

**FACTORS AFFECTING THE EFFECTIVE TEACHING AND LEARNING OF
MATHEMATICS IN GOVERNMENT SECONDARY SCHOOL IN BOSSO LOCAL
GOVERNMENT AREA MINNA, NIGER STATE.**

BY

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ABSTRACT

Mathematics is the very basis of all sciences and technology and therefore all human progress. If we must develop technologically and our economy, we must put functional and technological policy that we help the learning of mathematics in its proper perspective. This can be achieved by ensuring that mathematics teachers are efficient and effective in rendering their service of teaching to students. Most mathematics teacher lack the skills, attitude and competency required for the effective teaching of mathematics, even thou they have the required qualification as a mathematics teacher. Teaching aid s which are the instruments for effective teaching and learning of mathematics are often not been used by the mathematics teacher. Therefore the purpose of this project is to find out the Factors Affecting the Effective Teaching and Learning of Mathematics in Bosso Local Government Minna, Niger State. Descriptive survey method was adopted for this research work and random sampling techniques was used to select 70 respondents in Bosso Secondary School and Ahmadu Bahago Secondary School. A designed questionnaire was administered in the schools. The data collected were analyzed using frequency table percentage to answer research questions and recommendations that will give solutions to the Factors Affecting Effective Teaching and Learning of Mathematic were provided.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Mathematics is a pure science that requires mental or intellectual activity in calculation designed in order to discover information about the world. It is one of the major subject taught in Nigeria schools. Mathematics is important because the knowledge is required by every member of the society in day-to-day activities.

Some of the identified aims of mathematics are as follows; to help students understand the value and usefulness of mathematics. To nurture a sense of personal achievement and creative interest in mathematics. It help student to develop the ability to think logically and to develop several approaches to solving mathematical problems. To assist students to achieve the mathematical and statistical literacy needed in the society, which is technologically oriented and information rich. To provide a foundation for those students who may wish to continue studies in mathematics or other learning areas where mathematical concepts are central.

To stimulate the ability of students to think creatively, critically, strategically and logically.

These objectives would serve as foundation or preparatory knowledge to junior secondary schools, most especially for those wishing to study engineering, medicine, and technology at higher institutions and in dealing with other science subjects like physics and chemistry in senior secondary school, which is the reason why mathematics is made compulsory for every student at junior secondary school level in Nigeria, this made it an unavoidable subject.

The teaching of mathematics in junior secondary school help students to be exposed to a mathematical world, thus giving them a solid foundation.

Mathematics has been a part of human search for understanding for more than two thousand years. Mathematical discoveries have come both from the attempt to describe the natural world and from the desire to arrive at a form of unavoidable truth from careful reasoning. These remains productive and important need for mathematical thinking. Mathematics has been successfully applied to many other aspects of the human policies in the last century, the analysis of automobile, traffic pattern and long term strategies for sustainable harvest of deciduous forest.

Today mathematics as a mode of thought and expression is more valuable than ever before. In becoming a liberally educated person, learning to think mathematically is very essential.

There is more to mathematics than just proof. Indeed the vast majority of people who earn their living doing mathematics are not engage in finding proof at all, their goal is to solve problem to whatever level of accuracy or certainty is required. While proof remains the goal standard for mathematical truth, conclusion reached on two basis of assessing the available evidence have always been a relevant part of the mathematics enterprise (Keith 2012).

Mathematics was introduced into the curriculum with proper study, so many problems has been observed like the use of unqualified teachers in the teaching of mathematics in our different schools, who do not have adequate knowledge about the subject mathematics or not mathematically inclined. The non-challant attitudes of students towards mathematics and learning at large, due to the lack of use of motivational approach by the teachers.

Poor environment and lack of infrastructural facilities has led to failure in the teaching and learning of mathematics. The total failure in the usage of instructional material due to poor knowledge of instructional aides by teachers, all these has led to failure in good teaching and learning of mathematics. We therefore have to go into this research to find a possible solution to the many problems.

Therefore, saying that the teaching and learning of mathematics in secondary school is very essential no doubt as it is regarded as a yard stick in the development of any nation.

1.2 Statement of the Problem

Schooling in developing countries like Nigeria can be tedious and difficult. Imagine where schooling takes place under conditions that are very different from those in developed countries. Students are likely to attend schools that are poorly constructed and under miserable equipment like no windows or doors, no place for student to sit but cracked cemented dirty floor, sometimes teaching and learning takes place under the trees with very bad chalkboard, that students finds it difficult to see what is written on the board clearly.

The curriculum is poorly designed, learning environment typically has few resources and class rooms would have students to accommodate, many of whom are undernourished, parasite ridden and hungry. The job of educating these students difficult, with the use of inexperienced, untrained and unqualified teachers in the teaching of mathematics in our different schools can be discouraging, teachers who are not masters in the subject mathematics, they tend not to motivate the student in to seeing the importance and gain in the knowledge of mathematics, thereby making students play rather than studying.

Teachers neglect the use of instructional materials in the teaching and learning of mathematics. They engage themselves with chalk and talk method of teaching, which leave the students with little or no understanding.

The above prompted the researchers to identify the factors affecting effective teaching and learning of mathematics in Government secondary schools, Minna ,Niger State.

1.3 Purpose of the study

The main aim of this study is to find out the factors affecting the effective teaching and learning of mathematics in Government Secondary schools in Bosso Local Government Area, Minna, Niger State.

The following are the objective of this research;

1. To determine the qualification of teachers teaching mathematics in Government secondary school.
2. To evaluate attitudes of students towards learning of mathematics in Government secondary schools.

1.4 Research Questions

1. What are the qualification of the teachers teaching mathematics in our Government secondary schools?
2. What are the attitudes of students towards mathematics?

1.5 Significance of the Study

1. This research study will be of great help to students, teachers, curriculum planners and the society at large in the following ways;
2. The findings of this research will help students who are directly concerned to appreciate the subject mathematics, encouraging them to put more effort in the study since it is inevitable. This research study will expose the importance of mathematics and the fun and happiness it gives, making them understand that mathematics is an easy subject so as to remove every negative sentiment, attitudes and fear students have towards the study of mathematics.

3. This research will expose areas the teachers need to put more efforts in the teaching of mathematics. It will further help teachers in using better techniques and methods of teaching to the best understanding of the students.
4. The research study will be of immense help to the prospective and present curriculum planners. It will enlighten and widen their knowledge towards making an effective curriculum that will be better understood by the teacher who is to implement it, to achieve its objectives.
5. This research study is an eye opener to the general public in making people see the importance of mathematics and its usefulness in day-to-day activities and the indispensable contribution of mathematics in nation building.

1.6 Scope of the Study

This study will cover some Government secondary schools in Bosso Local Government Area Minna, Niger State. Because of the limited time, this study will focus on those Factors Affecting effective teaching and learning of mathematics in the following schools;

- i. Ahmadu Bahago Secondary school
- ii. Bosso Secondary School

1.7 Definition of terms

Mathematics: According to Merriam-Webster Dictionary, Mathematics is a science of number and their operations, interrelations, combination, generalizations, abstraction and of space configurations and their structures, measurements, transformations and generalizations.

Factor: According to Collins English dictionary, a factor is one of the things that affects an event, decision or a situation.

Militating: According to oxford dictionary, militating means a fact or circumstance, a powerful or conclusive factor in preventing.

Effective: According to oxford dictionary, effective means successfully producing a desired or intended result, existing in fact, though not formally acknowledged as such.

Teaching and Learning: According to www.igi-global.com, [teaching](#) and learning is a combined process where an educator assesses learning needs, establishes specific learning objectives, develops teaching and learning strategies, implements plan of work and evaluates the outcomes of the instruction.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Teachers in any educational system are facilitators of teaching and learning. They are the ones entrusted with the task of breaking down the desired needs of the society as specified in each subject syllabus into teachable and learnable topics in the classroom. Teachers are thus, the backbone of any educational system and could be referred to as nation builders.

In this chapter, the discussion will be based on the relevant literatures on the factors affecting the effective teaching and learning of mathematics in secondary schools. It will be discussed under the following;

2. 1. Conceptual framework
2. 2. Theoretical framework
2. 3. Empirical studies
2. 4. Summary of the literature reviews.

2.1 Conceptual framework

2.1.1 What is Effective Teaching?

Teaching is a complex, goal oriented; multifaceted activity. Psychologist found different concepts of the process of teaching. Those who see learning as a process of conditioning define teaching in terms of what teachers do in various stimuli of their environment. Psychologists who see learning as an individual's personal discovery of meaning emphasis teaching as procedure designed to involve learners in defining their own purpose and problems and in formulating and testing plans for achieving those purposes and solving those problems.

Teaching is a process which usually takes place in the classroom situations. It is a formal process through which the teacher interacts with the students to give what he/she wants the learners to

learn according to their learning needs. It is a systematic way to attain some pre-determined goal. Teaching is to cause motivation to learn and to fill the minds of the learners by information knowledge of facts. It imparts understanding of concepts and basic life skills.

Effective teacher provides the students opportunities for learning. Teacher facilitates the interaction among the students. Teacher organizes to construct the knowledge. In short, teaching is effective to the extent that the teachers' art in ways that are favorable to the development of basic skill, understanding, work habits, desirable attitudes, and value judgments of students.

2.1.2 What is Effective Learning?

Learning is an act of getting experience, knowledge, skills and values by understanding what to do and how to do any task by synthesizing the different types of information perceived by us. Learning brings about changes in the existing behavior of an individual. Human beings, animals and plants do learning (Garry 2010).

A child starts learning even in the womb of the mother and it involves continuous training or practice to produce a permanent change in the behavior. Learning not only brings about changes in the existing behavior of an individual but also enable individuals to acquire new behavior. The changes brought about through experience and training by learning would be stable and enduring. It prepares the individual for adjusting and adapting with the existing environment (Kimble 2011).

Learning is a process which occupies an important role in molding the structure of our personality and behavior. It develops socially accepted behaviors and also there is equal chance of building negative side of human behavior. Learning necessitates to meet sonic personal need as it is purposeful and goal oriented. Recognizing and identifying such needs enable us to evaluate whether that learning has been worthwhile and successful (Henry 2012). Learning involves new

ways of doing things with no limit to adopt the ways and means to attain the goal. It is a continuous, comprehensive process which involves different methods and covers cognitive and affective domains of human behavior.

2.1.3 Effective Teaching and Learning of Mathematics

It is widely acknowledged that student's performance in mathematics is generally poor. This has been evidenced both by research and classroom experiences, even, the West African Examination Council's record shows that the worst results were in mathematics (11th August 2014 Punch News Paper).

According to Jacob et al (2012), it is important to provide opportunities for parent to get involved and provide necessary tools for parents to help their children. The student's attitude towards mathematics is not solely developed at school, but the home background also contributes to the student's performance and attitudes in mathematics. This can happen through any of the following:

1. Parental encouragement or discouragement
2. What parents expect their child's performance to be?
3. Parent's own attitude towards the subject.

2.1.4 Lack of Qualified Teachers

One of the factors, which causes poor performances of students in mathematics in secondary schools and discourages students from studying mathematics, is poor teaching (Amoo, 2000).The role of teachers in any educational enterprise cannot be brushed aside.

Teachers are the hubs of any educational system upon their number, their quality and devotion depend on the success of any educational system". This is true of all disciplines; it is particularly true of mathematics as a discipline. A major problem facing the teaching and learning of

mathematics today is lack of enough teachers to handle the subject particularly at the secondary level. This is even made worse as the number of schools increases, as well as number of pupils in schools. Apart from this there is also a demand for mathematicians in Industrial and Commercial set ups. This shortage in the number of mathematics teachers has led to borrowing teachers who are specialists in other disciplines like chemistry, physics, economics, engineering etc. to teach mathematics. In many cases such borrowed teachers are not professional teachers i.e. they are not trained teachers hence they lack both the adequate knowledge (since they are not mathematics specialists) and the teaching methods required to teach mathematics effectively.

2.1.5 Teachers Involvement in WASSCE and NECO Marking

Mathematics teachers should be involved in WASCE and NECO items writing and marking exercises. This is to assist the teachers to know the technicalities involved in testing and marking WASCE and NECO papers in mathematics. This can be achieved through well-coordinated workshops and seminars organized by these examination bodies. Being an examiner would enable the teachers to be more focused in teaching topics in mathematics and it will enable them to educate the students on how to answer questions.

2.2 Theoretical Framework

2.2.1 Plato and Socrates Perspectives on Teaching and Learning Mathematics

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

2.2.2 Reduction of Large Classes

Mathematics teachers are unable to pay attention to individual student because of student's enrolments in a class. It becomes difficult for the teacher to establish close contacts with the students. Mathematics teachers are unable to judge the capacities of the individuals in the class.

This defect can be removed only by limiting the number of students in each class up to a maximum of thirty. The teacher is over-burdened on all sides and to follow the way of least resistance, he emphasizes cram work. He cannot adopt, and prepare for effective methods, as he has no spare time. His burden does not allow him time to remove individual difficulties. This burden should be lightened to enable mathematics teacher to show originality and initiative.

The adage, 'he who pays the piper dictates the tune' holds water in motivation of teachers. Their employers and their head teachers should effectively motivate mathematics teachers. Teachers should be paid promptly and adequately; both government and head teachers should employ extrinsic motivation techniques to motivate mathematics teachers. (Wilson, 1993). Mathematics teachers should be sent for workshops, retraining, conferences and seminars in order to improve their teaching techniques. Scholarships and in-service training with pay should be granted to mathematics teachers. On the other hand, the mathematics teacher should not depend on external motivation to do his job effectively. He should note that if man fails to reward him effectively, that God must reward him for effective teaching despite all external odds facing him from outside. The golden rule is another factor that can enhance the mathematics teachers' intrinsic motivation to teach effectively.

2.2.3 Mathematics Teachers Should be encouraged to Use Relevant Set Induction Technique before Starting Their Lessons

Joshua (2011) indicated that set induction is the way and manner in which a mathematics teacher starts or introduces his lessons. The set induction is a potential determinant of the level of student's interest in a mathematics lesson. Thus, the teacher should set induce his students for two reasons. The first is to ascertain the level of their interest and knowledge. Secondly, he has to use it to generate and sustain students' interest in the lesson in particular and in mathematics in general.

The mathematics teacher should use it to awaken the interest of the learners. This requires skillful instructional preparation and management. He can achieve a good set induction through relevant jokes and riddles, asking questions on previous lessons and displaying mathematical equipment's. The students always accept a mathematics teacher who uses relevant set induction techniques in the classroom.

2.2.4 The Structure of Mathematics

The structure of mathematics is such that the concepts to be learnt are built one on the other and are interdependent. Hence the understanding of concepts at one level depends on the completion and understanding of concepts on topics at the lower level. Therefore, when a syllabus at lower level (say J.S.S.) is not completed, or not properly understood by students, it will hinder the understanding of what is to be learnt at a higher level e.g. S.S. level. A notable occurrence in schools however is that in many cases, mathematics syllabus of a particular class are not completed, either due to lack of time or through a teacher deliberately avoiding some topics that he himself is not comfortable with. In addition, many of the topics covered are not properly understood by learners. This creates problems for them at the next level of learning.

2.2.5 Relating Mathematics to Other Subjects While Teaching: One way of creating and maintaining interest of students in mathematics by mathematics teachers is to relate the uses and applications of mathematics in various subjects such as carpentry, medicine, pharmacy, nursing, geology, geography, physics, engineering, building, biology etc.

Explaining the use and application of every topic in mathematics to one or more disciplines will go a long way in generating and sustaining the students' interest in mathematics. For instance, the use of patterns in tailoring and dressmaking is an example of symmetry. The work involved in basket weaving, tile making, beadwork, hairstyles are all forms of geometry.

The concept of limit of functions will be more interesting if the students understand the limit as tends to infinity as the state of an idea after a very long time. Thus he will discover that it is really useful as a topic since, he will always have to consider the long time effect of a decision or plan before embarking on it. Linking mathematics topics to real life would boost the teachers teaching methodology and enhance understanding by students (Ngannu, 2001). Mathematics teachers are encouraged to match practical with theoretical contents to ease students' comprehension and assimilation of topics taught in mathematics.

2.3 Empirical Studies

2.3.1 The Use of Teaching Aids

Adeluku (2012) investigated the influence of instructional materials in teaching and learning of mathematics in secondary schools. The effective uses of instructional materials by mathematics teachers go a long way to stimulate and sustain students' interest in mathematics. Their effective use helps in reducing the level of obstruction in teaching a topic i.e. they concretize the abstract nature of mathematics. They also stimulate students' imagination and help them retain the concepts learnt. Teaching aids should be provided for mathematics teachers. The teachers, in turn, should utilize these aids, involving the students in their use. The teacher should also improvise some of the teaching aids by using local resources. Maruff and Amos (2011) examined the effect of using standardized and improvised instructional materials on academics achievement of secondary schools mathematics in Nigeria.

2.3.2 Availability of Instructional Materials and Environments as Factors Affecting the Teaching and Learning of Mathematics

Instructional material and the learning environment are one of the major elements in teaching and learning of mathematics. The effective uses of instructional materials by mathematics teachers go

a long way to stimulate and sustain students' interest in mathematics. Their effective use helps in reducing the level of obstruction in teaching a topic i.e. they concretize the abstract nature of mathematics. They also stimulate students' imagination and help them retain the concepts learnt. Teaching aids should be provided for mathematics teachers. The teachers, in turn, should utilize these aids, involving the students in their use. The teacher should also improvise some of the teaching aids that he can by using local resources. The influence of a teacher's attitude toward any subject, (but particularly mathematics) on that of his students cannot be over- emphasized.

The mathematics textbook is a basic tool in the teaching and learning of mathematics. In most cases, it is the main resource material, being used as a guide in the teaching programs. Since this is the case, it is important that mathematics textbook must be of good standard that can enhance the teaching and learning of mathematics.

Apart from textbook mathematics lesson needs to be enriched with teaching aids like concrete materials, pictures, demonstrations etc. to help students' comprehension. Unfortunately, such are usually not available either due to teacher's indifference or lack due to found to provide such environment. These further complicate things for students who have always complained that mathematics is too abstract. Also time is not often available for the use of instructional material in the teaching and learning of mathematics (Wiseman 2004)

2.3.3 Over-Population of Classrooms

Mathematical learning and teaching requires giving individual attention to learners, as one learner's problems to comprehend may be different to another. In the past such assistance could easily be offered because classroom population was sizable, usually between 25 and 30 students in a class. Since the launching of Universal Primary Education (UPE) in the seventies, however, school enrolments soared up, and classroom population doubled or tripled. With about 60 to 70

students in a classroom, it becomes impracticable to offer individual assistance to students, and they have to make do with what they can assimilate during the general teaching.

2.3.4 Cognitive Demand for Mathematics Learning

By its nature, mathematics requires that students be able to think through and get a lot to practice in solving problems, this calls for concentration and involves spending time on the part of the students. Many students are not prepared to make this sacrifice so they are easily discouraged with learning mathematics.

2.3.4 Lack of mathematical laboratory

The learning of mathematics like other science subject required a proper equipped laboratory for effective learning of it. Students and even mathematics teachers see mathematics as an abstract subject due to the lack of mathematics laboratory. Laboratory helps to give concrete understanding of any subject. The teaching of the concept of pie (π) required practical prove instead of just saying that π is 3.142. for proper understanding of the concept (π) , it needs to be experimented by the students under the supervision of the teacher for clear understanding of the concept. (Omajemite 2014) For mathematics to be well understand by the learners especially at the primary and secondary level of education in Nigeria. To remove this abstractness from the subject, mathematics concepts must be taught using instructional media which will make mathematics real to the learners.

2.3.5 The Mathematics Teacher Should Encourage Students' Participation in Mathematics Lesson

To encourage, generate and maintain students' interest in mathematics, the teachers should involve students in relevant mathematical activities inside and outside the classroom. The student should

be made to carry out the activities themselves. Absence of students' participation makes the lesson boring and unexciting.

According to Kingsley (2013), the cause of the widespread low-level performance in mathematics of secondary school students could be largely ascribed to mechanical and uninteresting teaching due to noninvolvement of learning in the teaching processes. This traditional pattern of teaching mathematics has been identified as being ineffective and as one major factor responsible for poor performance of students in materials. Student's participation in mathematics lesson is henceforth recommended aimed at improving teacher's performance in the classroom.

2.4 Summary of Literature Reviews

Mathematics as a subject has been acclaimed to be very important both to the understanding of other subjects and to the economic and technological development of any nation. Ironically, it is a subject that is most dreaded by many students and in which most of them perform poorly. A number of factors are responsible for this. Attention need to be paid to such factors by all concerned with education with a view to breaking the barrier militating against both student interest and their satisfactory performance in it.

This work highlight many factors that affect effective teaching and learning of mathematics in secondary are:

1. Inadequate supply of qualified teachers
2. Lack of instructional aid for the effective teaching and learning of the subject.
3. Poor remunerations of mathematics teachers
4. Poor Environment and nature of the classroom used for the teaching of mathematics
5. Lack of laboratory Since Mathematics is the very basis of all sciences and technology, and therefore, of all human progress. Therefore, if we must develop technologically

and in our economy, we must put functional and technology policies in place. We must place mathematics in its proper perspective and correct those factors listed above and. This can only be achieved by ensuring that mathematics teachers are efficient and effective. We have to redirect our priorities and resources towards the implementation of the strategies highlighted in this paper since secondary school mathematics forms the gateway to the study of mathematics in our tertiary institutions, we must develop it now.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter discusses the procedures used in this research under the following sub-headings; Research Design, Population of the study, Sample and Sampling Technique, Research Instrument, Validation of Research instrument, Procedure for Data Collection and Data Analysis Techniques.

3.1 Research Design

The type of research design adopted in this study is a descriptive research design. Descriptive Survey method was the appropriate method for obtaining data needed for the study through the administration of questionnaire.

3.2 Population of the Study

The target population of this study consists of SS2 Students and Staff and the targets of about 70 respondents from the teachers and students. Two (2) secondary School were chosen for this study, they are Ahmadu Bahago Secondary school and Bosso Secondary School.

Table 3.2.1: Distribution Population by Staff and Students

SCHOOL	NO. OF STAFF	NO. OF STUDENTS
Ahmadu Bahago Secondary School	5	30
Bosso Secondary School	5	30
TOTAL	10	60

3.3 Sample and Sampling Techniques

A total of Thirty (30) students with staffs were selected randomly from Bosso Secondary School and Ahmadu Bahago Secondary School. The sampling Technique is represented below;

Table 3.3.1: Sample Distribution of Questionnaires

SCHOOL	NO. OF STAFF	NO. OF STUDENTS
Ahmadu Bahago Secondary School	5	10
Bosso Secondary School	5	10
TOTAL	10	20

3.4 Research Instrument

The main research instrument was a questionnaire designed by the researcher based on the problem of the study. The questionnaires were used to extract information from the respondents on the Factors Affecting the Effective Teaching and Learning of mathematics in secondary school in Bosso Local Government Area of Niger State. The questionnaire was designed for students and staffs and was divided into three sections. The section A which contains the bio-data part and section B which contains the teacher's response and section C which also contain the student response with Yes and No responses item for each section.

3.5 Validation of Research Instrument

The content of the research was validated by two lecturers from science education department to confirm if the items are able to provide answers to the research question asked.

3.6 Reliability of Research Instrument

After taking permission from the school head, the instrument was administered to the students and was retrieved immediately after completion. The reliability of the research instrument was determined by selecting secondary school students from the same school.

3.7 Method of Data Collection

The data collected from the distributed questionnaires were converted to percentage for clear and easy interpretation of data. The frequency of the total responses were compared with the frequency of the total number of NO responses.

3.8 Method of Data Analysis

Excel application was used to analyze the data collected. The process involve coding of data, sorting and conclusion was drawn. This helped the researcher to make description of the data collected from the field based on research objectives and derived conclusion on what to take regarding its usefulness.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Data Presentation

From the data generated from the questionnaire distributed, the following data were obtained:

Table 4.1: Gender of respondent

Gender	Frequency	Percent (%)
Male	31	52
Female	29	48
Total	60	100

Table 4.1 shows the gender of the respondents in which 52% respondents are male and 48% respondents are female. This implies that there are more responses from male than female.

Table 4.2: Age of the respondent

Age	Frequency	Percent (%)
15-20 years	0	0
21-30 years	27	45
30- Above Years	33	55
Total	60	100

Table 4.2. 0% falls under age group of between 15-20 years, 45% falls under age group of 21-30years and 55% falls under age group of 30 –above years.

Table 4.3: Qualification of Teachers in Bosso Secondary School

Qualification	Frequency	Percent (%)
Masters	3	10
Degree	15	50
Diploma	2	7
NCE	10	33
Total	30	100

From the table above, 50% of the respondent in Bosso secondary school has degree, 33% have NCE, 10% have masters and 7% have diploma.

Table 4.4: Qualification of Teachers in Ahmadu Bahago Secondary School

Qualification	Frequency	Percent (%)
Masters	2	7
Degree	13	43
Diploma	6	20
NCE	9	30
Total	30	100

Table 4.4 shows the qualification of respondent in Ahmadu Bahago secondary school in which the highest percentage is degree with 43%, follow by NCE with 30%, diploma with 20% and the lowest percentage is masters with 7%.

Table 4.5: Work Experience of the Respondent in Bosso Secondary School

Years	Frequency	Percent (%)
Below 5 years	5	17
6- 10 years	6	20
11- Above Years	19	63
Total	30	100

Table 4.5 shows the work experience of the respondent in Bosso secondary school. 63% have work experience of 11 and above, 20% have 6-10years work experience and 17% have below 5years work experience.

Table 4.6: Work Experience of the Respondent in Ahmadu Bahago Secondary School

Years	Frequency	Percent (%)
Below 5 years	6	20
6- 10 years	9	30
11- Above Years	15	50
Total	30	100

Table 4.6 shows the work experience of the respondent in Ahmadu Bahago secondary school. 50% have work experience of 11 and above, 30% have 6-10years work experience and 20% have below 5years work experience.

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Table 4.7: showing response of those that like mathematics in Bosso Secondary School

	Frequency	Percent (%)
YES	9	30
NO	21	70
Total	30	100

Table 4.7: Shows the respondent of those that like Mathematics in Bosso secondary school. 30% of the students like Mathematics while 70% do not like mathematics.

Table 4.8: showing response of those that like mathematics Ahmadu Bahago Secondary School

	Frequency	Percent (%)
YES	14	47
NO	16	53
Total	30	100

Table 4.8: Shows the respondent of those that like Mathematics in Ahmadu Bahago Secondary School. 47% of the students like Mathematics while 53% do not like mathematics

Table 4.9: showing respondent responses based on the difficulty in mathematics Bosso Secondary School

	Frequency	Percent (%)
YES	25	83
NO	5	17
Total	30	100

Table 4.9: shows the respondent of student towards difficulty in mathematics a difficult in Bosso Secondary School.

Table 4.10: showing respondent responses based on the difficulty in mathematics in Ahmadu Bahago Secondary School

	Frequency	Percent (%)
YES	23	77
NO	7	23
Total	30	100

The table above shows that 77% of the students says Mathematics is a difficult subject while 23% said no in Ahmadu Bahago Secondary School.

Table 4.11; the table below shows the response of the students that study mathematics at home in Bosso Secondary School

	Frequency	Percent (%)
YES	10	33
NO	20	67
Total	30	100

Table 4.11 shows that 33% of the students agrees Mathematics is a difficult subject while 67% disagree it is not a difficult subject in Bosso Secondary School.

Table 4.12: the table below shows the response of the students that study mathematics at home in Ahmadu Bahago Secondary School

	Frequency	Percent (%)
YES	12	40
NO	18	60
Total	30	100

Table 4.12. 40% of the students studies Mathematics at home while 60% of the student does not study Mathematics at home in Ahmadu Bahago Secondary School.

Table 4.13: showing the students responses based on the classroom conducive for learning in Bosso Secondary School

	Frequency	Percent (%)
YES	9	30
NO	21	70
Total	30	100

Table 4.13 shows that 30% of the student responses shows that the classroom is conducive for learning while 70% said it is not conducive for learning in Bosso Secondary School.

Table 4.14: showing the students responses based on the classroom conducive for learning in Ahmadu Bahago Secondary School

	Frequency	Percent (%)
YES	7	23
NO	23	77
Total	30	100

Table 4.14: About 23% of the student responses show that the classroom is conducive for learning while 77% said it is not conducive for learning in Ahmadu Bahago Secondary School.

Table 4.15: showing responses based on enough seats in the classroom in Bosso Secondary School)

	Frequency	Percent (%)
YES	26	87
NO	4	13
Total	30	100

Table 4.15 responses show that 87% have enough seat in class while 23% do not have enough seat in the classroom in Bosoo Secondary School.

Table 4.16: showing responses based on enough seats in the classroom in Ahmadu Bahago Secondary School

	Frequency	Percent (%)
YES	24	80
NO	6	20
Total	30	100

Table 4.16 shows that 80% have enough seats in class while 20% do not have enough seat in the classroom in Ahmadu Bahago Secondary School.

Table 4.17: showing responses based on enough ventilation in the classroom In Bosso Secondary School

	Frequency	Percent (%)
YES	23	77
NO	7	23
Total	30	100

Table 4.17 shows that 77% of the students responded to having enough ventilation in the classroom while 23% of the responses were no in Bosso Secondary School.

Table 4.18: showing responses based on enough ventilation in the classroom In Ahmadu Bahago Secondary School

	Frequency	Percent (%)
YES	26	87
NO	4	13
Total	30	100

Table 4.18 shows that 87% of the students responded to having enough ventilation in the classroom while 13% of the responses were no in Ahmadu Bahago Secondary School.

Table 4.19: showing responses based on if the mathematics teacher use instructional material while teaching in Bosso Secondary School

	Frequency	Percent (%)
YES	7	23
NO	23	77
Total	30	100

Table 4.19 shows that 23% of the teachers use instructional material while teaching and 77% of the teachers do not use in Bosso Secondary School.

Table 4.20: showing responses based on if the mathematics teacher use instructional material while teaching in Ahmadu Bahago Secondary School

	Frequency	Percent (%)
YES	8	27
NO	22	73
Total	30	100

Table 4.20 shows that 27% of the teachers use instructional material while teaching and 73% of the teachers do not use in Ahmadu Bahago Secondary School.

4.2 Summary of the Findings

Based on the data generated from the questionnaire distributed, the following information were obtained

1. From the data obtained from the staffs, it is clear that most of the teachers have degree qualifications and they have eleven years and above working experience.
2. The study shows that majority of the students see mathematics as a difficult subject. This is due to orientation received from their parents, peer influence and the environment they belong.
3. The teachers do not use instructional materials when teaching and this makes the student to lose interest in the subject.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The aim of the study is to find those factors affecting the effective teaching and learning of mathematics in Bosso Local Government Area in Niger State. With the data generated from the questionnaire distributed to the respondent's base on the outcome, the research work is summarized as follows:

Students sees mathematics as a difficult subject as a result, they develop poor attitude towards the learning of mathematics at their level. Most mathematics teacher lack the skills, attitude and competency required for the effective teaching of mathematics, even thou they have the required qualification as a mathematics teacher. Teaching aids which are the instruments for effective teaching and learning of mathematics are often not been used by the mathematics teacher.

Finally mathematics teachers are often not stable in one school especially those of the private school due to the low remuneration and over load of work.

5.2 Conclusion

Based on the data analysis, it can be concluded that;

Majority of the mathematics teachers in Bosso secondary school and Ahmadu Bahago secondary school were male. As to educational attainment and length of teaching experience, highest educational attainments of majority of the teachers were bachelor degrees.

It has been observed from the analysis in both Bosso Secondary School and Ahmadu Bahago Secondary School that the attitude of student toward mathematics is poor due to lack of instructional material.

5.3 Recommendations

Based on the findings of this study, the researcher therefore made the following recommendations;

The effective teaching and learning of mathematics should be encouraged by the teachers, the school authority and the Nigerian government at all level by providing all the required equipment & facilities such as instructional material and good textbooks. Mathematics textbook should be provided free and available to all student at all secondary level of education.

Parent, guidance and teachers should encourage students' attitude toward the learning of mathematics. They should stop telling or orienting the students that mathematics is a difficult subject rather mathematics should be seen as a simple and easy subject to be understood by all students.

Students on their part should develop a positive mindset toward the learning of mathematics, by studying mathematics on a regular basis. They should never see mathematics as a difficult subject, rather an easy and simplest subject among all subjects.

Students and teachers should improve their attitude, Government, school owners and parent should facilitate teaching and learning of mathematics

Finally, mathematics teachers on their part should develop a positive interest towards the teaching of mathematics by using the appropriate method and instructional material required for effective teaching and learning of mathematics at the secondary school level of education.

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APPENDIX

Federal University of Technology Minna, Niger State.

Dear participant,

This survey is to determine the Factors Affecting Effective Teaching and Learning of Mathematics in your school. Please make sure to tick (✓) the appropriate answer. The data collected will only be used for the purpose of the research.

SECTION A

Mark (✓) in the appropriate column to indicate your responses

Sex: Male () Female ()

Age: 15-20() 21-30() 30 and above ()

Class (option): Science () Arts () Social Science ()

School Name.....

SECTION B

S/N	Items	Yes	No
	Teacher Qualifications		
1	Do you have Masters in Education?		
2	Do you have Degree in Education?		
3	Do you have Diploma in Education?		
	Working Experience		
4	Below Five (5) years		
5	Six to Ten (6-10)years		

6	Eleven (11) years and above		
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SECTION C

STUDENTS ATTITUDE

1	Do you like Mathematics?		
2	Is Mathematics a difficult subject?		
3	Do you study Mathematics at home?		
4	Is your classroom conducive for learning?		
5	Is there enough seat in your classroom?		
6	Is there enough ventilation in your classroom?		
7	Do your Mathematics teacher use instructional material while teaching?		