FACTORS CONTRIBUTING TO POOR ACADEMIC ACHIEVEMENT IN CHEMISTRY AMONG SENIOR SECONDARY SCHOOL STUDENTS IN GUSAU METROPOLIS ZAMFARA STATE

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RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF SCIENCE EDUCATION, FACULTY OF HUMANITIES AND EDUCATION, FEDERAL UNIVERSITY GUSAU, NIGERIA IN PARTIAL ULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE EDUCATION CHEMISTRY

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CERTIFICATION

This research work has been carefully read and approved as having met the requirement for the award of degree of Bachelor of Science Education Chemistry of Federal University Gusau, Nigeria.

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DEDICATION

We dedicated this research work to Almighty Allah (S.W.A.) and to our beloved parents.

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In the name of Allah, the most Beneficent, the most Merciful, peace and blessings of Allah be upon His Messenger, and Companions, and all those who follow his footsteps in doing good deeds until the day of reckoning. First and foremost, we would like to thank Allah the Almighty for giving us the strength, knowledge, ability and opportunity to undertake this research study and to persevere and compete it satisfactorily. Without His blessings, these achievements would not have been possible.

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ABSTRACT

This study investigated "The Factors that Contribute to Poor Academic Achievement in Chemistry among Senior Secondary Schools Students in Gusau Metropolis." The study involves two hundred (200) students and Twenty Five Teachers (25) Five from each School randomly selected from five selected secondary schools in Gusau metropolis. Two instruments were used to gather data from this study, the instrument are (1) Student Questionnaire (2) Teachers Questionnaire Three research questions were raised and analyzed using Mean and Standard Deviation and Three null hypotheses were formulated and analyzed at The result of the study revealed that Student Interest, Environmental factor, Methodology of Instruction, Availability of Teaching/learning materials, Course Content-related factors, Career Factor. Also, the study revealed interest does not significantly influence academic Achievement in chemistry. The study also showed that teacher Methodology of Instruction has significant effect on students Academic Achievement. The study recommended that government should ensure That the Schools are provide with chemistry Laboratory facilities, Teachers should endeavour to constantly seek to update their knowledge and skills through workshop, seminar and conferences. Teachers should involve all students in practical work and Field Trips as it is known that learners learn faster when a hands-on approach is used. The study comprised five chapters. chapter one deals with the background of the study comprising the introduction to the study in general, including the statement of the problem, research objectives, research question and justification for the study. in chapter two, the relevant literature was reviewed. chapter three cares the description of the methodology employed in the study while chapter four comprise the analysis of the data, presentation and discussions of the result. In chapter five, a summary of the findings were highlighted. finally recommendations arising from the findings and suggestion for further studies.

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CHAPTER ONE

The Problem

1.1 INTRODUCTION

The role of Chemistry in the development of the scientific base of a country cannot be overemphasized and Nigeria is not an exception. Yet, with increasing importance of Chemistry to the world, the performance of Nigerian students in the subject at the secondary schools remains a dismal failure. It is thus disappointing to note that the students' academic achievement in chemistry at internal examination has remained considerably poor despite the relative importance of chemistry to the society Saage (2009) Several factors have been highlighted to be responsible for poor students' performance in schools. For example Koran (2006) reported that such factors include student-factor, teacher-factor, societal-factor, governmental infrastructural problems, language problem, examination body-related variables, curriculum-related variables and home-related variables. Other factors include poor primary school background in science, lack of incentive for learning, lack of interest on the part of the students, professionally incompetent teachers at the various levels of education, large class sizes and the fear of the subjects by some students.

Nigeria adopted the use of the 6334 system of education in 1988, This involves six years of primary education, three years for Junior Secondary

Education, 3years of Senior Secondary school Education at which level the student can choose the career he/she wish to pursue at higher level of education The choice is generally among the sciences, Arts and Government and commercial areas By the end of this level, students are expected to sit for the Senior Secondary Certificate Examination which may be the West African Examination Council, or the National Examination Council, or National Business Technical Examination Board. From this level students who passé with credit passes, proceed to tertiary institutions of education for specialization in various areas of study. Such institutions include the Universities, Technical and Vocational Institutions, Health technologies, Business Education and Teacher Colleges of Education.

At the secondary school level, it is required that all students study compulsory science subjects such as Chemistry, Mathematics, Biology, Physics while English language and Mathematics is compulsory in all cases. Also the category of combinations from which students can chose include those from Arts, Commercial subjects, languages, technical subjects, information and computer studies.

The essence of teaching is to bring about positive change in the behavior, attitude and thinking of the learner. The teaching approach that the teacher adopts in order to bring about desired positive change is very important. The

traditional teacher-centered lecture (Chalk and Talk) approach, which emphasize transfer of knowledge and skills and which also tends to reward memorization, is the predominant teaching format in Nigerian secondary schools. (Chanjo et al, 1996) In this approach, the teacher talks most of the time, while the students write down notes mainly for the purpose of passing the examinations. This instructional method does not allow much room for critical analysis of issues but encourage students to reproduce back to the teacher the notes previously given in class. In this teaching approach, there is little room for interaction between the teacher and the students or among the students in the classroom. Students hardly ask questions and the teachers rarely provoke the students to ask critical questions, and the teachers too, seldom ask such critical and thought-provokes questions, Various studies have reported the use of outdated teaching methods coupled sometimes with low professional competence by the teachers. All of these factors are considered to contribute significantly to the poor teaching quality and consequently poor academic performance by the student in the schools in Nigeria. Often the standards of teacher training have contributed extensively to the incidence of unqualified teachers who teach in schools which often lack necessary equipment required to impart knowledge to the students. (Ukeje 1978).There has been an acute shortage of qualified teachers in secondary school.

In Nigeria, the students' home upbringing tends to affect their attitude to authority. Too much restriction can have an adverse effect on the learner to the extent that he/she become afraid to experiment and explore in chemistry lessons and later in life, when it is required to make individual contribution in the class he may not have the courage to do so (Lawis and Eddy 1967). Kahl (1961) showed that parental attitude toward their children were more important in predicting aspiration of students towards continuing their schooling in future. Too much pressure on students by parents can lead to poor academic achievement and dislike for chemistry. Motivating remarks can encourage student academic achievement toward chemistry. It is often recommended parents should discuss the progress of their children with their teachers so as to assist the students in their areas of difficulty.

Boocock (1972) Parents can cause academic maladjustment in their children. Koran (2006) Found that parental dominance tend to discourage the children so much to the point of failure since such parents tend to shun their responsibility to training their children at home. Such children will develop non-charlent attitude to chemistry and other school courses. Koran (2006) also observed that the population of students in a school is a factor in academic achievement. Schools are generally overcrowded and this makes it impossible for effective teaching and learning of chemistry to take place. Effective teaching can take place if the

teacher can handle the number of student effectively. Class size can affects the students learning of chemistry and thus their performance.

1.2 Statement of the problem

Chemistry is a science subject which is being taught in most all secondary schools in and outside Gusau metropolis and almost all science students offer chemistry in the state because it is essential and relevant for professions like medicine, teaching, agriculture and engineering and also chemistry is one of the five major subjects in which a credit pass is required in order to gain admission in to tertiary institutions to read science and science-related courses such institution include Universities, Polytechnics and Colleges of Educations. A great deal of effort in trying to improve academic achievement in chemistry has been witnessed since independence. Various efforts have been geared towards improving the pedagogical approach and in shaping of the chemistry curriculum. Such efforts attempted to address areas of concern that were considered to provoke or promote observed poor academic achievement of students in chemistry.

Examples of such areas of concern include the following;

- Lack of interest on the part of the students
- Home-related variables
- Lack of incentive for learning

- Curriculum-related variables
- Language problems
- Governmental infrastructural problems
- Poor primary school background in science
- Professional incompetence by teachers at the various levels of education
- Fear of the subject by the students

1.3 Objectives of the study

The main objectives of the study are to find out:

i. From students and their teachers factors that contribute to poor academic achievement in chemistry.

ii. Whether or not the perception of the students are similar to those of their teachers about the causative factors.

iii. Male and female student hold similar views about causative factor of poor academic achievement in chemistry.

1.4 Research Questions

i. What are the factors that contribute to poor academic achievement among Senior Secondary School Students in Gusau metropolis of Zamfara State.

ii. Do the student subjects and their teachers hold similar views about factor that are perceived to cause poor academic achievement among Senior Secondary School Students in Gusau metropolis of Zamfara State?

iii. Do the male and the female subjects hold similar views about the factors that cause poor academic achievement among Senior Secondary School Students in Gusau metropolis?

1.5 Statement of Hypotheses: -

The following null hypothesis ere stated for testing;

i. There is no significant difference between the perception of the students and their teachers about the factors that cause poor academic achievement among Senior Secondary School Students in Gusau metropolis.

ii. There is no significance difference in the views of the male and female subjects about the factors that cause poor academic performance among Senior Secondary School Students in Gusau metropolis.

iii. There is no significant difference between students unwillingness to learn and the factors that contribute to poor academic achievement among Senior Secondary School Students in Gusau metropolis.

1.6 Significance of the study.

It is expected that the result from this study will:

- reveal the factors that contribute to the incidence of poor academic achievement among Senior Secondary School students in Gusau metropolis of Zamfara state

- Pave the way for teachers, science educators and curriculum planers to take step that will minimize the observed situation of poor academic achievement in chemistry among Senior Secondary School Student.
- be very useful to parents especially, in motivating their children in learning chemistry so as to improve in their academic achievement in chemistry.
- enable teachers to use various method in their teaching and make it flexible to accommodate all the students in order to improve their academic achievement in chemistry

1.7 Delineation of the study

This study is delineated to Gusau metropolis of Zamfara State. It is also delineated to five Secondary schools which are as follows; Government Science Secondary School Gusau, Government day Secondary School, Janyau, Sambo Secodary School, Gusau Government day Secondary School U/Gwaza, Government day Secondary School millennium Quarters

1.8 Basic assumptions

a. The following assumptions are made on the course of this study:

ii. Parents have influence on their children contribute to the poor student academic achievement in chemistry among Senior Secodary School Studendts in Gusau metropolis of Zamfara State.

iii. Lack of material required for effective teaching and learning chemistry to take place contribute to poor academic achievement in chemistry among Senior Secondary School Students in Gusau metropolis of Zamfara State.

iv. Lack of laboratories for effective teaching and learning of chemistry to take place contribute to poor academic achievement in chemistry among Senior Secondary School Students in Gusau metropolis of Zamfara State.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter the literature that are relevant to this study are reviewed. They are organized under the following sub-headings;

2.2 General Concerns about Students Poor Academic Achievement

2.3 Students Performances at Senior Secondary School Certificate Examinations

2.4 Factors Affecting Students Performances

2.5 Overview of Related Studies

2.2 General Concerns about Students Poor Academic Achievement

The academic achievement of student at senior secondary certificate examination in chemistry has been very poor in recent times.

The results in 2008 of all the science subjects for example were so bad that they were described as a national disaster.

Poor performance by students which may result to poor academic achievement by students in all the science subject has been a matter of concern to many research workers and science educators. The search for an explanation for the poor academic achievement of students in secondary schools is far from being concluded and continues to be one of the most tropical and controversial issues in science education. Numerous science educators for example Ukoli (1988); Adeyemi (1990) have expressed

concern over the poor trends of student's poor performances which may lead to poor academic achievement in science subjects including chemistry.

Ivowi (1994) stated that our efforts in the classroom and students' academic achievement have continued to be poor particularly at SSCE examinations.

Series of workshops have been held by bodies interested in educational assessment in Nigeria with a view to identifying difficult concepts and appropriate solutions to these problem Ukoli(1988); Adeyemi (1990) attributed these difficulties which students experience in learning to some difficult concepts in the learning/teaching process. The review of relevant science education literatures has indicated some major sources of students' misconceptions and learning difficulties in chemistry to include the following;

(a)Slow development of cognitive domain.

(b) Poor comprehension of English language.

(c) Weak scientific vocabulary.

(d) Poor mathematical background and

(e) Effective instructional strategy Aigbonaman (1990).

This chapter also reviewed some similar studies conducted by science educators about the poor academic achievement in chemistry at senior secondary school level.

2.2 Students' Performance at Senior Secondary Certificate Examination (SSCE)

The performances of students at school certificate Examination have been very poor in recent years, especially in chemistry. Candidates offering science subjects are failing at an alarming rate. Oke (1996) stated that teachers, parents, educationists, research workers and people who have vested interest in science education are becoming worried about this situation.

Eshiet (1994), also observed that ;the overall academic achievement in the science subjects over ten years have been quite poor Another research conducted by Ivowi (2004) revealed that' despite our effort in the classroom, students' performance have continued to be poor particularly at SSCE examinations.

Ajakaiye (1988) stated that the West African Examination Council results in sciences have not been encouraging over the years.

He gave a breakdown of students with particular reference to May-June Examinations He pointed out that in many cases only 12.3%, 14.6% and 8.9% had credits in chemistry, physics and biology respectively. And the above pattern of results has not changed.

The pendulum of failure swig to its worst in 2017 which was only 32% out of 80,059 candidates that sat for the examination.

Within the period of these ten years, the result/performance has been a sorry galore

Many science educators, some of whom include Ogunniyi (1977) Abdullahi (1982), Steller (1971) Balogun (1985) have enumerated some psychological factors affecting performance of students in schools. These factors include the following;

(i) Interest

(ii) Motivation

(iii) Attitude

1. Interest

Ivowi (1996) stated that a pre-requisite for understanding is learning; and learning is an individual's activity. This requires individual determination to study, practice or seek with a view to gain knowledge or acquire skills or modify behaviour. Therefore, interest is one of the crucial factors that lead to understanding and for this achievement.

Williams (1973) remarked that "learning without interest is sterile, but learning based on sound motivation cannot be stopped" Also Sibber (1981) pointed out that frequent and proper use of visual aids by the teacher makes a positive contribution towards developing specific concepts, skills and interest. The teacher is the most important factor in the learning process and has a crucial role to play in the development of students' effective behaviour over the field of science as a whole. Students do not really hate chemistry, rather what they often dislike in the subject are the drudgery, boredom and frustration which are sometimes characteristics of many chemistry classrooms (Balogun ,1985). He further stated that science depends to a large extent on the teachers instructional strategies. Ukage (1966) maintained that it is the teacher who holds the key to the door, because the quality interest and performance of students is largely the reflection of the teacher's instructional strategies. The activity method and a wide range of instructional strategies are considered to be some of the best method to alleviate most problems associated with the learning of difficult concepts in chemistry which would certainly lead to a better performance in public examinations.

2. Motivation

Psychologists define motivation as the processes involved in arousing directing and sustaining behaviour. Maslow (1971) recommended that teachers should help students to learn what their aptitudes are, what they are and what they are not good at, what strengths what they have that could be build up and what their potentialities are in order to help them meet their needs. Once students are aware of their strength, they will want to be successful in utilizing them.

Steller (1971) suggested the use of behaviour modification technique in the chemistry classroom. He is of the view that, if appropriate use of reinforcement (reward) is made, this would motivate students to do better in chemistry.

Turton (1992) stated that part of the causes of failure and poor academic achievement at Senior Secondary level include the fact that teachers have been poorly motivated in this country. Thus the urge to put in their best is always low in some in some parts of the Federation.

Gayne (1970) suggested techniques that may be used by the classroom teacher to motivate the students in the class. This are as follows;

(i) Making learning materials meaningful and relate it to the students' goals to sustain the effort of the learner.

(ii) Providing challenging materials. The learning materials should not be too difficult so as to avoid frustration, and not too easy as not to give a sense of achievements. A teacher that provides pleasant and satisfying experience to his students will motivate the students' learning.

(iii) The teacher using reinforcement or reward occasionally in the class. Reinforcement, when properly given creates interest and motivation in students.

(iv) The teacher should recognize the concept of individual differences in planning his lessons.

(v) The students should be given specific assignments or tasks to do by themselves.

(vi) Students should be provided with immediate feedback whenever they perform an activity.

Science educators emphasize that both teachers and the students should be motivated in the attempt to improve achievement in the schools.

3. **Attitude**

Various definitions have been put forward for attitude. Moor and Sutman (1970) defined attitude as "an opinion or position taken with respect to psychological object in the field of Science" Gayne (1977) defined attitude as an internal state that influence or moderates the personal actions of an individual.

Aigbonaman (1990) stated that some internal and external conditions exist that must be satisfied before attitudes are learnt or changed. The internal conditions are the intellectual skills and certain amount of relevant information which the learner must possess about the concepts of the class of object, event or person to which new attitude will be directed. The external conditions are mainly the human model's appeal and credibility and the learner's recall situations to which the object of the attitude is applicable. Thus, while the learner's attitude to a subject can be influenced by both internal and external factors as mentioned above, his choice of the subject is influenced by his/her attitude to it.

Alao (1985) opined that attitude to any of the basic science subjects i.e physics, Chemistry and biology can influence students' choice and performance in the subject. His knowledge of chemistry and the amount of information available to him on chemistry can influence his attitude to chemistry. Also external factors such as the teacher, classmates, school climate, parents and career prospects can

influence the student's attitude to academic achievement in chemistry. Akegu (1996) also observed that the attitude of science teachers which the students encounters in their earliest exposure to science teaching may determine their attitude to science. The teacher is also a crucial factor in determine his/her attitude to science. The teacher is a crucial factor for determining the students interest in the subject. Koro et al (1983) identified four important factors that can promote effective and effective academic achievement in chemistry;

These are:

i. **Meaningfulness:** Children learn when the teaching is meaningful.

ii. **Readiness:** Children learn best when they possess the necessary skills and have interest in learning the subject.

iii. **Motivation:** Children learn best when they are motivated. The learning approach has to be involve activities for the learner to participate.

iv. **Reinforcement:** The child learns best when the learning experience is a satisfying one.

The teacher, as a crucial factor in teaching and learning processes is required to adopt intensive practical exercises in dealing with abstract and theoretical concepts so as to improve students' understanding of such concepts (Ntuk, 1993).

Many science researchers and educators revealed that interest, motivation and the attitude of science teachers also determine students' interest and readiness to learn.

2.3 Factors Affecting Performance

Many science educators and researchers have identified many factors responsible for the poor trend in academic achievement in chemistry and other science subjects at senior secondary certificate examination. Adeyegbe (1993) highlighted some of these factors as:

a. Dearth of academically competent, professionally sound and enduring committed teachers.

b. Lack of equipped laboratories

c. Lack of relevant text books and teaching aids.

d. Population explosion in school, resulting in high teacher – student ratio.

e. Inadequate coverage of the school curriculum.

Also, in the 2004 May/June Chief examiner's Report for science, the following weaknesses of candidates were highlighted.

1. **Poor expression** – many candidates were unable to express themselves properly, hence their ideas could not be conveyed meaningfully.
2. **Poor presentation of work** – Many candidates were unable to give adequate space between one question and the other. They did not keep to the general instruction of having to answer a fresh question on a new page.
3. **Poor spellings** – Some candidates indulged in writing incorrect spelling of scientific terms.
4. **Poor mathematical knowledge** - Most candidates could not solve problems requiring simple calculation of plotting of graph.
5. **Poor knowledge of subject matter** – Most candidates lacked knowledge of the subject matter.

Oke (1996), in her research, attributed the poor trend of students' poor academic achievement to such issues as, improper counseling, over loaded curriculum, deficiency in the subject matter by the teachers lack of adequate textbooks, poor and ill- equipped laboratories, psychological state of the child and changing value system. Igwue (1990) stated that some factors which are generally believed to influence students' performances in science include individual differences, family background and

socio-economic status, the school environment and curriculum as well as the quality of teachers and the general values of the society.

Abubakar et al (1983), Adaeze (1982), Sayibo (1984) and Kurien (1983) conducted similar studies and found that notable among the factors causing poor academic achievement are incompetent teachers, difficult areas of the curricula, ill-equipped laboratories, students' poor background in science, explosion in student's enrolment and students' poor knowledge of English language.

Bunza (1995) also, enumerated such factors as environment, curriculum, finance, teachers, students and Government problems to also constitute part of the roblems that contribute to students' poor academic achievement.

a. Environment:

i. Inadequate infrastructural facilities in schools leading to over-crowded classrooms.

ii. Non-availability of furniture and other writing/sitting materials in the schools and hence students sitting on the floor or on the windows.

iii. Lack of teaching and learning facilities – textbooks teaching aids, libraries and science laboratories.

b. Curriculum:

The number of courses offered are sometimes too many and the contents too broad. Consequently, the syllabuses are never completed before the examinations.

c. Finance

Subventions from the Governments to schools are inadequate, irregular and ill-managed.

d. Government

Some of the problems related to governments' actions or inactions include the following;

i. Inadequate of teaching staff

ii. Non-commitment to teachers' welfare

iii. Irregular payment of teachers salaries and allowances

iv. Poor societal perception of teacher who are generally looked upon as 2nd class citizens in the public work force.

v. Lack of improvement of social conditions.

vi. Misplacement of priority particularly in budget placement and allocation

vii. Inadequate supervision of teachers by education inspector.

viii. Non provision of social amenities where school are located

ix. Absence of guidance and counseling service in the school.

x. Diversion and misappropriation of available meager resource by some government officials.

e. Students:

Some of the problems related to students include the following

i. Societal neglect of students

ii. Lack of commitment to students' welfare and upbringing.

iii. Mass promotion of students from one class to another wiyhout regards to quality performance this destroys merit.

iv. Poor family background and sometimes lack of parental care.

v. Peer group influence

vi. Truancy during lesson e.t.c

Alarmed by these stark realities, Col. Isa (Nov. 1994) declared that "falling standard of discipline, lack of concern by teachers, unseriousness on the part of students and parents are part of the factors that had led to the collapse of education in Zamfara State.

2.4 Overview of Similar Studies

Many science educators, for example, Ukoli (1981), Balogun (1988), Adeyemi (1990) have all expressed concern about the poor trend in student's performance in chemistry and other science subjects.

Similarly Williams (1989) expressed concern and views about students' poor performance in science subject by pointing out that there was clearly a noticeable decline in the performance of the Nigerian Secondary School students in science subjects. She emphasized that the foundation that was being laid in the schools for effective training in science did not remain only rickety but was infact crumbling. These observations and concern are pointers to the fact that in spite of the effort made in the sixties and early seventies at science curriculum reforms, science instruction in most of the Nigerian Secondary Schools is still in a deplorable condition. Itamah (1995),

Igwe (1990), in his research findings reported that there is no significant relationship between teachers' qualification and students' academic achievement at Senior Secondary level in science subjects. He opined that no matter their qualification if the teacher are not devoted and dedicated, the students would still have poor results.

Coleman (1986) and Jenks (1972) suggested that the role of teachers' qualification in accounting for students' overall students' performance in minimal. Whatever the qualification of teachers, if such teachers are not devoted to teaching or if students do not take their studies seriously enough, they would have poor result.Thus as suggested by Coleman (1986) and Jenks (1972) above, the home background and socio-economic status of students as well as the value attached to educational achievement in their society may be more important in determining their academic achievement in schools than the qualification of teachers. Conversely, Itamah (1995) opined that "although, no single factor can be said to be the sole determinant of students' poor academic achievement in chemistry and

other science subjects, one can say that the influence of the teacher is more domineering. The teacher is the key and pivot to science education. Salami (1992) observed that despite very many efforts that have been made to improve the quality of science teaching in the schools, the performance of students in science subjects particularly in Chemistry has remained persistently poor at the senior school certificate examination (SSCE)

Nwosu (1993) in his research on poor performance in Chemistry also stated that students' poor performance in science subjects generally and Chemistry in particular have been blamed on over-crowded nature of the SSCE syllabus among other factors. The change from GCE "O" level to SSCE as a result of the implementation of National Policy on Education has in fact, increased the potentials for failure at the senior secondary level Turton (1992).

2.5 Summary

Review of related literature reveals that the factors that are seen to be responsible for the poor trend are enormous, the most prominent among them includes:

a. Student-related factors: These include language problems, misconception, poor attitude towards learning, poor background in integrated science and mathematics.

b. Strategies; These include poor preparation for the teaching profession, inadequate number of teachers and hence poor coverage of syllabus and lack of commitment.

c. Environmental factors: These have to do with poor classrooms, poor laboratory facilities, unconducive home environment for learning, interference of local language with scientific language and lack of good interaction among teachers and students.

d. Resource materials factors: These include lack of adequate infrastructure, lack of adequate equipment and materials, lack of adequate support staff and overloaded syllabus.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 INTRODUCTION

In This chapter the description of the data collection process is presented. In this regard, the chapter describes the methods and techniques used in collection of data. These include the research design, population, sampling technique, research instrument used and how the data was intended to be analyzed.

3.2 Research Design

The research design used for this study was the survey design. It was designed to collect data on the factors responsible for students' poor academic achievement in chemistry among senior secondary school students in selected secondary schools in Gusau metropolis of Zamfara State, The design is an exploratory survey in which questionnaire were used to collect relevant data.

3.3 Population of The Study

The population of the study comprise all secondary schools in Gusau metropolis that are offering chemistry and their chemistry teachers within Gusau metropolis of Zamfara State. There are a total of Twenty (20) public schools in Gusau metropolis. The schools have a total population of 5,108 students that are offering chemistry in the present SS II class student.

3.4 Sample and sampling Procedure

For the purpose of this study; five of the senior secondary school, in the Gusau metropolis by what method did you select them out twenty secondary schools, the schools are shown in table 3.1

Table 3.2 Table showing The Schools Sampled for The Study

S/NO	NAME OF SCHOOL	NATURE SCHOL	NUMBER OF STUDENTS SELECTED
1.	Government Science Secondary School, Gausu	Boys	40
2.	Government day Secondary School, Janyau	Boys	40
3.	Sambo Secodary School, Gusau	Boys	40
4.	Government day Secondary School U/Gwaza	Boys	40
5.	Government day Secondary School millennium Quarters	Boys	40
Total	5		200

The students were randomly selected from each of the five schools. The intention was to verify whether there might be any variation in their responses due to exposure to the chemistry programme. Forty students were randomly selected from each of the sampled schools as subjects, There were Twenty five (25) teachers to

hom questionnaire were administered. This represents five chemistry teachers from ach of the five selected schools they were also randomly selected.

3.5 Instrumentation

The instrument used for this study were the questionnaire. The design was based on the review of related literature, discussion within the members of the study group and observation by the supervisor of the project. Two types of questionnaires were used, namely: students' and teachers' questionnaire. Students' questionnaire were aimed at collecting information about the factors contributing to poor academic achievement in chemistry among senior secondary school student at the senior secondary school level. These include possible factors such as interest, availability of resource materials, laboratory equipments, relevant chemistry text books, availability of qualified chemistry teachers.

The subjects (students and teachers) were requested to respond to the questionnaire items by selecting from the options provided in the questionnaire thus The relevant data were collected using teachers' and students' responses to the questionnaire. It is based on the 4-point Likert responses sclale namely;

1. Strongly Agree (SA)
2. Agree (A)
3. Disagree (D)
4. Strongly Disagree (SD)

e respondents were asked to tick (√) only one option corresponding to their opinion
each item. The questionnaire is included as A, B, C, D, and E for this study.

3.1 Validity of the instrument.

The instruments were given to a panel of experts for validation. They were also thoroughly vetted by the project supervisor and discussion with other teachers and this made the researchers feel comfortable about the Validity and suitability of the questionnaire for data collection.

3.6 Administration of the Instrument.

The questionnaire was directly administered by the researchers. Letters of introduction were made available to the project group by the department to facilitate entry access to the Schools by the project group and also to get cooperation of the respective authorities. This facilitated the process of making preliminary arrangement with principals of the schools for purposes of carrying out the study.

Each school was visited twice. During the first visit, the introductory letters were given to the principals and questionnaire were administered to the subjects during the second visit. On the purpose of the research, they were assured that the study has nothing to do with their schools' academic records and that the schools were selected purely on the basis random sampling. They were also informed that data collected will be treated confidentially with the aim of coming out with useful results and suggestions which wil

opefully help to alleviative the problems of poor academic achievement in chemistry t the senior secondary school level. The teachers and students that formed the subjects were later acquainted with on the purpose of the study. The students were then served with a copy of the questionnaire each and twenty five chemistry teacher also participated as subjects in the study. the questionnaire were later collected by the researchers after completion by the subjects.

3.7 Procedure for Data Analysis

The data collected are intended to be analyzed using frequency distribution of the responses details of the analysis of the data collected and the results obtained will be discussed in chapter four.

3.8 Summary of the chapter

This chapter deals with instrument design and method of data collection. A total of five schools were selected randomly are forty students were also selected randomly from each of the five schools that participated as subjects in all the five schools and twenty five chemistry teachers. This resulted in a total of two hundred participated as subject in the study.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION OF RESULTS

4.1 INTRODUCTION:

In this chapter, the analysis of data, presentation and discussion of results are presented for the purpose of confidentiality the five schools that participated in the data collection process were coded as A,B,C, D and E in the analysis of data. The items of the questionnaire were grouped under six main categories, which were from the planning stage of the study. These were mapped out as possible factors contributing to poor students' academic achievement in chemistry. They are as follows:

1) Students' characteristics\interest
2) Availability of learning\teaching materials.
3) Methodology of instruction.
4) Environmental factors
5) Career factors
6) Course content-related factors

For the purpose of reference, items of the questionnaire relevant to each of the categories of the factors are hereby reproduced: and (shoron in Table **4.1**) tally system was used to count and record the number of responses and the number got was converted to percentages of the total responses. The results tabulated to show the kinds and frequancy of the factors .

4.2 PRESENTATION AND DISCUSSION OF RESULT

4.1: Categories/Items Of Questionnaire

	Dimension/ categories	Related items of chemistry.
	Student characteristics/interest	➢ I am highly interested in chemistry. ➢ am offering chemistry simply because my friends are offering it ➢ I am offering chemistry simply because made compulsory. ➢ I offer chemistry because my parents asked me to do so. ➢ I always understand chemistry lesson
2	Availability of learning and teaching materials	➢ Chemistry lessons are sometimes taught with the use of locally available materials. ➢ Required facilities are always provided for chemistry practical lessons. ➢ Chemistry laboratory is frequently used for practical lessons. ➢ I am often involved in collecting materials in my environment for chemistry lessons. ➢ Relevant chemistry textbooks are available in sufficient quantity in our school library
3	Instructional Methodology	➢ My chemistry teacher always praises me in the class and that helps me to like chemistry.

		➢ I like chemistry because of the practical lessons that it involves. ➢ I have at least one chemistry practical lessons every week. ➢ The use of English Language makes it difficult for me to understand chemistry.
	Environmental Factors	➢ I am interested in watching science programme on Television. ➢ .Watching of science programmes on Television encourages me to read more about chemistry in school.
5.	Career Factors	➢ I offer chemistry because I wish to read related courses in higher institution.
6.	Course content	➢ The chemistry content in the syllabus is too broad to be covered before the examination. ➢ There are many difficult concepts in our chemistry syllabus.

Table 4.2. STUDENT' RESPONSES TO QUESTIONNAIRE ADMINSTERED IN SCHOOL A

		Responses			Percentage		
S/N	**Categories**	**AGREE**	**DISAGREE**	**TOTAL**	**AGREE**	**DISGREE**	**TOTAL**
(1)	Students Character ristic/interest	29	11	40	71	29	100
(2)	Availability of Leaning/teaching						

	Materials	16	24	40	39	61	100
(3)	Methodology	19	21	40	48	52	100
(4)	Environmental Factors	38	2	40	94	6	100
(5)	Career factors	35	5	40	87	13	100
(6)	Course content	24	16	40	59	14	100

Table 4.3 STUDENT' RESPONSES TO QUESTIONNAIRE ADMINSTERED IN SCHOOL B

	Responses				Percentage		
S/NO	**Categories**	**AGREE**	**DISAGREE**	**TOTAL**	**AGREE**	**DISGREE**	**TOTAL**
(1)	Students Characteristics/interest	27	13	40	68	32	100
(2)	Availability of Leaning/teaching Materials	20	20	40	50	50	100
(3)	Methodology	21	19	40	53	47	100
(4)	Environmental Factors	35		40	87	13	100
(5)	Career factors	35	5	40	87	13	100
(6)	Course content	28	12	40	71	29	100

DISCUSSION OF THE TEACHERS' AND STUDENTS' RESPONSES IN SCHOOL A TO QUESTIONNIRE ADMINISTERED

From school A 71% of both the teachers' and students' agree that they have interest in learing chemistry while 29% disagreed where as 67% of the teachers agreed that the students are interest in learning chemistry and 33% of the teachers disagreed.

For the availability of learning/teaching material, 39% of the students agreed that learning and teaching materials are available in the school while 61% of them disagreed. 44% of the teachers agreed that there are learning and teaching materials and 56% disagreed.

On methods of teaching chemistry to students in the school, 48% of the students said that, they understand their teachers, while 52% disagreed. The teachers in their own responses almost agreed that the method of teaching chemistry is a contributing factor because 43% of them agreed that their methods of teaching chemistry as a contributing factor. 94% of the students claimed that the location of the school in terms of rural and urban areas contributes to the learning of chemistry. This is because students in urban areas are exposed to learning facilities such T. V. radio newsletter e .t .c whereas 6% of them disagreed.

From the responses of the teachers, 78. 1% agreed that environmental factors affect the students' performance in chemistry in that students in urban areas are more exposed to better facilities of learning than those in rural areas. However, 22% of the teachers disagreed that the environmental factors contribute to students' performance. We can now see that both students and teachers strongly agreed that the environmental factor contribute to the students' performance. On consideration, 87% of the respondents agreed that learning chemistry will help them to take up related courses in higher institutions whereas 13% of the students disagreed. compared with teachers response in

which 100% agreed that learning chemistry will help their students to take related courses in higher institutions and none of them disagreed. 59% of the students agreed that, there are many difficult concepts in chemistry and the syllabus is too broad whereas 41% disagreed. Similarly 63% of the chemistry teachers agreed that the course content is too demanding conceptually. This shows that there are many chemistry concepts that need to be simplified.

DISCUSSION OF TEACHERS' AND STUDENTS' RESPONSES IN SCHOOL B TO QUESTIONAIRE ADMINISTERED.

Table 4.3 above shows that, 68% of the students agreed that they have interest in learning chemistry and 32% disagreed. 67% of the chemistry teachers stated that their students are interested in learning the subject whereas 33% disagreed. In essence, there is a strong agreement in the responses given by the teachers and the students. On the availability of teaching and learning materials 50% of the students in school B agreed that there are instruments for the teaching of chemistry in the school: whereas, 50% disagreed. For the teachers 44% agreed that learning and teaching materials are adequate in the school while 52% disagreed.

On methodology, 53% of the students agreed that the teaching methods used by their teachers help them to understand chemistry while the remaining 47% disagreed. In the case of the teachers 43% agreed that their students understand their methods of teaching chemistry, while 57% stated that their students didn't understand the method used in teaching chemistry. It can be seen that the teachers agreed that the method of teaching they are using did not appear to help the students to understand the subject matter. 87% of the students agreed that the environment has an influence in learning chemistry whereas 13% disagreed. As for the teacher, 78% agreed that the students are exposed to modern facilities like Television, Radio and other media so as to perform better in chemistry, but 22% disagreed.

87% of the students in school B were convinced that learning the subject will help them offer related courses in higher institution. 13% disagreed. This is similar to what was obtained in school a 100% of the teachers agreed that learning of chemistry will help their students to read related courses in higher institution.

71% of the students agreed that chemistry as a subject is too mathematical and too broad to be covered before the examination. But 29% disagreed. 63% of the teachers agreed that the content of the syllabus is too broad and too mathematical, while 37% disagreed.

From the above results, it can be seen that most of the students are interested in studying chemistry. On the availability of learning materials an average of both teachers and students agreed that teaching and learning materials are not adequate in the schools. And quite a number of them also agreed that the method used in teaching the subject is inappropriate.

On the course content, more than 60% of both the students and the teachers opined that the course content is too demanding and too broad for the students to cover before their senior secondary school final examination both the teachers and students opined that the environment is a strong factor that contributes to the performance of the students; Over 80% of the students offer chemistry so as to read science-related courses in the higher institutions of learning.

4.3 STUDENT' RESPONSES TO QUESTIONNAIRE ADMINSTERED IN SCHOOL C

		Responses			Percentage		
S/N	Categories	AGREE	DISAGREE	TOTAL	AGREE	DISGREE	TOTAL
(1)	Students Characteristics/interest						

		30	10	40	75	25	100
(2)	Availability of Leaning/teaching Materials	19	21	40	48	52	100
(3)	Methodology	22	19		55	45	100
(4)	Environmental Factors	36	4	40	89	11	100
(5)	Career factors	38	2	40	95	5	100
(6)	Course content	28	17	40	58	42	100

Table 4.5 STUDENTS' RESPONSES TO QUESTIONNAIRE ADMINSTERED IN SCHOOL D

		Responses			Percentage		
S/N	Categories	AGREE	DISAGREE	TOTAL	AGREE	DISGREE	TOTAL
(1)	Students Characteristics/interest	26	14	40	66	34	100
(2)	Availability of Leaning/teaching Materials	28	12	40	70	30	100
(3)	Methodology	28	12	40	69	31	100
(4)	Environmental Factors	34	6	40	84	16	100
(5)	Career factors	33	7	40	83	17	100
(6)	Course content	26	14	40	66	34	100

Table 4.6 STUDENT' RESPONSES TO QUESTIONNAIRE ADMINSTERED IN SCHOOL E

		Responses			Percentage		
S/N	Categories	AGREE	DISAGREE	TOTAL	AGREE	DISGREE	TOTAL
(1)	Students Characteristics/interest	30	10	40	75	25	100
(2)	Availability of Leaning/teaching Materials	19	21	40	48	52	100
(3)	Methodology	22	19		55	45	100
(4)	Environmental Factors	36	4	40	89	11	100
(5)	Career factors	38	2	40	95	5	100
(6)	Course content	28	17	40	58	42	100

DISCUSSION OF TEACHRES' AND STUDENTS' ,RESPONSES IN SCHOOL C TO QUESTIONNAIRE ADMINISTERED.

On interest Table 4.4 shows that 75% of the students agreed that they have interest in chemistry as a subject while 25% of them opined that they have no interest in chemistry. While 33% of the teachers indicated that their students have no interest in the subject.

On availability of teaching/learning materials, 48% of the students indicated that teaching/learning materials are available for the teaching of chemistry while 53% of them did not agreed. On the

teachers' part, 44% of them agreed that there are teaching/learning materials for the teaching of the subject while 56% of them did not agree. On the teaching of chemistry 55% of the teachers opined that the teaching method used in their school is not good enough but 45% of them are of the opinion that the methodology adopted is good enough to facilitate learning of the subject. The teachers (43% of them) opined that the methodology used is not very affective while 57.5% of them did not agreed that the methodology used is inappropriate to make students to pass their examination as SSSC level. On environmental factors, 89% of the students, agreed that environmental factors, such as having assess to viewing science-related programmes on TV especially in chemistry affect the performances of students positively as such students have a better opportunity. Only 11% of them disagreed with this statement. 78% of the teachers agreed that environmental factors affect the performance of students in chemistry while 30% of them did not agreed with statement.

On career prospects, 95% of the students agreed that they learn chemistry at secondary school level in order that they might read related courses in further studies. while 5% of them did not agree. Method of teaching chemistry 55% of the students opined that the method is not satisfactory while 45% of them disagreed. the other hand, 43% of them indicated that the methodology used for teaching chemistry is not very effective while 57.5% of them did not agreed with this. On environmental factors, 89% of the students, agreed that environmental factors, such as having assess to viewing science-related programmes on TV especially in chemistry affect the performances of students positively because such students have a better opportunity for learning Only 11% of them disagreed with this statement 78% teachers agreed that environmental factors affect the performance of students in chemistry while 28% of them did not agreed with this statement.

On career prospects, 95% of the students agreed that they learn chemistry in secondary school in order that they might read related courses in further studies. but 5% of them did not agree with this statement. On the methodology adopted for teaching chemistry 55% of the students agreed that it is effective while 45% disagreed. 43% of the teachers agreed that the methodology used for teaching the subject is appropriate but 57% disagreed with this statement. school is not good enough and unsatisfactory while 45% of them are of the opinion that the methodology adopted is good enough to facilitate learning of the subject. the teachers on the other hand, (43% of them) that the methodology is not very affective while 57.5% of them did not agreed that the methodology used are inappropriate to make students not to pass their examination as SSSC level. On environmental factors, 89% of the students, agreed that environmental factors, such as having assess to viewing science related programmes on TV especially in chemistry affect the performances of students. such students have a better opportunity. Only 11% of them disagreed with this statement. the teachers agreed by 78% that environmental factors affect the performance of students in chemistry while 30% of them did not agreed with statement.

On career prospects, 95% of the students agreed that they learn chemistry at secondary school level in order that they might read related courses in further studies. while 5% of them did not agreed that learning at the secondary school level in the teaching chemistry in the methodology adopted their school is not good enough and unsatisfactory while 45% of them are of the opinion that the methodology adopted is good enough to facilitate learning of the subject. the teachers on the other hand, (43% of them) that the methodology is not very affective while 57.5% of them did not agreed that the methodology used are inappropriate to make students not to pass their examination as SSSC level. On environmental factors, 89% of the students, agreed that

environmental factors, such as having assess to viewing science related programmes on TV especially in chemistry affect the performances of students. Because such students have a better learning opportunity. Only 11% of them disagreed with this statement. 78% of the teachers agreed that environmental factors affect the performance of students in chemistry while 22% of them did not agree with statement.

On career prospects, 95% of the students agreed that they learn chemistry at secondary school level in order that they might read related courses in further studies. while 5% of them did not agreed with this statement chemistry 100% of the teachers agreed that their students offer chemistry because of the opportunity it gives them to read science-related courses at higher levels of education.

DISCUSSION OF TEACHERS'/STUDENTS' RESPONSES IN SCHOOL D TO QUESTIONAIRE ADMINISTERED.

Form the table 4.5 it can be seen that 66% of the students agreed that they have interest in chemistry other than being influenced by other factors like friends and parents but 34% of them disagreed and claimed that they were influenced by friends and parents in offering chemistry as a subject. 67% of the teachers on the other hand, agreed that students offering chemistry have personal interest in the subject but 33% of them are of the opinion that their students offer chemistry because of the influence of the parents and friends.

On teaching materials, 70% of the students are of the opinion that there are enough teaching materials while 30% disagreed in this respect. However, 44% of the teachers agreed that there are adequate teaching /learning materials in the school while 56% disagreed.

On methodology of teaching 69% of the students agreed that the methods used for teaching chemistry is effective but31% disagreed with this statement. On the other hand, 43% of the teachers agreed that the teaching methods they use are effective, but 57% disagreed with this regarding environmental factors, 84% of the students agreed that environmental factors such as exposure to science-related programmes help chemistry students to perform better. However, 16% of them did not agree with this statement. Career prospects, 38% the students agreed that they offer chemistry because of the career prospects associated with the subject while 17% did not agree with this. On same vein,100% of the teachers opined that their students offer chemistry because of the career prospects associated with the subject.

On course contents, 66% of the b students agreed that chemistry course contents are difficult to learn while 34% were of the opinion that chemistry contents are not difficult to learn. On the part of the teachers 63% of them agreed that the course contents of the subject is difficult while 37% believe that it is not difficult. From the foregoing, about 66% of the teachers and students agreed that students have personal interest in studying chemistry. Most of the teachers disagreed that the teaching material were adequate majority of the students agreed that the methodology used in teaching chemistry contributes to poor performance of the students while some of the teachers do not agree with this. Over 78% of both students and teachers agreed that environment factors contribute to poor performance of students in chemistry. Most of the teachers and students agreed that the students offer chemistry for future career and that the course content is a factor leading to students poor performance in chemistry at SSS Level.

On course content about, 58% of the students in school D agreed that the chemistry contents are well understood whereas about 42% claimed that chemistry contents are not easy to understand.

DISCUSSION OF TEACHERS'/STUDENTS' RESPONSES IN SCHOOL E TO QUESTIONAIRE ADMINISTERED

From the Table 4.6 above, majority of the teachers and students agreed that the students have interest in chemistry rather than being influenced by other external factors such as parents and friends.

On the availability of teaching materials, more than 53% of both the students and teachers are of the opinion that materials for teaching of the subject are not readily available.

On methodology, majority about, 60%of the both teachers and students opined that the method used in teaching chemistry is effective to help students performs well in their examination at senior secondary level.

More about 80% of both students and teachers agreed that students can be affected negatively or positively by environment factors defending on the nature of the environment and the teachers. (About 52%) agreed that the chemistry content is not difficult for the students to learn, but 48% disagreed and opined that they are difficult for the students to learn.

4.4 SUMMARY OF STUDENTS RESPONSES FOR SCHOOLS A - E

	Responses				Percentage		
S/N	Categories	AGREE	DISAGREE	TOTAL	AGREE	DISGREE	TOTAL
(1)	Students Characteristics/interest	142	58	200	70	30	100
(2)	Availability of Leaning/teaching Materials	104	96	200	52	48	100

(3)	Methodology	115	85	200	56	44	100
(4)	Environmental Factors	172	28	200	89	11	100
(5)	Career factors	170	30	200	88	12	100
(6)	Course content	132	68	200	64	36	100

Table 4.6 SUMMARY OF THE FIVE SCHOOL; STUDENTS'/ TEACHERS' PERCEPTION

From the table of the summary of students responses and teachers of all the five sampled schools, 70% of the students agreed that they have interest in learning chemistry whereas 30% disagreed with this. This is in line with the teachers' responses which indicated that 66.7% agreed that the students have interest in chemistry while 33.3% disagreed.

On availability of learning and teaching materials, out of the 200 students administered with the questionnaire, 52% of them indicated that there are adequate learning, while 44% indicated that these are in adequate learning facilities in the schools. In the teachers' responses, 44% indicated that there are adequate facilities in teaching and learning chemistry while 56% disagreed. This indicate that in adequate teaching/learning facilities for teaching chemistry in the school contribute to the observed poor academic achievement of students at the senior secondary school level as often observed from West African Examination Council results. Other tables is included in the appendixes III & IV.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of this study is to find out factors contributing to poor academic achievement in chemistry at secondary school level in Gusau metropolis area of Zamfara state. In this chapter, the summary of the study out lined, findings of the study are also stated. the discussion, recommendation and suggestion for further studies is presented.

5.2 SUMMARY:

The study comprised five chapters. chapter one deals with the background of the study comprising the introduction to the study in general, including the statement of the problem, research objectives, research question and justification for the study. in chapter two, the relevant literature was reviewed. chapter three cares the description of the methodology employed in the study while chapter four comprise the analysis of the data, presentation and discussions of the result. In chapter five, a summary of the findings were highlighted. finally recommendations arising from the findings and suggestion for further studies.

5.3 SUMMARY OF FINDINGS

In the process of investigation, questionnaires were administrated to both teachers and students. for the purpose of comparison, the same questionnaires were serve in order to find out students and teachers perception. the data collected were analyzed and following findings were arrived at: these include; laboratory equipments, a standard laboratory, chemicals, lack of qualified laboratory assistants and appropriate teaching aids for chemistry lessons

1. Over 70% of the science students administered with the questionnaire indicated there interest in learning chemistry.
2. More than 56% of the student have difficulty in understanding English language which is a medium of instruction for leaning chemistry.
3. Parents do not seen to influence their children s choice in offering chemistry.
4. Over 88% of the students administered with questionnaire offer chemistry because they wish to study related course In higher institution.
5. Teachers don't organize field trips and excursions consequently, student are not exposed to visiting related fields, like refineries, sugar factory soap industry coca –cola factory.
6. The location of schools in terms of rural and urban areas affect learning. This study reveals that students from urban areas have advantage over their counter parts that are in rural areas. the former have access to learning facilities such as re –creation centers, television set, projectors, news papers etc. this help them perform better.
7. regarding the course contents, students and teachers have different views students believed that the course contents is too broad to be covered within the stipulated time. while the teachers believed that the course contents is quite adequate.
8. form our findings, chemistry contents are perceived to involve difficult concept which students find difficult to understand
9. Students fail chemistry examinations because it was too demanding conceptually.
10. From our finding also, teachers rarely organized practical lesson for their students. this makes it difficult for the students to understand chemistry easily.

5.4 CONCLUSION

This study has revealed some possible factors that contribute to poor academic achievement in chemistry at Senior Secondary School levels, teachers and students perceptions. this study was carried out in Gusau metropolis area of Zamfara State, these factors include ; inadequate teaching materials lack of adequate and relevant text books, poor teaching methodology, environmental factors, career factors and broad course content.

Based on this findings, a number of recommendations were made to those that are directly concerned with the teaching and learning chemistry at senior secondary school level.

The recommendations will be useful to institutions of learning, the ministry of education and future researchers.

5.5 SUGGESTION FOR FURTHER STUDIES

In the light of the above findings, future researchers could explore how family background size, socio economic status and peer group influence affects students' academic achievement in chemistry in senior secondary school certificate examination.

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Appendix I

STUDENT QUESTIONNAIRE

Name of Schools: .....

Gender: .....

Age: .....

	CATEGORIES	Strongly Agree	Agree	Disagree	Strongly disagree
	I am highly interested in Chemistry				
	I am offering Chemistry simply because my friends are offering it.				
	I am offering chemistry simply because it is made compulsory				
	I offer chemistry because my parents asked me to do so				
	I always understand chemistry lessons				
	I read my chemistry notebooks always				
	Chemistry lessons are sometimes taught with the use of locally available materials.				
8.	Required facilities are always provided for chemistry practical lessons.				
9.	I am often involved in collecting materials in my environment for Chemistry lessons.				
10.	Relevant chemistry textbook are available in sufficient quantity in our school library.				
11.	I like chemistry because of the practical lessons that it involves				
12.	My chemistry teacher always praises me in the class and that helps me to like chemistry.				
13.	I have at least one chemistry practical lessons every week.				
14.	The teacher organizes field trip once in a term.				
15.	The use of English Language makes it difficult for me to understand Chemistry.				
16.	Students fail Chemistry because of poor teaching method				
17.	I am interested in watching Science programmers on Television.				
18.	Watching Science programmes on television encourages me to read more about Chemistry in school.				
19.	I offer Chemistry because I wish to read related courses in higher institution.				
20.	The Chemistry content in the syllabus is too broad to be covered before the examination.				

Appendix II

TEACHERS QUESTIONNAIRE

The aim of this study is to find out factors contributing to poor academic achievement in chemistry among Senior Secondary School Students in Gusau metropolis of Zamfara State

Your sincere response to this questionnaire would be appreciated as it will help us draw relevant conclusions at the end of this study. Please tick (√) the appropriate columns.

Name of Schools:----------

Gender:----------

Age:----------

S/N	CATEGORIES	Strongly AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
1	There is functional chemistry laboratory in my school.				
2	I carry out chemistry practical's with my students every week.				
3	I receive science allowance for teaching chemistry.				
4	I am a member of Science Teachers Association of Nigeria.				
5	The school provides adequate relevant textbooks in chemistry.				
6	There is report between me and my student on practical chemistry.				
7	I find it difficult to teach chemistry with English Language.				
8	I normally improvise teaching materials where the standards ones are not available.				
9	I take my students on field trip as the need arises.				

10. With your experience in teaching the subject (chemistry) what problem has you encountered?

Answer:

Appendix III

STUDENTS' RESPONSES TO QUESTIONAIRES ADMINISTERED IN SCHOOL A

S/N	Categories	Items	Agree	Disagree	Percentage (%)	
					Agree	Disagree
1	Students characteristics/interest	I am highly interested in chemistry.	27	13	67.5%	32.5%
		I am offering chemistry simply because my friends are offering it.	10	30	25%	75%
		I am offering chemistry simply because made compulsory.	11	29	27.5%	72.5%
		I offer chemistry because my parent asked me to do.	25	15	62.5%	37.5%
		I always understand chemistry.	21	19	52.5%	47.4%
2	Availability of teaching and learning materials	Chemistry lessons are sometimes taught with the use of locally available materials.	16	24	40%	60%
		Required facilities are always provides for chemistry practical lessons.	9	31	22.5%	77.5%
		Chemistry laboratory is frequently used for practical lessons.	11	29	27.5%	72.5%
		I am often involved in collecting materials in my environment for chemistry lessons	21	19	52.5%	47.5%
		Relevant chemistry textbooks are available in sufficient quantity in our school library	28	12	70%	30%

3	Methodology	My chemistry teacher always praises me in the class and helps me to like chemistry.	19	21	47.5%	52.5%
		I like chemistry because of the practical lessons that it involves.	27	13	42.5%	32.5%
		I have at least one chemistry practical lessons in every week.	9	31	22.7%	77.5%
		The use of English language makes it difficult for me to understand chemistry.	32	8	80%	20%
4	Environmental factors	I am interested in watching science programme on television.	38	2	95%	5%
		Watching of science programs on television encourages me to read more about chemistry.	21	19	52%	47.5%
5	Career factors	I offer chemistry because I wish to read related courses in higher institution.	35	5	87.5%	12.5%
6	Course content	The chemistry content in the syllabus is too broad to be covered before examination.	24	16	60%	40%
		There are many difficult concepts in our chemistry syllabus.	27	13	67.5%	32.5%

STUDENTS' RESPONSES TO QUESTIONAIRES ADMINISTERED IN SCHOOL B

S/N	Categories	Items	Agree	Disagree	Percentage (%)	
					Agree	Disagree
1	Students characteristics/interest	I am highly interested in chemistry.	20	20	50%	50%
		I am offering chemistry simply because my friends are offering it.	9	31	22.5%	77.5%
		I am offering chemistry simply because made compulsory.	10	30	25%	75%
		I offer chemistry because my parent asked me to do.	15	25	37.5%	62.5%
		I always understand chemistry.	9	31	22.5%	77.5%
2	Availability of teaching and learning materials	Chemistry lessons are sometimes taught with the use of locally available materials.	19	21	47,5%	52.5%
		Required facilities are always provides for chemistry practical lessons.	8	32	20%	80%
		Chemistry laboratory is frequently used for practical lessons.	11	29	27.5%	72.5%
		I am often involved in collecting materials in my environment for chemistry lessons	10	30	25%	75%
		Relevant chemistry textbooks are available in sufficient quantity in our school library	11	29	27.5%	72.5%

3	Methodology	My chemistry teacher always praises me in the class and helps me to like chemistry.	30	10	75%	25%
		I like chemistry because of the practical lessons that it involves.	26	14	65%	35%
		I have at least one chemistry practical lessons in every week..	9	31	22.5%	77.5%
		The use of English language makes it difficult for me to understand chemistry.	10	30	25%	75%
4	Environmental factors	I am interested in watching science programme on television.	29	11	72.5%	27.5%
		Watching of science programs on television encourages me to read more about chemistry.	22	18	55%	45%
5	Career factors	I offer chemistry because I wish to read related courses in higher institution.	33	7	82.5%	17.5%
6	Course content	The chemistry content in the syllabus is too broad to be covered before examination.	24	16	60%	40%
		There are many difficult concepts in our chemistry syllabus.	35	5	87.5%	12.5%

STUDENTS' RESPONSES TO QUESTIONAIRES ADMINISTERED IN SCHOOL C

S/N	Categories	Items	Agree	Disagree	Percentage (%)	
					Agree	Disagree
1	Students characteristics/interest	I am highly interested in chemistry.	7	33	17.5%	82.5%
		I am offering chemistry simply because my friends are offering it.	14	26	35%	65%
		I am offering chemistry simply because made compulsory.	11	29	27.5%	75.5%
		I offer chemistry because my parent asked me to do.	20	20	50%	50%
		I always understand chemistry.	21	19	52.5%	47.5%
2	Availability of teaching and learning materials	Chemistry lessons are sometimes taught with the use of locally available materials.	16	24	40%	60%
		Required facilities are always provides for chemistry practical lessons.	9	31	22.5%	77.5%
		Chemistry laboratory is frequently used for practical lessons.	11	29	27.5%	75.5%
		I am often involved in collecting materials in my environment for chemistry lessons	21	19	52.5%	47.5%
		Relevant chemistry textbooks are available in sufficient quantity in our school library	28	12	70%	30%

3	Methodology	My chemistry teacher always praises me in the class and helps me to like chemistry.	19	21	47.5%	47.5%
		I like chemistry because of the practical lessons that it involves.	27	13	67.5%	32.5%
		I have at least one chemistry practical lessons in every week..	9	31	22.5%	77.5%
		The use of English language makes it difficult for me to understand chemistry.	32	8	80%	20%
4	Environmental factors	I am interested in watching science programme on television.	38	2	95%	5%
		Watching of science programs on television encourages me to read more about chemistry.	21	19	52.5%	47.5%
5	Career factors	I offer chemistry because I wish to read related courses in higher institution.	35	5	87.5%	12.5%
6	Course content	The chemistry content in the syllabus is too broad to be covered before examination.	24	16	60%	40%
		There are many difficult concepts in our chemistry syllabus.	27	13	67.5%	32.5%

STUDENTS' RESPONSES TO QUESTIONAIRES ADMINISTERED IN SCHOOL D

S/N	Categories	Items	Agree	Disagree	Percentage (%)	
					Agree	Disagree
1	Students characteristics/interest	I am highly interested in chemistry.	5	35	12.5%	87.5%
		I am offering chemistry simply because my friends are offering it.	16	24	40%	60%
		I am offering chemistry simply because made compulsory.	10	30	25%	75%
		I offer chemistry because my parent asked me to do.	23	17	57.5%	42.5%
		I always understand chemistry.	20	20	50%	50%
2	Availability of teaching and learning materials	Chemistry lessons are sometimes taught with the use of locally available materials.	16	24	40%	60%
		Required facilities are always provides for chemistry practical lessons.	10	30	25%	75%
		Chemistry laboratory is frequently used for practical lessons.	12	28	30%	70%
		I am often involved in collecting materials in my environment for chemistry lessons	23	17	57.5%	42.5%
		Relevant chemistry textbooks are available in sufficient quantity in our school library	16	24	40%	60%

3	Methodology	My chemistry teacher always praises me in the class and helps me to like chemistry.	15	25	37.5%	62.5%
		I like chemistry because of the practical lessons that it involves.	23	17	57.5%	42.5%
		I have at least one chemistry practical lessons in every week.	19	21	47.5%	52.5%
		The use of English language makes it difficult for me to understand chemistry.	30	10	75%	25%
4	Environmental factors	I am interested in watching science programme on television.	31	9	77.5%	22.5%
		Watching of science programs on television encourages me to read more about chemistry.	25	15	62.5%	37.5%
5	Career factors	I offer chemistry because I wish to read related courses in higher institution.	36	4	90%	10%
6	Course content	The chemistry content in the syllabus is too broad to be covered before examination.	19	21	47.5%	52.5%
		There are many difficult concepts in our chemistry syllabus.	20	20	50%	50%

STUDENTS' RESPONSES TO QUESTIONAIRES ADMINISTERED IN SCHOOL E

S/N	Categories	Items	Agree	Disagree	Percentage (%)	
					Agree	Disagree
1	Students characteristics/interest	I am highly interested in chemistry.	31	9	77.5%	22.5%
		I am offering chemistry simply because my friends are offering it.	8	32	20%	80%
		I am offering chemistry simply because made compulsory.	11	29	27.5%	72.5%
		I offer chemistry because my parent asked me to do.	25	15	62.5%	37.5%
		I always understand chemistry.	21	19	52.5%	47.4%
2	Availability of teaching and learning materials	Chemistry lessons are sometimes taught with the use of locally available materials.	16	24	40%	60%
		Required facilities are always provides for chemistry practical lessons.	9	31	22.5%	77.5%
		Chemistry laboratory is frequently used for practical lessons.	11	29	27.5%	72.5%
		I am often involved in collecting materials in my environment for chemistry lessons	21	19	52.5%	47.5%
		Relevant chemistry textbooks are available in sufficient quantity in our school library	28	12	70%	30%

3	Methodology	My chemistry teacher always praises me in the class and helps me to like chemistry.	38	2	95%	5%
		I like chemistry because of the practical lessons that it involves.	27	13	42.5%	32.5%
		I have at least one chemistry practical lessons in every week..	9	31	22.7%	77.5%
		The use of English language makes it difficult for me to understand chemistry.	32	8	80%	20%
4	Environmental factors	I am interested in watching science program on television.	38	2	95%	5%
		Watching of science programs on television encourages me to read more about chemistry.	21	19	52%	47.5%
5	Career factors	I offer chemistry because I wish to read related courses in higher institution.	35	5	87.5%	12.5%
6	Course content	The chemistry content in the syllabus is too broad to be covered before examination.	20	20	50%	50%
		There are many difficult concepts in our chemistry syllabus.	27	13	67.5%	32.5%

Appendix IV

TEACHERS' RESPONSES TO QUESTIONNAIRES (SCHOOL A-E)

Teachers' responses to questionnaire administered in school A

S/N	CATEGORIES	AGREE	DISAGREE	PERCENTAGE (%)	
				Agree	Disagree
1	There is functional chemistry laboratory in my school.	2	3	40%	60%
2	I carry out chemistry practical with my students every week.	0	5	0%	100%
3	I receive science allowance for teaching chemistry.	0	5	0%	100%
4	I am a member of Science Teachers Association of Nigeria.	2	3	40%	60%
5	The school provides adequate relevant textbooks in chemistry.	4	1	80%	20%
6	There is report between me and my student on practical chemistry.	2	3	40%	60%
7	I find it difficult to teach chemistry with English Language.	0	5	0%	100%
8	I normally improvise teaching materials where the standards ones are not available.	4	1	80%	20%
9	I take my students on field trip as the need arises.	2	3	40%	60%

Teachers' responses to questionnaire administered in school B

S/N	CATEGORIES	AGREE	DISAGREE	PERCENTAGE (%)	
				Agree	Disagree
1	There is functional chemistry laboratory in my school.	0	5	0%	100%
2	I carry out chemistry practical with my students every week.	0	5	0%	100%
3	I receive science allowance for teaching chemistry.	0	5	0%	100%
4	I am a member of Science Teachers Association of Nigeria.	1	4	20%	80%
5	The school provides adequate relevant textbooks in chemistry.	4	1	80%	20%
6	There is report between me and my	0	5	0%	100%

	student on practical chemistry.				
7	I find it difficult to teach chemistry with English Language.	0	5	0%	100%
8	I normally improvise teaching materials where the standards ones are not available.	4	1	80%	20%
9	I take my students on field trip as the need arises.	1	4	20%	80%

Teachers' responses to questionnaire administered in school C

S/N	CATEGORIES	AGREE	DISAGREE	PERCENTAGE (%)	
				Agree	Disagree
1	There is functional chemistry laboratory in my school.	0	5	0%	100%
2	I carry out chemistry practical with my students every week.	0	5	0%	100%
3	I receive science allowance for teaching chemistry.	0	5	0%	100%
4	I am a member of Science Teachers Association of Nigeria.	1	4	20%	80%
5	The school provides adequate relevant textbooks in chemistry.	0	5	0%	100%
6	There is report between me and my student on practical chemistry.	2	3	40%	60%
7	I find it difficult to teach chemistry with English Language.	0	5	0%	100%
8	I normally improvise teaching materials where the standards ones are not available.	4	1	80%	20%
9	I take my students on field trip as the need arises.	0	5	0%	100%

Teachers' responses to questionnaire administered in school D

S/N	CATEGORIES	AGREE	DISAGREE	PERCENTAGE (%)	
				Agree	Disagree
1	There is functional chemistry laboratory in my school.	5	0	100%	0%
2	I carry out chemistry practical with my students every week.	1	4	20%	80%
3	I receive science allowance for teaching chemistry.	0	5	0%	100%
4	I am a member of Science Teachers	4	1	80%	20%

	student on practical chemistry.				
7	I find it difficult to teach chemistry with English Language.	0	5	0%	100%
8	I normally improvise teaching materials where the standards ones are not available.	4	1	80%	20%
9	I take my students on field trip as the need arises.	1	4	20%	80%

Teachers' responses to questionnaire administered in school C

S/N	CATEGORIES	AGREE	DISAGREE	PERCENTAGE (%)	
				Agree	Disagree
1	There is functional chemistry laboratory in my school.	0	5	0%	100%
2	I carry out chemistry practical with my students every week.	0	5	0%	100%
3	I receive science allowance for teaching chemistry.	0	5	0%	100%
4	I am a member of Science Teachers Association of Nigeria.	1	4	20%	80%
5	The school provides adequate relevant textbooks in chemistry.	0	5	0%	100%
6	There is report between me and my student on practical chemistry.	2	3	40%	60%
7	I find it difficult to teach chemistry with English Language.	0	5	0%	100%
8	I normally improvise teaching materials where the standards ones are not available.	4	1	80%	20%
9	I take my students on field trip as the need arises.	0	5	0%	100%

Teachers' responses to questionnaire administered in school D

S/N	CATEGORIES	AGREE	DISAGREE	PERCENTAGE (%)	
				Agree	Disagree
1	There is functional chemistry laboratory in my school.	5	0	100%	0%
2	I carry out chemistry practical with my students every week.	1	4	20%	80%
3	I receive science allowance for teaching chemistry.	0	5	0%	100%
4	I am a member of Science Teachers	4	1	80%	20%