn and performs well in Mathematics.

APPENDIX B: INTERVIEW SCHEDULE (LEARNERS)

1. What do you think are the benefits of learning Mathematics in primary school?

2. All learners in South Africa are expected to learn Mathematics. Do think this is necessary?

3. Do you enjoy learning Mathematics?

4. Do you enjoy learning other subjects?

5. Do you pass Mathematics tests? If not, why?

6. Is your Mathematics teacher a good teacher? Explain your answer.

7. Do you think it is good to learn Mathematics in English and not in your mother tongue? Why?

8. What, if anything, do you think could be done for you now to improve your Mathematics learning?

9. Do you think parents can make a difference on their children's learning of Mathematics?

10. If you had a choice: Would you continue or stop learning Mathematics? Why?

APPENDIX C : QUESTIONAIRE FOR LEARNERS

Section 1: Demographic Information

1. Gender:

- Male
- Female
- Other (please specify)

2. Age:

- 16-18
- 19-21
- Over 21

3.Form:

3

4

4. How would you rate your overall performance in mathematics?

- Excellent
- Above Average
- Average
- Below Average
- Poor

Section 2: Attitudes and Perceptions

5. How do you feel about mathematics in general?

- Love it
- Like it
- Neutral
- Dislike it
- Hate it

6. Do you believe that being good at mathematics is important?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

7. What emotions do you experience when working on a mathematics problem?

- Excitement
- Confidence
- Frustration
- Anxiety
- Boredom

8. Do you find mathematics to be challenging?

- Very challenging

- Somewhat challenging

- Neutral

- Not very challenging

- Not challenging at all

Section 3: Confidence and Self-efficacy

9. How confident are you in your mathematical abilities?

- Very confident

- Confident

- Neutral

- Not very confident

- Not confident at all

10. Do you believe that you can improve your mathematics skills with practice and effort?

- Strongly Agree

- Agree

- Neutral

- Disagree

- Strongly Disagree

Section 4: Learning Preferences

11. How do you prefer to learn mathematics?

- Through lectures

- Through hands-on activities

- Through visual aids