UNIVERSITY OF EDUCATION, WINNEBA

CAUSES OF POOR STUDENTS ACADEMIC PERFORMANCE IN MATHEMATICS AMONG JUNIOR HIGH SCHOOL STUDENTS IN BANTAMA SUB – METRO IN KUMASI METROPOLIS

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A Project Report in the Department of Educational Leadership, Faculty of Education and Communication Sciences submitted to the School of Graduate Studies, University of Education, Winneba, in partial fulfilment of the requirements for award of the Master of Arts (Educational Leadership) degree

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DECLARATION

STUDENT'S DECLARATION

I, MILLICENT DARFOUR, declare that this project report, with the exception of quotations references contained in published works which have been identified and duly acknowledged, is entirely the result of my own original research work, and it has not been submitted either in part or whole for another degree elsewhere.

SIGNATURE: ……

DATE: ……

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines on supervision of project report as laid down by the University of Education, Winneba.

NAME OF SUPERVISOR: PROF. FRANCIS OWUSU MENSAH

SIGNATURE……

DATE: …….

ACKNOWLEDGEMENTS

I wish to express my heartfelt thanks to the Almighty God who made it possible for this project to become a reality. Special thanks go to all my family and friends for their prayers and moral support. Finally expressing my sincere appreciation to my supervisor Prof. Francis Owusu Mensah for supervising this project and also to all the lecturers of the University of Education Winneba, Kumasi Campus.

DEDICATION

To my loveliest and most adorable mother late Ms. Anna R. Geyi and my husband, Mr. Emmanuel Yeboah.

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ABSTRACT

The purpose of this study was to investigate the factors that contribute to students' poor performance in mathematics at selected junior high schools in Bantama Sub – Metro in Kumasi Metropolis. The sample for the study consisted of all Junior high school students preparing for the final examination that comprised of 337. Questionnaire in the form of likert format ranging from strongly disagree (1) to strongly agree (5) was used to collect data. The methodological inquiries was quantitative research approaches using descriptive cross-sectional design which included the following statistical analyses: mean and standard deviation and percentages were employed to answer the research questions of the study. Findings indicated students that show no interest in math class because of Mathematics phobia existence among junior high school students in the study area, the exhibition of poor knowledge of mathematics content by many mathematics teachers and poor teaching methods by teachers were the major factors that affect their performance in Mathematics and students mind go blank and they were unable to think when working mathematics. Based on these findings it was recommended that Ministry of education either directly or through its agents should enhance primary school pupils Mathematics background through inclusion of more introductory Mathematics concepts in the primary Mathematics syllabus and also motivate teachers. This includes subsidizing of house rents. The provision of incentives towards mathematics courses in universities and Colleges of Education through grant-in-aids and scholarships should be considered. This will help in training more mathematics teachers. Again, there is need to develop a love for mathematics through the setting up of "Mathematics Club" in every junior school.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

As soon as children begin talking, parents begin teaching their children to recite the ABCs and count from 1 to 10. Even at an early age, parents realize the importance of teaching their children the beginning basics of reading and mathematics before they enter school (Ballard & Johnson, 2004). Ballard and Johnson stated that in every school across the country, students are taught and expected to learn mathematics, beginning with number recognition in kindergarten. Avital (2012) noted that many mathematical problems for students begin before they even enter school. Many children enter school with very little beginning knowledge. They come from homes in which the parents are uneducated, often cannot speak English, and possibly struggling economically. These students are entering school already at a disadvantage (Betiku, 2001). While many young students begin mastering reading, mathematics often becomes a subject area that countless students will have difficulties and problems mastering.

Students need to be encouraged to acquire, and be provided with, the necessary academic skills to enter math and science related professions (Bush, 2009). Mastering mathematics has become more important than ever before in the world. Students with a strong background in mathematics have an advantage over those students who struggle when competing in the job market. In the job market, workers who have a strong mathematics and science background are more likely to be employed and earn more than those with lower achievement even if they have not gone to college (Betiku, 2001). To

compete in our 21st century global economy, it is critical that students leave high school knowledgeable and proficient in mathematics.

Today's students need to have solid mathematics skills regardless of whether they enter the workforce or continue into higher education (Betiku, 2001). Schools must find ways to improve instruction and provide students with rich experiences in mathematics as they progress through the school system (Sloan, 2002). To produce a generation of students who can compete globally will require schools to prioritize the effective teaching of mathematics (Betiku, 2001). If not, then students are likely to repeat the cycle of poor learning experiences, inadequate foundational knowledge and skills, and weak educational outcomes in mathematics. One factor that may affect a student's ability to succeed academically has been associated with low self efficacy and lack of motivation. Low self-efficacy causes motivational problems that hinder academic achievement. That is not surprising that many struggling learners have low self-efficacy for academics. (Morris & Maisto, 2001).

Therefore, students will avoid academics and give up quickly when faced with difficulties. Other possible factors that may affect student achievement are socioeconomic status conditions and ineffective instructional strategies (Betiku, 2001).

Mathematics as a subject affects all aspects of human life at different levels. Mathematics is seen by society as the foundation of scientific technological knowledge that is vital in social economic development of a nation. It is in realization of the vast applications of mathematics that made to posit that a disciplined and ordered pattern of life can only be achieved through the culture of mathematics. Unfortunately, students'

achievement in this important subject over the years has not been encouraging at the primary and junior high schools levels of education in Ghana (Betiku, 2001).

Mathematics is one of the most important school subjects in the curriculum worldwide. It is a subject that has direct relationship with other subjects, particularly technical and sciences. Mathematics is also a subject that cuts across primary and secondary school as a compulsory subject. Watson (2002) was of the view that mathematics is bedrock and an indispensable tool for scientific, technological and economic advancement of any nation. In addition to that Schenkel (2009) see mathematics as the important subject not only from point of view of getting an academic qualification at school or college, but also is a subject that prepares the students for the future as well irrespective of which work of life they choose to be a part of. Watson (2002) summarized it all by saying that mathematics relates to everything in the universe from the smallest to the largest. Watson (2002) added that mathematics is intimately connected to daily life and everybody's life-long planning.

Despite the fact that mathematics is essential for daily life and plays a crucial role in school curriculum, students' performance remains very low. This caused an outcry from mathematics teachers, parents, and students. One of the main issues for the outcry was the students' poor performance in the subject. By the 2013, however, the public at large and the mathematics community in particular began to voice a mounting concern regarding the mathematical competency of the high school graduates being produced. The resounding question of the 2013s, and 2014s is why are the students from the junior high schools are so mathematically illiterate? This question, which confronts the serious thinkers of mathematics education today, is not confined to any one country or any one

culture or, for that matter, any one system of education; it is being raised almost universally (Zan & Martino, 2007). Therefore, it is against this background that this study investigates into the causes of poor performance in mathematics among junior high school students in the study area.

1.2. Statement of the Problem

Mathematics is seen by society as the foundation of scientific and technological knowledge that is vital in social economic development of the nation. Because of this, mathematics is a compulsory subject at both primary and secondary levels in Sierra Leone. Mathematics is also used as a basic entry requirement into any of the prestigious courses such as medicine, and engineering among other degree courses. Despite the important role that mathematics plays in society, there has always been poor performance in the subject at public examinations.

The importance of mathematics in daily life is recognized worldwide and as a result of this, the subject has been given a special place in the school curriculum. However, students' poor performance in mathematics is globally known, Ghana not being different. Morris and Maisto (2001) contend that the problem of students' poor performance in mathematics is not confined to any one country but universal. In response to this global problem, researchers in various countries investigated its root causes. The researcher is a teacher at the study area and had observed the poor students mathematics performance in BECE. It is in view of this that the researcher designed and conducted this study, which focused on the factors that influenced junior high school students' performance in mathematics.

1.3. Purpose of the Study

The main purpose of this study was to investigate the factors that contribute to students' poor performance in mathematics at selected junior high schools in Bantama Sub – Metro in Kumasi Metropolis

1.4. Objectives of the Study

Specifically, the objectives of the study were to;

1. identify mathematics phobia existence among junior high school students
2. determine the factors that affect student performance in Mathematics in junior high school students in the study area
3. to establish students' attitudes towards mathematics that influences their performance in the subject.
4. devise strategies that can be adopted to improve performance in Mathematics by students in junior high school students in the study area

1.5. Research Questions

The study attempted to answer these questions:

1. What are the mathematics phobia existence among junior high school students in the study area?
2. What are the factors affecting student performance in Mathematics in junior high school students in the study area?
3. What are the students' attitudes towards mathematics that influence their performance in the subject?

4. What strategies can be adopted to improve performance in mathematics by students of junior high schools in the study area?

1.6. Significance of the Study

In addition, the study sought to identify factors contributing to student poor performance in mathematics at the BECE in the study area. The aim of this study, which focused on the factors that influence secondary school students' performance in mathematics, is to contribute towards the enhancement of teaching and learning of junior high school mathematics. The findings of the study are therefore significant to:

a) Policy makers: The findings of the study will assist the educational policy makers to reconsider the existing teacher training programmes.

b) Educational administrators: The findings will sensitize them to harmonize curriculum for teaching institutions and teaching policies.

c) Mathematics teachers: The findings will provide them guidance on the selection of suitable methods and resources for teaching and learning mathematics.

1.7. Delimitations of the Study

The scope of this study encompasses Junior High Schools students in the Bantama Sub Metro in Kumasi Metropolis. It would have been ideal to cover the whole of the Ashanti Region or perhaps the whole of Ghana. However, it is worth noting that the findings and recommendations from this study could be adapted by areas of similar characteristics in the region and outside the region for the purposes of decision-making.

1.8. Organization of the Study

The study was organized into five chapters. Chapter one deals with the background to the study, statement of problem, purpose of the study, objectives of the study, research questions, significance of the study and organization of the study. Chapter two covered review of available literature relevant to the study, while chapter three focused on the population, simple instrument for data collection and the procedure used in data analysis. Chapter four dealt with the analyses the result of the study and chapter five dealt with the summary of the research findings, conclusion and recommendation of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction

In this chapter the review focuses on the factors that are responsible for the students' poor performance in Mathematics in junior high schools. The study will be reviewed under the following headings:

2.2. The Essence of Mathematics Education

The main goal of mathematics education is to promote students 'learning of mathematics. It focuses on the content and the tools, methods and the approaches that facilitate the teaching/ learning activities. This makes mathematics education essentially practical and dynamic, necessitating new changes in teaching the subject. According to Bush (2009), there have been many changes in both the content and the style of mathematics teaching for the last thirty years. They note that modern methods made greater demands for visual and physical aids to help children understand concepts and processes. The old didactic methods of teaching mathematics, which involved rote learning, are gradually being replaced by interactive teaching methods On the other hand, the introduction of the use of graphic calculators and computers in mathematics classrooms is another worth mentioning recent change in mathematics. The power of using computers in the teaching of mathematics has been emphasized by Bush (2009) as a strategy for developing problem solving skills which was seen as a touchstone for reform. For this reason, the Bush (2009) advised that mathematics education programmes must take full advantage of the power of calculators and computers at all grade levels.

2.3. Determinants of Students' Performance in Mathematics

2.3.1. Methods of teaching mathematics

There are various techniques and methods of teaching mathematics. Every teacher uses his/her specific way of presenting a lesson. That is why many scholars argue that there are as many methods of teaching as there are teachers. On the other hand, there is no one best or most effective method in teaching mathematics. Miheso (2002) notes that no single teaching method can be the method of choice for all occasions. However, much is known about the characteristics of effective methods of teaching mathematics. What is important for every teacher is to select and use the methods with such characteristics. The quality of implementing mathematics programmes is ultimately determined by the teacher's performance and effective work in the classroom situations (Roulet, 2001).

Traditionally, teaching in general and teaching mathematics in particular strongly relied on teachers' exposition followed by practice of the fundamental skills. Many mathematics teachers support the idea that practice makes perfect. They strongly contend that practice or drill alone can help students to master fundamental skills and procedures. According to Moris and Maisto (2001), mathematics teachers at all levels reverted to an emphasis on facts and skills in mathematics (through drill) became very common in many classrooms. It was monkey see, monkey do mathematics, with little or no reason given. Sloan (2002) notes that teachers explain a rule on the blackboard, give some examples of the rule in operation, and then set the class many more examples and exercises to do for themselves. They also noted that teachers believe that understanding would eventually come through sufficient practice. However, research has shown that drill alone cannot even guarantee recording of the learned theories.

Moris and Maisto (2001) contend that drill with a fact or skill does not guarantee immediate recall. They posit that student competence with a mathematical skill does necessitate extensive practice. Drill alone contributes little or nothing to growth in a student‘s mathematical understanding.

There are a number of principles that appear frequently in any literature on effective mathematics instruction. These include a problem-oriented learning, focusing on meaning, whole-class discussion and small group-work. Effective teaching requires continuing efforts to learn and improve. Many scholars have addressed various issues relating these topics as effective methods of teaching mathematics. Research findings clearly support the use of small groups as part of mathematics instruction. This approach can result in increased student learning as measured by traditional achievement measures, as well as in other important outcomes (Moris & Maisto, 2001).

Miheso (2002) studies on grouping in mathematics classrooms, it was concluded that students working in small groups significantly outscored students working individually in more than 40 percent of the studies. Miheso (2002) further argues that most studies on achievement on cooperative learning found that, there was significantly greater achievement in cooperative classes than in the control classes.

Aiken (2001) observes that considerable research evidence within mathematics education indicates that using small groups of various types for different classroom tasks has positive effects on student learning. Reviews of studies of the effects of cooperative learning have generally yielded positive findings. Research has shown that these programs enhance various effective outcomes, including inter-group relations, acceptance of mainstream academically handicapped students by their classmates, self-esteem,

enjoyment of class or subject, and general acceptance of others. Further, achievement effects of cooperative learning are generally positive (Aiken, 2001).

According to Farooq and Shah (2008), a classroom in which problem solving plays a central role can provide a good environment for mathematics learning to take place. When confronted with an appropriately challenging and interesting problem, students feel both the urge to solve that problem and the concomitant tension that it arouses. A problem needs two attributes if it is to enhance student understanding of mathematics. First, a problem needs the potential to create a learning environment that encourages students to discuss their thinking about the mathematical structures and underlying computational procedures within the problem‘s solution. Second, a problem needs the potential to lead student investigations into unknown yet important areas in mathematics (Farooq & Shah, 2008).

Cockcroft (2002) notes that investigations have consistently shown that an emphasis on teaching for meaning has positive effects on student learning, including better initial learning, greater retention and an increased likelihood that the ideas will be used in new situations. Similarly, Sloan (2002) found that focusing on the meanings gives students a strong foundation for learning new related ideas. It also helps them to know when to apply particular skills or procedures, because they see the underlying reasons that these methods work.

The research findings indicated that achievement levels were significantly different in interactive from those in traditional classrooms at computational levels. However, differences in achievement were evident between interactive and traditional classrooms in application and comprehension levels of cognitive growth (Miheso, 2002).

Miheso also found that currently didactic teaching accounted for 75% of mathematics teaching and only 25% accounted for classroom interaction.

On the other hand, research suggests that whole-class discussion can be effective when it is used for sharing and explaining the variety of solutions by which individual students have solved problems. It allows students to see the many ways of examining a situation and the variety of appropriate and acceptable solutions (Zan & Martino, 2007). Some mathematics educators believe that for a mathematics teaching method to be effective, it should contain various and balanced pedagogical approaches and activities so that students with different types of learning styles can be catered for.

Cockcroft (2002) notes that mathematics teaching at all levels should include opportunities for:

Exposition by the teacher;

1. Discussion between teacher and pupils and between pupils themselves;
2. Appropriate practical work;
3. Consolidation and practice of fundamental skills and routines;
4. Investigational work.
5. Problem solving, including the application of mathematics to everyday situations;

2.3.2. Teacher-students interaction

Students learning mathematics do so with assistance from their teachers. Teacher-learner interaction in classroom should be geared towards achieving a goal; to learn mathematics, teachers should be conscious of their own attitudes towards mathematics and other subjects and towards his/her students regardless of their gender (Zan &

Martino, 2007). They further emphasized that there should be provision of guidance and counseling to students with repeated under-achievement to reinforce the students accordingly and motivate them by providing for the individual differences.

2.3.3. Students willingness towards problems solving and mathematics achievement

Students who have high level of positive attitude in mathematics will have high level of success in life (Watson, 2002). Therefore, willingness towards problem solving is believed to play a significant role in mathematics achievement. Schenkel, (2009) found that excellent students have high level of willingness to solve mathematics problems compared to average and weak students. His finding is also supported by Aiken (2001) that excellent students have high level of willingness towards problem solving. Aiken (2001) further highlight that Bandura (1977) claims that 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(Aiken, 2001). Watson (2002) shown that self efficacy has been used in the evaluation of performance in a variety of academic areas but a major focus has been related to mathematical skills.

2.3.4. Teacher Self-Efficacy

Self-efficacy as a teacher, on the other hand, is a powerful predictor of how and whether a teacher will act (Dienes, 2000). Self-efficacy is the belief that one is capable of exercising personal control over one's behaviour, thinking and emotions. Effective

teachers believe that they can make a difference in children's lives, and they teach in ways that demonstrate this belief (Dienes, 2000). What teachers believe about their capability is a strong predictor of teacher effectiveness. To Dienes (2000) teachers who hold strong self-efficacy beliefs tend to:

1. be more satisfied with their job
2. demonstrate more commitment and
3. have lower absenteeism

Dienes (2000) further emphasized that teachers who have high self-efficacy tend to: persist in failure situations; take more risks with the curriculum; use new teaching approaches; make better gains in children's achievement and have more motivated students.

2.3.5. Teachers experience

Teacher characteristics such as years of teaching experience have been investigated to determine their effect on student outcomes (Chapman, 2002). A more recent analysis by Mwangi (2002) used multilevel structural equation modeling to analyze data and found that teachers with a major or minor in the subject area that they are assigned to teach produce greater gains in student achievement in both mathematics and science. This remained true even after controlling for teacher professional development, teacher classroom practices, class size, and student demographics. Interestingly, Aiken (2000) found that students with mathematics teachers assigned in-field scored higher and had greater gains than students with mathematics teachers assigned out- of-field which indicates a connection of content-knowledge, but not

necessarily applying pedagogical knowledge to other content areas. However, teacher experience is a topic of potential concern to policymakers, because experienced teachers often try to move to districts, schools, and classrooms with a more privileged student body and higher resources.

Thus, if teacher experience is related to student achievement, and more experienced teachers are able to some extent select the schools and districts in which they teach, or even their teaching assignments within a school, poor students and students at risk of educational failure may end up being doubly disadvantaged because they are more likely to be taught by inexperienced teachers. Akey (2006) found in their meta-analytical study that teaching experience had a positive and significant effect on student achievement. Akey (2006) further found evidence that although teaching experience appears to be related to student achievement, the relationship may not be linear; students whose teachers had fewer than 5 years of experience had lower levels of mathematics achievement, but there were no differences in mathematics achievement among students whose teachers had more than 5 years of experience.

2.3.6. Teacher qualifications

Interest in student performance and teacher qualifications has intensified among education policymakers and researchers. During this time period, research has accumulated that links student achievement to the qualifications of teachers (Aborisade, 2009). Two central measures of teacher qualifications are teachers' education and their certification. To understand how many students are taught by teachers lacking specified levels of training, efforts have focused on mismatches between teacher qualifications and

their teaching assignments (Besant, 2000). One of the main findings concerning teacher qualifications has been the relatively high incidence of teachers teaching subjects outside their areas of subject matter training and certification (Besant, 2000). Moreover, the incidence of out-of-field teaching has been shown to vary by subject and by grade level. Out-of-field teaching also has been shown to occur more often in the classrooms of low-income students (Costello, 2001).

Oskemp (2002) analysis of teachers' qualification and students' mathematics performance found a positive relationship between these variables; with higher levels of performance among students whose teachers held a bachelor's or master's degree in mathematics than among students whose teachers were diplomates. Oskemp (2002) examined data on the degrees and certification status of teachers and their students' performance in mathematics and observed a positive relationship between teachers' degrees and student performance in mathematics. Oskemp (2002) further found that students whose teachers were certified in mathematics but did not hold a degree in mathematics did not perform as well.

2.3.7. The school environment

The physical environment of the school affects academic performance of the students. For example, Gronlund (2001) affirmed that environmental influences help in the acquisition of knowledge and skills. Oskemp, (2002) on the other hand noted that it is because of the effects of the environment on the child that educators are interested in the child's environment, as this, rather than heredity is the phenomenon they can easily control in order to enhance teaching, learning and achievement. Fakuade (1999)

explained that the physical settings of the classroom, teaching aids to mention a few, enhance teaching, learning and achievement. It is a fact that surrounding environment of the students influences their performance. For instance, the quality of the school building has direct impact on students' performance. Students perform better academically in better buildings. Biehler and Snowman (1997) have found that students in old buildings scored 5-7% points lower than students in new buildings and so established in independent findings that there is a relationship between the school building condition and students' achievement. Those high performance schools use various constructions and design methods to improve acoustical environment. This reduces internal noise and external noise factor like traffic (Biehler & Snowman, 1997). Another interesting factor to note is that daylight is a central component of high performance design. Providing natural daylight provides biological stimulation for that regulate body system and moods, provide opportunities for natural ventilation, and reduce the need for artificial light, thereby reducing energy costs (Biehler & Snowman, 1997). Dean (2004) concludes that the inadequacy of such physical resources like lecture halls, halls of residence, laboratories, libraries and other academic resources translate to poor results because it breeds over crowdedness. To Dean (2004) good acoustics are important in any learning situation, but noise in classrooms often makes children struggle to hear and concentrate, defeating the learning process at the outset. In a typical school, classrooms may bombard students with three sources of noise:

1. Noise from the outdoors
2. Mechanical noise generated between rooms or between corridors and rooms
3. Noise generated within the classroom, including the ventilation system.

Taken all together, the noise can stifle a child's chance to learn (Dean, 2004). The interaction between the environment factor and the personal characteristics of the student do exhibit significant effects on the academic performance of the students. This has supported Hamachek notion of person-environment interaction (Hamachek, 2002). Clearly, there is consensus that newer and better school buildings contribute to higher students' score on standardized tests (Lubinski, 2003), but just how much varies depending on the study and the subject area. For example, Sorensen (2003) found impressive gains in mathematics scores and found lower gains in social sciences. When buildings new schools, it is essential to incorporate the best design practices available. This is particularly relevant as numerous studies show that the central features of high performance schools- including ventilation, day lighting, and acoustics- have a direct impact on academic outcomes. School facilities affect learning. Spatial configurations, noise, heat, cold, light and air quality obviously bear on students' and teachers' ability to perform. Empirical studies will continue, focusing on fine-tuning the acceptable ranges of these variables for optimal academic outcomes. But we already know what is needed: clean air, good light and a quiet, comfortable, and safe learning environment. This can be and generally has been achieved within the limits of existing knowledge, technology, and materials. It simply requires adequate funding and competent design, construction, and maintenance (Sorensen, 2003).

2.3.8. Classroom environment

To many people classroom environment is just another expression for classroom setting. It is an undeniable fact that classroom lighting, temperature and ventilation affect

student‘s performance but creating an environment conducive to learning is more than having attractive sights, relaxing sounds, and good ventilation. In addition to that, a classroom environment conducive to learning is a place where everybody feels comfortable and at ease. It is a place where there is mutual respect in a friendly and non-threatening atmosphere (Sorensen, 2003).

The teacher is the key factor in influencing the mood of the classroom environment. It is the teacher who creates learner‘s attitudes towards the subject. With the help of their students, teachers foster positive classroom climate which encourages students to be comfortable and at ease in participating in all kinds of teaching learning activities. The teacher is always the decisive element in the classroom. It is the teacher‘s knowledge, personality, mood and skills that mold the entire classroom climate. Although most teachers are not aware of it, it is them who mend or end the children‘s ability to learn the subject.

On the other hand, clear and simple standards of conduct that all students understand are essential to a productive classroom environment. Classroom routines and procedures are the best way to establish these standards. Effective classroom management is more than rules and discipline. Rather, effective teachers establish responses to common classroom issues of order that allow them to focus maximum time and energy on the instructional process. A classroom environment is affected by both physical and psychological factors. Having emotionally safe and encouraging classroom climate is equally important, in creating an effective environment, as the physical make-up of the room (Sorensen, 2003).

2.3.9. Teacher attitude towards mathematics

An understanding of how attitudes are learned should establish a connection between teachers and students' attitudes, and attitudes and performance. Sorensen (2003) reports that positive teacher attitude towards mathematics was significantly related to high achievement in pupils. Sorensen (2003) studied how the teachers' attitude contributed to students' academic performance and behaviour. The study unveiled, among other things, that students with more devoted teachers were regarded by their peers as helpful to victims of bullying relative to students with less devoted teachers. The study also disclosed that students with the devoted teachers had the courage and determination to face difficulties in school life. Teachers were recognized as those who provided support, encouraged students and their value for love eradicated unwanted behaviour in students. Teachers are, invariably, role models whose behaviours are easily copied by students. What teachers like or dislike, appreciate and how they feel about their learning or studies could have a significant effect on their students. Unfortunately however, many teachers seldom realize that how they teach, how they behave and how they interact with students can be more paramount than what they teach (Sorensen, 2003)

Like all other kinds of attitude, a teacher's attitude towards mathematics can be measured by the emotional response towards Mathematics (affective), beliefs about Mathematics (cognitive), as well as behaviour. Steen (2000) postulate that attitudes and practices of teaching mathematics are complexly affected by beliefs, emotions, social context and content knowledge. Studies confirm that emotional responses toward mathematics that are found in teachers include like and dislike of mathematics, anxiety associated with mathematics and self-confidence in relation to mathematics (Kwakman,

2003). These emotional factors have been found to have an impact on student performance. In their study of teachers' self-esteem connected to mathematics, Kwakman (2003) found that approximately half of the participating pre-service teachers, some of whom were highly qualified, lacked self esteem in relation to mathematics. Hamachek (2002) stipulate that teachers' exhibition of self confidence when teaching Mathematics motivates student achievement in mathematics. The learner draws from the teacher's disposition to form his own attitude which may affect her learning outcomes.

Teachers' beliefs about mathematics such as the usefulness of mathematics, the way Mathematics should be learned, the difficulty or ease of mathematics, as well as gender ability and beliefs also affect their attitude towards the subject and impact on students' performance. According to Hamachek (2002), teachers' beliefs about the utility of mathematics are often found to correlate with either a more positive or negative attitude towards the subject. It is believed that a teacher who sees no usefulness of mathematics in the real world and believes that mathematics should be learnt as a set of rules and algorithms will require his students to memorize procedures and rules without meaning. This is a negative outlook that will make his students develop a negative attitude towards the subject. Also, a teacher who believes that girls are poor in mathematics is likely to impact negatively on girls in his class who will begin to believe that they cannot do mathematics (Hamachek, 2002).

Another aspect of the teacher's attitude towards mathematics is the teacher's behaviour in relation to mathematics. Such mathematics-related behaviour as avoidance of mathematics, pursuit of mathematics and instructional behaviour in the classroom all affect student attitude and performance (Hamachek, 2002). Usually, the way that

mathematics is represented in the classroom and perceived by students, even when teachers believe they are presenting it in authentic and context dependent way stands to alienate many students from mathematics (Hamachek, 2002). Good and Brophy (1999) stipulates that students' positive attitude towards mathematics is enhanced by the following teacher-related factors: teachers' enthusiasm, teachers' resourcefulness and helpful behaviour and teachers' thorough knowledge of the subject-matter and their making mathematics quite interesting. It is inferred that teachers can foster in students the positive attitudes about mathematics that help to build confidence by: encouraging the belief that everyone can "do" mathematics – emphasizing effort, not innate ability; modelling enthusiasm for teaching and learning Mathematics; addressing the learning styles of students by providing a variety of ways for students to gain an understanding of difficult concepts; helping students to appreciate the value of mathematics in their lives; and choosing activities carefully (not too easy, not too hard), so that students can be both challenged and successful (Good & Brophy, 1999).

2.3.10. Teachers/Students ratio

Githua (2002) there is a plethora of literatures to show that our primitive secondary schools are hampered by scores of problem: shortage of well-trained teachers, inadequacy of teaching facilities, lack of funds to purchase necessary equipment, poor quality textbooks, large classes, poorly motivated teachers, lack of laboratories and libraries, poorly coordinated supervisory activities, interference of the school system by the civil service, incessant transfers of teachers and principals, over-crowded classrooms or laboratories, automatic promotion of pupils, the negative role of public examination on

the teaching-learning process, inequality in educational opportunities (Githua, 2002). Githua (2002) emphasized that for education to be effective, especially at the junior school level, teaching staff strength has to be adequate. A student-teacher ratio of 40:1 may be considered adequate but where they exceed, the teacher cannot perform effectively and efficiently.

Martens and Witt (2004) asserts that owning to the bloated class-size, the work becomes unwieldy and tedious; personal attention to individual pupils becomes impracticable, marking of assignments becomes tedious and burdensome, while compilation of results became a frustrating exercise. The resultant effect is the pathetic situation of poor performances in Mathematics examination. They wonder how a single teacher can take care of 50 students at a time. In most cases, the rooms are too small and poorly ventilated. It becomes difficult for the teachers to establish any close individual contact with the students.

Baldacchino and Farrugia (2002) affirm the effects of class size and teacher/student ratio on performance of students especially in mathematics. They further (1998) concluded that small classes have an advantage over larger classes in school performance and confirms that students in small classes scored higher on standardized test than students in regular class.

2.3.11. Students' attitude and commitment

Anderson (2011) confirmed that a child who has a positive attitude towards what he learns will be highly motivated to engage in activities that promote learning thereby developing a positive self-concept in relation to the total teaching environment. One of

the most important factors for improving performance is students' involvement. By involvement it means how much time, energy and efforts students devote to the learning process. Several studies have found a small but positive correlation between some school factor and attitudes (Anderson, 2011). Cooper (2009) provides evidence that aspects of the classroom learning environment are positively related to mathematics attitudes. Attitudes therefore relate to the way we act or react and the way we perform our thinking (perceptions) is what results in our attitudes. Our actions therefore depend on our attitudes. There is now a good deal of research evidence to suggest that the more time and efforts students invest in the learning process and the more intensely they engage in their own education, the greater will be their growth and achievement, their satisfaction with their educational experiences and their persistence in school, and the more likely they are to continue their learning (Cooper, 2009), the students bring to the instructional setting his abilities, motivational propensities, personal background; home background, community values and these can mar, make or supersede teacher's intervention of whatever quality. Cooper, D. (2009) sees attitude as a mental state of readiness organized through experiences, exerting a direction or dynamic influence upon the individual's response to all objects and situations with which it is related.

Attitude therefore is fundamental to the dynamics of behaviours and determines how far a student learns. Jolibongo (2012) posits that if a student has a positive attitude towards mathematics, he will not only enjoy studying it but will also derive satisfaction from the knowledge of mathematical ideas he gains. Jolibongo (2012) explains further, if a student has a positive attitude to mathematics, he will definitely be interested in its teaching and learning. For Munn (2009), most mathematics teachers do not make the

teaching of mathematics practical and exciting and this leads to negative attitude to mathematics by students.

According to Munn (2009), the elements of novelty, usefulness and sheer intellectual curiosity are the primary stimuli for the awakening, maintaining the students' interest in mathematics. With genuine attitudinal change, sustained interest and continual challenge, mathematics would no longer seem to the students a boring, useless to real life issues and increasingly incomprehensible but a subject that will be longed for. The aim of understanding such an investigation, the researcher hoped, would be useful for teachers of mathematics in Ghanaian junior high schools. It has in fact been confirmed that effective teaching strategies can create positive attitude on the students towards school subjects (Munn, 2009).

2.3.12. Students attitudes towards mathematics

It is most probable that students 'attitudes towards mathematics influence the efforts they put in understanding and practicing mathematical concepts and skills. This will in turn affect their achievements in the subject. If for example a student believes that mathematics is so hard that only very few students can learn it, and he/she is not one of them, then he/she will not waste time in solving mathematical problems. The implication is also the same if the student believes that it does not have any practical real life applications and hence it is less likely that he/she will succeed in mathematics. According to Munn (2009), a vast majority of people hold mathematics as a dry and difficult subject full of abstract things.

Pupils' feelings are important and strongly affect the amount of work, effort put forward and the learning that is acquired. Thus attitudes determine the effort a student is likely to put in his learning of a subject. For example, a student who likes mathematics is likely to put more effort in learning the subject and at the same time increase the chance of performing well in the subject than a student who dislikes the very subject (Munn, 2009).

Student's attitudes towards mathematics have been found to be positive in the early years of primary schooling, but decline as they progress to upper classes. It is, therefore, necessary for mathematics teachers to strive and sustain positive attitudes towards mathematics for good performance in the upper classes (Munn, 2009).

2.4. Causes of Poor Performance in Mathematics among Junior High School Students

According to Ndebele (2008) there are many causes of poor performance in mathematics among junior high school students. Ndebele (2008) categorizes factors militating against good academic performance into four principal areas which are:

1. Causations resident in the child such as basic cognition skills, physical and health factors, psycho-emotional factors, lack of interest in school programme.
2. Causations resident in the family such as cognition stimulation/basic intuition during the first two years; type of discipline at home; lack of role model and finance.
3. Causations resident in the school such as school location and physical buildings; interpersonal relationship among the school personnel.

4. Causations resident in the society such as instability of educational policy; under-funding of educational sector; leadership; job losses.

Specifically, many studies and authorities presented many causes of poor performance in mathematics among students. For instance, Ndhlela (2012) was of the view that shortage of well trained teachers, inadequate of teaching facilities, lack of fund to purchase necessary equipment, poor quality of textbooks, large classes, poorly motivated teachers, lack of laboratories and libraries, poorly coordinated supervisory activities, interference of the school system by the civil service, incessant transfers of teachers and principals, automatic promotions of pupils, the negative role of public examinations on the teaching learning process and inequality in education opportunities all hamper the smooth acquisition of mathematics knowledge. In addition to the above causes of poor performance in mathematics, Ndhlela (2012) was of the view that prominent causes of poor performance in mathematics are:

1. Acute shortage of qualified professional mathematics teachers.
2. Exhibition of poor knowledge of mathematics content by many mathematics teachers.
3. Overcrowded mathematics classrooms.
4. Students negative attitude toward mathematics.
5. Undue emphasis on the coverage of mathematics syllabus at the expense of meaningful learning of mathematics concepts.
6. Inadequate facilities and mathematics laboratories.

In another vein, Ralenala (2012) found out that the reasons for poor performance in mathematics from the point of views of principals are:

1. Lack of learning support;
2. Principal teachers' dissatisfaction with the in-career training of teachers in mathematics;
3. Perceived shortage of instructional resources for teaching mathematics;
4. Learners taught by teachers who have not participated in career professional development;
5. Mathematics contents were not fully covered. Emphasis is placed on few areas that involve numbers.

Other causes of poor performance in mathematics among junior high school students include misconception of the subject (mathematics) as difficult one, fear and anxiety. Ralenala (2012) stated that students often develop mathematical anxiety in schools, often as a result of learning from teachers who are themselves anxious about their mathematical abilities in certain areas.

Ralenala (2012) attributed poor performance in mathematics to parental attitude, interrupted teaching, poor teaching and dyscalculia. Douglas and Kristin (2000) pointed out that lack of meaningful library and laboratory, qualified teachers, home environmental factors and family backgrounds as well as little participation of parents in the education of their children as the main causes of poor performance in mathematics.

Therefore, it is clear that the causes of poor performance in mathematics among senior secondary school students are many and varied but they fall under school based causes, teacher and students personal causes. Causes like inadequate qualified teachers, instructional materials, libraries and laboratories, poor attitude of students, improper teaching methods, anxiety, home background, overcrowded classrooms, interrupted

teaching, dyscalculia, poorly motivated teachers and so on and so forth bring about poor performance in mathematics among junior high school students(Douglas & Kristin, 2000).

2.5. Ways of Improving the Performance of Senior Secondary School Students in Mathematics

Miheso (2002) emphasized that there are many ways are suggested by teachers, students on how to improve the performance of students in mathematics. Miheso (2002) further stated that the government recognized the importance of mathematics in science and technology and in fact in all areas of human knowledge.

Mike and Anne (2001) were of the view that mathematics performance of students can be improved by provision of proper staffing, teaching and learning materials, curriculum motivation and attitudes, and fees and levies. On the other hand, Wasiche (2006) was of the opinion that ways of improving performance of students in mathematics include creation of positive attitude towards mathematics, administering of more examinations and quizzes, provision of adequate teaching and learning materials, motivation, completion of the syllabus in time, provision of adequately trained mathematics teachers, using variety of teaching methods as well as monitoring of lesson by the school administration.

Douglas & Kristin (2000) were of the opinion that provision of instructional materials, library, laboratory and other physical facilities, developing good rapport with parents by the head teachers, reducing students and teachers ratio to manageable size are some of the ways of improving performance in mathematics. In another vein, Miheso

(2002) suggested four strategies for improving the performance of students in mathematics as follows: groupings into students' ability during teaching of mathematics in the classroom; the strategy of constructivism should be imbibed in teaching mathematics, that is for students to learn and sustain their learning they must be in control of their learning. He also added that use of instructional aids and games as well as using computer-aided instruction are the strategies that can be used to improve performance of students in mathematics.

Miheso (2002) suggested addressing the following:

1. Changing the perception of students that mathematics is a very difficult subject.
2. Reversing the negative statistics from WAEC showing a high failure rate in mathematics exams.
3. Enhancing the understanding that mathematics is the bedrock of technological inventions and growth.
4. Ensuring that students pass mathematics to facilitate admission for higher studies in numerate academic disciplines.
5. Awakening a conscious interest for mathematics amongst pupils from their cradle age.
6. Creating a credible medium for identifying, encouraging and rewarding brilliance.

Therefore, it is clear that there are many ways that can be followed in order to improve the performance of junior high school students in mathematics, such as the provision of adequate facilities both teaching and physical, qualified mathematics teachers, developing positive attitude of students towards mathematics, involvement of

parents in the education of their children, using proper methods of teaching the subject, organization of quizzes and competition among and between schools and so on and so forth.

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter discusses the methods used in carrying out the present study. Research issues such as the design, population, sample, sampling procedure, research questionnaire, and statistical analysis are presented.

3.2 Research Design

The study adopted a cross sectional study design. This design was chosen because according to Cohen and Manion (2000) studies of this nature may be more productively undertaken because data can be collected from a cross section of a population in a short time and then results generalized to represent the entire population of the study. The study further employed descriptive survey approach. Sekaran (2000) states that the basic aim of survey research is that the information is collected at one point in time. Rubin (2005) defines descriptive research as a process of collecting data in order to test hypothesis or to answer questions concerning the current status of the subject in the study. Martens (2005) assert that descriptive research involves describing, reading, analyzing and interpreting condition that exists. The study was largely quantitative although, qualitative techniques were also employed to address the gap left by quantitative methods (Creswell, 2003).

3.3. Population of the Study

Orodho (2002) defined population as the group of people from which a sample can be drawn. Population is the total collection of elements about which we wish to make some inferences. The target population for this study comprised all Junior high school students preparing for the final examination in the Bantama Sub-metro. The table 3.1 below illustrates the study population.

Table 3:1: Distribution of the Study Population and their Schools

Schools	Students Population
AAA	69
BBB	75
CCC	65
DDD	58
EEE	70
Total	337

3.4. Sample and Sampling Procedure

From the target population, a sample of 102 was selected for the study using simple random method. Simple random sampling technique was employed because it ensured that everyone in the population had an equal chance of being selected. The goal of the sampling method used was to obtain a sample that is a representative of the population. The techniques used by the researcher to select the sample size required prior knowledge of the target population which allowed a determination of the size of the

sample needed to achieve a reasonable estimate with accepted precision and accuracy of the population. With the use of the simple random sampling technique, ‘’YES’’ or ‘’NO’’ was written on piece of papers and folded them and those who selected the ‘’YES’’ were selected. In addition, purposive sampling technique was used to select 2 mathematics teachers from each of the selected schools making 10 teachers to respond to qualitative data.

Table 3.2.: The Distribution of Population and Sample Selected from the Various Targeted Junior High Schools

Names of Schools	Students Population	Sample Selected (30%)
AAA	69	21
BBB	75	23
CCC	65	20
DDD	58	17
EEE	70	21
Total	337	102

In determining the sample size above, Rubin (2005) postulated that 20% to 30% of the population is sufficient for reliable findings. For the purpose of this study 30% was used. Thus a representative sample of 102 students which constitutes 30% of the entire population was adequate for reliable findings.

3.5: Instrumentation

The researcher constructed a questionnaire that had closed ended questions, which were designed to obtain information and data from the junior high school teachers. Structured questionnaires were preferred by the researcher because of its advantages like; easy to administer on a large population. Questionnaires require less time and money compared to other methods like focus group discussions (Amin, 2005). The questionnaire was a 4-point likert scale (1= Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree). The questionnaire consisted of 29 items. The items 1 to 8 measures students' mathematics phobia existence. Items 9 to 15 also measured factors causing students poor performance in mathematics, items 16 to 22 measures students' attitude towards mathematics, whiles items 23 to 29 measures ways of improving students' mathematics. The questionnaire obtained satisfactory cronbach alpha of 0.83.

3.6. Testing Validity and Reliability of the Instrument

The validity of research instruments was ensured by assessing the questionnaire items during their construction. Questions were discussed with the supervisor for verification. This was to clear any lack of clarity and ambiguity. The content related validity of the questionnaire was determined and strengthened through an extensive review of the literature. Reliability refers to the consistency of the instruments in tapping information from more than one respondent. Through a pilot study conducted at HHH Junior High school that was not part of the study and 50 students and 5 teachers were selected as respondents.

3.7. Data Collection Procedure

Structured questionnaires containing close ended questions and closed-ended were administered to respondents. This was done during school days between 10am – 2:00pm. The researcher visited each school and interacted with the head master and with the heads assistance, the researcher appointed a research assistant. After permission from the headmaster of the school has been obtained, the researcher personally administered the questionnaires to the teachers and collected the questionnaire later when she was informed about the completion of the instrument.

3.8. Data Analysis Procedure

After sorting out the questionnaires, the data were computed and analyzed using the Statistical Package of Social Sciences (SPSS) version 16.0. The statistical analysis such as frequencies and percentages were used to answer the research questions.

3.9. Ethical Considerations

As this study utilized human participants and investigated on accounting school practices in life, certain issues were addressed. The consideration of these issues is necessary for the purpose of ensuring the privacy as well as the security of the participants. These issues were identified in advance so as to prevent future problems that could have risen during the research process. Among the significant issues that were considered included consent, confidentiality and data protection.

In the conduct of the research, the questionnaire was drafted in a very clear and concise manner to prevent conflicts among respondents. People who participated in the

research were given ample time to respond to the questions posed on them to avoid errors and inaccuracies in their answers. The respondents were given a waiver regarding the confidentiality of their identity. The respondents' cooperation was eagerly sought after, and they were assured that the data gathered from them would be treated with the strictest confidence, so that they would be more open. This was done with the hope that this would promote trust between the researcher and the respondents.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter is divided into two major sections. The first section provides the demographic characteristics of the respondents. The second section presents the answers and discussions to the study research questions.

4.2. SECTION A – Demographic Characteristics of Respondents

Table 4.1 below shows the age group of the students. The dominant age group of the students ranged between 13 – 15 years representing 65 (63.7%), followed by age group between 16 to 18 years representing 33(32.4%) whereas between 10 to 12 years made up the smallest group, representing 4 (3.9%) of the students.

Table 4.1: Age Distribution of Students

	Frequency	Percentage
10-12	4	3.9
13-15	65	63.7
16 – 18	33	32.4
Total	102	100.0

The sex distribution of the students indicated differences with 64 boys representing 62.7% and 38 girls representing 37.3%. This implies boys who participants were more than girls participants. Table 4.2 below illustrate this relationship

Table 4.2: Sex Distribution of Students

	Frequency	Percentage
Boys	64	62.7
Girls	38	37.3
Total	102	100.0

Concerning the students' parents marital status, Table 4.3 below presents that 24 of the students representing 23.5% parents were single, whiles 78(76.5%) parents were intact or married. Table 4.3 below illustrates this relationship

Table 4.3: Distribution of Students Parental Marital Status

	Frequency	Percentage
Single/Divorce	24	23.5
Married/Intact	78	76.5
Total	102	100.0

With regard to the students living status, Table 4.4 below presents that 30(29.4%) stay with their mothers only, 15(14.7%) reported stayed with their fathers only, 53(52%)

indicated that they stayed with both of their parents, whiles 4 of the students representing 3.9% stayed with other relatives. Table 4.4 below illustrates this relationship

Table 4.4: Distribution of Students Living Status

	Frequency	Percentage
Mother only	30	29.4
Father only	15	14.7
Both Parents	53	52.0
Other Relatives	4	3.9
Total	102	100.0

In terms of the students' parents or guardians education status, table 4.5 below indicates that 5 of the students representing 4.9% were graduate, 30 of them representing 29.4% had secondary education status, 38(37.3%) had basic education whiles 29 of them representing 28.4% were uneducated.

Table 4.5: Distribution of Students Parents/Guardian Educational Level

	Frequency	Percentage
Tertiary	5	4.9
Secondary	30	29.4
Basic	38	37.3
Uneducated	29	28.4
Total	102	100.0

4.3. SECTION B – Analysis of Research Questions

Research Question One – What is the mathematics phobia existence among junior high school students in the study area?

This section of the research question was meant to identify the mathematics phobia existence among junior high school students in the study area. The students were given questionnaires and requested to express in their views so as to assist in finding out the type mathematics phobia existence among junior high school students in the study area. Their responses were recorded in Table 4.6 as follows:

Table 4.6: Mathematics Phobia Existence among Junior High School Students in the Study Area

Statements	SD	D	N	A	SA	Mean
1. Feverish feelings in math class	5(4.9)	6(5.9)	3(2.9)	46(41.1)	42(41.2)	4.12
2. Difficulty in understanding math problem	6(5.9)	4(3.9)	5(4.9)	59(57.8)	28(27.5)	3.97
3. Students do not concentrate in math class	6(5.9)	7(6.9)	6(5.9)	59(57.8)	24(23.5)	3.86
4. Students showing no interest in math class	4(3.9)	4(3.9)	2(2)	37(36.3)	55(53.9)	4.32
5.Truancy in math class	6(5.9)	7(6.9)	5(4.9)	66(64.7)	18(17.6)	3.81
6.Students mood change when asked to perform mathematical task	6(5.9)	8(7.8)	2(2)	49(48)	37(36.3)	4.01
7.Students were not showing concern for math classes	6(5.9)	10(9.8)	3(2.9)	30(29.4)	53(52)	4.12
8.Students refusal to do their math assignment	11(10.8)	5(4.9)	20(19.6)	46(45.1)	20(19.6)	3.59

Table 4.6 above shows the respondents' views on the mathematics phobia existence among junior high school students in the study area. The students were asked if they experience feverish feelings in math class. With this statement, 5 of the students representing 4.9% strongly disagreed, 6(5.9%) disagreed, 3(2.9%) stayed neutral, 46(41.1%) agreed while 42(41.2%) strongly agreed. The mean score of 4.12 implies that averagely the students strongly agreed that they experience feverish feelings in math class.

The researcher wanted to find out if the students have difficulty in understanding math problem and 6 of the students representing 5.9% strongly disagreed, 4(3.9%) disagreed, 5(4.9%) stayed neutral, 59(56.8%) agreed whiles 28(27.5%) strongly agreed. The mean score of 3.97 fell in the category of agreed. This implies that averagely, the students agreed that they have difficulty in understanding math problem.

Moreover, I wanted to find out if the students do not concentrate in math class and 6 of the students representing 5.9% strongly disagreed, 7(6.9%) disagreed, 6(5.9%) stayed neutral, 59(57.8%) agreed whiles 24(23.5%) strongly agreed. The mean score of 3.86 fell in the category of agreed. This implies that averagely, the students agreed that they do not concentrate in math class.

The students were further asked they show no interest in math class. With this statement, 4 of the students representing 3.9% strongly disagreed, 4(3.9%) disagreed, 2(2%) stayed neutral, 37(36.3%) agreed while 55(53.9%) strongly agreed. The mean score of 4.32 implies that averagely the students strongly agreed that they show no interest in math class.

The researcher wanted to find out if the students exhibit truant behaviour in math class and 6 of the students representing 5.9% strongly disagreed, 7(6.9%) disagreed, 5(4.9%) stayed neutral, 66(64.7%) agreed whiles 18(17.6%) strongly agreed. The mean score of 3.81fell in the category of agreed. This implies that averagely, the students agreed that they exhibit truant behaviour in math class

Moreover, I wanted to find out if the students mood change when asked to perform mathematical task and 6 of the students representing 5.9% strongly disagreed, 8(7.8%) disagreed, 2(2%) stayed neutral, 49(48%) agreed whiles 37(36.3%) strongly agreed. The mean score of 4.01 fell in the category of strongly agreed. This implies that averagely, the students strongly agreed that their mood change when asked to perform mathematical task

The students were further asked if they were not showing concern for math classes. With this statement, 6 of the students representing 5.9% strongly disagreed, 10(9.8%) disagreed, 3(2.9%) stayed neutral, 30(29.4%) agreed while 53(52%) strongly agreed. The mean score of 4.12 implies that averagely the students strongly agreed that they were not showing concern for math classes.

Lastly, I wanted to find out if the students refuse to do their math assignment and 11 of the students representing 10.8% strongly disagreed, 5(4.9%) disagreed, 20(19.6%) stayed neutral, 46(45.1%) agreed whiles 20(19.6%) strongly agreed. The mean score of 3.59 fell in the category of agreed. This implies that averagely, the students strongly agreed that they refuse to do their math assignment.

In conclusion, majority of the students strongly agreed that they show no interest in math class was the Mathematics phobia existence among junior high school students in

the study area. This finding was in line with Perina, 2002) noted that lot students experience math anxiety and unwillingness to attempt mathematics problems and exhibit fear of attending mathematics classes, and being unusually nervous when in mathematics class. The finding is this study supports that of Prescott (2001) who indicated that mathematics anxiety hinders students' working memory.

The finding also concur that of Schwartz (2000) who noted that students they show no interest in math class as result of their frequent experience math anxiety. This may be the reason that they have never experienced success in their mathematics classes. This can be due to poor instruction. If the teacher does not teach well, the average student will most likely not do well in his class. Also, the student may have taken an insufficient number of mathematics classes, causing him to be unprepared for the class he is in.

4.3.2. Research Question Two – What are the factors affecting student performance in Mathematics in junior high school students in the study area?

Objective of this research question aimed at determining the factors affecting student performance in Mathematics in junior high school students in the study area. The participants' responses are revealed in table 4.7 below

Table 4.7: Factors Affecting Student Performance in Mathematics in Junior High School Students

Statements	SD	D	N	A	SA	Mean
1. Acute shortage of qualified professional mathematics teachers.	22(21.6)	20(19.6)	10(9.8)	40(39.2)	10(9.8)	2.96
2. Exhibition of poor knowledge of mathematics content by many mathematics teachers.	5(4.9)	8(7.8)	5(4.9)	26(25.5)	58(56.9)	4.23
3. Overcrowded mathematics classrooms.	55(53.9)	28(27.5)	8(7.8)	7(6.9)	4(3.9)	1.79
4. Students negative attitude toward mathematics	11(10.8)	10(9.8)	12(11.8)	55(53.9)	14(13.7)	3.50
5. Inadequate facilities and mathematics laboratories.	22(21.6)	19(18.6)	18(17.6)	31(30.4)	12(11.8)	2.92
6. Poor teaching methods by teachers	6(5.9)	8(7.8)	6(5.9)	24(23.5)	58(56.9)	4.18
7. Mathematics contents were not fully covered.	14(13.7)	22(21.6)	26(25.5)	24(23.5)	16(15.7)	3.06

Findings in table 4.7 above show the students responses on the factors affecting student performance in mathematics in junior high school students in the study area. In the first place, I wanted to find out from the students if acute shortage of qualified professional mathematics teachers serves as a factor that affects their performance in mathematics. With this statement, 22 of the students representing 21.6% strongly disagreed, 20(19.6%) disagreed, 10(9.8%) stayed neutral, 40(39.2%) agreed while 10(9.8%) strongly disagreed. The mean score of 2.96 implies that averagely the students

stayed neural on the statement that acute shortage of qualified professional mathematics teachers serves as a factor that affects their performance in mathematics.

Again, 5(4.9%) strongly disagreed that exhibition of poor knowledge of mathematics content by many mathematics teachers serves as a factor that affects their performance in mathematics, 8(7.8%) disagreed, 5(4.9%) stayed neutral 26(25.5%) agreed whiles 58(56.9%) strongly agreed to that statement. The mean score of 4.23 fell in the category of strongly agreed. This implies that averagely, the students strongly agreed that exhibition of poor knowledge of mathematics content by many mathematics teachers serves as a factor that affects their performance in mathematics.

Moreover, I wanted to find out from the students if overcrowded mathematics classrooms serves as a factor that affects their performance in mathematics. With this statement, 55 of the students representing 53.9% strongly disagreed, 28(27.5%) disagreed, 8(7.8%) stayed neutral, 7(6.9%) agreed while 4(3.9%) strongly disagreed. The mean score of 1.79 implies that averagely the students disagreed that overcrowded mathematics classrooms serves as a factor that affects their performance in mathematics.

Moreover, 11(10.8%) strongly disagreed that students negative attitude toward mathematics serves as a factor that affects their performance in mathematics, 10(9.8%) disagreed, 12(11.8%) stayed neutral 55(53.9%) agreed whiles 14(56.9%) strongly agreed to that statement. The mean score of 3.50 fell in the category of agreed. This implies that averagely, the students agreed that their negative attitude toward mathematics serves as a factor that affects their performance in mathematics.

The researcher further wanted to find out from the students if inadequate facilities and mathematics laboratories serves as a factor that affects their performance in

mathematics. With this statement, 22 of the students representing 21.6% strongly disagreed, 19(18.6%) disagreed, 18(17.6%) stayed neutral, 31(30.4%) agreed while 12(11.8%) strongly disagreed. The mean score of 2.92 implies that averagely the students stayed neutral on the statement that inadequate facilities and mathematics laboratories serves as a factor that affects their performance in mathematics.

In addition, 6(5.9%) strongly disagreed that poor teaching methods by teachers serves as a factor that affects their performance in mathematics, 8(7.8%) disagreed, 6(5.9%) stayed neutral 24(23.5%) agreed whiles 58(56.9%) strongly agreed to that statement. The mean score of 4.18 fell in the category of strongly agreed. This implies that averagely, the students agreed that that poor teaching methods by teachers serves as a factor that affects their performance in mathematics

Lastly, I wanted to find out from the students if mathematics contents were not fully covered by their teachers serves as a factor that affects their performance in mathematics. With this statement, 14 of the students representing 13.7% strongly disagreed, 22(21.6%) disagreed, 26(25.5%) stayed neutral, 24(23.5%) agreed while 16(15.7%) strongly disagreed. The mean score of 3.06 implies that averagely the students agreed on the statement that mathematics contents were not fully covered by their teachers serves as a factor that affects their performance in mathematics.

In short, majority of students strongly agreed that exhibition of poor knowledge of mathematics content by many mathematics teachers and poor teaching methods by teachers were the major factors that affect their performance in Mathematics. This finding support that of Dewey (2007) who indicated that poor knowledge of mathematics content by mathematics teachers breeds mathematics teacher ineffectiveness in teaching

that highly made teachers incapable in mathematics which in turn crate learning problems for the students. The finding was also in line with Monk (2004) who emphasized that teacher poor pedagogical content knowledge do not attracted the attention and interest of students to the subject.

Black (2001) on the other hand indicated that knowledge of subject matter alone is not sufficient; the Mathematics teacher should be effective and efficient in teaching methodology. Black (2001) further argued that this creates the template for a sympathetic, well-informed, competent, mathematical language fluency and inspiring teaching and learning and concluded that lack of these breeds inattentive among learners.

4.3.3. Research Question Three – What are the students' attitudes towards mathematics that influence their performance in the subject?

The third research question intended to find out from the students their **attitudes towards mathematics that influence their performance in the subject.** The respondents' responses were presented in Table 4.8 below.

Table 4.8: Students' Attitudes towards Mathematics that Influence their Performance in the Subject

Statements	SD	D	N	A	SA	Mean
1. Maths is very interesting to me and I enjoy maths course	51(50)	37(36.3)	8(7.8)	4(3.9)	2(2)	1.71
2. Teaching mathematics does not need resources	46(45.1)	36(35.3)	9(8.8)	7(6.9)	4(3.9)	1.89
3. I am always under a terrible strain in mathematics class	22(21.6)	8(7.8)	5(4.9)	46(45.1)	21(20.6)	3.35
4. I do not like mathematics and it scares me	12(11.8)	8(7.8)	8(7.8)	42(41.2)	32(31.4)	3.73
5. My mind goes blank and I am unable to think when working mathematics	6(5.9)	4(3.9)	2(2)	25(24.5)	65(63.7)	4.36
6. I never liked mathematics and it is my most dreaded subjects	9(8.8)	6(5.9)	6(5.9)	56(54.9)	25(24.5)	3.80
7. Mathematics makes me feel uncomfortable and impatient	22(21.6)	24(23.5)	18(17.6)	32(31.4)	6(5.9)	2.76

Findings in table 4.8 above show the students responses on their attitudes towards mathematics that influence their performance in the subject. In the first place, I wanted to find out from them if they perceive that mathematics is very interesting to them and they enjoy mathematics course. With this statement, 51 of the students representing 50% strongly disagreed, 37(36.3%) disagreed, 8(7.8%) stayed neutral, 4(3.9%) agreed while 2(2%) strongly agreed. The mean score of 1.71 implies that averagely the students disagreed that mathematics is very interesting to them and they enjoy mathematics course.

Again, 46(45.1%) strongly disagreed that teaching mathematics does not need resources, 36(35.3%) disagreed, 9(8.8%) stayed neutral 7(6.9%) agreed whiles 4(3.9%) strongly agreed to that statement. The mean score of 1.89 fell in the category of disagreed. This implies that averagely, the students disagreed that to the statement that that teaching mathematics does not need resources.

Moreover, I wanted to find out from the students if they are always under a terrible strain in mathematics class. With this statement, 22 of the students representing 21.6% strongly disagreed, 8(7.8%) disagreed, 5(4.9%) stayed neutral, 46(45.1%) agreed while 21(20.6%) strongly agreed. The mean score of 3.35 implies that averagely the students agreed that they are always under a terrible strain in mathematics class.

The researcher further wanted to find out from the students if they do not like mathematics and it scares them. With this statement, 12 of the students representing 11.8% strongly disagreed, 8(7.8%) disagreed, 8(7.8%) stayed neutral, 42(41.2%) agreed while 32(31.4%) strongly agreed. The mean score of 3.73 implies that averagely the students agreed that they do not like mathematics and mathematics scares them.

Moreover, 6(5.9%) strongly disagreed that their mind goes blank and that they are unable to think when working mathematics, 4(3.9%) disagreed, 2(2%) stayed neutral, 25(24.5%) agreed whiles 65(63.7%) strongly agreed to that statement. The mean score of 4.36 fell in the category of strongly agreed. This implies that averagely, the students strongly agreed that their mind goes blank and that they are unable to think when working mathematics.

The researcher further wanted to find out from the students if they never liked mathematics and it is my most dreaded subjects. With this statement, 9 of the students representing 8.8% strongly disagreed, 6(5.9%) disagreed, 6(5.9%) stayed neutral, 56(54.9%) agreed while 25(24.5%) strongly disagreed. The mean score of 3.80 implies that averagely the students agreed on the statement that if they never liked mathematics and it is my most dreaded subjects.

Lastly, 22(21.6%) strongly disagreed that mathematics makes them feel uncomfortable and impatient, 24(235%) disagreed, 18(17.6%) stayed neutral 32(31.4%) agreed whiles 6(5.9%) strongly agreed to that statement. The mean score of 2.76 fell in the category of neutral. This implies that averagely, the students stayed neutral on the statement that that mathematics makes them feel uncomfortable and impatient.

In summary, majority of students strongly agreed their mind go blank and they were unable to think when working mathematics. This implies that students exhibit negative attitude towards learning mathematics. This finding was in line with that of Dewey (2007) who noted that a child who has a negative attitude towards what he learns will not be highly motivated to engage in activities that promote learning thereby developing a negative self-concept in relation to the total teaching environment. Dewey (2007) further concluded that this is one of the keys of the most important factors for decline performance is students' involvement.

Begle (2002) added that if a student has a negative attitude towards mathematics, he will not only enjoy studying it but will also not derive satisfaction from the knowledge of mathematical ideas he gains. Boaler (2008) explains further, if a student has a negative attitude to mathematics, he will definitely be disinterested in its learning. This implies

that most mathematics teachers do not make the teaching of mathematics practical and exciting and this leads to negative attitude to mathematics by students.

4.3.4. Research Question Four - What strategies can be adopted to improve performance in mathematics by students of junior high schools in the study area?

This section of the research question was meant to identify the avoidance method the head master employ to resolve conflict in their schools. The participants' responses were recorded in Table 4.9 as follows:

Table 4.9: Strategies to Improve Performance in Mathematics by Students

Statements	SD	D	N	A	SA	Mean
1. There is the need to guide and counsel students on importance of Mathematics	9(8.8)	6(5.9)	4(3.9)	51(50)	32(31.4)	3.89
2. Enhancing the understanding that mathematics is the bedrock of technological inventions and growth.	5(4.9)	4(3.9)	2(2)	25(24.5)	66(64.7)	4.40
3. Teachers should use different teaching methods	19(18.6)	6(5.9)	6(5.9)	45(44.1)	26(25.5)	3.52
4. Provision of teaching learning materials	22(21.6)	8(7.8)	5(4.9)	42(41.2)	25(24.5)	3.39
5. Teachers should motivate students to take mathematics positively	13(12.7)	8(7.8)	6(5.9)	47(46.1)	28(27.5)	3.68
6. Teachers should give assignments and mark them in time	5(4.9)	9(8.8)	5(4.9)	38(37.3)	45(44.1)	4.07
7. Awakening a conscious interest for mathematics amongst pupils from their basic classes.	14(13.7)	17(16.7)	5(4.9)	40(39.2)	26(25.5)	3.46

Findings in table 4.8 above show the students responses on strategies to improve their performance in mathematics by students. In the first place, I wanted to find out from them if they perceive that there is the need to guide and counsel students on importance of mathematics serves as a strategies to improve their performance in mathematics. With this statement, 9 of the students representing 8.8% strongly disagreed, 6(5.9%) disagreed, 4(3.9%) stayed neutral, 51(50%) agreed while 32(31.4%) strongly agreed. The mean score of 3.89 implies that averagely the students agreed that if the teachers see the to guide and counsel students on importance of mathematics their performance in mathematics will improve.

Again, 5(4.9%) strongly disagreed that enhancing the understanding that mathematics is the bedrock of technological inventions and growth will serve as a strategies to improve their performance in mathematics, 4(3.9%) disagreed, 2(2%) stayed neutral 25(24.5%) agreed whiles 66(64.7%) strongly agreed to that statement. The mean score of 4.40 fell in the category of strongly agreed. This implies that averagely, the students' strongly agreed that enhancing the understanding that mathematics is the bedrock of technological inventions and growth will serve as a strategies to improve their performance in mathematics.

Moreover, I wanted to find out from the students if teachers using different teaching methods serve as a strategies to improve their performance in mathematics and 19(18.6%) strongly disagreed, 6(5.9%) disagreed, 6(5.9%) stayed neutral, 45(44.1%)agreed whiles 26(25.5%) strongly agreed to that statement. The mean score of 3.52 fell in the category of agreed. This implies that averagely, the students agreed to the

statement that if teachers using different teaching methods serve as a strategies to improve their performance in mathematics.

The researcher further wanted to find out from the students if provision of teaching learning materials will serve as a strategies to improve their performance in mathematics and 22(21.6%) strongly disagreed, 8(7.8%) disagreed, 5(4.9%) stayed neutral, 42(41.2%) agreed whiles 25(25.5%) strongly agreed to that statement. The mean score of 3.39 fell in the category of agreed. This implies that averagely, the students agreed to the statement that provision of teaching learning materials will serve as a strategy to improve their performance in mathematics.

Moreover, 13(12.7%) strongly disagreed that teachers motivating students to take mathematics positively will serve as a strategies to improve their performance in mathematics and 8(7.8%) disagreed, 6(5.9%) stayed neutral, 47(46.1%) agreed whiles 28(27.5%) strongly agreed to that statement. The mean score of 3.68 fell in the category of agreed. This implies that averagely, the students agreed to the statement teachers motivating students to take mathematics positively will serve as a strategy to improve their performance in mathematics.

The researcher further wanted to find out from the students if teachers giving assignments and mark them in time will serve as a strategies to improve their performance in mathematics and 5(4.9%) strongly disagreed, 9(8.8%) disagreed, 5(4.9%) stayed neutral, 38(37.3%) agreed whiles 45(44.1%) strongly agreed to that statement. The mean score of 4.07 fell in the category of strongly agreed. This implies that averagely, the students strongly agreed to the statement that teachers giving

assignments and mark them in time will serve as a strategies to improve their performance in mathematics.

Lastly, 14(13.7%) strongly disagreed that awakening a conscious interest for mathematics amongst pupils from their basic classes will serve as a strategies to improve their performance in mathematics, 17(16.7%) disagreed, 5(4.9%) stayed neutral, 40(39.2%) agreed whiles 26(25.5%) strongly agreed to that statement. The mean score of 3.46 fell in the category of agreed. This implies that averagely, the students agreed to the statement that awakening a conscious interest for mathematics amongst pupils from their basic classes will serve as a strategy to improve their performance in mathematics.

In summary, majority of students strongly agreed that enhancing the understanding that mathematics is the bedrock of technological inventions and growth was the major strategy that serves to improve their performance in mathematics. This finding was in line with Dursun and Dede (2004) who noted that enhancing learners understanding and implications in the subject improves the students' ability in that subject and also fosters the earners interest in the subject.

The finding also concur with that of Aiken and Gredgwer (2007) who claimed that enhancing learners understanding and knowledge in a subject motivate them and improves children's subject orientations to learning in classroom settings. This to the researcher is a way of creating positive attitude of students toward mathematics.

The finding also support that of Callahan (2001) who claimed that enhancing students knowledge and understanding in mathematics serve to change the attitude of the learner positively towards the learning of mathematics as Papanastasiou (2001) reported that those who have positive attitude toward mathematics tend to perform better in the subject.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents a summary of the major findings of the study, which investigate the factors that contribute to students' poor performance in mathematics at selected junior high schools in Bantama Sub – Metro in Kumasi Metropolis. This chapter includes the summary of the research findings, and conclusions from the results and finally the implications and recommendations for further studies.

5.2. Summary of the Study

The study attempted to investigate the factors that contribute to students' poor performance in mathematics at selected junior high schools in Bantama Sub – Metro in Kumasi Metropolis.

The following research questions were posed to guide the study:

1. What are the mathematics phobia existence among junior high school students in the study area?
2. What are the factors affecting student performance in Mathematics in junior high school students in the study area?
3. What are the students' attitudes towards mathematics that influence their performance in the subject?

4. What strategies can be adopted to improve performance in mathematics by students of junior high schools in the study area?

5.2.1 Key Findings

The following findings were arrived at in the present study:

1. The first research questions sought to find out the mathematics phobia existence among junior high school students in the study area. The study revealed that students strongly agreed that they show no interest in math class was the Mathematics phobia existence among junior high school students in the study area.

2. Moreover, the second research question which sought to find out the factors affecting student performance in Mathematics in junior high school students in the study area revealed that the exhibition of poor knowledge of mathematics content by many mathematics teachers and poor teaching methods by teachers were the major factors that affect their performance in Mathematics.

3. The third research questions sought to find out the students' attitudes towards mathematics that influence their performance in the subject revealed that students strongly agreed that majority of students strongly agreed their mind go blank and they were unable to think when working mathematics

4. Finally, with respect to research question four which sought find out the strategies can be adopted to improve performance in mathematics by students of junior high schools, the study revealed that enhancing the understanding mathematics is the bedrock of technological inventions and growth provision of T/LMs, giving

assignment and making them, awakening a conscious interest in maths were the major strategy that serves to improve their performance in Mathematics.

5.3 Conclusion

This present study was aimed at surveying the factors responsible for students' poor performance in mathematics in junior high schools in Bantama Sub – Metro in Kumasi Metropolis. The findings of this survey confirmed the fact that; students show no interest in math class was the Mathematics phobia existence among junior high school students in the study area; the exhibition of poor knowledge of mathematics content by many mathematics teachers and poor teaching methods by teachers were the major factors that affect their performance in Mathematics; the students mind go blank and they were unable to think when working mathematics and stakeholders enhancing the students understanding that mathematics is the bedrock of technological inventions and growth was the major strategy that serves to improve their performance in Mathematics. These findings therefore would be of great help to governments, teachers, students, professional policy makers and parents in providing a solid springboard to launch anew a template to finding a lasting solution to the perennial poor performance issues in mathematics at the BECE.

5.4. Recommendations

From the observations made in the course of this study, the following stakeholders should consider putting in place the recommended steps to check the poor performance in Mathematics.

1. The Ministry of education either directly or through its agents should:
    - Enhance primary school pupils Mathematics background through inclusion of more introductory Mathematics concepts in the primary Mathematics syllabus and also review the Mathematics curriculum to make it relevant and flexible to the diverse needs of different regions and background of the students.
    - Motivate teachers especially after the release of examination results. This includes subsidizing of house rents. The provision of incentives towards mathematics courses in universities and Colleges of Education through grant-in-aids and scholarships should be considered. This will help in training more mathematics teachers.

2. There is need to develop a love for mathematics through the setting up of "Mathematics Club" in every junior school. It's aims should be as follows;
    - To initiate and develop love for mathematics
    - To help students develop positive attitude towards mathematics

3. Frequent inter-school competition in mathematics should be organized

4. Guidance and counseling units should be set up in our junior schools and they should be guiding and counseling students on the educational, personal and social issues affecting students. This will definitely help them to change their view with regard to mathematics and can help in improving their performance in it.

5.5. Recommendations for Future Research

In the light of the above findings, future researchers could explore how family background, size, socio-economic status and peer group influence affect students' performance in mathematics in BECE.

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APPENDIX A

SELF ADMINISTERED QUESTIONNAIRE FOR STUDENTS

Dear Respondent,

I am carrying out a study on the topic ***'' Causes on Poor Students Academic Performance in Mathematics Among Junior High School Students in Bantama Sub – Metro in Kumasi Metropolis''.*** It is against this background that you have been randomly selected to participate in the research by completing the questionnaire. It would thus be very helpful if you assist by answering the questionnaire as per instructions at the beginning of each section. You are required to provide the most appropriate answer in your opinion. Your responses will be kept confidential. In any case the questionnaire is anonymous. Thank you.

Yours faithfully,

……..

Researcher

SECTION A

STUDENTS BACKGROUND INFORMATION

Please help us classify your response by supplying the following facts about yourself and your opinion on the raised issues by ticking an appropriate box. There is no right wrong answer therefore no particular response is targeted.

1. Sex: Male [ ]. Female [ ].

2.Age. 10-12[ ]. 13-15[ ].16-18[ ]

3.Parental Marital Status: Single/Divorce[ ]. Intact[ ]

4.Living Statuses. Mother only [ ], Father only [ ]. Both Parents [ ].

Other Relatives [ ]

5. Educational level of your guardian or one you stay with

Tertiary[ ] Secondary [ ] Basic [ ] Uneducated [ ]

SECTION B

STUDENTS QUESTIONNAIRE

***Instructions*:** For each of the following, kindly respond to the statements, by circling the number of the 4-point scale using the following key (1=Strongly Disagree, 2=Disagree, 3 = Neutral 4 =Agree, 5 =Strongly Agree) as sincerely as possible.

Statements	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. Feverish feelings in math class					
2. Difficulty in understanding math problem					
3. Students do not concentrate in math class					
4. Students showing no interest in math class					
5.Truancy in math class					
6.Students mood change when asked to perform mathematical task					
7.Students were not showing concern for math classes					
8.Students refusal to do their math assignment					

9. Acute shortage of qualified professional mathematics teachers.					
10. Exhibition of poor knowledge of mathematics content by many mathematics teachers.					
11.Overcrowded mathematics classrooms.					
12. Students negative attitude toward mathematics					
13. Inadequate facilities and mathematics laboratories.					
14. Poor teaching methods by teachers					
15. Mathematics contents were not fully covered.					
16. Maths is very interesting to me and I enjoy maths course					
17. Teaching mathematics does not need resources					
18. I am always under a terrible strain in mathematics class					
19.I do not like mathematics and it scares me					
20. My mind goes blank and I am unable to think when working mathematics					
21. I never liked mathematics and it is my most dreaded subjects					
22.Mathematics makes me feel					

uncomfortable and impatient					
23. There is the need to guide and counsel students on importance of Mathematics					
24. Enhancing the understanding that mathematics is the bedrock of technological inventions and growth.					
25. Teachers should use different teaching methods					
26. Provision of teaching learning					
27. Teachers should motivate students to take mathematics positively					
28. Teachers should give assignments and mark them in time					
29. Awakening a conscious interest for mathematics amongst pupils from their basic classes.					