

**A CRITICAL ANALYSIS OF THE CAUSES OF MASS FAILURE IN  
MATHEMATICS IN SENIOR SECONDARY SCHOOLS IN MINNA  
MUNICIPAL, NIGER STATE**

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## **ABSTRACT**

*This research work was conducted to Critically analyze the causes of the mass failure in senior secondary schools in Minna Municipal, Niger State was used as a case study. The aims of this study were to: Determine the attitudes of mathematics teachers towards students learning of mathematics, determine the socio economic background of the students, and to determine the attitude of students towards the nature of learning mathematics in four different secondary Schools. Survey research design was adopted for the study. The population of the study comprised of (10,240) students in senior Secondary schools (SS 2) Minna Municipal, Niger State out of which a sample size of 200 were drawn from four different school, using simple random sampling techniques. Structured questionnaire were used to obtain relevant data. The instrument was subjected to content validity measurements which involves face validity and predictive validity by the experts in measurement and evaluation. The reliability of the instrument was established at 0.72. Answer to questionnaire were analyze using mean and standard deviation. It was recommended among others that, qualified teachers should be employed and already employed teachers should endeavor to go for certification to keep them up to par with development and other means of better learning especially in mathematics.*

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Mathematics globally, is recognized as the most important subject in most fields of human endeavor. Its usefulness in science, technological activities, commerce, economics, education and even humanities is almost at par with the importance of education as a whole. This implies that to function well in the society and in this era of technological age, one must possess relatively good mathematics knowledge (Kiplagat, Role & Makewa, 2012). Mathematics is the science of structure, order, numbers, space and relationships with counting, measuring and describing of shapes and objects. It qualifies in its own right as a science, but it is often regarded as a language of and a link between all the sciences (Umameh, 2011). The author adds that, mathematics is a body of knowledge that opens up the mind to logical reasoning, analytical thinking and the ability for creative thinking, deep focusing and clarity of thought and precision. It can be seen as the hub on which all scientific and technological studies find their bearings. In pure sciences it is the basis and language of study, in applied sciences and technology it is an indispensable tool of analysis, with the social sciences it is a scaffold and for the Arts the light that gives consistency and completeness to its study.

There are several branches of Mathematics that include algebra which has abstract algebra, modules, vector spaces, combinatory, Number theory which include: calculus, real and complex analysis, vector and tensor analysis, differential equations and functional analysis; Geometry includes Euclidean, geometry, affine, metric, projective geometry, discrete geometry, differential geometry and algebraic geometry. Foundations are logic, computability, recursion theory, set theory, category theory and Applied mathematics include probability, statistics, game theory system and control theory and computer science has been greatly extended to politics, stock market, financial calculations (like budget), population, competition

and even as a prestige (Usman & Ojo, 2014). Mathematics helps learners to understand the environment and to give accurate account of the physical phenomena around every person. This means that no other subject forms a strong binding force among various branches of science as mathematics does and without it, knowledge of the sciences often remains superficial. Learning of mathematics in schools represent first, a basic preparation for adult life and secondly a gateway to a vast array of career choices. Learning of Mathematics is essential for the preparation of an informed citizenry and for continuous production of highly skilled personnel required for industry, technology and science. The progress of any nation depends upon her scientific and technological advancement which can only be built on a sound mathematical education capable of making the citizens effectively functional in the natural and applied sciences. The study of Mathematics therefore will go a long way to “equip Pupils to live effectively in our modern age of science and technology and enhance performance in the subject (Umameh, 2011).

Globally, mathematics is regarded as one of the most important subjects in the school curriculum worldwide. It is seen as subject that has direct correlation with other subjects, particularly with science and technology (Federal Republic of Nigeria, 2013; Umameh, 2011). The subject cuts across primary and secondary levels of education. Mathematics remains one of the most difficult subjects in schools as perceived by students. There is general impression that mathematics is difficult by its very nature and because of this impression, majority of students have phobia for it (Ale, 2007; Ampadu, 2012; Ojimba, 2012; Onah, 2010; Ozochi, 2007; Saad, Adamu & Sadiq, 2014).

Public examination was made necessary when the educational sector was clogged after the industrial revolution. It is now used as prerequisite examination to move students from one educational level to another (Udofia & Udoh, 2012). The essence of public examination is to provide unvarying assessment to all candidate who were exposed to a given curriculum. The



councils saddled with the responsibilities of conducting this examination use standard scores to report the performance of the candidates. In Nigeria, public examinations are taken by candidates in the terminal classes for certification, namely: primary six, junior secondary and senior secondary schools. The aims of secondary school education in Nigeria, as stated in the National Policy on Education (FGN, 2004), are to prepare the individual child for (a) useful living in the society; and (b) for higher education. Senior secondary school certificate examinations are taken at the end of six years academic tenure of students in secondary school. The School certificate examinations, which determine the placement of Nigerian students in higher learning and/or employment, are of particular concern (Ololube, 2008b). One of the major problems facing the educational system in Nigeria is the abysmal failure of student in public examination; particularly at the secondary level of education. The situation is so pathetic that stakeholders keep on wondering why this level of education has persistently failed to meet the yearnings and aspirations of the society (Ale, 1992; Saad, Adamu & Sadiq, 2014).

Internationally today, scientific methods pervade literally field of human endeavour and play a fundamental role in economic development of any country. In our modest quest toward scientific and technological advancement and following our aspiration to be among the first twenty economies in the world by the year 2020 (Obioma, 2009; NERDC, 2007, Abe & Popoola, 2015) we need, as a matter of necessity nothing short of good academic performance of our youths in mathematics at all levels of education. The West African Senior Secondary Certificate Examination is a school-based ordinary level school certificate examination conducted by the West African Examinations Council (WAEC) in Nigeria every May/June. According to Asuru (2006), the West African Examination Council is one of the major examining bodies in Nigeria which is so much entrusted for its transparency and accountability in its ability to conduct examinations for senior secondary schools final year students, the body has gone so far to all west African countries including Nigeria, Ghana, Gambia, Sierra Leone e.t.c

## **1.2 Statement of the Problem**

In spite the importance of mathematics in education especially in secondary school, effort has been made by teachers, parents, governments at all levels to promote students interest in Mathematics. But, many students still fail mathematics in termly examinations .which is a call to be emphasized on in order to counter the causes of failures in mathematics by most students, does this have to do with teachers attitudes toward students learning mathematics, socio economic background of the students and attitudes of students towards the nature of learning mathematics. This study will be made to find the causes of this failures in mathematics especially in some various schools and find a strategic tools to bring a solution to the problem in Minna Municipal, Niger State.

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

The aim of this study is to critically analyze the causes of student's failures in mathematics in secondary schools as reported by students themselves with the following objectives.

1. To determine the attitudes of mathematics teachers towards students learning of mathematics.
2. To determine the socio -economic background of the students.
3. To determine the attitudes of students towards the nature of learning mathematics.

## **1.4 Research Question**

- i. What are the attitudes of mathematics teachers towards students learning of mathematics.
- ii. What are the socio economic background of students in Learning mathematics
- iii. What are the attitudes of students towards the nature of learning mathematics

### **1.5 The Significance of the Study**

The findings of this study may be beneficial to the following stakeholders:

Students, teachers and ministry of education.

Student: students in secondary school will find this study so useful as it will be a mechanism to be able to counter failures especially in mathematics.

Teachers: teachers in secondary schools will see this study so useful as it will be a remedy to help them reduce students' failure in mathematics and this will also show them the right tools and approach in solving these problems.

Since an excellent student is a pride to his parents and nation, no nation or parents will find joy in seeing his/her ward failing so it will act as a remedy to sanitize failures of students in our society and will help parents and government to be effective in playing their vital role in contribution to their ward education.

### **1.6 The Scope of the Study**

The scope of this study is restricted to secondary schools students in Minna Municipal, Niger state. The class that was used for this study is SS2 mathematics from four secondary schools. This study will cover A Critical Analysis of the Causes of Mass Failure in Secondary schools Minna Municipal Niger State.

### **1.7 Operational Definition of Terms**

The following terms used in this study are operationally defined as follows:

**i. Failure:** State or condition of not meeting desirable or intended objectives.

- ii. Parental Role:** The expected behavior or responsibility of a parents to their ward
- iii. Students efficacy:** the ability of the student to produce a desired effect under ideal testing condition
- iv. Analysis:** A process of breaking down and study the parts
- v. Critical:** marked by tendency to find and call to errors and flaws

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Conceptual frame work

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' socio economic backgrounds. Teaching methods are such as teacher centered method, students' centered 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.

##### 2.1.1 Parental Role and How it Affects Students Performance

The main essence of a school is to impart education to the students. It is where parents send their kids to help them learn the various skills and information that will be needed to help them build a future and a career. These skills can range from academic skills of mathematics, reading, writing, history, etc. to even social skills of communication, social ethics, etc.

By virtue of this understanding, it has gathered that it is primarily the school that u data proves that the home atmosphere and parental involvement plays a crucial role in the growth and performance of a student. For instance, it has been proven time and again

that reading improves greatly when parents and children read together at home. The action of daily reading enhances the child's reading abilities. Once the child starts attending a regular school; most parents have a lot of educational aspirations for their children's academic growth. Over the years, research has proven that the academic success of students linked to the values and aspirations that they share with their parents. These shared aspirations serve to motivate the students, as the parents and students set learning goals together. These do not necessarily have to be lofty goals but can also be small and simple goals such as improving the grade by a certain percent. Children who receive support their parents develop an appropriate mindset, motivation, and self-discipline at school. Disengaged parents who are not interested in the academic life of their kids often promote school failures. Create of a generation of students not interested in studying or in gaining information. For students who have supportive parents guiding them at home, it has noticed that these students also are more likely to enjoy school. Thus, parental involvement and support at home not only enhance academic performance, but it also has a positive influence on a student's mindset, attitude, and behavior. Parents constant involvement affects the child's attitude toward school and classroom conduct. For instance, these students have a better attendance record as they have supportive parents who help prepare them for school every day. Similarly, these students have a better performance when completing homework or submitting assignments on time because of the help and guidance available at home. However, students who lack supportive parents have to struggle on their own. This not only affects their performance but at the same time, it also came negatively impacting their self-esteem. Parental involvement also has a positive influence on student attitude and behavior. It has observed that children on disengaged parents have a negative attitude in the classroom and are more disruptive because of the

lack of consequences at home. All this is because of poor parental support, which is also related to parental monitoring. When the student gets monitored at home for their behavior, then they behave appropriately in school, pay more attention in the classroom, and eventually perform better in the studies. The parents who are involved in the day to day learning of their kids are more aware and have a greater appreciation for the challenges that teachers face in the classroom. They appreciate the teachers, and this goes a long way in boosting teacher morale. The constant communication between home and school helps a teacher to know a student personally, understand their challenges, and guide them in a better manner. Becoming involved in their children's education gives parents a better understanding of the school curriculum and activities. They are more aware of the quality of education their child is receiving and can enhance it further by adding extra classes or tuitions if needed. This helps to improve the performance of the students and makes them confident learners.

### **2.1.2 Governmental role and how it affects students' performances**

Education is today largely paid for and almost entirely administered by governmental bodies or non-profit institutions. This situation has developed gradually and is now taken so much for granted that little explicit attention is any longer directed to the reasons for the special treatment of education even in countries that are predominantly free enterprise in organization and philosophy. The result has been an indiscriminate extension of governmental responsibility.

The role assigned to government in any particular field depends, of course, on the principles accepted for the organization of society in general. In what follows, I shall assume a society that takes freedom of the individual, or more realistically the family, as its ultimate objective, and seeks to further this objective by relying primarily on voluntary exchange among individuals for the organization of economic activity. In

such a free private enterprise exchange economy, government's primary role is to preserve the rules of the game by enforcing contracts, preventing coercion, and keeping markets free. Beyond this, there are only three major grounds on which government intervention is to be justified. One is "natural monopoly" or similar market imperfection which makes effective competition (and therefore thoroughly voluntary exchange) impossible. A second is the existence of substantial "neighborhood effects," i.e., the action of one individual imposes significant costs on other individuals for which it is not feasible to make him compensate them or yields significant gains to them for which it is not feasible to make them compensate him — circumstances that again make voluntary exchange impossible. The third derives from an ambiguity in the ultimate objective rather than from the difficulty of achieving it by voluntary exchange, namely, paternalistic concern for children and other irresponsible individuals. The belief in freedom is for "responsible" units, among whom we include neither children nor insane people. In general, this problem is avoided by regarding the family as the basic unit and therefore parents as responsible for their children; in considerable measure, however, such a procedure rests on expediency rather than principle.

### **2. 1.3 Managements and teachers effects on students' performance**

Mathematics teachers had on several accounts been judged as the main determinant in the success or failure of students in the subject. This is true for many reasons; according to Idowu (2015), "they are the main custodians of students, the way and manner they perform this role is important" (p. 4). Because of this, mathematics teachers are expected to have the required knowledge necessary for teaching as well as the ability to disseminate such knowledge appropriately that will result in learning. Mathematics teachers, according to Soer (2009), should be able to communicate the required knowledge in a clear, informative and precise manner to their students. This, unfortunately, according to Okafor and Anaduaka (2013), is not



being done by the mathematics teachers. According to both researchers, most teachers are not ready to go the extra length in their teaching.

In a study conducted by Avong (2013), shortage of qualified mathematics was judged to be the most contributing factor to poor performance by her participants in a study conducted in a remote in Kaduna state. Teachers' attitudes had also been linked to students' poor performance in a study conducted by Osunde and Izevbigie (2006). In this study, 400 Nigerian post primary school teachers' attitudes toward the teaching profession were sorted. They discovered that issues like delay in payment of salaries and poor financial remuneration contributed to a low attitude of teachers in the teaching profession.

The school population, according to Korau (2006), today, is in the thousands compared to mere hundreds many years ago. Consequently, schools are now overcrowded with some classrooms having too large a size that may seriously compromise mathematics teaching and learning. A student-teacher ratio of 40:1 may be considered adequate, but according to Umameh (2011) some schools in Nigeria are noted to have a 100:1 ratio, a situation that will never lead to any meaningful learning of mathematics no matter how capable the mathematics teacher may be. According to Asikhai (2010), the government recommendation for student-teacher ratio was 50:1, but it is obvious that this ratio can never be met with the astronomical increase in population experiencing currently.

Also, another issue raised that equally affect students' performance is the distance from most students' homes to their schools. This adversely affects not just fatigue, but sometimes absenteeism, which, according to Duze (2005), could lead to truancy and eventual dropout by some students. Evidence from research has also showed that long distances travelled to school are among the major reasons why students performed poorly and eventually dropped out of schools (Arubayi, 2005; Onakpoma, 2008). Furthermore, studies indicate that the beliefs teachers hold regarding the causes of failure affect their approach toward low achievers, the

stringency of their assessments (Matteucci & Gosling, 2004), and the goals they pursue through educational practices (Reyna & Weiner, 2001; Weiner, Graham, & Reyna, 1997). Specifically, when relating to academically unsuccessful students, teachers tend to express more compassion and less anger when they attribute students' low achievement to low ability (Georgiou, Christou, Stavriniades, & Panaoura, 2002). However, when teachers attribute low achievement to a lack of commitment or effort, they choose more severe, retributive educational interventions (Matteucci, 2007). ...

However, when teachers attribute low achievement to a lack of commitment or effort, they choose more severe, retributive educational interventions (Matteucci, 2007). In addition, teachers are less willing to accept responsibility for student failure if they believe that the student has not made enough of an effort (Georgiou et al., 2002). ...

Following this were factors such as teachers being unprepared regarding teaching methodologies, students' insufficient commitment, and laziness as well as parents' lack of commitment towards helping their children at home. These findings are, to a certain extent, consistent with other studies related to teachers' perceptions of factors linked to school failure (Georgiou et al., 2002; Petersen, 2010). For example, in a survey conducted among teachers from 31 elementary schools in Serbia, it was concluded that teachers perceived students' lack of interest as one of the key causes of grade repetition.

#### **2.1.4 Students self-efficacy and how it affects student performance**

Self-efficacy as pupil's factor play a key role in academic learning, and has a positive correlation with the pupils' performance in mathematics. Self-efficacy refers to the belief pupil's hold in their capabilities to accomplish tasks required for learning (Gutiérrez-Doña, Lippke, Renner, Kwon & Schwarzer, 2009). Self-efficacy refers to a person's belief that he/she can complete a specific target task. Self-efficacy has been found to play a key role in many academic learning applications, such as: self-efficacy in computer skills, engineering skills among others. The

higher self-efficacy the pupil have, the better performance recorded by pupil in mathematics. Self-efficacy is the belief individuals hold about their capability to succeed within a specific domain or at a particular task; is a motivational construct that plays an important role in pupil's academic success (Bandura, 2015).

In learning mathematics, self-efficacy has been shown to predict both the pursuit of college mathematics degrees and actual mathematics performance (Lapan, Shaughnessy & Boggs, 2016). Self-efficacy of pupils may depend on contextual factors such as sex, academic domain, cultural context, age, teacher factors and classroom contextual factors. Self-efficacy has played a key role in academics of male and female pupils as well as male and female pupils' academically. In fact, self-efficacy has been shown to be a stronger predictor of mathematics performance than many other variables, such as self-concept, anxiety, perceived usefulness of mathematics and mathematics background. However, self-efficacy often leads to a self-fulfilling prophecy, where individuals perform as they would expect (Pajares, 2010). Self-efficacy is a person's beliefs in his perfection of skills in a given context to do successful performance.

## **2.2 Theoretical framework**

Plato and Socrates' Perspectives on teaching and learning methods 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 (Freire, 1970) —Pedagogy of the Oppressed|| he suggested that educational activities should be conducted under existing experiences of the participants (Maganga, 2013).

Teachers should discuss with their students and help them in re-labeling or generating new ideas (Smith 2002). 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 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 senior secondary schools in, Minna Municipal, Niger State 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 experience Julius Nyerere

According to Nyerere (2017), the need for curriculum change was insisted in both content and pedagogical approaches. This means that, there was a need for a curriculum to be tailored on the teachers' and students' daily life and the classroom practices need to connect students'

real life what Nyerere called —praxis|. Methods such as student’s centred methods were the proposed one (URT, 2010). In order to achieve this in mathematics today, teachers need to actively engage learners in their teaching and learning process to make them practically learn mathematics

### **2.3 Empirical Studies**

According to Smith (2014), family background influences student performance senior secondary schools in, Minna municipal, Niger State. it is indentified that students’ cultural backgrounds differ and can affect students’ influences to study mathematics. Furthermore, students from different cultural backgrounds are influenced differently based upon parental experiences, interests in mathematics and cultural views and attitudes of mathematics education. Additionally, Smith’ s research indicates that students who are studying higher-level mathematics are influenced differently as compared to students who are studying lower level mathematics or choose not to study mathematics at all. One of the most stable and consistently observed phenomena (Sirin, 2015) in the field of education is the impact of students’ home background on achievement. Students whose parents have a higher level of education, a more prestigious occupation, or greater income tend to have higher achievement than students whose parents have a lower standing on such socio-economic status indicators. According to UNESCO (1984), a necessary condition for teachers to teach mathematics was not only to know mathematics but also to be competent in understanding the basic contents, concepts and the associated skills. The teacher must know what it means to do mathematics so as to make students achieve good performance. Teachers must consider student’ s perceptions and the ideas the student brings into the classroom. It was therefore important that teachers should find what their students already know about the concepts or the principles that are to be introduced. According to Limb & Fullarton (2011), there was an importance of classroom, teachers and school factors on students’ performances in

mathematics senior secondary schools in, Minna municipal, Niger State. Some of the school factors are gender, family cultural resources, language background and attitudes towards Mathematics, which have significant negative effect on students' performance. Limb & Fullarton (2011), in the study made at US and Australia on TIMSS (Trends in International Mathematics and Science Study) they found that students with more family cultural resources such as books at home and those from two parent rather than single parent families tend to have higher achievement levels in mathematics. Students from English speaking families have good performances in Mathematics than non-English speaking families. In classes where teachers set more homework they have associated with higher levels of performance. They supported that grouping practices employed by teachers shape the classroom learning environments and improve students' performance.

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.

The study made by Tshabalala & Ncube (2013), revealed that student's performance in Mathematics was mainly affected by teaching methods, 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 in Minna Municipal 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, 2017) 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 (2015), and Quimbo (2013), observed that teachers who have mathematical knowledge, good attendance and participate in programs development have the students with good performance in Mathematics material resources, teacher behavior, grounding in the subject at lower levels as well.

#### **2.4 Summary of literature review**

This chapter has presented the conceptual framework, theoretical framework and empirical studies that informed about the study in Minna Municipal Niger State. In conceptual framework the researcher has given out assumptions on factors that have an influence on student's performance in Mathematics. These assumptions have been enlightened with theoretical and empirical literatures reviewed. It was noticed that students' performance is the function of teaching and learning methods, teachers' -students' relationship, school learning environments and school management system.



Lastly the research gap was developed whereby the researcher wanted to assess factors leading to poor performance in mathematics subject for which findings were generalized to other schools in Minna Municipal Niger.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Research Design

The survey research design was adopted for this research because is best served to answer the questions and the purposes of the study. The survey research is one in which a group of people or items are study by gathering and analyzing data from only a small number of individuals or items which are believed to be representative of the entire group under study. Alternatively, a survey research can be seen as one in wish only a representative portion of the population is studied, and findings from the studies are expected to be generalized to the entire population (Nworgu 1991:68). Similarly, Mcburney (1994:170) defined a survey research as accessing public opinion or individual characteristic by the use of questionnaire and sampling methods.

#### 3.2 Population of the Study

The target population of this study includes all the Public Secondary Schools in Minna Muncipal. there are twenty-eight registered Secondary Schools in Minna Municipal, and ten thousand two hundred and forty (10,240) SSII Students (Ministry of Education, Minna 2021)

#### 3.3 Sample and Sampling Techniques

Since a research cannot cover the whole population targeted due to the time frame, a total sample of 200 students of the total population was selected to represent the entire population. In order to obtain the sample, a simple random sampling techniques was used in selecting four schools for the study. Out of the total population of the four selected schools which was five thousand (5000), the total number of two hundred (200) SSII Students were randomly selected for the study which is 40<sup>th</sup> percent of the total population of the four sampled schools. The names of the schools are:

<b>Names of schools</b>	<b>No. of students</b>
Zarumai Secondary School. Minna	50
Ahmadu Bahago Secondary School,	50
Bosso Secondary School, Minna	50
<u>Government Girls Science Seconary School, Minna</u>	<u>50</u>
<b>Total</b>	<b>200</b>

### **3.4 Research Instrument**

The instrument developed by the researcher for the data collection is questionnaire. Questionnaire based on students perception (QBSP).

The questionnaire based on students perception (QBSP) consisted of set of fifteen (15) items structure to provide answer to the major research question. Four (4) point scale rating: Strongly Agreed (SA), Agreed (A), Strongly disagreed (SD) and disagreed (D).

### **3.5 Validity of the Research Instrument**

Experts in Mathematics education and test and measurement validated the instrument. The validators chosen include two experts in Mathematics education and one from test and measurement all in the department of science education, Federal University of Technology, Minna, Niger State.

### **3.6 Reliability of the Research Instrument**

To test the reliability of the instrument, a trial testing of the instrument was carried out on a randomly selected five (10) male and five (8) female students making the total of ten (18)

students which were part of the targeted population but not part of the sampling size. The questionnaire based on students perception (QBSP) was administered on the students from the separate population but with similar background. Cronbach alpha formula was used to get the correlation coefficient of 0.72. Split-half method was employed in establishing the reliability of the instrument. This reliability coefficient showed that the instrument was reliable for use.

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

The researcher with two of his friends visited the selected schools to submit the letter of permission for collection of data collected from the department. The letter was presented to vice principal academic of the selected schools to seek for permission from the school authority for data collection. The letter was approved by the vice principal academic for the data collection. The questionnaire was administered, led by Mathematics teachers of each selected school to the students from the selected schools in the area of study by researcher. The students filled the questionnaire on the spot, and it was collected back from them by the researcher with his friends for data analysis.

### **3.8 Method of Data Analysis**

Descriptive statistics mainly Mean and Standard Deviation was used to answer the research questions.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND DISCUSSIONS OF RESULTS

The Data collected was analyzed by the use of descriptive SPSS. The full analysis is presented below:

#### 4.1 Age and Gender Demography of Students

Gender	Male	Female			
Frequency	88	112			
Age	17	18	19	20	21+
Frequency	21	56	83	32	8

Table 4.1

#### Research question 1

Table 4.2: What are the attitudes of mathematics teachers towards students learning of Mathematics

S/N	STATEMENT	MEAN	STD.D	DECISION
1.	Insufficient qualified Mathematics teachers causes many students to have negative interest in learning Mathematics	3.03	.891	agreed
2.	Frequent use of instructional materials in teaching mathematics helps teachers to motivate to learn Mathematics	2.92	.923	agreed

3.	Teachers do not prepare students before Mathematics agreed  Examinations	3.05	.816	
4.	Government inability to provide teaching material to school Causes students to fail Mathematics	2.88	.889	agreed
5	Mathematics teachers not able to set and lead students to agreed  learn Mathematics	3.06	.887	

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<b>GRAND MEAN</b>	<b>2.99</b>
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### Discussion

The table 4.2 above reveals that the attitude of Mathematics teachers towards students learning of Mathematics in Minna Municipal, where table 4.2 above illustrated that statement 1,2,3,4 and 5 are having means: 3.03, 2.92,3.05,2.88, and 3.06 and standard deviation: .891,.923,.816,.889 and .887 respectively. The grand mean is 2.99. which means the respondents agreed that the attitude of Mathematics teachers is a factor in students performance.

### Research question 2

Table 4.3:What are the socio economic background of the students in learning Mathematics

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S/N	STATEMENT	MEAN	STD.D	DECISIONS
1	Poor socio economic background affects student's In studying Mathematics	2.86	.932	agreed

2.	Lack of interest in Mathematics due to poor background in primary schools	3.21	.759	agreed
3.	Poor Classroom environment in Schools affected agreed students in studying Mathematics.	2.44	.860	
4.	Frequent transfer of Mathematics teachers from one agreed schools to another can affects student's learning of Mathematics	2.62	.792	
5	Inadequate learning materials has negative sequence on students attitude in learning Mathematics	2.85	.876	agreed
<b>GRAND MEAN</b>		<b>2.80</b>		

### Discussion

The table 4.3 above reveals that the socio economic background of the students in learning Mathematics, where table 4.3 above illustrated that statement 1,2,3,4 and 5 are having means: 2.86, 3.21, 2.44, 2.62, and 2.85 and standard deviation: 0.932, 0.759, 0.860, 0.792 and .876 respectively. The grand mean is 2.80, implies that the respondents agreed that socio economic background is a contributing factors to student poor performance in mathematics.

### Research question 3

Table 4.4: What are the attitudes of students towards the nature of learning Mathematics

S/N	STATEMENT	MEAN	STD.D	DECISIONS
1.	Irregular practice of students in Mathematics has contribute to their mass failure in Mathematics examinations	2.83	.967	agreed
2.	Students hate mathematics and it's affects them in learning Mathematics	3.03	.859	agreed
3.	Students on justly scaring towards Mathematics is contribute to their failure in Mathematics	2.42	.899	agreed
4.	Poor teaching methodology of some Mathematics Teachers scare students from learning Mathematics	2.76	.811	agreed
5.	The period allocated for the Mathematics most time is not appropriate for it's easier assimilation by the students	2.62	.943	agreed
<b>GRAND MEAN</b>		<b>2.73</b>		

### Discussion



The table 4.4 above reveals that the attitude towards the nature of learning mathematics, where table 4.4 above illustrated that statement 1, 2, 3, 4 and 5 are having means: 2.83, 3.03, 2.42, 2.76, and 2.62 and standard deviation: 0.967, 0.859, 0.899, 0.811 and 0.943 respectively. The grand mean is 2.73, which means the respondents agreed that students attitudes towards the nature of learning mathematics is contributing factor to students poor performance.

#### **4.2 Summary**

It can be concluded based on the findings that, the reasons behind the cause of mass failure in mathematics as mentioned and analyzed above, we agreed with our respondents that:the attitude of mathematics teachers towards students learning of mathematic, students socio-economic background of the students in learning mathematics and students attitudes towards the nature of learning mathematics among others are the reasons for massive failure of students in mathematics, and if acted upon positively, the causes of mass failure of students in mathematics will be greatly reduced otherwise it will get worse.

## CHAPTER FIVE

### SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

#### 5.1 Summary

The study accesses the causes of student's failures in mathematics based on: attitude of the teachers toward students' learning, socio economic background of the students, attitudes of the students toward the nature of learning of Mathematics. 200 questionnaires were sent to the respondents from these schools and were strictly followed up which all were collected.

The analysis of the data collected from questionnaires was done and finding from the research questions revealed that, insufficient qualified number of teachers, inadequate of learning materials, methods of teaching cause many students to have negative interest in learning Mathematics and the students' perspective about the subject which is due to phobia and un-seriousness.

#### 5.2 Recommendations

1. Subject teachers should endeavor to use effective teaching aids that will involve the students and class activities should be encouraged in mathematics.
2. It is suggested that mathematics teachers should align teaching methods with assessed learned needs and capabilities of students.
3. Mathematics teachers to consider students cultural and learning backgrounds in choosing instructional strategies
4. Students can be introduced to mathematical games software which can be practices using phones or laptops for this will boost and interest their love for the subject.
5. Mathematics clubs should be organized in school so that it will help the talented students to carry both the average and the poor ones along in the subject.

6. Students should be encouraged to give more time to learn Mathematics and not to wait till exams or test period before studying or learning.

7. Government and schools should endeavor to organize schemes like termly or yearly Mathematics competitions, seminars, and scholarship that will enhance student involvement in the subject.

8. Qualified teachers should be employed and already employed teachers should endeavor to go for certifications to keep them up-to-par with developments and other means of better learning especially in Mathematics.

### **5.3 Conclusion**

With the responses so far, students failures in mathematics are mostly accountable to: students negative perspective towards the subject, students hate mathematics and it affects them in learning since they have a perception that its difficult and the attitude of the students themselves towards the nature of learning mathematics, the background of the students, nature of the school environment, student self-effort and family economic status of the students also contributed to their failure, mathematics teachers not able to set and lead students to learn mathematics and the method of teaching make student to lose interest in mathematics which lead to poor performance of students in mathematics.

### **5.4 Suggestion for Further Studies**

The following are suggestion for further studies

1. The research work should be carried out to at least cover as many local governments in Niger state.

2. The research should be carried out in different part of the country to determine a solution to the mass failures we experienced in national mathematics exams like WAEC, NECO, NABTEB, JAMB.
3. The research is ought to be repeated to have update knowledge on students in Niger state.
4. The sample size for the research is too low because the time frame for the research was short, time lapse for the next studies should be increased so that research can cover a reasonable sample population.

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**QUESTIONNAIRE ON THE CAUSES OF MASS FAILURE IN MATHEMATICS AMONG SECONDARY SCHOOL STUDENTS**

This questionnaire is designed to analyze data on causes of mass failure in mathematics among secondary school students. Your responses will make this study either as a success or failure

**Section A**

Please supply the following personal information

1. School:.....
2. Class:..... 3. Gender:..... 4. Age:.....

**Instructions: tick appropriately the correct answer that is applicable to you.**

S/N	I T E M S	S . A .	A	D . A .	S . D . A
1	Insufficient qualified mathematics teachers causes many students to have negative interest in learning mathematics				
2	Frequent use of instructional materials in teaching mathematics helps teachers to motive to learn mathematics				
3	Teachers do not prepare students before mathematics examinations				
4	Government inability to provide teaching material to school Causes students to fail mathematics				
5	mathematics teachers not able to set and lead students to learn mathematics				
6	Poor socio economic background affects student's In studying mathematics				
7	Lack of interest in Mathematics due to poor background in primary schools				
8	Poor Classroom environment in schools affected students in studying mathematics				
9	Frequent transfer of mathematics teachers from one schools to another can affects student's to learn mathematics				
10	Inadequate learning materials has negative sequence on students attitude in learning mathematics				
11	Irregular practice of students in mathematics has contribute to their mass failure in mathematics examinations				
12	Students hate mathematics and it's affects them in learning mathematics				
13	Students on justly scaring towards mathematics is contribute to their failure in mathematics				
14	Poor teaching methodology of some mathematics teachers scares students from learning mathematics				
15	The period allocated for the mathematics most time is not appropriate for it's easier assimilation by the students				



### Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
RQ1	200	3.03	.063	.891
RQ2	200	2.92	.065	.923
RQ3	200	3.05	.058	.816
RQ4	200	2.88	.063	.889
RQ5	200	3.06	.063	.887
Valid N (listwise)	200			

### Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
RQ6	200	2.86	.066	.932
RQ7	200	3.21	.054	.759
RQ8	200	2.44	.061	.860
RQ9	200	2.62	.056	.792
RQ10	200	2.85	.062	.876
Valid N (listwise)	200			

### Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic

RQ11	200	2.83	.068	.967
RQ12	200	3.03	.061	.859
RQ13	200	2.42	.064	.899
RQ14	200	2.76	.057	.811
RQ15	200	2.62	.067	.943
Valid N (listwise)	200			