

**CAUSES OF POOR PERFORMANCE IN MATHEMATICS AMONG PUBLIC  
SENIOR SECONDARY SCHOOLS IN BOSSO LOCAL GOVERNMENT AREA  
MINNA, NIGER STATE.**

**BY**

**USMAN, Mustapha  
(2014/1/53353BE)**

**PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF SCIENCE  
EDUCATION, SCHOOL OF SCIENCE AND TECHNOLOGY  
EDUCATION, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**

**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF  
BACHELOR OF TECHNOLOGY (B. TECH) DEGREE IN MATHEMATICS  
EDUCATION.**

**DEPARTMENT OF SCIENCE EDUCATION,  
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION,  
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**

**NOVEMBER, 2019**

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## **ABSTRACT**

This study investigated the Causes of Poor Performance in Mathematics among Public Senior Secondary Schools in Bosso Local Government Area of Niger State. The study determines to find out from the students and teachers, the causes of poor performance of senior secondary school students in mathematics. Descriptive survey research design was adopted for the study. The population of the study include all SS2 mathematics students and teachers (target population) in Bosso Local Government Area of Niger State. Simple random sampling technique was used to select three secondary schools used for the study and also 75 SS2 mathematics students and 10 mathematics teachers from public senior secondary schools in Bosso Local Government Area of Niger State were used for the study. The instrument of data collection was a structured survey questionnaire and statistical package for social science (SPSS) was used to analyse the data collected. Frequency and percentage were used to analyse the data. The study hence showed that all the factors identified are actually responsible for poor performance of students in Mathematics. The recommendation made was that frequent inter-school competition in mathematics should be organized by state government with prizes to be awarded to the winner; parents should be enlightened on the importance of their involvement in the education of their children and its attendant benefit in the performance of students.

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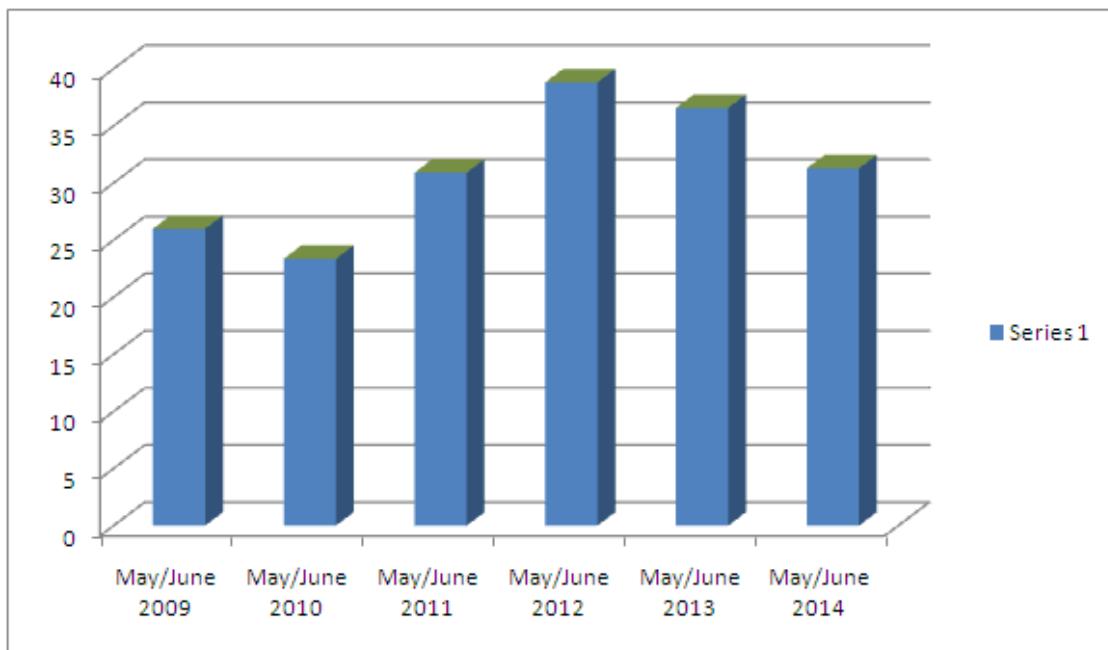
## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Arithmetic is the science of thinking and calculations. It is the science or investigation of numbers, amount or shapes. Kitta (2004), characterized arithmetic as the language that causes us to depict thought and connections drawn from the earth. Mathematics enables one to make the invisible to be visible, thereby solving problems that would be impossible otherwise. According to Lambdin (2009), mathematical demands on students increase as they progress through school, take up their adult lives at home and in the workplace. In order to function in a mathematically literate way in the future, students must have a strong foundation in mathematics. A strong foundation involves much more than the rote application of procedural knowledge. Ontario Ministry of Education report in 2004 shows that, all students should be able to understand, make sense of, and apply mathematics; make connections between concepts and see patterns throughout in mathematics. The report shows that students must be able to communicate their reasoning, the flexibility of thinking that will allow them to tackle new areas of mathematics and be willing to continue in doing mathematics. However findings by Iheanachor (2007), indicate that, there is a significant positive relationship between students' academic achievement in mathematics and teachers' background. Teachers who have good qualifications in mathematics have their students performing better in mathematics. Tata (2013), ascertained that, students' negative attitude toward mathematics, fear of mathematics, inadequate qualified teachers and inadequate teaching materials were some of the causes of poor performance in mathematics. Developing positive attitude, motivation and proper guidance toward mathematics and provision of relevant teaching materials could make students perform better in mathematics. However, it is disheartening to

note that with all the importance attached to mathematics in Nigeria's education system, poor performance is recorded in public examinations in recent time. This poor performance in mathematics is one of the major reason for decline in science and technology courses and development, even though FGN, (1998) emphasis on 60:40 ratio in favour of sciences in the area of admission into higher institutions. Ukeje, (1977) in Ojimba, (2012) was of the view that without mathematics, there is no science, The Causes of Poor Performance in Mathematics among Public Senior Secondary School Students without science there is no modern technology and without modern technology there is no modern society. Despite the importance attached to mathematics by all stakeholders in education, senior secondary school students still perform poorly. The Daily Trust of Wednesday, August 25, 2010 as cited by Sa'ad and Usman (2014) reported that "seventy-five per cent of candidates who sat for May/June WAEC 2010 examinations failed to meet the minimum entry requirement into tertiary institutions. Again, the Daily Trust of 21st August, 2014 in Sa'ad and Rabi'u (2014) reveals that the recently released WAEC results indicated that over seventy percent fail in November/December results. 86,612 candidates, representing 29.17 percent of the total number of candidates who sat for the NOV/DEC examinations of West African Examination Council (WAEC), obtained credits in five subjects and above, including Mathematics and English language. Again, the WAEC has released its May/June 2014 WASSCE results, recording mass failure in mathematics and English language. Head of National Office, WAEC Charles Eguridu, while announcing the results said, "A total of 529,425 candidates; representing 31.28 percent obtained credits". According to him when compared to the 2012 and 2013 May/June WASSCE, there was marginal decline in the performance of candidates as 38.81 percent was recorded in 2012 and 36.57 in 2013.



## 1.2 Statement of the Problem

Effective and efficient teaching methods that could help improve student's performance in mathematics are most desired. According to Gurney (2007), teaching is effective and efficient when students are taught the right content, having enough learning materials and high ratio of teachers' time on the teaching activity. This requires a teacher to have passion in sharing knowledge with students while motivated with school management system. Mtitu (2014) also identified that, for effective and efficient teaching, learner centered methods that require teachers to actively involve students in the teaching and learning process must be applied. However, the reverse opposite of Gurney (2007), is the case in our secondary schools today; there are no qualified teachers to teach students are the right content , inadequate instructional or learning materials, lackadaisical attitudes of some teachers towards their duty. Therefore the study motive was to seek to answers on the following questions on what was the influence of cultural backgrounds on students' performance in mathematics. How does school

environment affects students' performance in mathematics? In which ways does school management influence teaching and learning process?

### **1.3 Aims and Objectives of the Study**

The main objective of this study is to make an assessment on the causes of poor performance in mathematics among secondary schools in Bosso Local Government Area, Minna Niger State.

The specific objectives of this study are:

- (i) To examine the influence of cultural backgrounds on students' performance in mathematics.
- (ii) To assess the influence of teacher – student's relationship on students' performance in mathematics.
- (iii) To investigate how school environment affects students' performance in mathematics
- (iv) To examine the influence of school management system on teaching and learning process in mathematics.

### **1.4 Research Questions**

- (i) What is the influence of cultural backgrounds to students' performance in mathematics?
- (ii) How does teacher- students' relationship affect student's performances in mathematics?
- (iii) How does school environment affects students' performance in mathematics?
- (iv) How does school management system influence teaching and learning process in mathematics?

## **1.5 Significance of the Study**

This study is important to other researchers as a reference on studies concerning students' performance in mathematics. It is the sincere hope of the researcher that by going through this work, it will make mathematics teachers to help their students perform well in mathematics subject. Teachers will consider students' cultural backgrounds before actual classroom teaching to know if the students have the basic concepts in particular unit of study in mathematics. Then teachers can be in a position to improve students' performance in mathematics. The study will also help future researchers to come with findings on how school environments and teachers backgrounds are connected to students' cultural backgrounds that affects performance in mathematics.

## **1.6 Scope / Delimitation of the study**

This study will be limited to three (3) different secondary schools in Minna metropolis. The only instrument that will be studied is the teachers and students' questionnaire and oral interview conducted among some mathematics teachers in secondary school visited

These schools include;

1. Maryam Babangida Girls school, Bosso
2. Ahmadu Bahago secondary school, Minna
3. Bosso secondary school, Minna

## **1.7 Limitations of the Study**

*Financial constraints:* insufficient funds tend to impede the researcher in sourcing for relevant materials, literature or information and in the process of data collection (internet, questionnaire, and interview).

*Time constraints:* the researcher will simultaneously engage in this study with other academic works. This consequently will cut down on the time devoted for the research work.

## **1.8 Operational Definition of Terms**

- **Cultural background:** refers to tribal, religious, racial, gender, linguistic or other socioeconomic factors and values that shape an individual's upbringing. A cultural background can be shaped at the family, societal or at primary school level. In this study it refers to what do students do to help themselves excel in their academic carriers.
- **Curriculum:** A sequence of potential experiences, set up in the schools to discipline children and youth in ways of thinking and acting whether it is carried out in groups or individually, inside or outside the school.
- **Performance:** Accomplishing or achievement of specific goals, objectives set in any academic undertaking in basic mathematics.
- **Qualified Teacher:** This is the teacher who holds the following certificate such as: Diploma in Education, B.Ed., B.Sc. (Ed), B.Sc. and PGDE, Masters in Education and PhD from a recognized university or college in Nigeria and outside Nigeria.
- **School Environment:** encompasses physical environment such as buildings like classrooms and teachers' houses, classroom size, how dark or light it is, temperature, the arrangement of chairs, the noise which affects teachers and students' attraction in secondary schools in Bosso Local Government Area of Niger state
- **Teacher Characteristics:** This refers to the attributes and practices which contribute immensely to teacher success or failure. These are such as displaying fairness, having a positive outlook, being prepared, possessing a sense of humor, possessing creativity, admitting mistakes, being forgiving, respecting students, maintaining high

expectations, showing compassion, and developing a sense of belonging for students— center around the theme of caring.

- **Teaching Method:** This comprises the principles and techniques used for instruction. Commonly used teaching methods may include class participation, demonstration, recitation, memorization, or combinations of these, teacher centered and student centered methods.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Conceptual Framework**

The conceptual framework hereunder presented variables that influence teaching and learning in mathematics subject. Sitko (2013), defined conceptual framework as the system of concepts, assumptions, expectations, beliefs, and theories that support and inform about the study. Students' performance in mathematics is influenced by the teaching and learning methods and students' cultural backgrounds. Teaching methods are such as teacher centred

method, students' centred method and type of homework assignments offered to students. Learning methods are such as group discussions when solving problems and individual work as provided by the teacher or as in textbooks. The relationship between teachers and students, the way students are punished and homework assignments might influence student's performance in mathematics (Sitko, 2013). However learning environment affected students' concentration in schools.

**Figure 2.1: Conceptual Framework**

This figure of conceptual framework was adopted and modified from Omari, (2011 p. 45). The concept behind this figure was to help researcher in developing research objectives, questions, and methodologies, analyzing and interpreting the research findings.

**2.2 Theoretical Framework**

**Plato and Socrates' Perspectives on teaching and learning methods**

<b>Contextual Variables (Context)</b>	<b>Predictor Variables (Input)</b>	<b>Variables (Process)</b>	<b>Outcomes variables (Product)</b>
<ul style="list-style-type: none"> <li>• Learning environment</li> <li>• Location of schools</li> <li>• Teacher students' relationship</li> <li>• Teaching methods</li> <li>• Teaching and Learning resources</li> <li>• Relevance of text books</li> <li>• School Management system</li> <li>• Language</li> <li>• Cultural Resources</li> <li>• Curriculum Content</li> </ul>	<ul style="list-style-type: none"> <li>• Students Cultural background</li> <li>• Teacher and Students' Power relationship</li> <li>• Students' Learning background</li> <li>• Teaching ability</li> <li>• Students' attitude</li> <li>• Teacher qualification</li> <li>• Syllabus in use</li> <li>• Teaching experience</li> <li>• Class size</li> <li>• Learning Resources Mediating</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher's characteristics</li> <li>• Student's characteristics</li> <li>• Learning Skills</li> <li>• Fear of the subject</li> <li>• Teaching styles</li> <li>• Students confidence</li> <li>• Mob psychology</li> <li>• Time table</li> <li>• Teachers personality</li> <li>• Perceived importance of the subject</li> </ul>	<ul style="list-style-type: none"> <li>• Student's performances in mathematics</li> <li>• The quality of teaching practices</li> <li>• Logical reasoning</li> <li>• Learners creativity in problems solving</li> <li>• Ability to question correctly</li> <li>• Interest in science subjects</li> </ul>

Maganga (2013), as he made a study on Plato and Socrates work, he found that the knowledge of geometry have been in possession even before the birth of a child.



Thus according to Plato it is known that the ideas or general concept behind the concrete entities were experienced through senses, by means of questions set that awaken knowledge or understanding of such ideas behind concrete phenomena. This implies that students could become good in mathematics as teachers give them more questions to awaken their knowledge and understanding on mathematics concepts. It was declared that ideas must have existed in our mind even before our birth. Such knowledge is termed a priori, that means knowledge which is their prior to and independent of any experience (Maganga, 2013). Therefore questions came on how teachers keep in mind that their learners had concepts or ideas that they should help them develop such ideas and cultivate what is in their experience as they immerse in the module or topic under study.

### **John Locke and Knowledge of Practice**

John Lock said that empiricism is an epistemological position which contends that genuine knowledge is what comes to us through our sensory experiences. This means that the only sources of genuine knowledge are senses of sight, hearing, touching, smelling and tasting. John Locke stated that the child's mind is like a white sheet of paper on which experiences are recorded.

This implied that teaching methods in mathematics needs to involve five sense organs of students in the class. While teaching, students must be given tasks to attempt with the guide of a teacher; they must see clearly what is been written on the chalkboard and practically solve mathematics problems. Teachers should be able to teach students in such a way that students can practically do what they are taught, hearing it well by minimizing number of students in overcrowded classes and use of actual environment to make students understand mathematics (Maganga, 2013).

Therefore the researcher wanted to know whether in actual teaching students practically learn mathematics and how teachers help students to solve, interact with teaching materials as well as the impact of school environments to students learning.

### **Paul Freire and the Learning Environment**

Freire (1921-1997), an influential thinker about education in the late 20th was the first philosopher to concern himself with oppressed people whose natural rights to liberty and property were violated. In his book “Pedagogy of the Oppressed”, he suggested that educational activities should be conducted under existing experiences of the participants (Maganga, 2013). This implies that mathematics teachers are supposed to teach their students in the actual living environments of their students. Students can be taken to field such as farms, pitch or football grounds to learn many forms of diagrams as examples. This will make students not to forget what they have practically learned. According to Maganga (2013), Freire was insisting on the use of dialogue method whereby teachers should discuss with their students about their learning environments. The methods involve students discussing together or conversing, rather than using written books and syllabuses in a curriculum of study as what Paul Freire called banking education. Banking system of education the one that teachers deposit knowledge to the students.

Bartlett (2008), as he learned from Freire’s work, banking education is a relationship of domination in which the teacher has knowledge that he/she deposits in the heads of the passive objects of assistance, his/her students. In contrast to banking education, Freire proposed a problem posing education that encourages students to become active in thinking. Problem posing education relies upon dialogue and critical consciousness, democratic teacher-student relationships, the concretion of knowledge through interaction, and a curriculum grounded in students’ interests and experiences. The theory by Freire raised some questions to us whether in teaching mathematics there is an element of banking as students

are dominated by their teachers in classes or there is any democratic way of teaching and learning in mathematics classes. Do teachers and students have a culture of discussing mathematics concepts?

### **John Dewey**

John Dewey (1859-1952) proposed a pragmatic philosophy of education that education was a process of reconstructing and reinstituting experience to promote individual's efficiency and good citizenship. It goes all the way from the birth of the individual to his death. The curriculum content should not be burdened with subjects that are unrelated to the pupils' lives and every day experiences. If mathematics contents are related to learner experiences students' performance might be good. This needs to be in line with teachers' teaching methods for which their methods of delivery must be in line with such experiences.

## **2.3 Empirical Literature Review**

### **2.3.1 Empirical Studies in Mathematics World Wide**

Factors influencing students' performance in Wawasan Open University (Liew & Teoh 2008) do previous Education level, age group and course load matter? The main objective of this study was to examine whether the students age or their prior formal education moderated by the semester course load could influence their performance. The sample of this study comprised of 1271 students from three different intakes in the university. The GPA of each student obtained at their first semester of studies was employed to measure their performance. Outcome of this study revealed that the number of course registered by each student from diverse academic background and various age did not impact on their GPA performance. The

researcher also discovered that the combined factors of academic background and age have very little significant effect on the GPA as well. Nevertheless, independently the academic background or the student's age significantly affected their GPA. This study suggests various factors that affect student's performance and will be used to compare with the findings of the current study. A research on analysis of factors affecting pupils' science achievement (Fabio & Laura 2010) in Italy, the aim of their study was to examine, for the Italian TIMSS 2007 data, the relationship between contextual factors at the school level and pupil level and the proficiency scores for science achievement. In their findings, in Italy 34% of the total variance accounted for is between schools and that the school and teacher factors analyzed do not significantly affect students' performance in science. In the Italian context being a non-native student and having less cultural resources negatively and substantially affects science performance and is consistent with several studies pointing out the advantages deriving from home and parental features. The researchers also found that students self confidence in learning science proved to be the most important predictor of their performance. Research into educational psychology shows that teachers can improve students' self-confidence and self-efficacy by means of specific teaching methods such as engaging students in a creative manner and using collaborative learning or inquiry-based activities (Fencl & Scheel, 2005).

Karuna (2009), a professor in the department of mathematics, Barbhag college India in his research; secondary school education in Assam (India) with special reference to mathematics, in his study he revealed that mathematics performances of schools are positively correlated with (a) the academic performance of a school indicated by school leaving pass percentage and also (b) with the performances in subjects other than mathematics. On the other hand, student teacher ratio seems not to affect the mathematics performance of the schools. There are other academic environmental factors governing the success of secondary education to achieve its goal (Karuna, 2009). If socio-political disturbances involving youth of this region

are considered as a yardstick of educational performance then analysis of the existing education system prevailing in this region is imperative. The objectives of his study were;

to investigate the academic scenario of secondary schools in Assam with special reference to (i) age (ii) management (iii) teacher student ratio and (iv) result of 10th standard school leaving examination, to compare the academic performance in mathematics subject with performances in other subjects of secondary schools as reflected by the scores of students' class examination and to investigate the dependency of students' mathematical performance on some relevant academic environmental factors prevailing in secondary schools in the region. In his conclusion, the financial and managerial status of the schools seems to be the major factors influencing academic performance. Appropriate secondary school knowledge backed by perfect learning in mathematics can make the students competent for future careers.

In the USA, (Belinda, 2010) carried out a research; academic failure in secondary schools. Her research explores whether the interplay of health problems and school environment predicts academic failure. The study also investigates the connection between health and education in adolescence. The researcher aimed at determining students preferences for science subjects, establish the relationship between students' preference and performance on science subjects, identify the effect of preference on performance then suggest ways to improve such relationship in order to enhance better academic performance and reinforce students' interests on preferences in science subjects. The researcher recommends that guidance and counseling should be offered to the students particularly to those aspects which affect the future. The government should make science subjects compulsory so as to avoid the possibility of losing some potential future scientists who might have dropped optional subjects and schools are to be guaranteed of enough teaching and learning resources like text books, laboratory equipment and other facilities to make the learning conducive (Belinda,

2010).

In the United Kingdom, (Sutton, 2011), in a research titled; improving the impact of teachers on pupil achievement in UK recommended that, improving the effectiveness of teachers would have a major impact on the performance of the country's schools, increasing the attainment of children across the education system. Teachers are by far the biggest resource in schools. Research has found that teachers are the most important factor within schools that policy makers can directly affect to improve student achievement. Having a very effective rather than an average teacher raises each pupil's attainment by a third of a GCSE grade.

### **2.3.2 Empirical Studies done in Africa**

A similar study has been carried out in Nigeria (Jerry, 2009) where the performance in science subjects was very poor in the secondary schools. Among the factors that contributed to this poor performance were inadequate learning facilities in the secondary schools which include science equipment and laboratories, shortage of qualified and devoted instructors, lack of ability of the scholars to do well in practical and the teaching methodology used by the teachers (Akinola, 2006). Most of the text books used in secondary schools are written by foreign authors who use complex language which is difficult for the learners to comprehend. In Malawi, poor performance in science subjects has been in the decline due to the following factors: lack of science equipment, lack of enough and quality text books, students' perception that science subjects are hard, student's laziness and too little time allocated to practical lessons (Dzana, 2012).

A study on factors associated with high school learner's poor performance (Andile & Moses 2011) in South Africa where education and training during apartheid was characterized by the underdevelopment of human potential and that of blacks in particular. The teaching and learning of mathematics, science and technology were the hardest hit (Department of Education, DOE, 2001). The researchers classified the factors that led to poor performance

into two; direct influences which include teaching strategies, content knowledge and understanding, motivation and interest, laboratory usage and syllabus non completion. The indirect influences include parental roles and language, (Thomas & Pedersen, 2003), argues that a common maxim in the educational profession is that one teaches the way he was taught. This suggests that, for example an educator who was educated in an incompetent manner will have learnt bad practice and is likely to use such in teaching others. These factors relate to this study since the factors are similar despite the environment. Students' teachers' perception on the causes of poor academic performance in Ogun state secondary schools in Nigeria, (Asikhia, 2009). This study examined the perception of students and teachers on the causes of poor performance among secondary school students in Ogun state, Nigeria. Responses of teachers showed that teachers qualification and students environment do not influence students poor performance but teachers' methods of teaching influences poor academic performance. Student's response on the other hand showed that teacher's methods of teaching and learning materials contributes to poor performance.

The variables that were identified in the study for research questions and data collection instruments were; student's poor or academic performance and teachers' qualifications, students poor academic performance and teachers method of teaching and students environment and poor academic performance. These factors form a basis for comparison with the factors causing poor performance among students in secondary schools in Tanzania. The role of student-related factors in the factors in the performance of biology subject in secondary schools in Eldoret municipality, Kenya (Wabuke, 2009). The study was conducted through an ex-post facto design. He sampled a total of ten schools and the target respondents were form three students and teachers of biology. The researcher established that student-related factors affecting performance of biology in the municipality are; primary school science which provides a requisite background for biology at secondary school level, interest

in biology (theory and practical) provides a force for learners to participate in the learning process, their ability to carry out the practical effectively and students' ambition and attitude towards biology. Other student related factors based on knowledge acquisition noted were availability of reading materials, student using study timetables and organizing their work, study discussion groups and attending science symposiums, field trips and exhibitions. On the contrary the study also established that absenteeism, indiscipline and truancy in students posts poor performance. The relationship between availability of teaching/ learning resources and performance in secondary school science subjects in Eldoret municipality, Kenya, (Ambogo, 2010). In his study, he examined the relationship between availability of both human and non-human resources for teaching/ learning and performance in the science subjects in Kenya Certificate of Secondary Education (KCSE) examination. From his findings availability of text books, laboratory chemicals and equipment was higher in the high performing schools than in the low performing schools. The findings show that two out of the seven low performing schools that had a science laboratory, all the five low performing schools that had a science laboratory did not have a laboratory technician and only one was fully equipped. There were differences in the availability of teaching and learning resources. The author recommended that the ministry of Education should initiate more training programmes in provision, improvisation and utilization of teaching/learning resources and should help enhance the ongoing science programmes like SMASSE. This research established similar factors that lead to poor performance in science subjects in secondary schools even in Bosso Local Government Area of Niger State.

The study in Lesotho by Iheanachor (2007) on the influence of teachers' background, professional development and teaching practices on students' achievement in mathematics in Lesotho, have positively associated students' performance in mathematics and teaching methods in mathematics. He revealed that teaching methods, teacher qualifications, subject



majors and the years of experience are predictors of students' achievement in mathematics. The study reveals that some mathematics teachers have majored in mathematics or mathematics education and others have majored in professions other than mathematics but employed to teach mathematics. This implies that almost half of the mathematics teachers may not have enough mathematics knowledge and skills that affects their teaching methods.

In Tanzania this is evident in 2006 - 2008 where the government had introduced an induction course famous as crash program (SEDP 2010). The program, which produced ill, trained teachers as they attended the college in one month only and then posted to teach in schools.

The study made by Tshabalala & Ncube (2013), revealed that student's performance in mathematics was mainly affected by teaching methods, material resources, teacher behavior, grounding in the subject at lower levels as well as their fear of the subject. The mediating variables such as attitudes towards mathematics, perceived importance of mathematics and time spent on mathematics homework were influential predictors of student's performance in mathematics. Ali, et al. (2010), identified in her study that many students were considered underachievers in mathematics. Students were average or above average in their intelligence but their actual performance in mathematics did not coincide to their intellectual capabilities. Several factors had been identified (Suan, 2014) which seems to be the reason for student's underachievement in mathematics.

First was teacher factor, such as teaching styles, mastery of the subject matter, instructional techniques and strategies, classroom management, communication skills, and personality.

Second was student factor like study habits, time management, attitude and interests towards mathematics. Third was environmental factor such as parents' values attitudes, classroom settings and peer group. Teachers were responsible to the learning and experiences (Iheanachor, 2007) the students might engage everyday as well as setting of educational goals and total personality development. This must be in line with professional development of

teachers on content and instruction, which has remarkable effect on student achievement. Suan (2014), as she cited from Hill, Rowan & Ball (2005), and Quimbo (2010), observed that teachers who have mathematical knowledge, good attendance and participate in programs development have the students with good performances in mathematics. This can be the case in secondary schools in Bosso Local Government Area of Niger State considering teachers' mathematical knowledge, teachers' attendance profile as well as if they attend seminars, marking for zonal or national form two or form four final examinations.

It is evidently seen that there is poor performance in mathematics among senior secondary school students as shown in figure 1 above. The causes of this problem are many and cut across all stakeholders in education. In other words, the causes of poor performance in mathematics among senior secondary school students emanates from the schools, students, teachers as well as the government itself. But in the past many efforts were made to bring a lasting solution to this problem. For instance, Umameh, (2011) stated that events like the comparative Education Study and Adaptation Centre (1976) that took care of the secondary level mathematics syllabus, the Benin Conference (1977) and The National Critique Workshop at Onitsha as well as recently, The National Mathematics Centre, all did a lot in ending the problem of poor performance in mathematics.

#### **2.4 Causes of Poor Performance in Mathematics among senior Secondary Students**

As said earlier, there are many causes of poor performance in mathematics among senior secondary school students. Bakare, (1994) in Asikhia, (2010) categorizes factors militating against good academic performance into four principal areas which are: The Causes of Poor Performance in Mathematics among Secondary School Students in Bosso Local Government Area of Niger State include;

- Causations resident in the child such as basic cognition skills, physical and health factors, psycho-emotional factors, lack of interest in school programme.
- 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.
- Causations resident in the school such as school location and physical buildings; interpersonal relationship among the school personnel.
- 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, Vudla, (2012) in Tshabalala and Ncube, (2013) 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, STAN, (2002) as cited by Ojimba, (2012) was of the view that prominent causes of poor performance in mathematics are:

- Acute shortage of qualified professional mathematics teachers.
- Exhibition of poor knowledge of mathematics content by many mathematics teachers.
- Overcrowded mathematics classrooms.
- Students negative attitude toward mathematics.

- Undue emphasis on the coverage of mathematics syllabus at the expense of meaningful learning of mathematics concepts.
- Inadequate facilities and mathematics laboratories.

In another vein, The National Institute for Educational Development (NIED) (2010) found out in Britain that the reasons for poor performance in mathematics from the point of views of principals are:

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

Other causes of poor performance in mathematics among senior secondary school students include misconception of the subject (mathematics) as difficult one, fear and anxiety. Wikipedia Free Encyclopedia, (2014) 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. Attwood, (2014) attributed poor performance in mathematics to parental attitude, interrupted teaching, poor teaching and dyscalculia. Karue and Amukowa, (2013) 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 in Bosso Local Government Area of Niger State. Therefore, it is clear that the

causes of poor performance in mathematics among 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 secondary school students.

## **2.5 Ways of Improving the Performance of Secondary school Students in Mathematics**

Many ways are suggested by teachers, students, and organizations like STAN and National Mathematical Center on how to improve the performance of students in mathematics. Edukugho, (2010) stated that the government recognized the importance of mathematics in science and technology and in fact in all areas of human knowledge. Hence, government established the National Mathematical Center and has been funding it as one of its parastatals. MAN also is doing a lot in the area of promoting effective mathematical teaching and research.

Mbugua, Kibet, Muthaa and Nkonke, (2012) were of the view that mathematics performance of students can be improved by provision of proper staffing, teaching and learning materials, curriculum, the causes of poor motivation and attitudes, and fees and levies. On the other hand, Gitaari, Nyaga, Muthaa and Reche were 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. Karue and Amukowa, (2013) 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 Bosso Local Government Area of Niger State. In another vein, Ojimba, (2012) 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. Edukugho, (2010) quoted Chief Kieth Richards, Managing Director, Promasidor Nigeria Limited explained that the mathematics competition, A sponsorship nationwide is part of its Corporate Social Responsibility (CSR) as a way of addressing the following:

- a. Changing the perception of Nigerian students that mathematics is a very difficult subject.
- b. Reversing the negative statistics from WAEC showing a high failure rate in mathematics exams.
- c. Enhancing the understanding that mathematics is the bedrock of technological inventions and growth.
- d. Ensuring that students pass mathematics to facilitate admission for higher studies in numerate academic disciplines.
- e. Awakening a conscious interest for mathematics amongst pupils from their cradle age.
- f. 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 secondary 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.

## **2.6 Summary of Literature Review**

Despite noticeable unsatisfactory performance in mathematics, a review of the related literature above indicated a significant gap in the area of study, factors leading to poor performance in mathematics subject and the type of samples involved. These areas required indepth investigation to enlighten the factors for poor performance in mathematics subject. The researcher considered the influence of school management system to the whole process of teaching/learning and students' performance in mathematics, which existed insignificant in the reviewed literatures. The studies conducted was in secondary schools in bosso local government area minna, niger state and much attention was put in other factors like teachers' backgrounds, professional developments, scarcity of mathematics teachers and teaching practices. Moreover the sample suggested in this study would differ from other studies as the researcher involved mathematics teachers, students, head of schools and academic masters.

## **CHAPTER THREE**

### **3.0 Research Methodology**

This chapter discusses the method and procedure that was employed in the study. It contains the following sub-headings: Research design, population of the study, sample and sampling technique, research instrument, validity of the research instrument, reliability of the research instrument, method of data collection and method of data analysis.

### **3.1 Research Design**

This research work employed survey research design. Survey research is considered the most appropriate. Survey research as defined by business dictionary is the method of sociological investigation which uses questions-based or statistical surveys in collecting information about how people act and think. According to Check and Schutt (2012), survey is the collection of information from a sample of individuals through their collaboration or response to questions. This type of research allows for a variety of methods to recruit participants, collect data and utilize various methods of instrumentation. Survey research has historically included large population-based data collection. The primary purpose of this type of survey research was to retrieve information describing characteristics of large sample of individuals of interest relatively quick.

### **3.2 Population of the Study**

The population of this study consists of secondary school students of Bahago Secondary School, Mariam Babangida Secondary School and Bosso Secondary School. Simple random sampling was employed to choose 25 respondents (staffs and students) from each school

### **3.3 Sample and Sampling Techniques**



Random sampling method was employed in this study to acquire data from the respondents. According to Kothari in Augustine (2012), a sample is a part of the chosen population deliberately selected for the aim of investigating the properties of the parent population. From the given population of each school, 25 respondents were selected randomly with no specific characteristics feature irrespective of class age and religion from each school. The determining criterion is that the respondents must be students of the selected secondary schools. As such, the sample population is represented below;

<b>School</b>	<b>Sample</b>
Mariam Babangida Secondary School	25
Ahmadu Bahago Secondary School	25
Bosso Secondary School	25
<b>Total</b>	<b>75</b>

### **3.4 Research Instrument**

The research instrument used for this study is questionnaire. The questionnaire is titled: Causes of Poor Performance in Mathematics Among Secondary School Students (CPPMASSS). The questionnaire is constructed in accordance with the research questions. The questionnaire item was divided into two sections. Section one was designed to elicit relevant background information about teachers with respect to their qualification and teaching experience whereas section two was used to elicit information on the research questions of the study. Part two was subdivided into (5) Clusters: A to E. Cluster A which contains 4 items sought to inquire how poor method of teaching affect student's performance in Mathematics. Cluster B which contains 4 items sought – how family background affects student's performance in Mathematics. Cluster C contains 4 items which sought information on how parents' socio-economic status affect the students' performance in Mathematics. Cluster D contains 4 items which was aimed at finding out how attitude of students toward

Mathematics affect the students' performance in mathematics. Cluster E contains 4 items dedicated to finding out how inadequacy of teaching-aid affects students' performance in Mathematics. On the response option, the research question one, two, four and five were on SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree. The research questions were based on a four point Likert scale.

### **3.5 Validation of the Research Instruments.**

The questionnaire drafted was distributed to exports in the area of study and lecturers in the departments for their comments and suggestions. Based on the criticisms and suggestion, the questionnaire was modified, some items were dropped and others were added. Mathematics educators before use of study first validated the questionnaires and final draft of the questionnaire was submitted to the project supervisor for final ratification. This procure was assumed adequate for face validation. Visits were made to the secondary schools used for the study to interview the Mathematics teachers.

### **3.6 Reliability of the Research Instruments**

The questionnaire was subjected to face validation by the supervisor of the research from the department of science education. Who examined the instrument thoroughly and made corrections where necessary. This was done to ensure the instrument and the content were befitting the objectives and the scope of the study.

### **3.7 Method of Data Collection**

Data collection method defines the research techniques or strategies used in a research operation for information or data gathering on the study population. In this study, the

questionnaire method was the instrument used in gathering the necessary and relevant data. A structured questionnaire was used as instrument for data collection.

A letter of introduction was issued to the researcher signed from the office of the department of science education in which the researcher was introduced to the respondents. The letter briefly stated the topic and objectives of the research and craves the indulgence of the respondents to fill the questionnaire. Once filled, the questionnaire are returned back or collected by the researcher.

### **3.8 Method Data Analysis**

The researcher used quantitative analysis to analyse and present the data collected from the field using Statistical Packages for Social Sciences (SPSS) software for quantitative data. The data is interpreted by the researcher and explanations of the data gathered were made based on the aims and objectives of the study. The resultant information and data are presented in tabular form using relative important index (RII), simple ranking and charts.

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSION**

This chapter shows the presentation of the analysis of the data collected from Mathematics teachers and Mathematics students from selected schools in Minna metropolis. The data obtained from the administration of survey questionnaire were used for data analysis, presentation of results and general discussion of the results. Data were analyzed through descriptive statistics that involves frequency counts and percentages were used to answer the research questions.

#### 4.1 The Distribution of the Sample

The research instrument was distributed to 10 teachers and 75 students that offer Mathematics. The distribution of the sample is illustrated on the table below:

**Table 4.1 Number of respondents.**

<b>Schools</b>	<b>Teachers</b>	<b>Students</b>
Bosso Secondary School, Minna	4	25
Mariam Babangida Girls College Minna	3	25
Ahmadu Bahago Secondary School, Minna	3	25
<b>Total</b>	<b>10</b>	<b>75</b>

Table 4.1 shows that the population of teachers was 10%, while that of student was 75%. This indicating that the majority of the respondents for this study were students.

**Table 4.2: Demographic Information of the Students; Gender (n= 75)**

<b>Sex</b>	<b>Frequency</b>	<b>Percent</b>
Male	45	60%
Female	30	40%

<b>Total</b>	<b>75</b>	<b>100</b>
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**Source:** Fieldwork, 2019

Table 4.2 shows that the population of female students was 40%, while that of male student was 60%. This indicated that the majority of the students' respondents were female.

#### **4.2.1 Teachers Demographic Information**

Demographic characteristics of the teachers who took part in the study were also determined.

These characteristics included; gender, academic qualifications and teaching experiences.

The responses were summarized and recorded in Table 4.3.

**Table 4.2.2: Demographic Information of the Teachers; Gender (n= 10)**

<b>Sex</b>	<b>Frequency</b>	<b>Percent</b>
Male	6	60%
Female	4	40%
<b>Total</b>	<b>10</b>	<b>100</b>

**Source:** Field Data, 2019

Table 4.2.3 shows that the population of female teachers was 40%, while that of male teachers was 60%. This indicated that the majority of the teacher respondents were female.

**Table 4.2.3: Demographic Information of the Teachers; Age Range (n= 10)**

<b>Qualification</b>	<b>Frequency</b>	<b>Percent</b>
18 - 30 years	8	80
30 – 45 years	2	20
Above 45 years	-	-
<b>Total</b>	<b>10</b>	<b>100.0</b>

**Source:** Field Data, (2019)

Table 4.2.4 indicates that many teachers in the study area are relatively young staffs between the age ranges of 18 – 30 years, while few of the teachers are matured adults who fall within the age range of 30 – 45 years.

**Table 4.2.4: Demographic Information of the Teachers; Academic Qualifications (n= 10)**

<b>Qualification</b>	<b>Frequency</b>	<b>Percent</b>
Diploma	7	70.0
Degree	3	30.0
Masters	-	-
<b>Total</b>	<b>10</b>	<b>100.0</b>

**Source:** Field Data, (2019)

Table 4.2.5 shows the academic qualification of the teachers in the study area. The findings indicate that the qualification is too high. 70% have diploma, 30% have degree while none of the teachers had master degree. In the teaching professional the teachers in the study area have the required amount of education for teaching in secondary schools.

**Table 4.2.5: Demographic Information of the Teachers; Teaching Experiences (n= 10)**

<b>Qualification</b>	<b>Frequency</b>	<b>Percent</b>
Below 10 years	4	40
Between 10 – 20 years	6	50
Above 20 years	1	10
<b>Total</b>	<b>10</b>	<b>100.0</b>

**Source:** Field Data, (2019)

Table 4.2.6 indicates that many teachers in the study area representing 50% of the respondents are relatively old staffs with 10 – 20 years of teaching experience. 40% of the teacher respondents pointed out that they had less than 10 years in the teaching while 10% had above 20 years of working experience.

### Section 4.3: causes of poor performance of students in mathematics

**Table 4.3.1: causes of poor performance of students in mathematics**

causes of poor performance of students in mathematics	Response Rate	Percentage(%)
Ineffective teaching methods	-	-
Teaching and learning of mathematics in theory rather than in practical	1	10
Poor attitudes of students towards mathematics	3	30
Availability and accessibility to teaching aids	3	30
Poor economic status of students	1	10
Lack of motivation from parents	-	-
Difficulty of mathematics	2	20
<b>Total</b>	<b>10</b>	<b>100</b>

The findings of the study revealed that majority of the teachers (30%) were of the opinion that poor attitudes of students toward mathematics was the major cause of poor performance of students in mathematics, (0%) believed ineffective teaching methods to be the real cause, (10%) opined that poor economic status of students was the reason behind the poor performance of students in mathematics, (30%) said that availability and accessibility to teaching aids were the major causes, (20%) were of the opinion that difficulty of mathematics itself was the main reason causing poor performance of students in mathematics.

**Table 4.3.2: Poor methods of teaching effects on student's performance in Mathematics**

Poor methods of teaching effects on student's performance in Mathematics	Response Rate	Percentage(%)
Strongly agreed	6	60
Agreed	3	30
Undecided	1	<b>10</b>
Strongly disagreed	0	0
Disagreed	0	0
<b>Total</b>	<b>10</b>	<b>100</b>

The findings of table 4.3.2 revealed that majority representing (60%) of the students strongly agreed that poor method of teaching affect students' performance in mathematics. (30%) agreed, and (10%) were undecided on the matter that poor methods of teaching affect students' performance in mathematics. The study shows that majority of the respondents strongly agreed that poor method of teaching affect students' performance in mathematics.

**Table 4.3.3:Effect of family background on student's performance in Mathematics**

<b>Effect of family background on student's performance in Mathematics</b>	<b>Response Rate</b>	<b>Percentage(%)</b>
Strongly agreed	3	30
Agreed	4	40
Undecided	2	20
Strongly disagreed	-	-
Disagreed	1	<b>10</b>
<b>Total</b>	<b>10</b>	<b>100</b>

The findings of table 4.3.3 revealed that majority representing (30%) of the students strongly agreed that family background affect students' performance in mathematics. (40%) agreed of the respondents, (20%) of the respondents were undecided while (10%) of the respondents disagreed that family background affect students' performance in mathematics.

**Table 4.3.4:Teaching and learning of mathematics in theory rather than in practical**

<b>Teaching and learning of mathematics in theory rather than in practical</b>	<b>Response Rate</b>	<b>Percentage(%)</b>
Strongly agreed	3	30
Agreed	5	50
Undecided	0	0
Strongly disagreed	1	10
Disagreed	<b>1</b>	<b>10</b>
<b>Total</b>	<b>10</b>	<b>100</b>



The findings of table 4.3.4 made it clear that majority representing (50%) of the students agreed that teaching and learning of mathematics in theory rather than in practical affects students' performance in mathematics, (30%) of the respondents strongly agreed, (0%) was undecided, (10%) of the respondents strongly disagreed while (10%) disagreed that family background affect students' performance in mathematics.

**Table 4.3.5: Poor economic status of students**

<b>Poor economic status of students</b>	<b>Response Rate</b>	<b>Percentage(%)</b>
Strongly agreed	3	30
Agreed	4	40
Undecided	-	-
Strongly disagreed	1	10
Disagreed	2	20
<b>Total</b>	<b>10</b>	<b>100</b>

The findings of table 4.3.5 showed that (30%) of the respondents agreed to the fact that poor economic status of students affects students' performance in mathematics, (40%) of the respondents strongly agreed to the above claim, (0%) were undecided, (10%) of the respondents strongly disagreed while (10%) disagreed that poor economic status of students affect students' performance in mathematics. This shows that majority of the respondents concurred with the fact that poor economic status of students affects students' performance in mathematics.

**Table 4.3.6: Availability and accessibility to teaching aids**

<b>Availability and accessibility to teaching aids</b>	<b>Response Rate</b>	<b>Percentage(%)</b>
Strongly agreed	5	50
Agreed	2	20
Undecided	1	10
Strongly disagreed	1	10

Disagreed	1	10
<b>Total</b>	<b>10</b>	<b>100</b>

The findings of the study indicated that (50%) of the respondents strongly agreed that availability and accessibility to teaching aids affects students' performance in mathematics, (20%) of the respondents agreed to the above claim, (10%) were undecided, strongly disagreed and disagreed to the claim that poor economic status of students affect students' performance in mathematics. This reveals that majority of the respondents agreed to the fact that availability and accessibility to teaching aids.

#### **4.4 Discussion of Findings**

The discussion of results is presented according to research questions raised in this study. The findings for the research questions of this study are as follows:

The first objective was to assess the influence of cultural backgrounds to students' performance in mathematics. The study results revealed that school cultural factors, specifically, school management style and characteristics had high influence on student's performance in mathematics. It was possible to conclude that there is a democratic style of school management, some of evolution methods of effectiveness of teachers' work and active culture of cooperation among school community members.

The second objective was to examine how teacher-students' relationship affect student's performances in mathematics. The findings show that 37.5% of students attending mathematics subject in all sampled schools have similar favorable perceptions on their relationships with the teachers as they confirm that the relationship was good. They said that it is an individual teacher or student that has an effect on student's perceptions of those relationships for which sometimes create negative look on the teacher by other students when they become aware. Also they said that the relationship becomes bad when a teacher make high use of corporal punishment while teaching in classrooms. The findings indicated

that it is difficult for some students to consult their teachers in case of difficulties in their learning. In focus group discussions students said that sometimes their teachers are harsh though not all the time but that discourages them.

The fourth objective was to assess how school environment affects students' performance in mathematics. Findings indicated that there were not enough records that students were given or borrowed mathematics books for self-study and self-practice. The students involved in a focus group discussion only two had mathematics textbooks in one school and one in the group among 15 students in another school. For the other two schools, no student in the focus group discussion had a mathematics textbook. On making observations the researcher noticed the shortage of teaching materials, which was parallel to no use of available teaching resources. In one of the focus group discussions students said they were taught the topic on Circle and Spheres without use of any objects with such shape, it was only through notes and drawings.

## **CHAPTER FIVE**

### **5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This section presents the summary of the study, conclusion and the recommendations of the study.

#### **5.2 Summary**

The objective of the study was to examine the causes of poor performance in mathematics among secondary schools in Bosso Local Government Area, Minna Niger State. The researcher reviewed related literatures on ways of improving the performance of secondary school students in mathematics and established that there was limited research on the same locality. The limited research on this motivated the researcher to carry out this study.

The study used cross sectional survey design since the area under the study has been extended and the entire population could not be covered on individual basis. The survey design employed enabled the researcher to be able to generalize the characteristics of the

entire population because of its sample. The target population included secondary school teachers and students in Bosso Local Government Area, Minna Niger State.

The instruments which were used to collect data in this study included questionnaires and interview. Questionnaires were used to collect data from students and teachers while interview was used to collect data from secondary school teachers and students. The collected data were coded and analysed and the results were presented in condensed form in terms of tables and figures.

### **5.3 Conclusion**

Based on the findings of the study, it can be concluded that:

(i) Majority of the mathematics teachers in Bosso Local Government Area of Niger State are mostly male. As to educational attainment and length of teaching experience, highest educational attainments of majority of the teachers were diploma holders with good experience in teaching mathematics.

(ii) Student-centred methods, discussion, demonstration; problem solving, and inquiry approach were highly preferred by the teacher participants. But this was hindered by the background of the students, nature of school environments, students' self-effort and family economic status of the students. It ended up teachers applying teacher-centred method due to that students have a poor background in mathematics.

(iii) There was no significant relationship between the instructional strategy preference of teacher participants and their teaching performance. The preference of teachers on particular instructional strategies does not affect the level of their teaching performance.

(iv) Teacher – student relationship has its motivation for both teachers and students. It motivates teachers to like attending classes as there is absence of hostility. Also it motivates students to like the subject as they don't have negative attitude toward their teacher.

#### **5.4 Recommendations**

Based on the findings of this study, the following recommendations were provided:

- Frequent inter-school competition in mathematics should be organized by the state government with prizes to be awarded to winners
- The annual competition and quiz organized by Mathematical Association of Nigeria (MAN) should be extended to all nook and corners of Nigeria (Urban and Rural) and it should be on quarterly basis.
- Frequent supervision and inspection by the state ministry of education should be carried out in order to see and assess the teaching of mathematics and other subjects in the study area.
- Parents should be enlightened on the importance of their involvement in the education of their children and its attendant benefit in the performance of students.
- Guidance and counseling units should be set up in our secondary 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.

## REFERENCES

- Akiknola B, 2006, Factors that contribute to poor performance among students in secondary schools, Sun's ray, Nigeria.
- Ali, R., Altcher, A. & Khan, A. (2010). Effect of Using Problem Solving Method in Teaching Mathematics on the Achievement of Mathematics Students: Bannu, (NWFP): Pakistan.
- Andile M & Moses M, 2011, Factors associated with high school learners' performance, South African journal of sciences.
- Asikhia, O. A. (2010). Students and Teachers' Perception of the Causes of Poor Academic [3]. Performance in Ogun State Secondary Schools [Nigeria]: Implication for Counseling for National Development. Retrieved on 11th November, 2014 from <http://connection.ebscohost.com/c/articles/50743662/students-teachers-perception-causes-poor-academic-performance-ogun-state-secondary-schools-nigeria-implications-couselling-national-development>
- Attwood, T. (2014). Why are Some Students so Poor at Maths? Retrieved on 19th October 2014 from <https://www.senmagazine.co.uk/articles/articles/senarticles/why-are-some-people-so-poor-at-maths>
- Belinda P, 2010, Academic failure in secondary schools, Interplay of health problems and school environment, USA.
- Certificate of Secondary Examination in Embu District in Kenya. Retrieved on 19th October, 2014 from <http://www.tijoss.com/TIJOSS%2013th%20Volume/Amukowa.pdf>
- Dzana E.N, 2012, Poor performance in science subjects in Malawi, University of Malawi.
- Edukugho, E. (2010). Federal Government Moves to Tackle Poor Result in NECO, SSCE Exams
- Fabio C & Laura L, 2010, Analysis of the factors affecting pupil's science achievement, Italy.
- Federal Republic of Nigeria (2004). National Policy on Education. Lagos: NERDC Press.
- Fencl, H & Scheel, K, 2005, Research and teaching-engaging students, journal of college science teaching.
- HakiElimu, (2013). Joint Civil Society Statement on Government's decision to nullify 2012 Form IV result: HakiElimu.

- Hill, H. C., Rowan, B., & Ball, D. L. (2005). Effects of Teachers' Mathematical Knowledge for Teaching on Student Achievement. *American Educational Research Journal*.
- Iheanachor, O. U. (2007). *The Influence of Teachers' Background, Professional Development and Teaching Practices on Students' Achievement in Mathematics in Lesotho*: University of South Africa.
- Karue, N. & Amukowa, W. (2013). *Analysis of Factors that Lead to Poor Performance in Kenya*
- Karuna B, 2009, Secondary school education, Barbhag College, India.
- Kitta, S. (2004). *Enhancing Mathematics Teachers' Pedagogical Content Knowledge and Skills in Tanzania*. Print Partners- Ipskamp: Enschede.
- Liew T.K & Teoh A.P, 2008, *Factors affecting students' performance*, Wawason Open University, Malaysia.
- Maganga, C. K. (2013). *Evolution of Philosophical Discourses on Education: A Clarification*. Tanzania Open School and Publishing House: Dar es Salaam.
- Mbugua, Z. K., Kibet, K. & Nkonke, G. R.(2012). *Factors Contributing to Students' Poor Performance in Mathematics at Kenya Certificate of Secondary Education in Kenya: A Case of Baringo County, Kenya*. Retrieved on 19th October, 2014 from [http://www.ajjernet.com/journals/Vol\\_2\\_No\\_6\\_June\\_2012/11.pdf](http://www.ajjernet.com/journals/Vol_2_No_6_June_2012/11.pdf)
- Mtitu, E. A. (2014). *Learner-centred teaching in Tanzania: Geography teachers' perceptions and experiences*. Victoria University of Wellington.
- National Institute for Educational Development (NEID) (2010). *Performance of Learners in Mathematics at Upper Primary Phase in Namibia: Examining Reasons for Low Performance*. Retrieved on 19th October, 2014 from [http://www.nied.edu.na/publications/research%20docs/Maths\\_national%20report%20Sept\\_30\\_%20DECEMBER%203rd%20FEBth%20updated%20\\_Nambira%20Aina%20FINAL.pdf](http://www.nied.edu.na/publications/research%20docs/Maths_national%20report%20Sept_30_%20DECEMBER%203rd%20FEBth%20updated%20_Nambira%20Aina%20FINAL.pdf)
- Ojimba, D. P. (2012). *Strategies for Teaching and Sustaining Mathematics as an Indispensable Tool for Technological Development in Nigeria*. Retrieved on 19th October, 2014 from [http://www.mcser.org/images/stories/MJSS-Special issue/MJSS%202012%20Special%20Issue%20vol203%20no%2015/Daso,%20Peter%20Ojimba.pdf](http://www.mcser.org/images/stories/MJSS-Special%20issue/MJSS%202012%20Special%20Issue%20vol203%20no%2015/Daso,%20Peter%20Ojimba.pdf)
- Omari, I. M. (2011). *Concept and Methods in Educational Research "A Practical Guide Based on Experience"*. Dar es Salaam: Oxford University Press.
- Performance in Ogun State Secondary Schools [Nigeria]: Implication for Counseling for National Development*. Retrieved on 11th November, 2014 from <http://connection.ebscohost.com/c/articles/50743662/students-teachers-perception-causes-poor-academic-performance-ogun-state-secondary-schools-nigeria-implications-counseling-national-development>
- Quimbo, S. L. A. (2010). *Explaining Math and Science Achievement of Public School Children in the Philippines*. *Philippine Review of Economics*: Philippines.



- Rufai. Retrieved on 9th October, 2014 from <http://www.vanguardngr.com/2010/06/fg-moves-to-tackle-poor-result-in-neco-ssce-exams-rufai/>
- SEDP, (2004). The Ministry of Education and Vocational Training: Secondary Education Development Programme. Dar es Salaam.
- Sitko, N. J. (2013). Designing a Qualitative Research Project: Conceptual Framework and Research questions. Indaba Agricultural Policy Research Institute (IAPRI).
- Suan, I. (2014). A Critical Review of Leadership Styles on the Performance of Public Secondary Schools in National Examinations in Tana River County. Kenya.
- Sutton L, 2011, Improving the impact of teachers on pupil achievement, United Kingdom.
- Thomas J. A & Pedersen J .E 2003, reforming elementary science teacher preparation: What about extent teaching beliefs? School science and mathematics.
- Tshabalala, T. & Ncuba, A. C. (2013). Causes of Poor Performance of Ordinary Level Pupils in Mathematics in Rural Secondary Schools in Nkayi District: Learner's Attributions. Nova Explore Publications: Zimbabwe
- Unameh, M. A. (2011). A Survey of Factors Responsible for Students' Poor Performance in Mathematics in Senior Secondary School Certificate Examination (SSCE) in Idah Local Government Area of Kogi State, Nigeria. Retrieved on 4th November, 2014 from [https://www.academia.edu/7671293/a\\_survey\\_of\\_factors\\_responsible\\_for\\_students\\_poor\\_performance\\_in\\_mathematics\\_in\\_senior\\_secondary\\_school\\_certificate\\_examination\\_ssce\\_in\\_idah\\_local\\_government\\_area\\_of\\_kogi\\_state\\_nigeria](https://www.academia.edu/7671293/a_survey_of_factors_responsible_for_students_poor_performance_in_mathematics_in_senior_secondary_school_certificate_examination_ssce_in_idah_local_government_area_of_kogi_state_nigeria).
- Wikipedia Free Encyclopedia, (2014). Mathematics Anxiety. Retrieved on 19th October, 2014 From [http://en.wikipedia.org/wiki/Mathematical\\_anxiety](http://en.wikipedia.org/wiki/Mathematical_anxiety)

Technology,

Department of Science Education,

School of Science Education

Federal University of Technology,  
Minna.

**Dear Respondent,**

I am USMAN Mustapha an undergraduate student of the above-named department, school and university respectively. I am carrying out a research on the topic **“the Causes of Poor Performance in Mathematics Among Secondary Schools in Bosso Local Government Area of Niger State”** in partial fulfilment of the requirement for the Award of Bachelor’s Degree in Mathematics and Education.

The outlined questions are for you to accurately and sincerely answer them as required, as this will enable me to efficiently carry out this research as expected. All responses are strictly for this research work and remain highly confidential.

Thanks for your cooperation.

Yours sincerely,

Usman Mustapha

## APPENDIX

### Appendix I: Questionnaire for Teachers

This questionnaire is addressed to teachers of students, who are asked to supply information about their academic and professional backgrounds, classroom resources, and the instructional materials and activities used to teach reading and promote the development of students' reading skills and performance.

1. School name .....
2. Ward.....

### Biodata

Put a tick in the appropriate box

3. Gender of the respondent: (a) Male  (b) Female
4. Age of the respondent: (a) 18-30 years ( ) (b) Between 30-45 years ( )  
(c) Above 45 years ( )
5. Professional Qualification: (a) Diploma Holder ( ) (b) Degree Holder ( )  
(c) Master Holder ( )
6. Teaching Experiences: (a) Below 10 years ( ) (b) Between 10-20 years ( )  
Above 20 years ( )

### SECTION B

Please respond to all statements by ticking the one you consider most appropriate.

Note: Strongly Agree (SA), Agree (A), Undecided (U), Strongly Disagreed (SD), Disagreed (D)

SN		SA	A	U	SD	D
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1.	Poor performance of students can be attributed to ineffective teaching methods in Mathematic					
2.	Teaching and learning of mathematics in theory rather than in practical contributed to the poor performance of students in Mathematics					
3.	Poor attitude of students towards Mathematics contribute to the failure of student in Mathematics					
4.	The availability and accessibility to teaching aids negatively affect students; performance in Mathematics					
5.	Poor economic status of the students can contribute to poor performance of students in Mathematics					
6.	Lack of motivation from parents can contribute to the poor performance of students in Mathematics					
7.	Difficulty of Mathematics contribute to massive failure in SSCE examination					

## Appendix II: Questionnaire for students

### Instruction

The statement below is intended to gather information on causes of poor performance among secondary school students in mathematics in your school. Suggest to the best of your ability, your opinion against each of the statements. Thanks for accepting to take part in this programme

### SECTION A

What is the name of your school? \_\_\_\_\_

What is the category of your school? Girls Only ( ) Boys Only ( ) Mixed ( )

What is your age? \_\_\_\_\_

Sex: male ( ) Female ( )

### SECTION B

**Please respond to all statements by ticking the one you consider most appropriate.**

Note: Strongly Agree (SA), Agree (A), Undecided (U), Strongly Disagreed (SD), Disagreed (D)

SN	Cluster A: Does employing poor method of teaching affect student's performance in Mathematics?	SA	A	U	D	SD
1.	Our mathematics teacher does not allow students to ask questions in class					
2.	Our mathematics teacher makes use of teaching aids to demonstrate different concepts of Mathematics					
3.	Our Mathematics teachers have adequate workspace for preparation, collaboration or meeting with students					
	<b>Cluster B: Does family background affects student's performance in Mathematics?</b>					
4.	My parent's attitude towards my education affects my performance in Mathematics					
5.	My parent used to motivate me					
6.	My parent's academic performance has much to do with my performance in Mathematics					
	<b>Cluster C: Does socio-economic status of parents affect the students' performance in Mathematics?</b>					
7.	My parents can afford to provide the basic necessities required for my education					
8.	My parent guide me in school assignment and homework					
	<b>Cluster D: Does attitude of students toward Mathematics affect the students' performance in mathematics?</b>					
9.	Mathematics is useful in my future life					
10.	I do not like mathematics					
11.	Mathematics is a difficult subject					
12.	I often study Mathematics on my own					
	<b>Cluster E: Does inadequacy of teaching aid affect students' performance in Mathematics?</b>					
13.	Our teacher always uses charts, models and other teaching aids					

	during Mathematics lessons					
<b>14.</b>	There is shortage of physical facilities such as desks and chairs for students					
<b>15.</b>	We have adequate Mathematics text-books					
<b>16.</b>	Our teachers do not have enough instructional materials and supplies					