LECTURERS' CHARACTERISTICS ANDTHEIR PERCEPTIONS OF THE IMPLEMENTATION OF CHEMISTRY CURRICULUM IN COLLEGES OF EDUCATION IN SOUTH- WEST, NIGERIA

Ph.D. ORAL DEFENCE

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DEPARTMENT OF SCIENCE EDUCATION
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NIGERIA

APRIL, 2018

DECLARATION

I declare that this thesis on the Lecturers' Characteristics and their Perceptions of the Implementation of Chemistry Curriculum in Colleges of Education in South-west Nigeria is my own work and has not been previously submitted by me or any other person for any course or qualification in this or any tertiary institution.

I also declare that to the best of my knowledge, all cited works have been acknowledged and referenced.

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CERTIFICATION

This is to certify that this research work was carried out by Adewale Olusegun Adeniran(88/015515). The thesis had been read and approved as meeting the requirements for the award of the Degree of Doctor of Philosophy in Curriculum Development, in the Department of Science Education, Faculty of Education, University of Ilorin, Ilorin, Nigeria.

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2018

DEDICATION

This research work is dedicated to the Almighty God for His care, protection, love and provision.

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ABSTRACT

The goals and objectives of a course at any level of education can be achieved if the planned curriculum for such a course is properly implemented. Effective implementation of chemistry curriculum is a function of lecturers' characteristics. Studies revealed poor performance of students in chemistry, which indicates that implementation of chemistry curriculum, may be faulty. This study therefore examined lecturers' characteristics and their perceptions of the implementation of chemistry curriculum in Colleges of Education in South-west, Nigeria. The objectives of the study were to find out the influence of lecturers' characteristics: (i) academic qualifications; (ii) teaching experience; and (iii) gender on perceptions of the implementation of chemistry curriculum. The study further investigated: (iv) influence of school type; and also determined (v) whether significant differences exist in lecturers' perceptions of implementation of chemistry curriculum based on qualification, experience, gender and school type.

Descriptive research method of the survey type was employed. The population comprised all (107) chemistry lecturers from Federal, State and Private Colleges of Education in South-west Nigeria. Total population sampling was employed for the 107 chemistry lecturers from 15 Colleges of Education that offered chemistry out of 33 Colleges of Education in south-west, Nigeria, during the field work. 87 lecturers were qualified, 20 were unqualified, 28 were experienced, 46 were moderately experienced and 33 were less experienced. 74 were males while 33 were females. The instrument used was Lecturers' Characteristics Questionnaire (LCQ) which was validated by experts. Using test-retest method, LCQ reliability value was 0.81. Four research questions were answered using mean scores while four hypotheses were tested using *t*-test and Analysis of Variance (ANOVA).
Findings of the study were that:

(i) qualified lecturers had higher positive perceptions ($\bar{x}$=4.21) of the implementation of chemistry curriculum than unqualified lecturers ($\bar{x}$=4.05);
(ii) experienced lecturers had the highest positive perceptions ($\bar{x}$= 4.25) of the implementation of chemistry curriculum followed by the less experienced ($\bar{x}$=4.21), and moderately experienced lecturers ($\bar{x}$= 4.15);
(iii) male lecturers had higher positive perceptions ($\bar{x}$=4.42) of the implementation of chemistry curriculum than female lecturers ($\bar{x}$=4.12);
(iv) lecturers in State Colleges of Education had the highest positive perceptions ($\bar{x}$=4.22) of the implementation of chemistry curriculum followed by lecturers in Federal (x=4.17) and lecturers in Private Colleges of Education ($\bar{x}$=4.13); and
(v) no significant difference existed in lecturers' perceptions of the implementation of chemistry curriculum based on qualification, gender, experience and school type ($p>0.05$).

The study concluded that lecturers had high positive perceptions of the implementation of chemistry curriculum. The implication of this study is that poor performance of students in chemistry may not have anything to do with lecturers'

characteristics and their perceptions, but could be caused by other factors. It was recommended that teaching of chemistry should be limited to qualified and experienced chemistry lecturers. However, further studies should look into other factors that may cause poor performance of students in chemistry, in Colleges of Education in South-west Nigeria.

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TABLE OF CONTENTS

Contents

Title Page	i
Declaration	iii
Certification Page	iv
Copyright Page	v
Dedication	vi
Acknowledgements	v ii
Abstract	x
Table of Contents	xii
List of Tables	xvi
List of Figures	xvii
List of Appendices	xix

CHAPTER ONE

INTRODUCTION

Background to the Problem	1
Statement of the Problem	27
Purpose of the Study	29
Research Questions	29
Research Hypotheses	30
Scope of the Study	31
Significance of the Study	31

Clarification of Major Terms and Variables 33

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Conceptual Framework for the Study 36

History of Colleges of Education in Nigeria 48

The N.C.C.E. Minimum Standard 54

Functions of NCCE 55

Philosophy, Objectives and content of NCE

Chemistry Curriculum 57

Concept of Curriculum Implementation 58

Lecturers' Qualifications on the Implementation

of Curriculum 63

Lecturers' Experience on the Implementation

of Curriculum 83

Lecturers' Gender on the Implementation

Of Curriculum 100

Lecturers' Perceptions of the Implementation of Curriculum 113

Appraisal of the Reviewed Literature 116

CHAPTER THREE

RESEARCH METHODOLOGY

Research Type 120

Population, Sample and Sampling Techniques 121

Research Instrument 123

Validation of Research Instrument 123

Procedure for Data Collection 124

Data Analysis Techniques 124

CHAPTER FOUR

DATA ANALYSES AND RESULTS

Research Question 1 130

Research Question 2 132

Research Question 3 136

Research Question 4 139

Hypothesis 1 143

Hypothesis 2 144

Hypothesis 3 144

Hypothesis 4 145

Summary of Major Findings 146

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Discussion of Findings 148

Conclusion 155

Limitation of the Study 156

Recommendations 157

Suggestions for Further Studies 159

References 161

Appendices 179

LIST OF TABLES

Table1:Performance of NCE III Chemistry Students in a Federal College of Education from 2011-2014……..20

Table 2: Performance of NCE III Chemistry Students in a State College of Education from 2011-2015……..22

Table 3:Performance of NCE III Chemistry Students in a Private College of Education, from 2010 – 2014……25

Table 4: Distribution of Academic StaffbyQualification and Sex 2009/2010 Sessions…….82

Table 5: Distribution of Academic Staff by School and Sex 2009/2010 session……115

Table 6: PercentageDistribution of Respondents based on School Type…….129

Table 7: PercentageDistribution of Respondents based on Gender..130

Table 8: PercentageDistribution of Respondentsbased on Academic Qualifications……131

Table 9: PercentageDistribution of Respondents based on the Years of Teaching Experience……132

Table 10: Rating ofChemistry Lecturers' Responsesbased on Academic Qualifications……134

Table 11:Ratingof Chemistry Lecturers' Responsesbased on Teaching Experienced……..137

Table12:RatingofChemistry Lecturers' Responses based on Gender.140

Table13:Rating of Chemistry Lecturers' Responsesbased on School Type……..143

Table 14: T-test Analysis of Qualified and Unqualified Chemistry Lecturers and their Perceptionsof the Implementation of Chemistry Curriculum…….146

Table 15: One way Analysis of Variance (ANOVA) of Experienced, Moderately Experienced and Less Experienced Chemistry Lecturers and their Perceptionsof the Implementation of Chemistry Curriculum…147

Table 16: T- test Analysis of Male and Female Chemistry Lecturers and their Perceptionsof the Implementation of Chemistry Curriculum…148

Table 17: One way Analysis of Variance (ANOVA) of Perceptions of the Implementation of Chemistry Curriculum by Lecturers based on School typeof Colleges of Education……149

LIST OF FIGURES

Figure 1: Classification of Matter…….11

Figure 2: Energy Profile for Exothermic Reaction……...14

Figure 3: Energy Profile for Endothermic Reaction……..15

Figure 4: Trends of Students' Performance of NCE III Chemistry Students ina Federal College of Education inChemistry from 2011-2014……..21

Figure 5: Trends of Students' Performanceof NCE III ChemistryStudents ina State College of Education from 2011-2015……..23

Figure 6: Trends of Students' Performance of NCE III Chemistry Students ina Private College of Education in Chemistry from 2010 – 2014…….25

Figure7: Relationship between the Curriculum Implementation Strategies……36

Figure8: Curricular cycle……...37

Figure9: School Based Factors that Influence Implementation Process..38

Figure10: Profile of Implementation……39

Figure11: Linkage between Different Factors and Academic Performance……..40

Figure 12: Factors Affecting Students' Academic Performance..42

Figure 13:Relationship between Attitude and Academic Performance in Chemistry……43

Figure 14: An Illustration of Factors Affecting the Teaching and Learning of Chemistry…….44

Figure 15: Relationship between Learners, Teachersand Subjects..45

Figure 16: Students and Teachers Related Variables……..45

Figure 17: Distribution of Academic Staff byQualification and Sex 2009/2010……..83

Figure 18: Distribution of Academic Staff bySchool and Sex 2009/2010……..115

Figure 19:Pie-chart of Respondents based on School type……130

Figure 20:Pie-chart of Respondents based on Gender……131

Figure 21:Pie-chart of Respondents based on Academic Qualification……..…….132

Figure 22:Pie-chart on Experience of Lecturers……..133

LIST OF APPENDICES

Appendix 1Address of Approved NCE –Awarding Institutions as at 2016…….182

Appendix 2 Selected Colleges of Education…….191

Appendix 3Lecturers' Characteristics Questionnaire……192

Appendix 4 Budget Proposal…….194

Appendix 5 Lectures' Consent Forms……196

Appendix 6 Dissemination of Major Findings……...199

CHAPTER ONE

INTRODUCTION

Background to the Problem

Teacher as a stakeholder in education is found to be the pivot around which other stakeholders revolve. For any achievement to be recorded in education sector, they have major parts to execute in the execution of such curriculum in that system. Much of the discourse in curriculum implementation depends on the teachers as the executor. Hence teachers are generally referred to as intermediaries of educational innovations and agents of innovations.

Over the past two decades, policy makers have called for betterment in the implementation of curriculum so as to cut down the variance in implementing the curriculum. For instance, Iheonunekwu, Umebali and Okunamiri (2011) emphasized that teachers are important enablers in matters relating to educational development and curriculum renewal. Gidado (2007) observed that the teacher is being globally recognized as the most prominent and significant factor that imparts learning process especially in the school context. It simply means that resources that are on ground to ameliorate quality of education at any level might not yield the expected result unless the teacher factor is properly considered. Gabriel (2013) corroborated the fact that teacher education is very significant for the fact that teachers translate and put

into action educational principles which train our students for their future benefits, and the society at large.

Fullan (2001) supported that any meaningful educational innovation that does not take into account the role of teachers in the change process is unlikely to yield any significant impact. This means that, no matter how modern the policy and materials and how originative the methodology are, unless the classroom teacher has a comprehensive idea to work, the new program is bound to fail. National Policy on Education (2013), stated thus "no educational system can rise above the quality of its teachers" (F.R.N., 2013). It stated further that purpose of teacher education was to turn out extremely encouraged, vigilant and up to task teachers in all our educational structure (F.R.N., 2013).

Abodunrin and Ogundare (1996) mentioned that whatever the influence of teacher would be on the system of education can only be determined by the teacher's quality, quantity and value. Wolhuer (2006) suggested that any education system stands or falls by the quality of its teaching profession. The meaning of this is that, level of excellence of education is a crucial matter that can assist in actualization of any government education policy. Teachers should be resource personnel, translators and planners of curriculum. They should also be engaged in professional development and carry out research work, and be versed with the knowledge, skills, values, principles and procedures.

Mohammed (2012) confirmed that the aims of any stage of education can only be attained if the designed activity for such stage of education is properly executed. Onyeachu (2008) indicated that irrespective of how well academic program is drawn, patterned and recorded, effectuation is very essential. The reason is that the challenge being faced by many educational instructions surfaces at the effectuation level. Supporting submissions of Babalola (2004), and Mkpa (2005), Onyeachu (2008) made it known that at the effectuation level, lots of good academic program as well as other educational principles are spoiled. However Olorundare (2011) confirmed that, it is very glaring that the roles of classroom teachers as curriculum implementers cannot be ignored.

There are different features of teachers that affect the implementation. Among these are academic qualification, teaching experience, gender and attitude of the teacher. Qualification means the academic degree with which one enters a job. Teachers' qualification must be taken into consideration in implementing school curriculum. Some empirical studies affirmed the fact that only qualified teachers can handle or implement the curriculum successfully. Such studies include those of Badmus (2007), Jeremiah and Diepreye (2012) and Bandele and Akintoye(2012). Badmus (2007) agreed with this submission and called for more qualified teachers in schools. Likewise, Jeremiah and Diepreye

(2012), Bandele and Akintoye (2012) called for the employment of specialists and provision of required human resources respectively.

Another important feature of curriculum implementation is the teacher's year of teaching experience. A lot of profession identify employee's years of knowledge as a means of compensations rules, benefit bundles as well as deciding of promotion. It is believed that knowledge acquired over a period of time heightens the experience, ability and output of staff. For instance, Ajayi and Afolabi (2012) asserted that teachers experience had a significant influence on their performance. Mantosa (2014) confirmed the fact that teachers' experience is very crucial in implementing the curriculum. However, Jennifer (2010) concluded that on the average, the influence of knowledge is very high at the early years of classroom teaching after which diminishing returns set in.

Gender is a variable which also influences the implementation of the curriculum. The effect of gender on performance of students` in science is a major concern to many scholars and particularly science educationists. Many scholars had tried to find out if it is true that there is male superiority in science achievement or not. Mezieobi, Oyeoku and Egbe (2012) were of the view that there is a gender balance in the implementation of curriculum. This view was supported by Mohammed and Babikkoi (2012) be it male or female. Kobia and Ndiga (2013)

affirmed that teachers' gender did not influence implementation of curriculum. However, Luschei and Thomas (2012) opined that those students under the supervision of male tutors scored below those of female tutors. Chudgar and Sanker (2008) earlier affirmed that classroom management as well as trust in learning skills of students differs from male to female teachers.

Perception of the teacher is another significant factor in the implementation of curriculum. Researchers are of diverse opinions on the issue of perception as it affects the implementation of curriculum. The perception to teaching and or implementing of curriculum greatly affects the outcome of the curriculum. Findings from the study suggested that teacher's perceptions are very essential when it comes to chalk and talk/learning stages. Teacher's perceptions are significant factor in teaching because of the connection it has between attitude and practice. Teachers' behavior are often transformed into precise classroom and teaching which also influence students' behavioral and performances (Cook, 2002). Reinke and Moseley (2002) indicated that teachers` behavior is a vital variable in the implementation of new ideas and new methods to teaching.

Technology is the application of science particularly to industry in achieving industrial objectives. Alele-Williams (1987) noted that the place of Science, Technology and Mathematics (S.T.M.) in the life of any

nation is one which is inescapably linked with the pace of the development in that nation. Imevbore (2002) concluded that scientific and technological research is the life blood of real progress. Imevbore explained that science is seen as the basics of all inventions necessary for growth in the efficiency of the human community.

Fafunwa (1972) confirmed that this world where we are today, science and technology is now indispensable and any country that takes it for granted will definitely lag behind others. According to Banu (1994), science and technology are known to be the fundamentals of modern development. Therefore, it is very glaring that the role of science in the development of a nation is never controversial most especially in Nigeria. In corroboration of the views above, Olorundare (2011) asserted that the level of development of any nation is a function of its science, technology and mathematics.

Modern science has advanced seriously since its advent in 16thcentury that today we live in a world of science full of principles termed technology. The definitions of science are in-exhaustive; it varies even among scientists. Few of the diverse definitions of science are stated as follows: Abdulahi (1982) described science as ability to think logically in which human beings seek to know more about the world around them. Ogunniyi (1983) described science as series of scientific work subject to be tested, verifiable and falsifiable intellect. Abimbola

(2013) opined that science is an intellectual activity, a way to verify, a method and away of thinking in the pursuit of an understanding of nature. National Teachers Institutes and Teacher Education in Sub-Saharan Africa (NTI-TESSA) (2010) stated that, science is concerned with finding out about things in our environment.

Science is seen as the procedure or method of finding out or unwrapping our world. Balogun (2010) observed that we are living in a world that has been made small by the advancement of communication technology as well as a world, which can be blown asunder by nuclear weapons. Adeyegbe (2003) considered the role of science and technology as fundamental and basic tools for man's progress and development. This implies that we are living in a science-driven world that is both exciting (e.g. communication technology, health care, modern transportation system, skyscraper buildings and so on), and challenging (e.g. cybercrime, pollution, global warming, atomic bomb and so on) that is also making great demands on individuals and societies at large. Nigeria needs to advance in the modern science and skill so as not to lag behind other nations of the world. In actualization of this fact, Chemistry education cannot be disregarded as a core subject from where other sciences draw nourishment.

Ogunleye (1999) asserted that there have been various efforts by successive Nigerian governments to improve the scientific and

technological development in Nigeria. In a bid to boost science, there was the introduction of special remedial science courses in schools. Such remedial science courses were established in Federal science schools (now Federal College of Arts and Science) in Lagos. The deliberate policies of the University intake by the Federal Government to reflect preference for the science (i.e. 60% of students in science based programs), the establishment of science centers and science schools in many states, National Mathematical Centre at Abuja, local production of equipment, educational resource centers of the Ministry of Education, science equipment centers, and schools for the gifted and so on. (STAN bulletin 1989) are for the enhancement of science and technology in Nigeria.

Jekayinfa (2010) noted that in Nigeria as well as in other countries that are just developing, teaching is found to be highly important and strategic profession for national development. Omosewo (1994) argued that science teaching commenced as far back as 1859 in Nigerian secondary schools. Science teaching commenced with Nature Study, which was later extended to Chemistry, Physics and Biology. Physics, according to Okpala (1999) is described as the science which deals with the behavior of matter. Ramalingam (2010) described Biology as the science of living things e.g. plants and animals. It is an interesting subjects that studies tiny cellular molecules as well as the atmosphere,

comprising of the surface of the earth to the biosphere, encompassing the earth and its living things (Ramalingam, 2010).

Odesina (2008) described Chemistry as a branch of science which studies the component as well as the arrangement of matter, and the strength that bind the arrangement together. Chemistry has as its main objectives, study of the nature and characteristics non-living things that surrounds us as well as the formation of new things from the materials provided by nature (Odesina, 2008).

The study of Chemistry makes it possible for us to acquire knowledge about matter. Being an experimental science, experiments are carried out, observations are recorded, and intelligent inferences are made. Chemistry has helped greatly towards providing our basic needs and enhancing the quality of our lives. For instance, the effects of Chemistry are felt in provision of medicine, portable water, improved food technology, household equipment, modern building, textiles and so on. Banya (2005) emphasized that Chemistry as a subject has both intrinsic and utility values in virtually all areas of human life. According to Banya (2005), Chemistry is a core subject from which those other sciences draw nourishment. It is a human enterprise that depends on basic human attributes like creativity, insight, reasoning and skills viewing the submission.

Tai, Sadller and Loehr (2005) observed that Chemistry is mostly seen as a core science, as many of its thoughts concerning the arrangement of matter are important to further study in all sciences. Science interprets nature in terms of matter and energy. Matter is described as whatever that has weight and occupies space. Matter is said to be in 3 physical states which are solid, liquid and gas. A gas maintains neither volume nor shape. A liquid has no fixed shape while a solid, under ordinary condition, maintains definite volume and shape. All matter can change from one state to another when heated or cooled. For example, let us consider what occurs to water under various temperatures.

Ice $\underset{\text{cool}}{\overset{\text{heat } 0^0\text{c}}{\rightleftharpoons}}$ Water $\underset{\text{cool}}{\overset{\text{heat } 100^0\text{c}}{\rightleftharpoons}}$ Steam

Properties of matter include density, colour, physical state, melting point, hardness and electrical conductivity. All these can be noticed without causing any difference in the chemical composition of the matter and are known as physical properties. The chemical properties of matter are those that explain the chemical changes that matter undergoes. For example, the rusting of iron as a chemical property of matter. Properties that are not characteristics of any particular type of matter, such as mass, length and temperature are known as extrinsic properties.

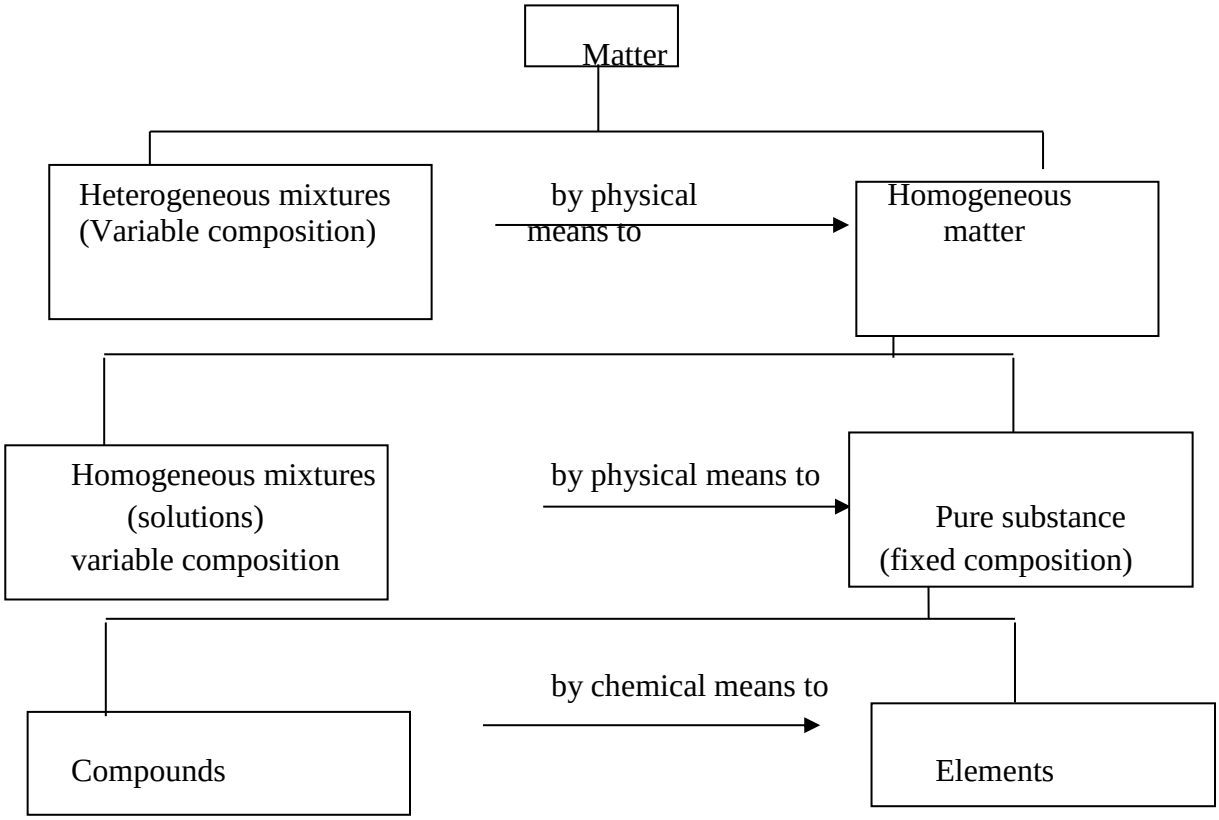


Figure 1: Classification of matter

Source: Odesina (2008)

According to Odesina (2008) when matter is put to varying conditions, it undergoes changes which may be temporary that is physical change, for example the dissolution of common salt in water

$$\text{Salt + water} \underset{\text{Evaporate}}{\overset{\text{Mix}}{\rightleftharpoons}} \text{salt solution}$$

The other type of change is known as chemical change which is the transformation in which new substance is formed and is not easily reversed, for example (i) burning of wood

$$\text{Wood burning} \longrightarrow \text{ash + gases}$$

(ii) addition of water to calcium oxide

$$CaO_{(s)} + H_2O_{(l)} \longrightarrow Ca(OH)_{2(aq)}$$

(iii) reaction between metals and calcium trioxocarbonate (iv) with dilute acids

$$Zn_s + 2HCl_{(aq)} \longrightarrow ZnCl_{2\,(s)} + H_{2\,(g)} \uparrow$$

(iv) the corrosion of iron in damp air

$$4Fe_{(s)} + 3O_{2(g)} + 2xH_2O_{(l)} \longrightarrow 2Fe_2O_3.xH_2O_{(s)}$$

Odesina (2008) explained that matter consists of tiny particles like atoms, molecules and ions. The smallest fragment of an element which can partake in a chemical reaction is called atom. Molecule is described as the smallest fragment of a substance that is capable of independent existence, and still retains the chemical properties of that substance. The combination of atoms of the same type produces molecules of an element e.g. H_2, O_2, N_2 and Cl_2 while the combination of different types of atoms produces molecule of a compound e.g. sodium chloride (NaCl), calcium chloride ($CaCl_2$) and so on. Ions are any atom or a group of atoms which contains electric charges. The positively charged ions or cations include K^+, Na^+, Ca^{2+}, Fe^{2+} and so on, while the negatively charged ions or anions include OH^-, Cl^-, NO_3^-, SO_4^{2-} . There is production of ions when atoms loss or gain electrons. For example,

$Na - e^- \longrightarrow Na^+$ $\qquad$ $Mg - 2e^- \longrightarrow Mg^{2+}$

$Cl + e^- \longrightarrow Cl^-$ $\qquad$ $S + 2e^- S^{2-} \longrightarrow$

The universe where we are contains various types of physical and chemical reactions which may or may not be known to many of us who have little or even no knowledge of science. Some of these reactions are

carried out knowingly or unknowingly in the process of our day to day activities. Ababio (2015) explainedsome of these reactions to include:

(i) Neutralization reaction: this is a reaction by which a basic oxide or hydroxide reacts completely with an appropriate amount of an acid to form salt and water. E.g.,

$$HCl_{(aq)} + NaOH_{(aq)} \longrightarrow NaCl_{(aq)} + H_2O_{(l)}$$

Neutralization reaction can also be expressed with ionic equations as the process of neutralization occurs by the reaction of hydrogen and hydroxide ions.

$$H^+_{(aq)} + OH^-_{(aq)} \longrightarrow H_2O_{(l)}$$

$$H_3O^+_{(aq)} + OH^-_{(aq)} \longrightarrow 2H_2O_{(l)}$$

(ii) Combination reaction: this chemical reaction occurs when a single compound is formed from the combination of two or more substances. E.g.,

$$Fe_{(s)} + S_{(s)} \longrightarrow FeS_{(s)}$$

$$NH_{3(g)} + HCl_{(g)} \longrightarrow NH_4Cl_{(s)}$$

(iii) Decomposition reaction: this takes place by the splitting of a single compound into two or more simpler substances. When heat is needed to bring about the decomposition, the reaction is known as thermal decomposition. E.g.,

$$2Pb(NO_3)_{2(s)} \xrightarrow{heat} 2PbO_{(s)} + 4NO_{2(g)} + O_{2(g)}$$

(iv) Displacement reaction: this involves the replacement of one element (or radical) by another element (or radical) in a compound. For example,

$Zn_{(s)} + CuSO_{4(aq)} \longrightarrow ZnSO_{4(aq)} + Cu_{(s)}$

$Cl_{2(g)} + 2KBr_{(aq)} \longrightarrow 2KCl_{(aq)} + Br_{2(g)}$

(v) Reversible reaction: this is a chemical reaction which can be made to proceed in either direction under suitable conditions. For example,

$$3Fe_{(s)} + 4H_2O_{(g)} \rightleftharpoons Fe_3O_{4(s)} + 4H_{2(g)}$$

$$CaCO_{3(s)} + H_2O_{(l)} + CO_{2(g)} \underset{\text{heat}}{\overset{\text{in the cold}}{\rightleftharpoons}} Ca(HCO_3)_{2(aq)}$$

(vi) Exothermic reaction: when heat is given out to the surroundings such chemical reaction is known as exothermic reaction. e.g. $CaO_{(s)} + H_2O_{(l)} Ca(OH)_{2(aq)}$

The enthalpy of the reaction is negative i.e $\triangle H = -x\ KJmol^{-1}$

The energy profile diagram for the reaction is shown below

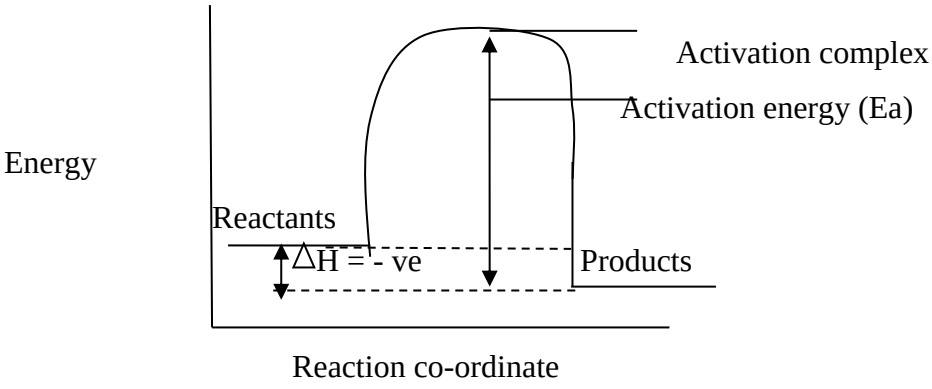


Figure 2: Energy Profile for Exothermic Reaction
Source: Ababio (2015)

(vii) Endothermic reaction: When heat absorbed from the surroundings during a chemical reaction, such is called endothermic reaction. The enthalpy change is positive that is $\triangle H = +xKJ\ mol^{-1}$. The energy profile diagram is shown below

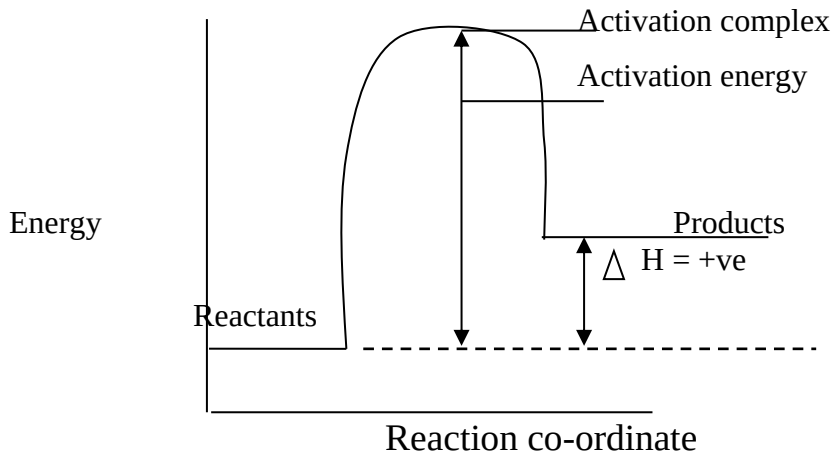


Figure 3: Energy profile for endothermic reaction
Source: Ababio (2015)

viii. Fermentation: is the slow decomposition of large organic molecule (starch) by micro-organism (e.g. yeast and bacteria) into smaller molecules (ethanol) e.g. $C_6H_{12}O_6 \longrightarrow 2CO_{2(g)} + 2C_2H_5OH_{(l)}$

ix. Saponification: this is the general process of alkaline hydrolysis of esters by which soap is obtained. For example, hydrolysis of fats and oils with caustic alkali yields propane - 1, 2, 3, - triol and the equivalent sodium and potassium salts of the essential fatty acids. These two salts are the main components of a soap

fat or oil + caustic alkali $\longrightarrow$ soap + propane – 1,2,3,- triol

$$\begin{array}{lll} R\ COOCH_2 & RCOO^-Na^+ & HO\text{-}CH_2 \\ \downarrow & & \downarrow \\ R^1COOCH + 3NaOH \longrightarrow & R^1COO^-Na^+ + & HO\text{-}CH \\ \downarrow & & \downarrow \\ R^{11}COOCH_2 & R^{11}COO^-Na^+ & HO\text{-}CH_2 \end{array}$$

Soaps propane – 1,2,3- triol (glycerol)

Source: Ababio (2015)

With these few illustrations of chemical reactions, one can clearly see the essential worth as well as useful worth of Chemistry in all aspects of human activities and how Chemistry cuts across other disciplines. It can be said that Chemistry serves as the foot path to the study of many sciences.

Deanery (2012) asserted that in lecturing, there are certain things that people belief; one of the common beliefs is that there are some people who have natural interest for lecturing. Some people reform better and find it easier when delivering to groups than others, however it must be noted that the end result of a lecture is that people learn. Real delivery of lecture lies mostly on ability. However, certain methods of teaching can be employed to make ones lecture more interesting. Characteristics of an efficient lecturer include (1) presentation of the material in a simple and reasonable ways, (2) making of the material available, understood and significant, (3) cover the course work satisfactorily, (4) demonstrate authority, (5) package the lecture properly, (6) add materials that are not available in textbooks, and (7) clarify the aspect of practical in the course delivered.

Abimbola (2011) asserted that some Nigerian University lecturers use inappropriate and archaic methods of teaching. This does not only concern the University lecturers, it is also applicable to other higher institutions of learning as well. According to Abimbola (2011),lecture

method has been grossly bastardized in Universities because it is always used to make for lost ground that is, the method is often used to rush lectures. Perhaps, because of lack of supervision and monitoring or because of sheer knowledge gap, young lecturers always abuse it with impunity. He concluded that experienced University lecturers in most cases think they are lecturers and not teachers. The statement above presupposes that modern methods of teaching should be used together with lecture method most especially those recommended for Chemistry lecturers by the NCCE, which include lecture, demonstration, discussion, activity, field trips, project and tutorial, CAI, concept mapping and games and simulation.

The recommended teaching methods are briefly discussed below: (a)Lecture method: The lecture or didactic method, according to Abimbola (2009) is a teaching technique in which the lecturer makes oral presentation of ideas to the students. The students on the other end are said to receive these ideas meaningfully or by rote.(b) Discussion method: This is a teaching method whereby views are presented by students and teachers on a particular issues for comparism and contrast. (Abimbola, 2009). The success of the technique depends on students having pre-knowledge of the topic of discussion. (c) Activity method: This requires students and teachers deep participation in the stages of teaching, when explanation on the practical aspect in the theory are done.

(d) Demonstration method: Omosewo (2009) observed that it is a process of doing or performing something in the presence of others either as a means of showing them how to do it themselves or illustrate principle. This could be done either by teacher or students.(e) Project method: According to Fajemidagba (2009),project method involves students doing different manipulative activities or varied library researches or different problem solving tasks on an individual basis. The method centers on an assignment of interest undertaken by an individual or a group or a whole class. (f)Tutorial method: Abimbola (2009) asserted that this technique allows students to be placed in a one to one relationship with the teacher, a peer or an adult.

(g)Field trip method: This technique assists students to have a broad knowledge and build on the gained knowledge. It enhances the ability of making use of the knowledge gained in theory. Omosewo (2009) observed that it entails going outside the classroom for the purpose of making relevant observations, collections, classification and manipulations.(h) Concept mapping: This is an example of graphic organizer which is used to assist students to arrange and present cognizance of a subject. It starts with a particular concept then spread out to a particular topic.

The essential worth as well as the useful worth of Chemistry in all areas of human life have accounted for its addition in the school program.

The process of instruction and knowledge of Chemistry at the NCE level ought to be done in such a way as to have capable, active and resourceful teachers, who can easily pass the acquired skills to their pupils (NCCE, 2009, p. 25).

Nigeria as country comprises of thirty-six (36) states and Abuja as its Federal capital territory. Nigeria is one of the West Africa countries and shares her borders with the Republic of Benin towards west, to the east are Cameroon and Chad, and Niger Republic towards the north, and Atlantic ocean in the south. Nigeria has more than 500 different ethnic groups.The three major ethnic groups are Yoruba, Hausa, and Igbo. The country was colonized by the British.

Nigeria got her autonomous in 1960.The country is called "The giant of Africa". It is the highest populated country in Africa and by 2006 census; the population was 140,431,790 and estimated to be 170,123,740 in 2012. Nigeria has 6 Geo-political zones namely: (i) North-eastern (ii) North-central (iii) North-western (iv) South-southern (v) South-western states and (vi) South-eastern zones. The states comprising of the South-western zones are; (i) Oyo, (ii) Ogun (iii) Ondo (iv) Osun (v) Ekiti and (vi) Lagos. These are the states that the research covered. Private, State and Federal Colleges of Education were sampled in the states.

Reports clearly indicate poor students' performance in Chemistry in the Colleges of Education. For instance, looking at the performance of

students in three Colleges of Education below, one could say that performance of students in Chemistry is not encouraging.

Table 1

Performance of NCE III Chemistry Students in a Federal College of Education (2011 – 2014).

	Organic Chemistry				Inorganic Chemistry				Physical Chemistry				Total Enrolled
	No and % pass at Distinction level A%	No and % pass at Credit level C%	No and % pass at Pass level P%	No and % Fail F%	No and % pass at Distinction level	No and % pass at Credit level C%	No and % pass at Pass level P%	No and % Fail F%	No and % pass at Distinction level A%	No and % pass at Credit level C%	No and % pass at Pass level P%	No and % Fail	
2011	-	7(63.6)	2(18.2)	2(18.2)	1(9.1)	5(45.5)	3(27.3)	2(18.2)	-	4(36.4)	3(27.2)	4(36.4)	11
2012	2(7.7)	20(76.9)	3(11.5)	1(3.8)	3(11.5)	13(50)	6(23.1)	4(15.4)	-	11(42.3)	10(38.4)	5(19.2)	26
2013	4(10)	24(60)	6(15)	6(15)	5(12.5)	25(62.5)	7(17.5)	3(7.5)	2(5)	19(47.5)	11(27.5)	8(20)	40
2014	4(10)	22(55)	10(25)	4(10)	6(15)	22(55)	7(17.5)	5(12.5)	4(10)	12(30)	17(42.5)	7(17.5)	40

Source: Examination office, Federal College of Education Oyo (2016).

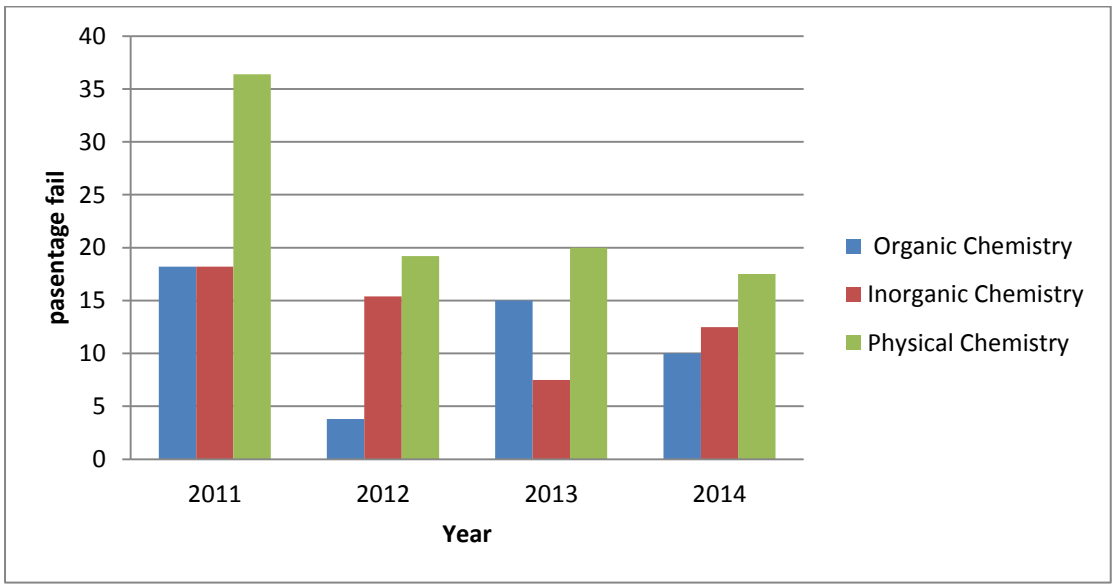


Figure 4: Trends of Students Performance by NCE III Chemistry Students in a Federal College of Education from 2011-2014.

Table 1 shows trends in enrolment and students' academic accomplishment in Chemistry between 2011 and 2014 academic sessions. The number on roll increases from 11 to 40 between 2011 and 2014. The table shows that academic performances in Organic Chemistry were better than performance in Physical Chemistry. In each session percentage failure in Physical Chemistry e.g. (36.4%) were greater than what was recorded in Organic (18.2%) and Inorganic (18.2%) Chemistry. For 2011 and 2012 academic sessions, there was no record of distinction except for the year 2013 (5%) and 2014 (10%). Generally, performances in Organic and Inorganic Chemistry were better than performance in Physical Chemistry. This may be as a result of the fact that Organic and Inorganic Chemistry do not contain much mathematical concepts like Physical Chemistry.

Weak background of students in Mathematics may lead to poor performances in Physical Chemistry. However to enhance the knowledge of students in mathematics for better performance in Physical Chemistry, Mat 114 and Mat 126 courses were introduced into the NCE curriculum. Despite the introduction of these mathematics courses, performance of students in Physical Chemistry is still poor, while performances in Organic and Inorganic Chemistry need to be improved upon.

Jimoh (2002) and Balogun (2010) asserted that the most difficult topics and concepts as perceived by students and teachers are in Physical

Chemistry. It was also revealed that performance of students in Physical Chemistry was always poor.

Table 2

Performance of NCE lll Chemistry students in a State College of Education (2011-2015).

	Organic Chemistry				Inorganic Chemistry				Physical Chemistry			
	No. nd % pass at distinction level	No. and %pass at credit level	No. and %pass at pass level	No. and % pass at fail	No. and %of pass at distinction level	No. and %pass at credit level c%	No. and %pass at pass level	No. and %passs at fail level	No. and %pass at distinction level	No. and % pass at credit level	No. and %pass at pass level	No. and % pass at fail
2011	5(19.2)	11(42.3)	5(19.2)	5(19.2)	6(23.1)	12(46.2)	6(23.1)	7(26.9)	2(7.6)	10(38.5)	8(30.8)	4(15.4)
2012	-	18(60)	8(26.6)	4(13.3)	4(14.3)	13(46.4)	3(10.7)	8(28.6)	-	16(53.3)	11(36.7)	3(10)
2013	4(12.5)	15(46.9)	3(9.4)	8(25)	-	20(68.9)	4(13.8)	5(17.2)	-	16(50)	7(21.9)	9(28.1)
2014	8(17.8)	25(55.6)	5(11.1)	7(15.6)	-	18(66.7)	4(14.81)	5(18.5)	-	25(55.6)	12(26.7)	10(22.2)
2015	-	21(55.3)	8(21.1)	9(23.7)	6(23.1)	12(46.2)	4(15.4)	4(15.4)	4(10.5)	25(65)	7(18.4)	2(5.3)

Source: Examination office, Adeniran Ogunsanya College of Education Ijanikin, Lagos (2016)

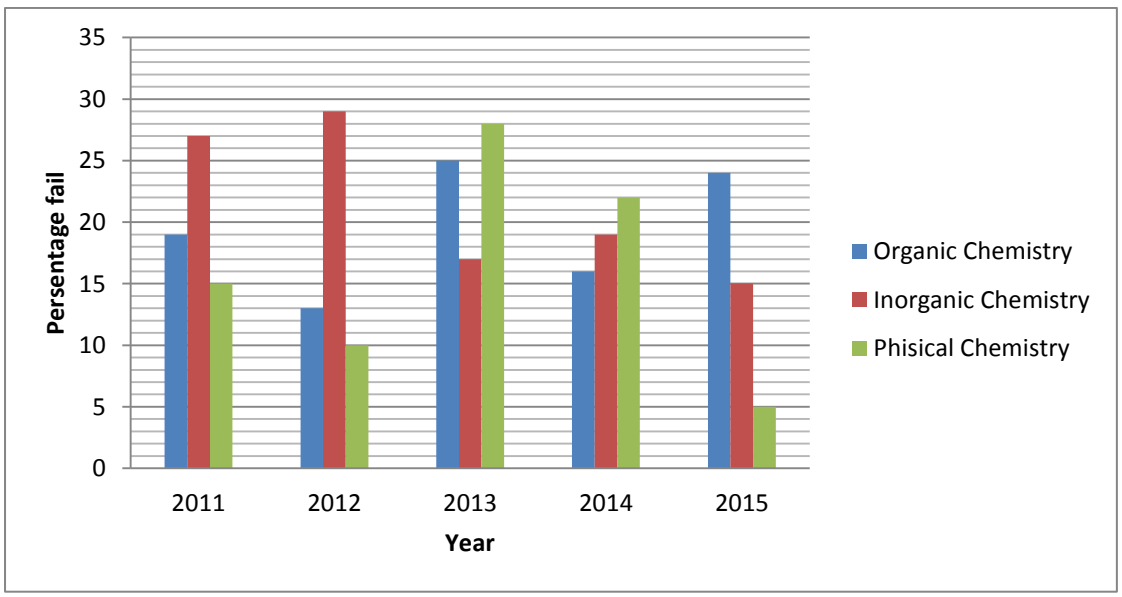


Figure 5: Trends of Students Performance by NCE III Chemistry Students in a State College of Education from 2011-2015.

Table 2 shows trends in enrolment and students 'academic accomplishment in chemistry between 2011 and 2015 academic sessions. The number of candidates range between 26 and 45 for the sessions. For the 2010/2011 session, the percentage passes at credit level for organic, inorganic and physical chemistry were 61.5%, 69.3% and 46.1% respectively. For 2011/2012 session, the percentage passes at credit level for organic, inorganic and physical chemistry were 60%, 60.7% and 53.3% respectively. Likewise for the 2012/2013 session, the percentage passes at credit level for organic, inorganic and physical chemistry were 59. 4%, 68.9% and 50% respectively. For 2013/2014 session, the percentage passes at credit level for organic, inorganic and physical chemistry were 73.4%, 66.7% and 55.6% respectively. Lastly, for the 2014/2015 session, the percentage passes at credit level for organic, inorganic and physical chemistry were 55.3%, 69.3% and 75.5% respectively.

From the information giving above it is clearly seen that students' performances in organic and inorganic chemistry were better than what were recorded in physical chemistry in 2010/2011(46.1%), 2011/2012(53.3%), 2012/2013 (50%) 2013/2014 (55.6%) except 2014/2015 where 75.5% was recorded in physical chemistry. Distinctions were recorded in 2011 (7.6%) and 2015 (10.5%) only, whereas distinction were recorded thrice in organic chemistry, that is,

2011(19.2%), 2013(12.5%) and 2014 (17.8%) and inorganic chemistry that is 2011(23.1%), 2012 (14.3%) and 2014(23.17%). As discussed earlier, the phobia created for mathematics by students may be a factor responsible for the poor performance in physical chemistry which is mathematics oriented.

Table 3

Performance of NCE III Chemistry Students in a Private College of Education, 2010 – 2014.

	Organic Chemistry				**Inorganic Chemistry**				**Physical Chemistry**				**Total enrolment**
	No and % Pass at Distinction level A%	No and % Pass at Credit C%	No and % pass at pass level P %	No and % Fail F%	No and % pass at Distinction level A%	No and % Pass at Credit C%	No and % Pass at Pass level P %	No and % fail F%	No and % Pass at Distinction level A%	No and % pass at Credit level C%	No and % pass at Pass level P %	No and % Fail F%	
2010	4(11.8)	14(51.9)	6(22.2)	3(11.1)	2(7.4)	18(66.6)	5(18.5)	2(7.4)	1(3.7)	10(37)	10(37)	6(22.2)	27
2011	2(10)	13(65)	3(15)	2(10)	1(5)	16(80)	3(15)	-	-	8(40)	7(35)	5(25)	20
2012	-	19(79.2)	4 (16.7)	1(4.2)	3(12)	15(62.5)	4(16.6)	2(8.3)	-	12(50)	8(33.3)	4(16.6)	24
2013	2(10)	12(60)	3(15)	3(15)	2(10)	10(50)	7(35)	1(5)	-	6(30)	10(50)	4(20)	20
2014	1(6.6)	10(66.6)	2(13.3)	2(13.3)	4(26.6)	7(46.6)	3(20)	1(6.6)	2(13.3)	4(26.6)	6(40)	3(20)	15

Source: Examination office Best Legacy College of Education Ogbomoso (2016).

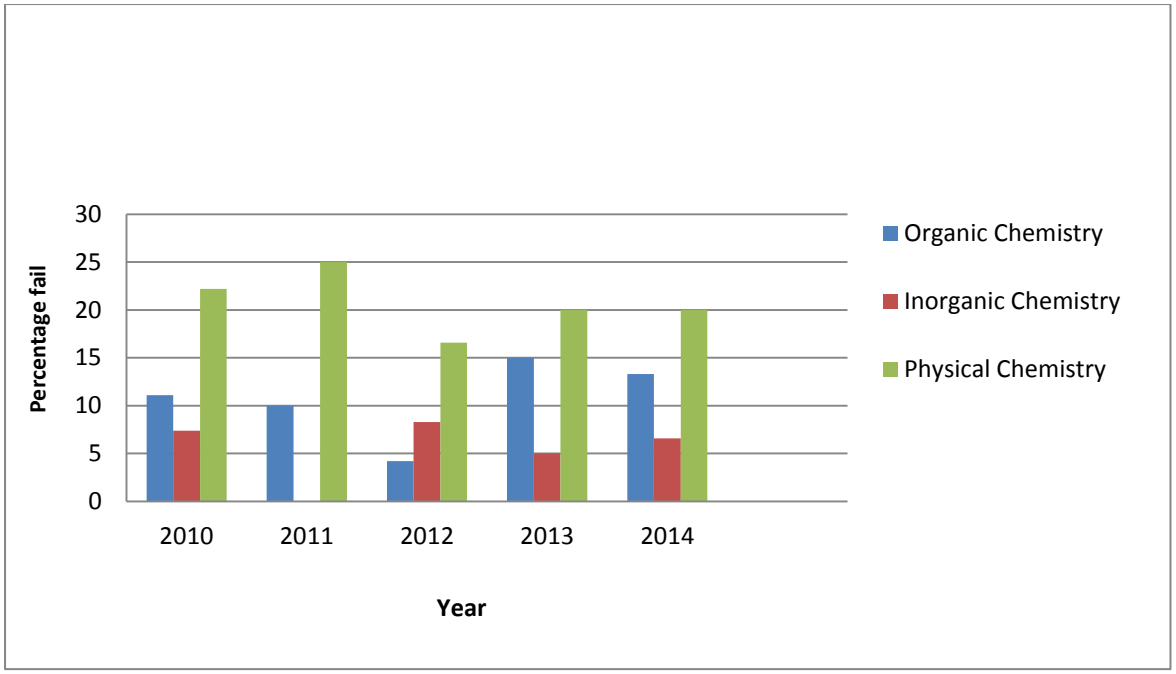


Figure 6: Trends of Students' Performance by NCE III Chemistry Students in a Private College of Education from 2010– 2014.

Table 3 shows trends in enrolment and students' academic accomplishment in Chemistry between 2010 and 2014 academic sessions. It is observed that the enrolment of students decreased from 2010 (27) to 2014 (15). The table compared performances of students among three main branches of Chemistry i.e. Organic, Inorganic and Physical Chemistry. It is clearly shown that performances in Organic and Inorganic Chemistry were better than performances in Physical Chemistry. In Physical Chemistry, distinctions were recorded only in two sessions that is 2010 (3.7%) and 2014 (13.3) unlike what were obtained in Organic and Inorganic Chemistry where distinctions were obtained throughout except in the year 2012 where there was no record of distinction in Organic Chemistry.

Moreover, the percentage failures in Physical Chemistry were higher in each session than what were recorded in Organic and Inorganic Chemistry for example in the year 2010, percentage failure recorded were 11.1%, 7.4% and 22.2% in Organic, Inorganic and Physical Chemistry respectively. The poor performance of students in Physical Chemistry may be as a result of its mathematical nature, students who are weak in Mathematics may not pass it well.

There is the necessity to sort for lasting answer to the challenge of lowly performance in Chemistry in the Colleges of Education considering its intrinsic value and its useful value in all aspect of human activity. Above all, the teaching and learning of Chemistry at this stage is ought to produce to produce skilled, active and competent teachers with basic skills to impart same to their pupils (NCCE 2009 p. 25).

For a country that wants to develop technologically, Chemistry education cannot be ignored. Chemistry students in Colleges of Education are equipped as science teachers for the future. It is therefore imperative that these students are well equipped so as to produce sound students. Hence implementation of Chemistry curriculum in the College of Education is very essential.

Statement of the Problem

All Colleges of Education in Nigeria run courses for the award of Certificate in Teacher Education. National Commission for Colleges of

Education (NCCE) supervises the Colleges. This is to allow for effective teacher education. The trend of achievement of Chemistry students in these Colleges of Education has not been encouraging. This may be an indicator that something is wrong with the implementation of Chemistry curriculum.

Government and other stake holders in education sector: Science Teachers Association of Nigeria, National Commission for Colleges of Education, Federal Ministry of Education, and Colleges of Education Academic Staff Union, have struggled to enhance the accomplishment of lecturers and teachers through various conferences, workshops, seminars and solve the problem by establishing principle that enforces them to be experts. This entails having the right teaching qualifications and having the necessary characteristics that will enable them to perform efficiently. However, Esuh and Nurahima (2013) observed that teachers and lecturers' accomplishment still continue very poor and this has caused a contesting matter.

Akey shortcoming of previous researches along this line has to do with the coverage area. They examined secondary and primary schools, while those that covered Colleges of Education did not extend their scopes to Chemistry. For instance, Owolabi and Adebayo (2012) assessed the influence of teacher's qualifications on accomplishment of senior secondary school students in Physics. Keys (2003) verified difference in

knowledge of the primary and secondary schools and how teacher's knowledge impacted on the effectuation of the science program.

Abe (2014) also considered the influence of teachers' qualifications on student's accomplishment in secondary school Mathematics. Jeremiah and Diepreye (2012) investigated the effectuation of NCE Primary Education Program in Colleges of Education, while Mohammed and Babikkoi (2012) examined how English curriculum is being implemented in Colleges of Education in North Central.

There is the necessity to assess Chemistry curriculum implementation at the College of Education, hence the need for this research. This study will investigate lecturers' characteristics and their perceptions of the implementation of Chemistry curriculum in South-west Nigerian Colleges of Education. Private, State and Federal Colleges of Education were involved in the study.

Purpose of the Study

The primary purpose of this study was to determine lecturers' characteristics and their perceptions of the implementation of Chemistry curriculum in South-west Nigeria. Specifically, the study determined;

1. chemistry lecturers' academic qualifications and their perceptions of the implementation of chemistry curriculum;
2. chemistry lecturers' teaching experience and their perceptions of the implementation of chemistry curriculum;

3. chemistry lecturers' gender and their perceptions of the implementation of chemistry curriculum;
4. school type and their perceptions of the implementation of chemistry curriculum .

Research Questions

The following questions were answered in this research study;

1. What is the influence of chemistry lecturers' academic qualifications on their perceptions of the implementation of chemistry curriculum?
2. What is the influence of chemistry lecturers' teaching experience on their perceptions of the implementation of chemistry curriculum?
3. What is the influence of chemistry lecturers' gender on their perceptions of the implementation of chemistry curriculum? and,
4. What is the influence of school type on their perceptions of the implementation of chemistry curriculum?

Research Hypotheses

The following research hypotheses were tested at 0.05 level of significance;

$H0_1$: There is no significant difference in the mean ratings of qualified and unqualified chemistry lecturers and their perceptions of the implementation of chemistry curriculum;

$H0_2$: There is no significant difference on the rating of experienced, moderately experienced and less experienced chemistry lecturers and their perceptions of the implementation of chemistry curriculum;

$H0_3$: There is no significant difference in the mean ratings of male and female chemistry lecturers and their perceptions of the implementation of chemistry curriculum;

$H0_4$: There is no significant difference on the rating of Federal, State, and Private chemistry lecturers and their perceptions of the implementation of chemistry curriculum.

Scope of the Study

This study involve all the chemistry lecturers from all sampled Private, State and Federal government owned Colleges of Education in the South-west Geo-political zone of Nigeria. The zone comprises Oyo, Ogun, Ondo, Osun, Lagos and Ekiti states. The instrument for the study will be adapted from Brian (2003). Data were analyzed using mean, percentage, t-test and ANOVA.

Significance of the Study

The study may be of significance to the teaching of Chemistry at the Colleges of Education. The findings from this study may have

positive impact on students, teacher educators, proprietors and curriculum planners.

The result of this study may be of useful to students in that they will be able to determine the benefit they can get from their lecturer based on his characteristics. This will enable them to know how best to interact with him/her.

The result of the study will also assist teacher educators in seeking ways of implementing Chemistry curriculum in such a way that will enhance students' knowledge, and moreover, attract their interest to the learning of Chemistry. It will also be an eye opener to teacher-educators on their characteristics as they influence implementation of Chemistry curriculum.

The result of the study will encourage proprietors in providing support to improve lecturers' characteristics through in-service training, seminar and workshops both locally and abroad on the implementation of the curriculum.

The result from this study could also be useful to the administrators of Colleges of Education in that it provides adequate information on the quality of their human resources and the extent of the effectuation of the Chemistry program. The result of this study will also assist curriculum developers such as National Commission for Colleges of Education (NCCE) by providing them relevant feedback on the level of compliance

of the Colleges of Education with objectives for which the NCE Chemistry program is designed.

Professional organizations such as College of Education Academic Staff Union(COASU) and Science Teachers Association of Nigeria (STAN) among others would be charged with organizing conferences, workshops and seminars to update the knowledge of their members in implementation of Chemistry curriculum.

It is also expected that the findings of this research study willaid in accomplishing the purposes of Chemistry education program in Nigeria which explain that teacher education will remain to take awareness of new things in methodology and program and tutors will be frequently updated on different forms of innovation in their profession.

Clarification of Major Terms and Variables

The following concepts and variables were explained as used in the study:

Chemistry lecturer: An individual who has successfully completed a bachelor Degree or postgraduate degree in Chemistry and teaches Chemistry in the selected Colleges of Education.

Experienced Chemistry lecturer: A Chemistry lecturer who has taught Chemistry for over 10 years at the College of Education level.

Moderately experienced Chemistry lecturer: A Chemistry lecturer who has taught Chemistry for over 5 years and below 10 years at the College of Education level.

Less experienced Chemistry lecturer: A Chemistry lecturer that has less than five years of teaching experience at the College of Education level.

Qualified Chemistry lecturer: A Chemistry lecturer that has any of the following qualifications: B.Sc. Ed. Chemistry, B.Sc. Chemistry + PGDE, NCE + B. Sc.Chemistry, M. Ed. Chemistry, Ph. D. Chemistry Education.

Unqualified Chemistry lecturer: A Chemistry lecturer that does not have qualification in Education.

Implementation: Stage at which the lecturer does the actual presentation or delivery of the lesson.

Chemistry Curriculum: The course contents of Chemistry offered to students(NCE I, II and III), under the guidance of the school.

Characteristics: Distinguishing features(s) of individual lecturers, in discharging history her duty.

Chemistry: The branch of natural science that deals with the composition and constitution of substances and the changes that they undergo as a consequence of alterations in the constitution of their molecules.

Perception: The state of being positive or negative towards implementation of curriculum or having understanding of implementing the curriculum.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Chapter two identifies and reviews some available studies, views, scholarly opinions and works as well as constructs which are relevant and also enable the researcher to give direction to the study. The review has thus been organized around the following sub-headings:

Conceptual framework for the Study;

History of colleges of education in Nigeria;

The NCCE minimum standard, philosophy, objectives and contents of the NCE chemistry curriculum;

Concept of curriculum implementation;

Influence of lecturers' qualifications on implementation of curriculum;

Influence of lecturers' experience on implementation of curriculum;

Influence of lecturers' gender on implementation of curriculum;

Influence of school type on the implementation of curriculum;

Lecturers' perceptions of the implementation of curriculum; and

Appraisal of reviewed literature

Conceptual framework for the study

This study will consider conceptual framework within which the concept implementation of curriculum and academic performance is/are propounded. The choice of the model is linked to the belief of Acato (2006) that performance is a function of the quality of the input.

Gichobi (2008) discusses the link that exist between the program, implementation techniques, discussion, teaching and scholar's learning.

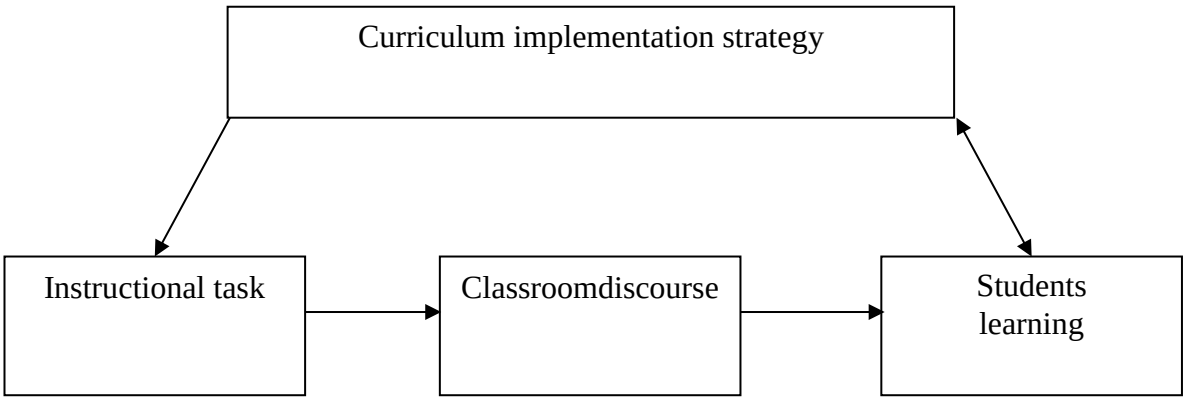


Fig.7: Relationship between the curriculum implementation strategies
Source: Gichobi (2008)

The kind of teaching task affect the student-to-teacher relationship and student-to-student relationship once the imparted information functions move around the assignment given. It shows that classroom discussion is directly influenced by the tutors' action and what occurs inside the class, influencing teaching pronouncements which the tutor makes. Gichobi observed further that classroom discussion affects students' knowledge; hence, program implementation techniques have a direct impact on students' knowledge.

Peyton (1998) asserted that program cycle includes expansion through needs evaluation, plan and execution phases. Outcomes are revised and assessed against the unique needs evaluation. Curriculum implementation is in between design and outcomes. It shows that implementation stage is crucial stage and a link between curriculum design and the outcome. Implementation stage is a function of the

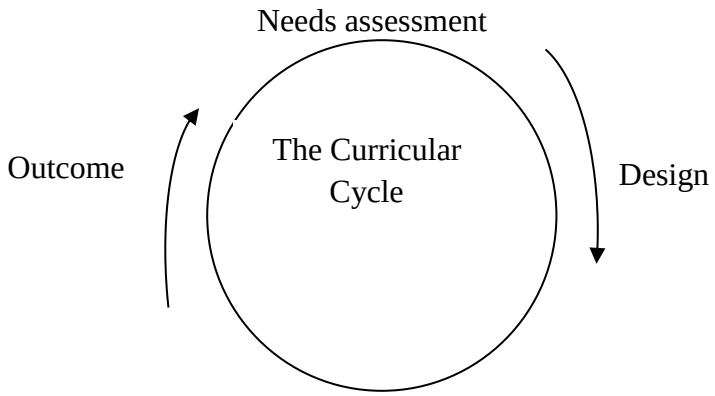


Fig.8: Curricular Cycle

Source: Peyton (1998)

outcome. If the implementation stage is properly done or effective, it will result to desired outcome. Poor implementation leads to poor outcome.

Kipyegon (2013) in examining school based factors that influence implementation process came up with the model stated below. Among the factors examined are teaching methods, text books, parental support, motivation and Mathematics language.

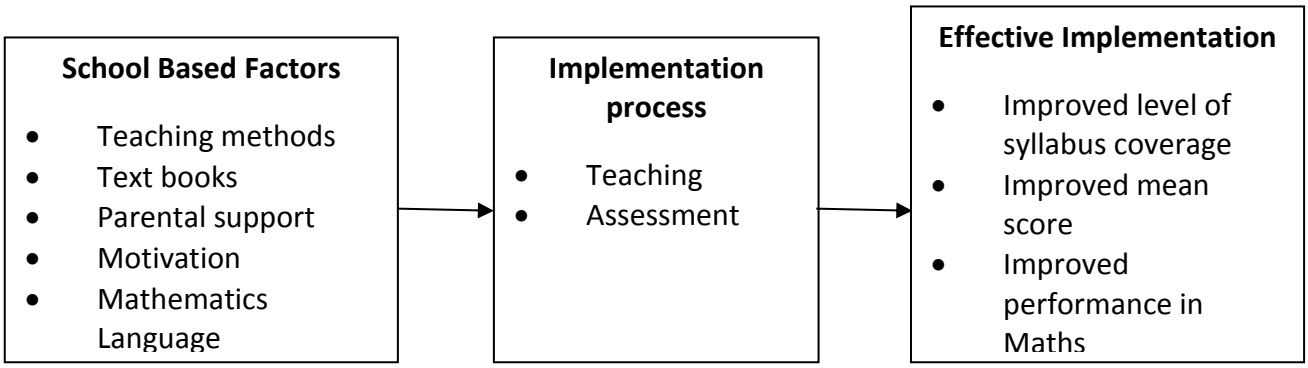


Fig.9:School based factors that influence implementation process
Source: Kipyegon (2013)

The model shows that effective implementation process through teaching and assessment will result to enhanced level of syllabus coverage, improved mean score and improved performance in mathematics.

Hattingh, Aldous and Rogan (2007) stated that the frame work has its core through concepts namely a outline of implementation, ability to renew and outside backing. The conceptability to update involves four sub- constructs: physical resources, tutor factors, student factors and school code and management. The concept outside effects involves five sub-constructs; certified development, providing resources essential for the novelty, kind of pressures and backing conveyed to bear (change forces), support to students and observing tactics.

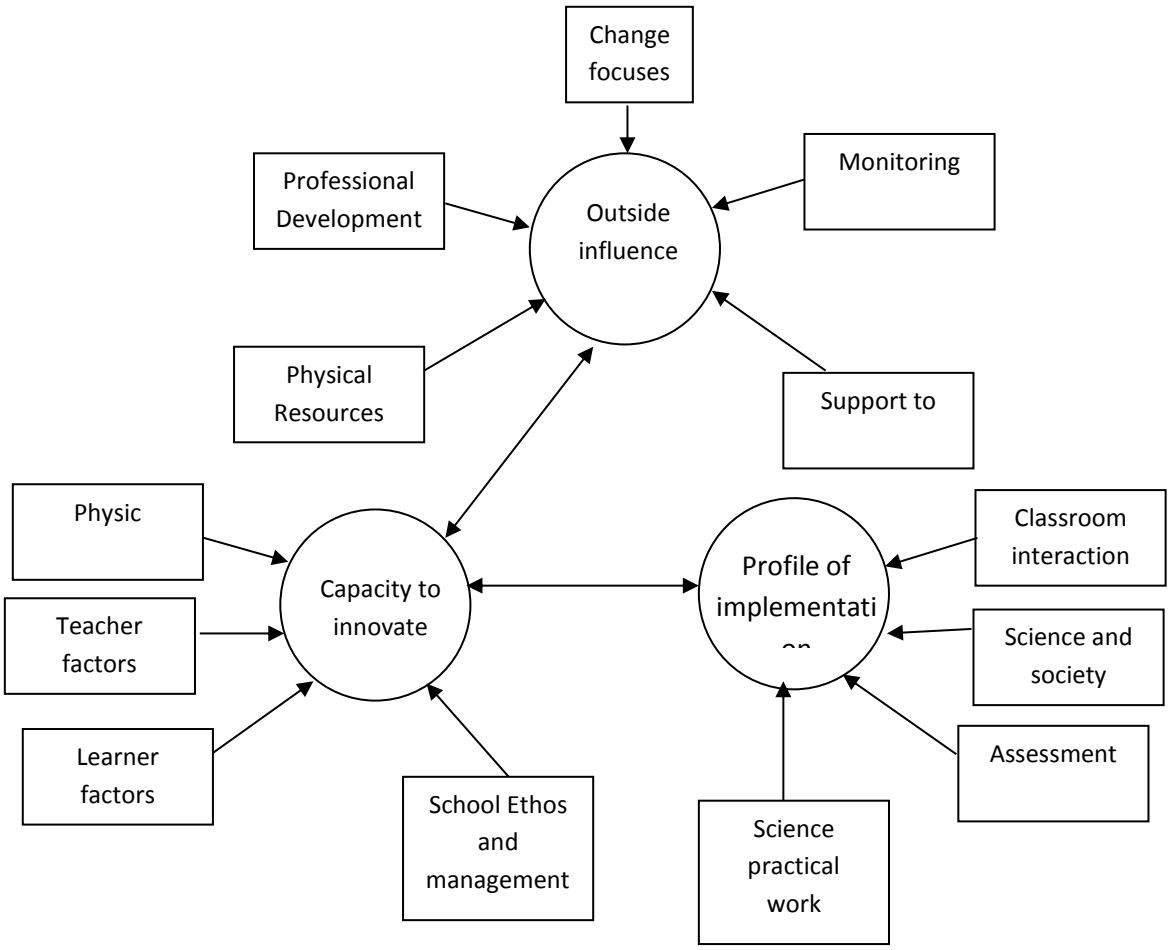


Fig.10: Profile of Implementation

Source:Hattingh, Aldous and Rogan (2007)

The four sub-constructs of the profile of implementation are the nature of classroom interaction (what teachers and students do in relation to one another) use and nature of science practical work, incorporation of science in society and evaluation practices.

Kyoshaba (2009) studied factors affecting academic performance of undergraduate students at Uganda. He studied the effect of the following independent variables; admission points, social economic status

and former school background on dependent variable which is academic performance. The study proposed the model below.

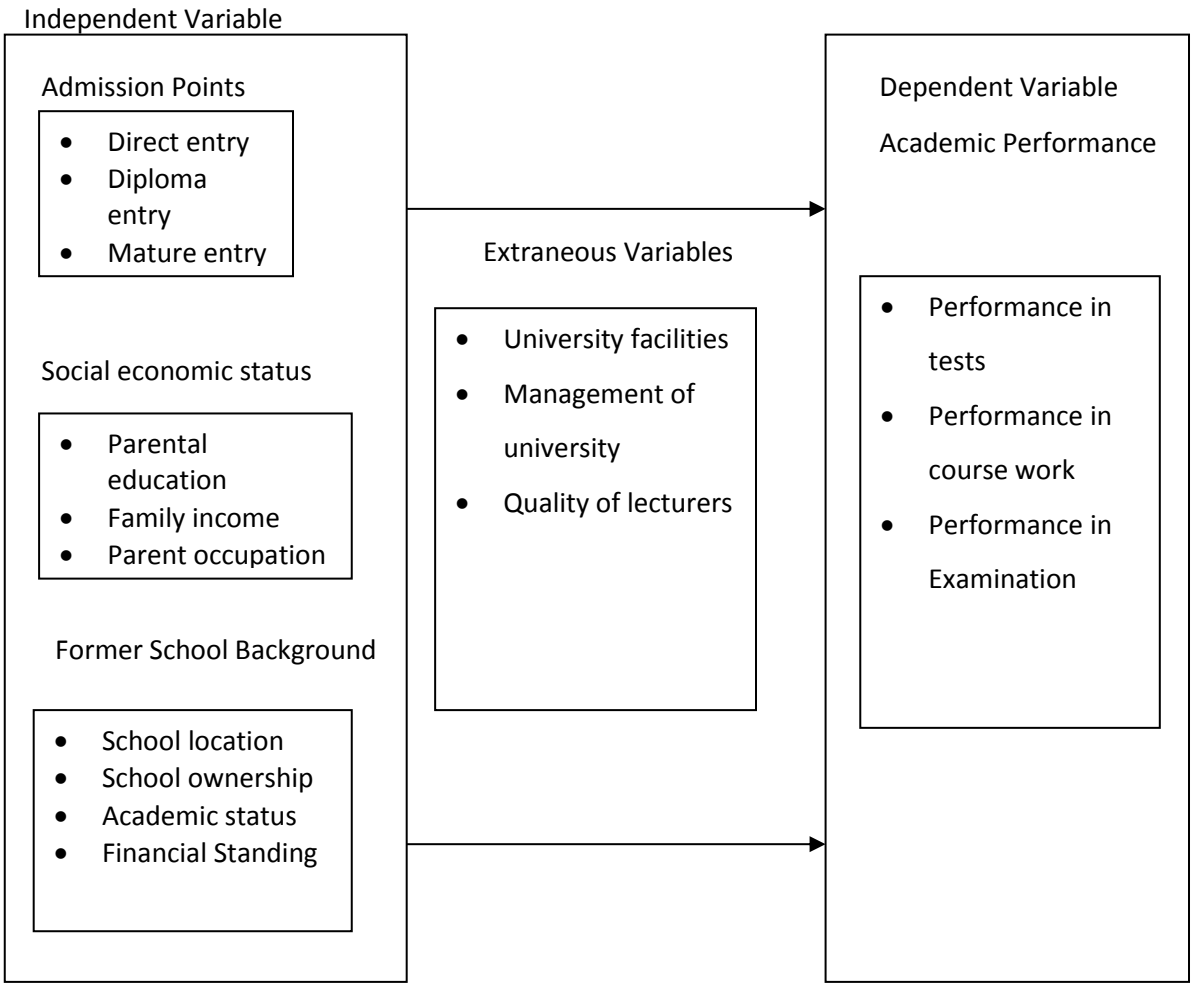


Fig. 11: Linkage between different factors and academic performance
Source: Kyoshaba (2009)

The conceptual framework reveals the linkage between different factors and academic performance. It reveals that academic performance as a dependent variable is related to the independent variables which are admission points, parent's social economic status and student's former school. Kyoshaba (2009) stated that admission points which include direct entry points, diploma points and mature age points are linked to

academic performance. If the admission points are high, then the academic performance is likely to be high and if admission points are low, then academic performance may be low. Kyoshaba(2009) stated further that this argument is supported by Staffolani and Bratti (2002)whose study showed that previous performance affects future performance.

Moreover, parent's education, parents' income and parents' occupation is linked to academic performance. It shows that performance is dependent on parents' social economic status. That is, students from high social economic background will perform better than their counterparts from low social economic background which is supported by Owens (1999). Kyoshaba(2009) concluded that location of former school (Urban or rural), Ownership of former school (public or private), academic status and financial status of former school is linked to academic performance of students. Students from high-class schools are likely to perform well due to the fact that they attended those schools which are in line with Kwesiga (2002) and Sentahu (2003).

Irfau and Shabana (2012) in the study which was carried out to find out the important factors that affect the students' academic performance. The research was carried out on Private Colleges in Rawalpindi and Islamabad. The study came up with the model shown below.

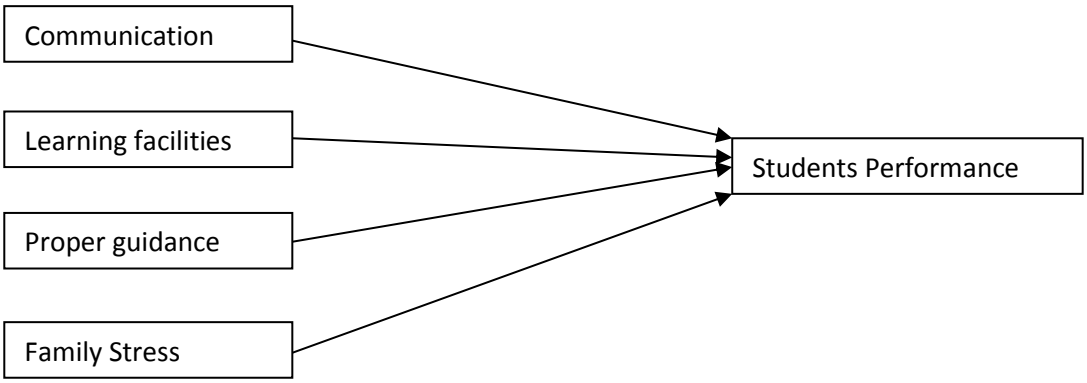


Fig 12: Factors affecting students' Academic performance

Source: Irgan M, and Shabana, M (2012)

The study revealed out that communication, learning facilities, proper guidance and family stress are the factors that affect the students' performance. According to the findings, communication, learning facilities and proper guidance show the positive impact on the students' performance but the significant level is more important factor that affect the students' performance and the learning facilities and proper guidance also affect the students' performance while family stress affects the students' performance and reduces the performance of the students and affect negatively the students' performance.

Sabellah (2010) noted that student's attitude is an inherent part of learning. It shapes one's behavior inner mood and learning. Both the positive and negative attitudes have strong effect on the success of a subject learnt. The attitude of an individual rely strongly upon different stimuli as shown in the model below:

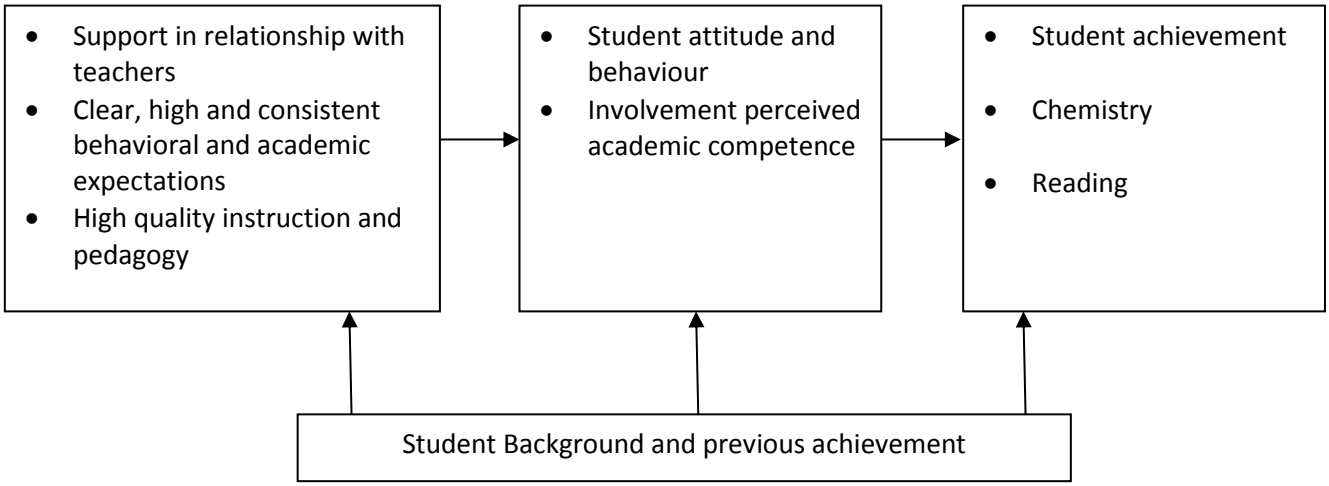


Fig.13 Relationship between attitude and academic performance in chemistry

Source: Sabellah (2010)

From the figure above, the student's background features and their levels of prior success shape their subsequent achievement, attitudes, behavior and perceptions of school context. Therefore student's role in their studies is seen as the level of participation and intrinsic interest that a student demonstrates in school. Sabellah (2010) maintained that, students or active students seek out activities inside and outside the classroom that lead to success in their learning. They demonstrate curiosity; they are aggressive to know more, they demonstrate positive emotional responses to learning and hence they have positive attitude towards the area of study.

Aremu (1998) asserted that when students work alone and fail to attain the expectations; this leads to lack of interest and a development of

negative attitude in the subject and thus affect the teaching and learning of the subject. Aremu (1998) explained that when pupils express lack of interest in the subject, it may affect the way they respond or listen to the teacher.

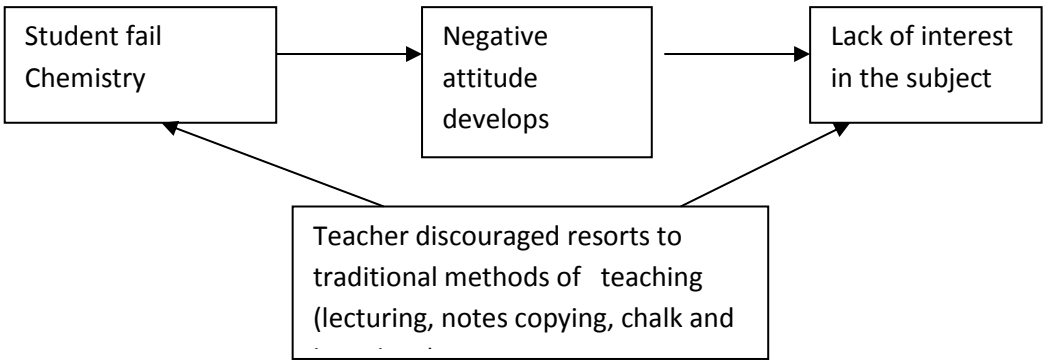


Fig 14: An illustration of factors affecting the teaching and learning of Chemistry

Source: Aremu 1998.

Aremu(1998) observed further that when many believe that they cannot pass, the teacher also is affected. This is because apart from these negative responses from the students; he/she is as well being confronted by a lot of other challenges e.g. low income, low status in society, large teacher-student ratio and so on. This may cause him or her to resort to the easiest way of imparting knowledge that is "Chalk and Talk" without use of instructional materials.

Aremu(1998) declared that the negative attitude towards the subject is passed down from one generation peer group to another and therefore the cycle keeps enlarging which is an unfortunate event! However, Aremu (1998) expressed his view that when students do well in

the subject, they get exited by the outcomes. This makes them to create a positive interest towards the subject. Hence they will seek to know more from their teachers or instructors.

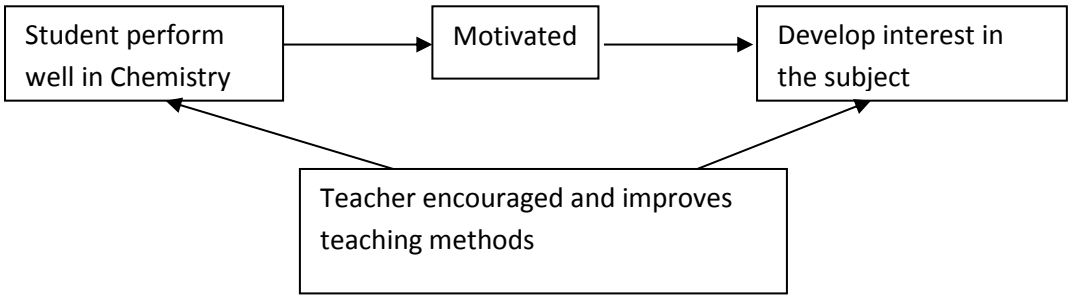


Fig. 15: Relationship between learner, teacher and subject

Source: Aremu (1998)

Abuseji (2007) carried out a research titled student and teacher related variables as determinants of secondary school students' academic achievement in Chemistry. Teachers' variables considered were gender, age, qualification and year of experience while students' variables were gender, study habit, and mathematical ability. The study proposed a

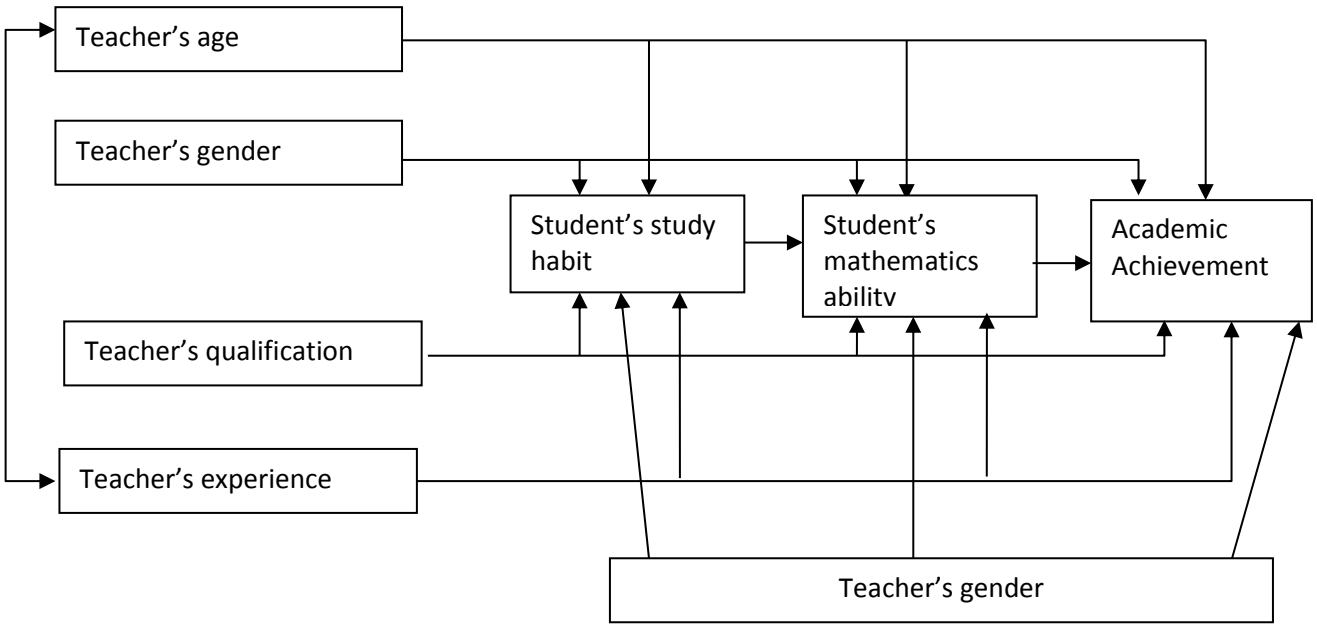


Fig.16: Students and teachers related variables.
Source: Abuseji (2007)

Abuseji(2007) observed that the variance in students' accomplishment in Chemistry was accounted for by all the seven-predictor variables when taken together. However, he made it known that only four variables, that is, teacher age, teacher gender, qualification and experience have direct impact on students' accomplishment in Chemistry. From the study, teacher's age had important effect on students' achievement in Chemistry. This effect is the highest of the total effect of the seven independent variables on students' achievement in Chemistry.

The finding runs contrary to the study of Adeniji (1999), who reported that age of the teacher could not affect academic achievement. Teacher's qualification had the second impact on student's accomplishment in Chemistry. This finding is inline with the findings of Darling-Hammond (2000), who found that teacher's qualifications significantly and positively correlated with student learning outcomes in science. This showed that teacher's qualification is a significant predictor of students' accomplishment in Chemistry. This is because a teacher with higher qualification in a given subject is most likely to ask higher level cognitively- based questions thus helping the students to learn and perform better. However, Darling-Hammond(2000) noted that the finding is contrary to the work of Adeniji (1999) who discovered no significant

relationship between teacher's qualification and academic accomplishment.

Teacher's experience was also found to have significantly affected students' accomplishment. It was also found to significantly influence study habit. The finding corroborates the works of Bilesanmi (1999) and Okoniwa (1999) that had independently shown that teachers' experience predicts students' academic accomplishment. The reason for this could be explained in the opinion of Hansen (1988) that teachers who have spent more time studying and teaching are more effective. However the finding is contrary to the work of Adeniji (1999) who discovered that teacher's length of teaching and administrative experience was not related to students' accomplishment in science.

Teacher's gender also has direct impact on students' accomplishment in Chemistry. This finding is in line with the work of Okoniwa (1999), who discovered that gender could predict academic accomplishment. However the finding contradicts the work of Adeniji (1999), who observed that gender alone has no impact on academic accomplishment but could act in collaboration with other variables to influence learning outcomes.

Abuseji (2007) discussed furthermore that other variables like students` gender, study habit and mathematical ability had no direct or indirect impact on academic accomplishment in Chemistry.

Abusseji(2007) asserted that some scholars discovered students` gender to significantly influence accomplishment in favor of boys (Oke 1996, Erinosho 1994) while some were in favor of girls (Toh 1993; Tang 1989), while Onocha (1985) did not see any relationship between students` gender and academic accomplishment. Abuseji(2007) however concluded by saying that the results of the study did not imply that students gender, study habit and mathematical ability do not affect accomplishment at all, but in the presence of important factors like teacher's age, qualification, experience and gender, their impacts would be so low that they are not likely to be statistically significant.

History of Colleges of Education in Nigeria

College of Education is one of the institutions in Nigeria purposely established for the training of teachers to meet the needs of the country in education sector. Onifade (2011) asserted that College of Education system is one of the tripods of tertiary education in Nigeria. College of Education has a primary role of training teachers who will be awarded the minimum teaching qualification of Nigerian Certificate in Education (NCE). Onifade(2011) observed further that the certificate qualifies one to teach in Junior Secondary School (JSS) and Technical Colleges in Nigeria which takes three years to complete.

Jekayinfa (2010) traced the origin and development of teacher education to the beginning of Wesleyan Methodist, the Church

Missionary Society (CMS), the Baptist, the Church of Scotland (Presbyterian) and the Roman Catholic were very active in Nigeria between 1842 and 1860. Adeyinka's work as cited in Jekayinfa (2010) noted that the missionaries trained their teachers through the pupil-teacher system. The first teacher training college known as The Training Institution (TTI) was established in Abeokuta in 1859 by the Church Missionary Society (CMS).

The school was later moved to Lagos in 1896 when the missionaries were expelled from Abeokuta. It later moved to Oyo to become the St. Andrews College Oyo. In 1897, the Baptist Mission established the Baptist Training College at Ogbomoso as explained by Jekayinfa (2010). In 1905, the Wesleyan Methodist Missionary Society established an institution for the training of Catechists and teachers in Ibadan known as the Wesleyan College, Ibadan.

The Ashby Commission expressed that there was an inadequate supply of trained and educated teachers in Nigerian secondary grammar schools as there was an increase in demand for more of this class of education institutions. Among his recommendations were; (i) the opening of more Universities (ii) the institution of a Bachelor's degree in education B.A. (Ed), B.Sc. (Ed) or B. Ed (iii) the training of more teachers for the nation's secondary schools. The Ashby Commission's recommendation for Teacher's Grade I Colleges was adjusted to give rise

to new programme and a new certificate – the Nigerian Certificate in Education (NCE). According to Jekayinfa (2010), the programme was meant for the training and preparation of teachers for the lower forms of secondary schools, and the teacher training colleges.

The schools were formerly called the Advanced Teachers Colleges (ATC). They were established in Lagos (1962), Ibadan (1962) but transferred to Ondo where it became the Adeyemi College of Education. In Oweri (1963), Zaria (1962), Kano (1964) and Abraka (1968) (Taiwo 1980). Since then, there have been various parameters in seeing to the numerical strength of Teachers Training College in this country. Such measure includes autonomy given to state government and private (religious bodies and individual) to establish College of Education in Nigeria.

The country has one hundred and twenty eight (128) Colleges of Education and 9 other NCE awarding institutions (JAMB Brochure 2016). The three types of College of Education that are in existence in this country are (i) conventional; which offers art and social sciences, education, languages, science and vocational subjects (ii) Technical: this does not offer languages and arts & social sciences. (iii) Special: this offers special education for the handicapped in addition to the others.

With the efforts of the British government in starting the establishment of teacher training institutions in the country and with bold

steps taken by the Nigerian government and other proprietors to continue in the development of teacher education, as at 2016, the country can now boast of twenty one (21) Federal Colleges of Education(Appendix 1A), forty seven (47) State Colleges of Education (Appendix 1B) and sixty (60) Private Colleges of Education (Appendix 1C) while other NCE awarding institutions are nine (9) (Appendix 1D) totaling one hundred and twenty eight Colleges of Education and nine NCE awarding institutions (JAMB Bronchure, 2016).

Apart from taking care of quantitative aspect of teacher training in the country, the qualitative aspect is not as well taken for granted. The Ashby commission's recommendation for teacher education prorgamme at the University level was executed. The B.A. and B. Sc. (Ed) according to Fafunwa (1974) was inaugurated at the University of Nigeria, Nsuka in September 1961 with fifty (50) students. The University of Ibadan followed in 1963, Ahmadu Bello University in 1964, the University of Lagos in 1965 and the University of Ife (now Obafemi Awolowo University- O.A.U.) Ile-Ife in 1967. Since then these Universities and many more have been taking good care of teacher education in Nigeria.

Science teaching in Nigeria has come a long way, as far back as 1859. It was in this year that C. M. S. grammar school Lagos was established (Omosewo 1991). Establishment of missionary secondary schools in Lagos then followed such as Wesleyan Methodist Boys high

school, St. Gregory College, the Methodist Girl's High School, Kings College and Queens College all in Lagos. Abdullahi (1982) observed that the foundations for science teaching were laid in Nigeria between 1861 and 1897 when basics of science were introduced in the time-table of some missionary secondary schools and Teacher Training Colleges. As earlier mentioned, the establishment of Colleges of Education or Advanced Teachers College was first suggested by Ashby in 1960 and sponsored by UNESCO in1962. Omosewo (1991) stressed that there has been an upward trend in the quality and quantity of professionally trained science teachers of secondary schools starting with N.C.E. graduates through B.Sc.Ed. or B.Ed. Science Education to the masters in Science Education, Ph.D. in Science Education and research fellow in the Science Education Department of Nigerian Universities.

Ogunleye (1999) noted out that while it can be assumed that science teaching move forward with the further establishment of more missionary schools in Nigeria at that period, unfortunately the number of students doing science at that time and the extent to which science was taught in the schools remain unclear. The problem facing science teaching during this period as explained by Ogunleye (1999) included lack of laboratory, lack of qualified science teachers, lack of interest or enthusiasm displayed by the colonial government in Nigeria towards encouraging and supporting the efforts of the missionaries, lack of

instructional objectives in science teaching, lack of funds to promote science education, lack of science textbooks and lack of uniform curriculum in science.

Abdulahi (1982) said that with the passing of the education ordinance of 1908 which among other things stipulated certain conditions for government grants to missionary schools, with these grants, some of the missionary schools were able to purchase some sort of science equipment of laboratory instruction. Ogunleye (1999) maintained that during the period 1883-1930, the rate of development of Science Education in Nigeria was retarded to some extent by the following factors; the uncooperative attitude and reluctance of both the colonial government and missionaries to disallow Nigerians from learning science as they both believed that Africans in general were biologically inferior and incapable of learning science, inadequate financing of science education, insufficient time devoted to science teaching on the school time table, lack of suitably qualified science teachers, absence of science textbooks in schools, and lack of laboratory facilities and science equipment in schools (p.8).

It's quite unfortunate that up till today, some of these recognized factors are still impending full development of science education in Nigeria. However despite all these challenges, these Colleges of Education are offering a great and important service in the training of the

much needed man power (science) for the educational sector. For instance, in 2009/2010 academic session, a total of 501,409 students were enrolled out of which male students constituted 338,237 while female constituted 163,172 in all Colleges of Education where science is offered (Statistical digest 2010).

The NCCE Minimum Standard

The NCCE was set up by decree (now Act) 13 of 17th January 1989 (Amended Act 12 of 1993) as a completion of tripod of excellence in the supervision of higher education in the country (Excellence and Education Network 2012). The establishment of the commission was as a result of the utmost importance accorded to quality teacher education by the Federal Government of Nigeria. The pride of the commission is based on the seminal philosophy in the National Policy on Education (NPE) which stated that no education can rise above the quality of its teachers (NPE, 2004, p. 43).

In pursuit of its objectives, the commission had standardized and continuously reviewed the curriculum of the Colleges of Education. This frequent review of the curriculum had strengthened the capacity of NCE graduates. After the laying down of minimum requisites for the Colleges of Education, the commission had gone ahead to license their courses. The accreditation of the courses is carried out once in five years (Excellence and Education Network 2012). NCCE is responsible for

making recommendations on the national policy necessary for the full development of teacher education and the professional preparation of non-degree teachers.

It is to oversee all aspects of teacher education in Nigeria, outside the Universities through the bond of affiliation catered for the academic standards and certification needs of Colleges of Education. Musa (2010) asserted that the use of minimum standards for NCE teachers in place, requirements such as students' admission qualifications, course content descriptions, titles and units are uniform thereby minimizing inequality among NCE graduates.

Functions of the NCCE

The enabling decree No. 3 of January 1989 authorized the commission to perform the following functions:

i. make recommendations on the rational policy necessary for the full development of teacher education and the training of teachers;
ii. lay down minimum standards for all programmes of teacher education and accredit their certificates and other academic awards after obtaining there of prior approval of the Honorable Minister of Education;
iii. approve guidelines setting out criteria for accreditation of all Colleges of Education in Nigeria;

iv. determine the qualified teachers` needs of Nigeria for the purpose of planning facilities and in particular prepare periodic master plans for the balanced and coordinated development of Colleges of Education;

v. inquire into and advice the Federal Government on the financial needs of the Colleges to enable them meet the objectives of producing the trained qualified teachers of the country;

vi. receive block grants from the Federal Government and allocate them to the Colleges of Education;

vii. act as the agency for channeling all external aids to Colleges of Education in Nigeria;

viii. harmonize entry requirements and duration of courses at the Colleges of Education;

ix. collate, analyze and publish relevant information relating to teacher education in Nigeria;

x. advice on and take measures to improve immediate and long term prospects of technical and business education teachers with respect to status and remuneration; and

xi. provide encouragement for women to enter a wide range of pre-vocational courses in technical education (Excellence and Education Network 2012).

Apart from achieving all these objectives over the years, the commission had gone extra mile to bring in new innovations towards development of teacher education in Nigeria.

Philosophy, Objectives and Content of NCE Chemistry Curriculum

The philosophy of NCE Chemistry curriculum is stated as:

The intrinsic values as well as the utility values of Chemistry in all spheres of human activity have necessitated its inclusion in the school curriculum. The teaching and learning of Chemistry at the Nigerian Certificate in Education (NCE) level should be such as to produce competent, effective and efficient teachers, who having acquired the requisite skills should be able to impart same to their pupils. (NCCE Minimum Standard, 2008, p. 25).

The objectives of the Chemistry programme at the NCE level are to produce highly qualified middle-level manpower knowledgeable in the processes of Chemistry and capable of instilling these in the students. It is stated that students should have competences in Chemistry teaching including ability to: develop functional knowledge of Chemistry concepts and principles,observe and explore the chemical environment, apply the skills and knowledge gained through the study of Chemistry to solve day to day problems, explain simple natural phenomena, develop scientific attitudes such as curiosity etc., manipulate simple apparatus for purposes of demonstration and use, and extemporize simple equipment from

available junk in the chemical environment. (NCCE minimum standard, 2008, p.25).

Concept of Curriculum Implementation

Curriculum implementation is a stage of curriculum out of three stages that is curriculum design/development, curriculum implementation and curriculum evaluation. Implementation in curriculum is a very sensitive and delicate level which needs to be carefully handled because, it is the level that ascertains if the set down goals and objectives would be successful or not. It is a stage that the classroom teachers should not playwith, hence the classroom teachers have an essential role to play at this stage. In summary, it means that the bulk of implementing curriculum depends on the classroom teachers because they are the ones that will realize the objectives of curriculum through delivery of the lesson.

There is need to quickly and briefly look at some of the reasons why the stage is said to be essential. As explained by University of Ado-Ekiti (UNAD) (2010), it is an essential stage because the functionality / workability or otherwise of the curriculum and attainment of the stated objectives of instruction is determined here. It is crucial since it is at this level that the learners are given the privilege of benefitting from the curriculum. It is a crucial level because it helps to create meaningful

interactions among three major components/groups- the teacher, the learners and the curriculum materials. It is a stage where such activities like public enlightment, monitoring, information dissemination and modification/adjustment are carried out as the situation for it arises and the design is transformed into classroom activities, at this stage where the parties involved play the assigned roles.

There are different and many angles through which scholars define curriculum implementation. These include Lawal (2009) who described curriculum implementation as, the stage at which the teacher does the real implementation or delivery of the lesson. His or her plan is now translated into action in the form of active classroom interaction through the various methods of introduction, explanation, illustration, exemplification and initiation and facilitation of practice (p. 344).

University of Zimbabwe (1995) described curriculum implementation as that which involves putting into practices the officially prescribed courses of study, syllabuses and subjects. It refers to how the planned or officially designed course of study is translated by the teachers into syllabuses, schemes of work and lessons to be delivered to students. University of Ado-Ekiti(2010) asserted that curriculum implementation is the stage of putting into practice what had earlier been planned, designed or developed and a follow up to the process of curriculum design/development.

From the above definitions of implementation as pointed out by different scholars, summarily, implementation involves actual interaction between the executor (teacher/lecturer) and students or pupils along with the learning environment to realize the set down learning objectives. Olorundare (2011) pointed out that "the successful implementation of any curriculum change is dependent on the informed and deliberate choices lecturers and classroom teachers make about curriculum programme and materials they are expected to use (p.22).

The two common types of curriculum implementation are:

i. Laissez-faire approach / the let-alone approach/optional implementation: this gives teachers absolute power to decide what they see best to execute in the classroom. It also refers to a transition period in which boards of education have the option of using the revised curriculum or the existing curriculum. There is no firm control or monitoring whatsoever in this area.

ii. Full implementation/ authoritarian control: this refers to curriculum that must be used and that have substituted the former or old version. In this view, teachers are directed by authority figures through a memorandum to follow a curriculum. The teachers have no control whatsoever.

Who are the stakeholders in curriculum implementation?

Stakeholder in curriculum is a person who in one way or the other contributes or benefit from the curriculum development and implementation. The stakeholders include teachers/lecturers, students, parents, principals/ provost, government, school board/inspectors/NCCE, publishing house, community (mosque/church), politicians, ministry of education and non-governmental organizations (NGOs).

Barriers in Implementing Science Curriculum

There is no stage of curriculum without its own challenges. There are some challenges facing implementation of curriculum at different levels of education. Majority of these problems are empirically established. These include, inadequacy of teachers in schools especially in some subjects like science and English as major hindrance to successful curriculum implementation, Olarewaju (1987), Omosewo (1994), Aderogba (1998) and Bello (2002). Inadequacy of the curriculum materials for the use of both the teachers and students/pupils, Omosewo (1994), Adeniyi (2000), and Akanbi (2010).

Others include inadequate periods, school activities which take up students' time, incessant strike, too many topics in the curriculum, Olarewaju (1987), Aderogba (1998). Inadequate / no workshop / seminar for the development of teachers, Omosewo (1994), Nwangi (2011) reluctance of the teachers to use the few available curriculum materials as prescribed by the curriculum developers, Nwangi (2011), Vongai, et al.

(2012) and ineffective monitoring and supervision by the designated groups or department which resulted from insincerity.

Some factors that affect curriculum implementation as identified by some schorlars above include; (i) The teacher (ii) the learners (iii) resource materials and resources (iv)interest group (that is parents, PTA, politicians, religious groups, local authorities, companies etc.) (v) the school environment (vi) culture and ideology (vii) publishers and (viii) technology (that is radio, television, newspapers, e-mail, computer).

Characteristics of an individual lecturer is said to be the distinguishing feature(s) in discharging his/her duty. Characteristics of individual lecturer play a crucial role in the learning outcome of students. The two classifications of lecturer's characteristics are (i) professional characteristics and (ii) personal characteristics. Professional characteristics of lecturers are what the lecturers should possess to be considered a professional of which the most important one is the qualification (i.e. NCE, B.A. Ed., B. Sc. Ed, M. Ed, M. Sc. + Ph.D. (Ed), TRCN). This is followed by other ethics and code of conduct of the profession.

On the other hand, personal characteristics deal with the distinguishing features of the individual lecturer. These include experience, gender, age, self-efficacy, pedagogical content knowledge, method of teaching, reflectivity, openness to new experiences etc.

However this study will review empirical studies on the following lecturer's characteristics i.e. qualification, experience, and genderas they affect implementation of curriculum.

Influence of Lecturers' Qualifications on the Implementation of Curriculum

Many studies affirm that some teachers contribute more to their student's academic growth than others, research has not been very successful at identifying the specific teachers' qualifications, characteristics and classroom practices that are most likely to enhancestudents' learning. This is to bring it to our notice that, this is the information that education policy makers need most. When discussing teachers variables, qualifications of teachers cannot be overemphasized. Qualification simply means the right degree for a particular level or stage of education. That is to say there are qualified trained and unqualified but trained teachers.

For example an NCE graduate is not qualified to teach in secondary school. A Grade II teacher also has professional training but not enough content to teach in secondary school, hence not qualify. A qualified teacher must be trained e.g. B.Ed./B.Sc.(Ed.) while P.G.D.E also qualifies one to teach. NCCE laid emphasis on it that when recruiting academic staff for Colleges of Education, the minimum qualification as

specified by NCCE is B.Sc. (Hons.) plus PGDE, B.Sc. (Hons.) plus NCE/PDGE, B.Sc. (Ed.) and B. Ed. (NCCE 2009 p. 27). Among series of research studies on influence of teachers' qualification on implementation of curriculum few are examined thus;

Williams (2005) investigated teachers' perception of classroom assessment in Mathematics and their currents classroom assessments practices. Specifically, the study sought to gain an understanding of the extent to which teachers use different classroom assessment methods and tools to understand and to support both the learning and teaching process. The following questions were asked (1) How do primary school teachers perceive classroom assessment in Mathematics? (2) What kinds of evaluation methods and tools do teachers use to assess their students in Mathematics? (3) What is the impact of teacher's perceptions of classroom evaluation on their classroom assessment?

The study made use of a questionnaire to establish the teachers' understanding of classroom evaluation in Mathematics, a lesson observation protocol, and pre-lesson and post-lesson observation interview protocols as main sources of data collection. A total of six teachers (three males and three females) were drawn from two primary schools in Malawi. The data suggested that teachers perceived classroom assessment as tests that teachers give to their students at specified time intervals.

What teachers said about their teaching was not reflected during their teaching. Since teachers understood classroom evaluation as tests, they demonstrated limited ability to use different methods and tools to evaluate their students while teaching. The teachers' understanding of classroom evaluation have impact on their classroom assessment practices. Five of the six teachers understood assessment as testing, and classroom assessment practices were not clearly included in their teaching. Teacher's experience and teacher's education programme did not seem to contribute much to teachers' perceptions of classroom assessment; however, teachers' academic qualification seemed to determine teachers' flexibility to accept new ideas.

Kosgen, Jaro, Odhiambo and Aygi (2013) affirmeded the relationship between teachers' characteristics and students' academic performance. The study was guided by Education Production Function theory (EPF) which connects student's academic performance to teacher's characteristics. The study was conducted in Nandi district, Kenya and target population comprised teachers of all 26 public secondary schools. The study applied a causal comparative research design. A questionnaire was used for data collection. Data was analyzed by using descriptive and inferential statistical methods.

The findings showed that students' academic performance (in 2007, 2008 and 2009) was below average. The poor performance was

attributed to insufficient number of teachers in most secondary schools within the district. On teachers' qualification, the study established that 65% of teachers were degree holders, 25% had diploma certificates while only 10% were untrained, cross tabulation results pointed out that there was no variance in performance between teachers who had degrees or diploma pointing out that teachers` qualification did not result to increase students' academic achievement.

In the research study of Kamal, Shahzad and Umar-u-Din (2010), the study reported the analysis of the performance of the English Language Teachers (ELTs) and Teachers with Formal Education (TFEs) at secondary level in public high schools. Using percentage and frequency counts, the study revealed that ELTs have positive impact on the performance of the students in the final examinations conducted by the board of intermediate and secondary education. The data for this study were collected from three different public schools where ELTs and TFEs were teaching in parallel. Results of secondary school examination for the years 2006, 2007 and 2008 were used for the study. The examinations were conducted by Board of Intermediate and Secondary Education Lahore.

The three schools were selected because ELTs and TFEs were involved in the process of English language teaching to secondary school classes (10^{th} grade students). Three ELTs and seven TFEs results were

collected from these schools. The results obtained were divided into three stages i.e. number of successful candidates obtaining 80% and above marks and candidates obtaining 70% to 80% marks in the board examinations. The results revealed that those students who were taught by the ELTs had better results in the final examinations as compared to those who were taught by the TFEs. The study pointed out that the practice of inducting qualified English language teachers at secondary level should continue.

Mubenga (2006) was of the opinion that there has been a serious irregularity in the academic achievement of minority students, which is documented by the large gap between standardized test results of white students and minority students, along with the high rate of suspensions and dropouts among Black and Hispanic students. The study spelt it out that it is not entirely clear as to why these achievement gaps exist. A probable cause for this performance gap may be difference in teacher's quality and / or the effect that teacher's quality has on students of various ethnic backgrounds.

The purpose of the study was to ascertain the impact that teacher's qualifications have on students' performance. Furthermore, the study aimed at exploring the different impacts that teacher's qualifications may have on students' performance based upon the race of the student (African American, Caucasian and Hispanic) and core subject matter

(English and Algebra). Simple descriptive statistics was used and the findings revealed that students with unqualified teachers did better in language arts and algebra. The results also showed that teacher's qualifications did not interact with ethnicity with regard to students' performance.

Richardson (2008) opined that many researchers have suggested that teacher's quality and student`s performance especially in Mathematics are two important challenges for schools. The purpose of the study was to evaluate whether or not there is a statistically significant difference in teachers' qualifications that might help to determine the academic performance of middle school students on the Mathematics portion of the Alabama Reading and Math Test (ARMT). Twenty full time Mathematics teachers from 7 to the 8 traditional (non-magnet) middle / junior high schools located in the Montgomery Public School (MPS) district, Montgomery were sampled. All participants completed a teacher background survey. The survey results were later matched with student's data from the 2007 administration of the ARMT. The responses to the teacher surveys were analyzed using a t-test. Findings from the study showed that a significant relationship does exist between teacher's qualifications and student's performance.

Khalid (2008) examined the relationship between the professional qualifications of the teachers and academic performance of their students

at secondary school level. The study was restricted to two male government and private schools and three female government and private schools in Burewala city (Pakistan). The total sample comprised eighty students and eighty-seven teachers from five schools. The results of the 10^{th} class, 1^{st} annual 2004 and 2005 were taken from the board of intermediate and secondary education, Maltan Pakistan.

A questionnaire was administered to collect the basic information about teachers' academic qualifications and professional qualifications. For the statistical analysis of data, the arithmetic mean, percentage and matrix correlation were computed. It was found that the performance of the students taught by the untrained teachers with B.A. / B.Sc qualifications was better than the students taught by trained teachers with professional qualifications like B.Ed. and M.Ed. Subjects used: English, Islamic Studies, Pakistan Studies, Maths, Physics, Chemistry and Biology.

The study of Badmus (2007) was carried out to determine the contributions of teachers' knowledge of curriculum characteristics, value internalization and commitment, perception of adequacy of facilities, equipment and materials, and degree of performance of implementation roles/behaviors to achievements in Junior School Certificate Examination (JSCE) in Home Economics. Effect of state and teachers' qualification on achievement in the same examination was also evaluated. The study

made use of ex-post facto, research design and a survey technique. A random sample of one hundred junior secondary schools classified accordingly by state was chosen for the study. The main research instrument used in the study was a questionnaire for teachers in junior secondary schools. It was designed to elicit information on JSCE results for 1999.

Analysis of variance (NOVA) and multiple regression analysis were the statistical tools used to analyze the data. Of all the correlation coefficients, only the correlation between teachers' qualification and performance of teachers' implementation roles/behaviors on the one hand, and teachers' perceived adequacy of instructional resources and materials were significantly correlated at 0.05 level of significance. The inter-correlation matrix also showed that performance in JSCE in Home Economics is not seriously related to any of the five predictor variables; its strongest relationship is the teachers' qualification. The study recommended that qualified teachers should be employed to teach Home Economics.

The independent variable for correlation part of the study were; (i) performance of teachers' implementation roles (ii) teachers' knowledge of curriculum characteristics (iii) teachers` value and internalization and commitment (iv) perceived adequacy of instructional resources and materials (v) teachers` qualification. The study revealed that

performancein junior school certificate examination in Home Economics is not seriously related to any of the variables studied either singly or jointly. Although as said earlier the relationship with teachers` qualification is strongest in view of his findings, it shows in particular that there was no serious relationship between degree of implementation (the extent to which actual use of the curriculum corresponds with intended or planned used) and performance in Home Economics.

Aderogba (1998) stressed the status of integrated science teaching, the extent of actual classroom coverage, implementation of the integrated science curriculum as compared with official recommendations; degree of qualifications of integrated science teachers and the extent to which the objectives of the integrated science curriculum are being executed.

The three hypotheses dealt with different implementation with respect to school located in rural and urban areas, male and female teachers and professionally qualified teachers. The instruments used to collect data were the questionnaire and interview. A total of 200 questionnaires were administered to 96 schools in selected 24 local government areas of Osun state. Eventually 168 were analyzed, analysis of the result showed that, integrated science is offered as a core-subject to all the students in each of the 3 classes in the junior secondary school in Osun state.

Majority of the teachers about (84%) are unable to cover all the content topics of the syllabus before the start of the JSCE, majority of the

teachers about (89%) are not specialist in integrated science. The rate of the performance of the national objective of integrated science teaching is low; the curriculum for integrated science is better executed in the urban schools than the rural schools, the gender of the teacher has no serious effect on his/her implementation of the curriculum and that specialist teachers of integrated science implement the curriculum more painstakingly than non-specialist teachers. It was recommended that government should mandate tertiary institution to produce more specialist teachers of integrated science as well as organizing in-service training for non-specialist teachers.

Olarewaju (1987) in identifying problems in the implementations of core-curriculum for Integrated Science pointed out that the core curriculum for Integrated Science was introduced to schools without trial testing which led to short -circuiting the curriculum development procedure. This led to some problems in the implementation of the curriculum. The study was carried out to find out some of these problems. Sample consisted of Integrated Science teachers in Ondo and Oyo States ofNigeria. The samples were drawn from twenty three schools situated in seven local government areas of the two states. Sixty questionnaires were distributed out of which forty two were completed and returned. An open ended Integrated Science teachers' questionnaire constructed by the

researcher was used to collect data. Simple frequency counts and percentages were used to analyze the data collected.

Results of the study revealed that most of the teachers were not sufficiently prepared to teach the content of the curriculum and thus they encounter problems with the teaching of topics that are not related to their areas of qualifications. School activities take up much of the time that most of the teachers cannot cover all the topics specified for each year. These findings point to the fact that there is need to consciously prepare NCE science teachers to teach Integrated Science. This means that Integrated Science should not just be a part of their general knowledge but they should be brought up properly in the content and methods of teaching Integrated Science. Brady and Kenney (1999) observed that there was no significant relationship between natural science teacher's scores on a test and their educational qualifications. It shows that although teachers' educational qualification is essential, teacher's understanding of the curriculum contents may at times not depend on qualifications alone.

In a related study, Mustapha (2001) worked on NCE Integrated Science lecturers' understanding of the features, the philosophy and objectives, the intended teaching methods and the content of the Nigeria Certificate in Education (NCE) Integrated Science double major

curriculum and how their understanding relates to their classroom practices. Lecturers' characteristics that affect their understanding were also sought. Data were collected from 84 lecturers from 17 Colleges of Education using researcher's developed and validated questionnaires with 0.96 reliability coefficients. Descriptive and inferential statistics were employed to answer the research questions and hypotheses. The major findings of the study revealed that, lecturers have positive understanding of the curriculum but lack clear perception of certain integrated features of curriculum; their understanding is affected by their professional qualification, specialization in Integrated Science and in-service training; and their understanding of the curriculum is related to their classroom practice in 25% cases only.

Jeremiah and Diepreye (2012) assessed the implementation of NCE primary education programme in Colleges of Education in Nigeria. The study was guided by three research questions and corresponding hypotheses. The population was made up of 127 primary education studies lecturers in five Colleges of Education in South-south geopolitical zone of Nigeria. The sample comprised 83 lecturers in four Colleges of Education in the area. The instrument used for the study was evaluation and implementation of NCE primary education questionnaire (EIPEQ). The questionnaire was validated by experts and a coefficient reliability of 0.75 established using Croumbachs alpha method. Pearson product

moment correlation coefficient was used in analyzing the data. The findings from the study revealed that there was a significant relationship between teacher's qualification, structural facilities and text on the implementation of NCE primary education programme. The study recommended the provision of adequate facilities and employment of specialist in the teaching of primary education studies.

Bandele and Akintoye (2012) researched into the challenges facing the implementation of Technical College curriculum in South-west Nigeria. The purpose of the study was to ascertain whether the teachers and instructors that implement the curriculum are professionally qualified or not and to find out other challenges facing the teaching and learning of technical and vocational education in Technical Colleges. The study made use of survey research and technical instructors selected from Technical Colleges in two states (Ondo and Ekiti) using multistage sampling technique.

Questionnaire on challenges facing curriculum implementation (QCFCI) with reliability coefficient of 0.72 was used to collect necessary data. The data collected were analyzed using descriptive and inferential statistics. The study showed that 65.83% of the teachers and instructors are professionally qualified to teach in Technical Colleges. The study further highlights the following as the major challenges facing the implementation of the modular curriculum in South-west, Nigeria. These

include: lack of in-service training and poor condition of service of teachers and instructors.

Others include obsolete equipment, unstable government policy; lack of standard workshop for practical work and lack of related modern instructional materials. The study also showed that there was no serious difference between the opinions of the instructors and teachers on the challenges facing the implementation of the curriculum. In conclusion, the study recommended among others that, government should provide the necessary and required human and non-human resources needed in Technical Colleges.

Abe (2014) evaluated the effect of teacher's qualification on student's performance in Mathematics. Three hundred students were randomly selected from ten schools that were purposively selected from sixteen secondary schools in Ikere Local government Area of Ekiti State and used as sample for the study. The qualifications of the teachers were used as the criteria for selection of mathematics teachers. The three hypotheses in the study were tested using t-test statistics. The results pointed out that a significant difference existed in the performances of students taught by professional teachers and non-professional teachers, between students taught by NCE teachers and B.Sc. Ed. teachers and also between B.Sc. teachers and B.Sc. Ed. teachers at $P < 0.05$.

The study recommended that, only qualified mathematics teachers should be allowed to implement mathematics curriculum at the secondary school level while the holders of Nigeria Certificate in Education (NCE) should be allowed to proceed in their education either through part-time or study leave. Likewise, teachers without teaching qualification should be advised to pursue their Post Graduate Diploma in Education (PGDE). This will enhance their implementation method to improve the performance of students in Mathematics.

Owolabi and Adedayo (2012) also investigated the effect of teacher's qualification on performance of senior secondary school students in Physics. The purpose was to find out whether the status of the teachers has any impact on the performance of the students in Physics. The survey type of descriptive research design was adopted. The sample for the study consisted of 100 senior secondary school Physics students in Ekiti State and the teachers that prepared and presented the students in each school for 2009/2010 West African School Certificate Examination.

The researchers collated the years result summary for each school with the bio-data of their respective Physics teachers. Four hypotheses were formulated and tested at 0.05 significant levels. The data collected were analyzed using inferential statistics. The results showed that students taught by teachers with higher qualifications performed better than those taught by teachers with lower qualifications. It was also

revealed that students performed better in Physics when taught by professional teachers. Based on the findings, it was recommended that teachers with professional qualifications in higher level should teach Physics at the certificate class.

Koledoye (2012) reported the analysis of the performance of the English Language Teachers (ELTs) and Teachers with Formal Education (TFEs) at secondary level in public high school. The study pointed out that ELTs have positive impact on the performance of the students in the final examination conducted by the board of intermediate and secondary education. Data were collected from three different public schools where ELTs and TFEs were teaching in parallel. The results of the students in their final examination conducted by the board were collected. The results revealed that those students who were taught by the ELTs had better results in the final examinations as compared to those who were taught by the TFEs. The study then suggested that the practice of inducting qualified English teacher at secondary level should continue.

Omosewo (2007) investigated whether or not teachers' academic qualification has impact on students' performance in Physics. That is to determine whether Physics students taught by qualified teachers would perform better than those taught by unqualified Physics teachers. The sample consisted of fifteen Physics teachers from Edu, Kaima and Moro Local Government Authority (L.G.As) of Kwara state. Grades of students

in S.S.C.E. Physics were collected in the three local government areas of Kwara state.

These were compared with the qualifications of the Physics teachers in the three LGAs using t-test for independent samples. It discovered that teachers' academic qualification was a prerequisite for students' performance in Physics at the senior secondary level of education and that workshops seminars and in-service training should be organized for the available Physics teachers.

Owolabi, Thomas, Adebayo and Julius (2012) investigated the effect of teachers' qualifications on the performance of senior secondary school students in Physics. The purpose was to ascertain whether the status of the teacher has any effect on the achievement of the students in Physics. The survey type of descriptive research design was employed. The sample for the study consisted of 100 senior secondary schools Physics students in Ekiti state and the teachers that prepared and presented the students in each school for 2009/2010 West Africa School Certificate Examination.

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by professional teachers. Based on the findings, it was recommended that experienced teachers with professional qualifications in higher level should teach Physics at the certificate class.

Akinsolu, (2010) considered the number of qualified teachers and its relationship to students' academic performance in public secondary schools in a sample of Local Government Areas (LGA) of Osun State. The descriptive study employed a post-hoc data set. An instrument titled "Quantity and Quality of Teachers and Students' Academic Performance" (QQTSAP) was used for the study. Twenty-one (21) public secondary schools in each LGA from a population of thirty-one (31) LGAs in the state were sampled.

The Senior School Certificate Examination results from 2000/01 to 2004/05 were used to analyze students' academic achievement and reflected some concerns in the school system. The data were analyzed using ANOVA and spearman rank correlation coefficient. Finding of the study revealed teachers qualifications, experience and teacher- student ratio were significantly related to students' academic performance. There is need for our educational planners to employ qualified teachers to facilitate effective teaching and learning in our secondary schools.

Ishiekwen and Benjamin (2014) investigated teacher's qualification, area of specialization and the implementation of the environmentaleducation curriculum in Cross River State, Nigeria.

The aim of the work is to investigate the effects of teacher's professional qualification and how they predict the implementation of the environmental education curriculum. The population of the study comprised of the teachers. The analyses of data collected pointed out that teachers' professional qualification do not significantly affect the implementation of environmental education curriculum.

Etiubon and Benson (2014) examined qualification and experience as determinants of quality Chemistry education in Akwa Ibom State of Nigerian. The population consisted of all the Chemistry teachers in the 31 Local Government Areas where 130 Chemistry teachers' were randomly selected. Analysis of the result showed that there was serious impact of teacher's qualifications on quality of Chemistry education.

Musau and Abere (2015) worked on the extent to which teachers' qualifications impact academic performance in Science Mathematics and Technology (SMT) subjects. It included 8 head teachers, 40 teachers of SMT subjects and 600 candidates who sat for the Kenya Certificate of Secondary Education in the 2012. The study discovered that there was no serious difference in means between teachers' qualification and students' performance in SMT subjects.

It must be noted that performance of students is a function of curriculum implementation. NCCE (2009) observed that in many

Colleges some lecturers did not possess teaching qualifications and some did not have post graduate qualifications. The body advised such college authorities to encourage academic staff to acquire the needed qualifications as soon as possible. The table below shows the distribution of academic staff by qualification and sex for 2009/2010 session.

Table 4

Distribution of Academic staff by Qualification and Sex 2009/2010 Sessions

Qualification	Male	Female
HND	216	55
HND + PGDE	362	99
BA/BSC	2228	457
BA/BSC + PGDE	1455	342
BA/BSC. Ed	1202	243
B. ED	2214	631
MA/MSC	2582	563
MA/ MSC. Ed	1135	268
MED	2331	698
PhD	802	200
OTHERS	391	81
TOTAL	**14918**	**3637**

Source: NCCE Statistical digest (2011)

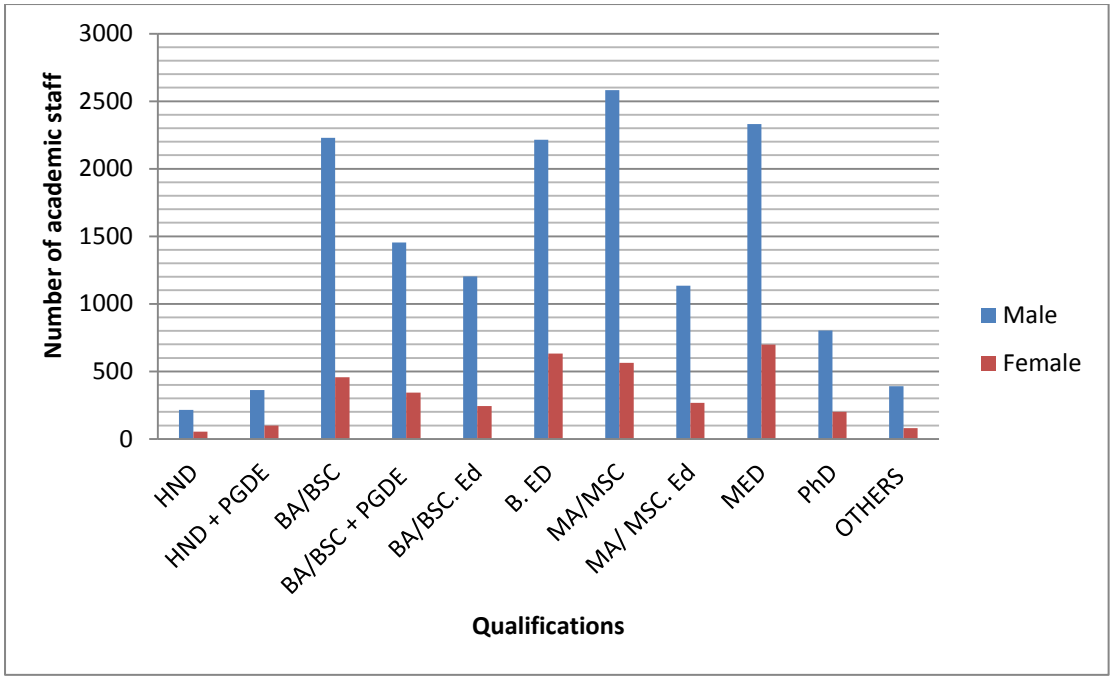


Figure17: Distribution of Academic Staff by Qualification and Sex 2009/2010

Source: NCCE Statistical Digest (2011)

Influence of Lecturers' Experience on Implementation of Curriculum

Many professions identify workers' years of experience as a pertinent factor in human resource rules, comprising compensations structures, benefit enumerations and upgradepronouncements. We belief that experience acquired over time, improves the understanding, expertise and efficiency of workers. In education, tutor's experience is possibly the mainissue in personnel rules that influence current employees. The topic tutor experience is receiving a lot of consideration in education arguments. Habitually experience is debated in relationsto performances

– if more experienced tutors turnout larger scholars test score gain than less experienced tutors.

Ebru, Alyidrin and Pinar (2011) examined the transformation procedure of centralized curriculum into classroom implementation. This is an example of Turkey's educational system. The key point of the study was to explore the change procedure of unified curriculum into classroom exercise through a phenomenological study strategy. The partakers included 7 high school Chemistry tutors in Turkey. The tutors were nominated centered on maximum variation sampling technique which comprises the determined choice of entities whose experiences give the full account of the studied occurrence.

The partakers symbolize a range of instruction experience in Chemistry (from 12 to 31 years), satisfied area of qualifications and such features like two urban one sub- urban school type and2 public and one private. Semi structured interview was used to collect data. The problems were connected to overall flow of Chemistry lesson, how tutors use curriculum in the preparation and implementation procedure, lastly themes reflecting teacher's understanding and implementation procedure were acknowledged centered on these programs.

The results of the research study were offered less than six points, insight of unified program roles of tutor ascribed by program, conversion of unified program into thought program, internal issues on change,

external effects, and reflection back on the program. Internal factors on conversion were discovered as experience of tutors, levels of scholars and program among others.

Alister, Harlow and Cowie (2004) described the outcome of a national study to examine tutors` skills in the execution of the technology program in Newzealand colleges from year 1- 3. Their inquiry of the execution of the technology program is portion of a bigger study being taken nationally in all program areas to find out how active the program is in exercise and how the outcomes can bring about progresses. National emphasis group's questionnaire and instance studies were used to find out how the program is being implemented. The questionnaires were disseminated to over 10% of Newzealand schools. The main results showed that nearly all the primary school tutors are targeting for program coverage, have reasonable levels of self-assurance but are worried about program crowding. Years seven and eight teachers are primarily anxious about evaluation, however secondary school tutors are hampered by existing structure in schools.

Mantsose (2014) investigated experiences of of tutors in countryside schools with respect to program execution and how their knowledge and experiences affect the execution of the program. The research study was carried out in the district of Lusikisiki in South Africa. Qualitative case study research strategy was employed. Semi-structured

dialogues, classroom observation and article analyses were also engaged. The results emphasized that tutors acknowledge the benefits of previous curriculum workshops despite the fact that they experienced trials in the implementation.

The researcher recommended that for tutors to execute curriculum efficiently, the unit of Basic Education and Program Designers need to examine the situation in which the program has to be implemented. Among other necessities for program implementation, tutors have to be continually overseen and reinforced to improve the superiority of learning and teaching.

Tumova (2012) affirmed if tutors' age and length of skilled experience influence their attitudes to the curricular transformation and its execution in the Czech Republic. The study relied on a secondary breakdown of quantifiable data (N = 1002 respondents). The study showed among others that span of skilled experience was statistically important only for 3 out of 4inquiriesevaluated. The general trend that can be perceived for these 3 statements is, beyond all that tutors with qualified experience longer than 15years are more skeptical about the transformation. In all-purpose, the effect of the variable of length and age ofqualified experience on tutors' attitudes to the curricular transformation and its execution are not as solid as they might be estimated or as they are often recommended by tutors or the overall public.

The sample for the study consisted of 1002 respondents employed among tutors at the lower/upper and primary secondary levels. Centered on quota sampling, the sample represented the local dissemination and structure of types of schools in the Czech Republic. The data was gathered by means of standardized face-to-face interviews between interviewers and tutors taking approximately 30 minutes each. The data was administered and examined in the SPSS 13.0 statistical software. The influence of both variables was examined by using the chi-square test which tests independence between 2 variables. The study showed that tutors with qualified experience extended than 15years are more skeptical about the restructuring. In a nut shell the factor of span of qualified experience was statistically significant.

In the study of Minjeong (2008), how Korean elementary tutors implement program combination in the teaching practice and what Korean elementary tutors' experience in executing program combination was evaluated. The partaker tutors were chosen centered on their accessibility and readiness to partake. The participant tutors were invited to express in their own words and in description organizations. The interview was guided by the following questions: how the partaker tutors distinct the perception of program combination, how they had attained this understanding, how they use the idea of program combination to

everyday performs, what those performs were like, and what accomplishments and problems were come across during their execution.

Qualitative content analysis was employed for the data interpretation. The researcher discovered that the tutors were not used to integrative planning models, they did not see them necessary hence did not make use of them during teaching. The researcher explained that the tutors were implementing the program based on their own understanding, not minding the theoretical frameworks that are available for assistant.

The researcher concluded that teaching experience does not count when it comes to integration/innovation; teachers need to be well taught and enlightened on what should be the outcome and also apply it during teaching. Minjeong (2008) asserted that training of tutors that are qualified with up-to-date knowledge for program integrations should be encouraged.

Keys (2003) researched on how secondary and primary tutors` knowledge affected the effectuation of a year 1-10 science syllabus introduced into Queensland in 1999. The research study verified differences in the knowledge of tutors in secondary and primary schools and influence of tutors knowledge on the effectuation of the science program. Teachers 'beliefs and practices have been established to affect the effectuation of program. Information was done through discussion between a secondary tutor, middle/upper primary and a lower primary.

The result showed that tutors utilized 3 sets of opinions to figure the effectuation of the science program. The secondary and primary tutors did possess related sets of views and knowledge however the method of effectuation in certain cases were not the same. It was discovered that the knowledge and views possessed by them served as catalyst in teaching science as they did.

Bulent (2012) examined Mathematics tutors' feelings about the new sixth grade Mathematics program on Turkey and to find out the likely associations between tutors` personal features and their worries about the program. Three hundred and six in-service Mathematics tutors teaching in Ankara partook in the study. Tutors' concern about new program was known by making use of Concerns – Based Adoption Model (CBAM). Results revealed that tutors' concern concentrated mostly on the individual and cooperation phases of the CBAM model. It shows that the tutors did not go against the change but they wanted to gain from others knowledge to enhance their skills and knowledge about effectuation of the new program. Experience gained here will help them in implementing the curriculum.

Ogott and Odera (2012) examined teachers` attitude in effectuation of the language program in childhood education and development program. 68 tutors constituted the sample for the study. Attitude test questionnaire was used to collect data.

The research study observed that many years of experience among others had progressive impact on tutors' dispositions and negative impact on linguistic factual selection, expansion and use in the primary childhood growth and learning program. The researchers proposed that those involved in education should emphasize the significance of sound grades in academic for those willing to join teaching as not trained and those heading to train as teachers which would lead to influence the way they are going to implement the curriculum.

Dogan and Yildiz (2013) verified the perception of tutors in Turkey about program mapping, short-range design, long-range design and standard position. The research study dealt with the factors that influenced tutors understanding. The study revealed that years of teaching experience is the most prominent powerful issues among others. When comparing the results, it shows that the tutors with more experience see curriculum mapping for curriculum planning as effective.

Jessica and Fraser-Thomas (2002) presented an event study of tutors' experience on physical education curriculum using document, interviews and observations breakdown; they planned their facts around Brunnelle conceptual frame work. Several challenges to effectuation identified include shortage of time to accomplish products, insufficient apparatus, enormous classes, full instruction loads, lack of qualified

growth and lack of specialist support. Data indicated that notwithstanding tutors` best labors, students did not meet up with curriculum purposes.

Mueller (2011) analyzed teachers' knowledge as a mode rating factor for the influence of class size-reduction on performance of student in the first grades taking information from the Tennessee STAR experiment with classes of different sizes using random assignment of tutors and scholars. Mueller (2011) found that class size only had effect for senior tutors. The impact is highly stressed for average students and those performing higher. The analysis also revealed that senior teachers (i.e. more experienced) performed better than the inexperienced only in small classes.

Al-jasser (2007) considered the teaching experience variables and whether they have effects on the Saudi students' level of accomplishment. The samples for the study were 9 non-native tutors and 246 students of university. All the respondents were involved in the study. The breakdown of the second term was used to determine their performance. The outcome of the correlation and analysis of variance showed that higher performance level was independent of longer teaching experience. Reverse was the case i.e. higher performance level is a function of shorter teaching experience. ANOVA showed some differences in the average scores. Scholars underneath teachers who had been teaching for long recorded lesser when compared with the rest of

other groups (Mean = 25.63) however, students that obtained the highest score (Mean = 29.47) were taught by tutors with least experience.

Madsen and Cassidy (2005) considered pre-service and experienced tutors 'rankings and discussed on tutor's functionality and scholars 'achievement after viewing music classes on videotaped. Comparisons were pointed out among experience ranks of viewers and between targets of consideration of observations. Samples for the research study included students that major in music education with either no college no practicum teaching experience (n=26) or who had not been teaching students but had experience in practicum teaching. The last set involved samples with teaching experience in music and are full time teachers.

Samples were asked to watch 2 videotapes, one of which the camera was focused on the teachers while the other camera focused on the students. Effectiveness of scholars learning and teaching were rated by the respondents on the two videotapes. Statistical analysis of the rating indicated that unlike the undergraduate respondents, experienced respondents were more critical in their judgment.

Jennifer (2010) pointed out that experience counts, but more is not always better. Jennifer (2010) pronounced that the influence of experience is toughest at the early years of teaching after which comes decline in performance. The researcher explained further that many other

studies established the fact that on the average, newly employed tutors are less functional compared with those tutors with some experience.

In the research work of Jepsen (2005) the view point data bank comprises two units of basic school scholars, first-grade scholars in the fall of 1991 and third rank scholars in the spring of 1991. Each unit initially comprises over 200 schools and nearly 10,000 scholars. Within each school, if rank registration is under 150, all scholars in the rank are involved in the starting point survey in 1991. Then, every scholar in four classrooms (chosen at random) is chosen. Follow-up data for each scholar were composed in each spring through 1994. In the study scholars, parents, tutors, school administrators, principals and district titled managers finished questionnaires in the springs of 1991 (third-grade unit only), 1992, 1993, and 1994.

Also, scholars took the 4th version of the complete test of elementary abilities in reading and Mathematics in the springs of 1992, 1993 and 1994. Scholars in the first-grade unit also took tests in the fall of 1991 (i.e. in the fall of first rank), while scholars in the 3rd graded units took test in the spring of 1991(i.e. in the spring of third rank). These tests are described as gauge scores, in order to permit for relationships across units and years. The outcomes for the third-grade unit exposed to some extent tougher associations between tutors and scholars accomplishment.

As soon as lagged peer test marks are involved in the model, tutors experience is absolutely related with classroom efficiency, with an influence of 0.002 normal deviance of each year of knowledge. For Mathematics, the profits to knowledge are declining, as the knowledge squared term is negative and important. The total influence of a one-standard deviance rise in tutor's experience is in line with an rise in classroom efficiency of 13 fraction facts in Mathematics and 8 proportion points in reading.

Abuseji (2007) built and examined a prototypical for providing a connecting clarification of secondary school achievement in Chemistry in relations to scholar variables and tutor's variables – age, qualification gender, and years of experience. For the study ex-post facto design was engaged. The population comprised of all year two (SS II) scholars and their tutors in Epe and Ibeju-Lekki LGA of Lagos State, Nigeria. Nevertheless, 6 and 4 schools were involved in the 2 local government areas correspondingly.

These 10 selected schools were the ones that met the standards which were: the school must have touched all the course work in their outline from SSI to the 2nd term of SSII. The female and male Chemistry tutors must have imparted knowledge to the scholars in the SS I. 2statistical principles were adopted to analyze the records, that is multiple regression analysis and path analysis. The study revealed that

tutor's experience has important connecting Influence on scholars' performance. The straight and unplanned impacts responsible for 3.40% and 0.12% of the total influence correspondingly.

Adedeji (2008) studied the correlation between tutor self-efficiency, concern, approach, qualification, knowledge and scholars' educational accomplishment in basic school Mathematics. The sample consisted of 254 basic school tutors and 120 basic school scholars. Data obtained were analyzed with a stepwise multiple regression analysis. The outcomes revealed that tutor's experience did not significantly correlate with pupils' achievement in Mathematics.

Adeyemi (2008) worked on tutors' teaching knowledge and scholars' learning products in the basic schools in Ondo State, Nigeria. The population involved all the two hundred and fifty seven secondary schools in the state. The population consisted of one hundred and forty seven countryside schools and one hundred and ten metropolitan schools. It consisted of twelve single sex schools and two hundred and forty five mixed schools. A sample of one hundred and eighty schools was selected through stratified random sampling system. An account and a semi-structured dialogue plan were the tools used to gather data for the research.

The information gathered was analyzed with chi-square test, t-test and correlation analysis. The results showed that tutors' teaching

knowledge was important with scholars ‘education results as determined by their achievement in the senior school certificate examinations. Adeyemi (2008) observed further that those schools that are having many tutors with five years and above instructionknowledge had good results than those schools that have many tutors with less than five years instruction knowledge.

Odedina (2001) investigated the correlation between scholars’ attitude towards Mathematics and their educational achievement in the subject in the junior secondary school in Kwara State. Purposive and systematic selection methods were employed to choose a model of 812 J. S. III students from a sample of twelve secondary schools constituting 25% of the number of schools in the 4 selected L.G.A out of sixteen in Kwara State. The study showed a low non-significant positive correlation existed between tutors knowledge and the educational performance of their scholars in Mathematics.

Okpala (2012) determined the relationship between selected teachers’ variables and high school students’ performance. The study used Pearson correlation analysis to ascertain the correlation between tutors’ teaching knowledge and high school scholars’ performance in English and Algebra. The research also used the data to ascertain the relationship between teachers’ turnover rate and high school student performance. The relationship between teachers with advanced degree

and high school student performance were also determined. Results from the analysis revealed that teachers' teaching experience is essential in explaining differences in high school student performance in English I and SAT total score.

Bello (2002) assessed the execution of the curriculum for senior secondary school students in Kano metropolis. 16 secondary schools were randomly chosen out of 46 secondary schools. 2tools were adopted for collection of data. One was labeled questionnaire A and sought opinions of teachers and principals on science curriculum implementations. The questionnaire contained 7 items, the second was questionnaire B which contained 7 items and sought students' opinions on science curriculum implementation. Both questionnaires used five point Likert scale of 1 undecided, 2 strongly disagree, 3 disagree, 4 agreed and 5 strongly agreed. Simple percentage was adopted to evaluate the figures collected. The outcomes revealed that implementation of science program in secondary school connect to the objective of science education and also connects to the needs and yearning of the society. The study identified inexperience teachers as the major problem affecting implementation of science curriculum in Kano State.

In a similar study, Ajayi and Afolabi (2012) investigated teachers` output in South-west Nigerian secondary schools. The sample involved100 schools' principals and 1000 tutors of secondary schools

who were chosen from these schools employing multistage random method. The study employed self-designed tool to gather information. The information gathered was analyzed with t-test, frequency counts, and percentage scores. The assumptions postulated were verified at 0. 05 level of implication. The research study pointed out that level of tutors was small during the era of examination. The research study as well showed that teachers` experience had a great impact on performance of teachers. It was recommended that more knowledgeable tutors should direct the less- experienced tutors towards the accomplishment of greater output.

In a related research work, Owolabi and Adedayo (2012) considered the impact of tutor's qualification on the achievement of senior secondary school students in SSS in Physics. The determination of the research was to find outif the position of the tutor has any effect on the achievement of the scholars in Physics. Descriptive research of survey type was employed. For the study, the sample involved 100 Physics students of senior secondary school in Ekiti State and the tutors that equipped and offered the scholars in each school for 2009/2010 WASCE. The summary of the results for each school was gathered long with the biometric-information data their individual Physics tutors.

The information gathered was examined using inferential statistics. The result discovered that experience of the tutors among others is important at influencing the scholars` educational achievement in

Physics. Built on this, it shows that experience of tutors is significant in implementation of Physics curriculum. Built on the outcomes the researchers suggested that knowledgeable tutors with qualified qualifications in advanced level should impart knowledge of Physics at the terminal level. Reuben (2015) appraised the impact of teachers' demographic variables on implementation of ICT in community schools in Niyeri central region, Kenya. The independent variables were teachers' teaching experience and training. The Sample size was 82 teachers. The data was analyzed and the result revealed that teaching experience is not consistent in affecting ICT implementation. Likewise the finding of the study is consistent with the submission of Henrrietta (2016) that evaluated the impact of tutors' instruction knowledge on the execution of secretarial program in South –south zone of Nigeria. The population comprised 74 secretarial education teachers served sample. The results from the analyses revealed that tutors' teaching experience does not seriously affect the curriculum implementation in College of Education.

Ahmet and Ayse (2011) examined whether experienced elementary school teachers make a difference in science and technology teaching process employing meta cognitive plans. 14 basic school tutors were sampled for the study, comprising seven knowledgeable and seven inexpert. Results of the figures pointed out that experienced basic school tutors accomplish more events connected to meta-cognition earlier,

through and after science and technology instruction than inexperienced teachers.

Onyekuru and Josephant (2013) verified teaching functionality of secondary school tutors in Emohua LGA of River State. The study revealed that the instruction functionality of tutors with 5 or more years of instruction knowledge were 87.23 (mean) and 10.38 (standard deviation) correspondingly. The tutors that have less than 5years of instruction knowledge had average score of 69.03 with a standard deviation of 3.99.

According to Olorundare (2003) educational products are not only considered by the quality of the material input (knowledge, skill e.t.c) but also by the quality of those who execute and monitor those inputs that is the teachers. According to Olorundare (2003), what students at all levels aim and achieve intellectually relies greatly on what their teachers teach, how these are taught and the faithfulness which the teaching job is conducted. The strategic function of teaching is that, more experienced teachers are seen as the most effective to teach particular topics to students who differ in their abilities, prior knowledge and backgrounds.

Influence of Lecturers' Gender on implementation of curriculum

Gender sensitivity about school curriculum offering is gaining global attention and concern because of the growing interest in equalizing

privilege to education for the child regardless of differences in sex structure (Dan, Oyeoku, Ezegbe and Igbo 2012, p.1044). Gender and its associated powers are built in all establishments of the society be it norms, belief, religious system, work place, educational institutions etc.

Alele Williams (1987) observed that there is a social cultural dimension to the low involvement rate of females in general in Science Technology and Mathematics (STM). The social cultural dimension of the problem has become a myth to the extent that girls have come consciously or unconsciously to accept STM education as man's land. Then impact of sex on scholars' performance in science has been an issue of concern for a long time to many scholars and science instructors. Many of them hunted to ascertain if it is true that there is male superiority in science performance or not. However the results obtained varied.

Gomelksiz (2012) investigated scholars 'views of science and technology by gender in a Turkish basic school setting. Information for the research were gathered using a 20-item, 5 point Likert scale from a population of 1558 sixth grade scholars at 20 dissimilar basic schools in Turkey. The autonomous group's t-test and Mann-Whitney U-test were employed to evaluate the numbers. Statistically, various variations were detected students' gender. The study showed that male scholars saw learning science and technology more essential and significant than female students did. Also they found knowledge atmosphere and

instruction tactics more adequate and real than female did. Results showed that male scholars were not contented with what the tutors implemented in science classrooms.

Kobia and Ndiga (2013) verified how tutors affect the execution of Kiswahili program in Igembe district. The study employed two research questions and adopted expressive study design. The sample was 24 head tutors and 24 heads of Kiswahili branch who were also Kiswahili tutors. The information was obtained using questionnaires, documents proof guide and discussion plan. Discoveries revealed that tutors 'features like gender affect not the execution of Kiswahili program in secondary schools in Kenya.

Allana, Asad & Sherali (2010) planned and approved a tutor teaching program with the backing of Global Fund for Women. The purpose of the exercise was to sensitize the tutors and drill them to discourse predominant gender and social matters in educational sets and in the people at large. Besides it was to attempt and modification of tutors 'border of their own background to discourse gender and social issues in scholastic sets. The technique for the drill was collaborative and comprised tutors` awareness sessions, case studies, activities, workshops, and video clippings.

The exercise led to providing gender schooling to tutors, gender sensitization, growing their ability to carry out gender breakdown of

program factual, learning and teaching practices and school arrangements and values. They concluded that this gender sensitivity of tutors will expectantly yield a resultant influence in the school declaration.

Chudgar and Sankar (2008) reported that, teaching in India has been a male - controlled occupation. The study asserted further that in the 70s, women constituted slightly more than 25% of the main tutor labor force. The study observed that right from 1987, the process black-board outline has concentrated on the aim of engaging at least 50% female tutors. It was emphasized in 1992 program of action complementary the review of the national education rule. In the late 1990s, around 35% of tutors at the basic level were female India's most new and ambitions education platform, "Sarva Siksha Abhiyan" (known as education for all) remains to state the objective of 50% female tutors amongst its many goals.

However, the figure has surged recently up to 43%. Chudgar and Sanker (2008) examined the relationship between students' learning outcomes. The study is making study to assess students` learning. 300 schools were selected from the five most populated towns in 5 states (Chhattisgarh, Andhra, Gujarat, Rajasthan, Pradesh and Uitarakhand).Private and public schools were employed with a main importance on public schools. English language and other 3 regional languages were used (Telugu, Hindi and Gujarati). Results revealed that

female and male tutors vary in relations to their classroom administration rehearses and their trust in scholars' learning potential. In limited backing of the plan of employing more female tutors, also it revealed that being in a female tutor's classroom is useful for language learning but tutors` gender has no effect on Mathematics learning.

Antecol, Eren and Ozbeklik (2012) in the paper which attempted to put to rights the opposing marks found in the Educational Psychology, Literature, and Economics with regard to the educational influence of gender changing aspects in the classroom. They looked to the impacts of having a female tutor on the Math test grades of the scholars in basic school. It was found that female scholars that were appointed to a female tutor with no strong Mathematics background agonized from minor Math test score at the end of the educational year. The negative influence nevertheless not only looks to vanish but it turns out to be (marginally) progressive for female scholars who were allocated to a female tutor with a tough Mathematics experience. Lastly, they found no impact of having a female tutor on male scholars' test marks (math or reading) or female scholars' reading test marks.

Luschei and Thomas (2012) summated that even though the grades of measureable studies frequently show that scholars of male tutors accomplish poorer on accomplishment test unlike female tutors, the researchers said is not strong that male are less active tutors. The study

explained that male tutors are prone to work in more tough surroundings. The research study used longitudinal figures from Mexico's national tutor motivation program to study the efficiency and dissemination of male tutors in 2 Mexican states. Although they found certain evidences that the scholars of male tutors got lower marks than those of female tutors, it was found that male tutors are excessively focused in lower-achieving and countryside schools and in higher-poverty cities.

Mezieobi, Oyeoku and Ezegbe (2012) examined matters in the execution of Social Studies program in Nigerian Universities. The sample for the study involved all of the 200 final-year students of University of Port-Harcourt offering Social Studies in the 2009 contact session. 5 research questions conducted the research study. Researcher's established survey containing 32 items and demographic information on students and lecturers which were used to collect data. Frequencies and percentages were employed to answer the questions.

The results of the research study pointed out that there was gender gap in the implementation of Social Studies curriculum, more females offered Social Studies than their male's counterparts, also there are more than females academics teaching Social Studies curriculum can be further enhanced gender equality. The researchers recommended that classroom management teaching techniques should be fairly distributed to students by both genders in Social Studies classroom. Also the issues and problem

arising from gender stereotyping in Social Studies curriculum and instruction should be done through gender awareness workshop for Social Studies (lecturers) among other recommendations.

Ejimaji and Emekene (2012) investigated the correlation between age and gender on academic performance cumulative grade point average (CGPA) of students in chemistry. The research study adopted 36 females and 40 to give a sample 78. Mean standard deviation and scatter-plot were employed for the descriptive statistics while analysis of variance (ANOVA) and multiple regressions were employed for inferential statistics. The null hypothesis formulated was tested with t-test ($P < 0.05$). Results showed that there existed a linear relationship between gender-CGPA and age – CGPA. A little positive association coefficients was gotten for gender and ages ($r = 0.006$ and 0.105) which were not substantial. The forecaster variables together accounted for 1.1% of the difference, age was found to be a better predictor. The null assumption tested was accepted denoting no serious disparity in academic achievement of students.

Alao and Abubakar (2010) emphasized on gender registration gap and educational achievement of Physics students in the College. A sample of 18 male and 18female students were chosen purposively as respondents from the department of Physics/Computer Science Education of Federal College of Education (Technical), in Rivers State. The CGPA

of the respondents was analyzed using standard deviation, mean and percentages.

The 4 formulated hypotheses were tested with t-test. It pointed out that there exist no statistical serious variances in educational achievement between male and female scholars. Centered on this, it was suggested by the researchers that tutors in Physics/Computer department should still enhance on their teaching abilities in other to be able to teach the scholars, emphasizing the significance of Physics in Technology, giving them the essential encouragement to acquire particularly in their preliminary courses.

Afolabi (2009) considered the impact of the teachers' gender and attitude as factors on the educational achievement of the basic schools scholars. 50 teachers were arbitrarily carefully chosen from 70basic schools out of the 97 basic schools in Ondo West LG in Ondo State and 200 scholars were arbitrarily chosen and employed for the study. 2 tools were used to gather information that is the and Primary Science Achievement Test (PSAT) and Teachers' Attitude Questionnaire (TAQ).

The design employed for the research study was survey. For the instrument analysis, Pearson Moment Product correlation coefficient was used. The end result revealed that no serious relationship existed between the achievement of scholars taught by female and male tutors in basic science. Based on the outcomes, the researcher recommended that on a

regular basis, government should organize workshop and seminars for the tutors.

Mohammed and Babikkoi (2012) examined the impact of gender on the execution of the English language curriculum in Colleges of Education in the north central states of Nigeria. A research question was postulated for the study while a hypothesis was postulated for the study. Total population sampling was employed for the 223 English language lecturers using a self -structured questionnaire.

The questionnaire has a four-point reply plan, which was said to have been authenticated by 3 experts. A trial test was done using 20 English language teachers from Enugu State with a reliability coefficient of 0.83 was arrived at. The survey was as well used to gather related information from the 223 English language teachers of which only 169 were returned to the researchers. The researchers used the standard deviation, mean and grand means scores to answer the questions at 0.05 level of significance.

It was established that English language teachers executed the English language curriculum in Colleges of Education in the north central states of Nigeria to a high-level as reported by the researchers. Above all, the results revealed that there exist no serious variation in the total average scores of female and male English teachers in Colleges of Education in the northern states of Nigeria with respects to English

language teachers' execution of the English language curriculum. Centered on the results, the researchers proposed that the Federal and State Government should work together in the preparation of laws and guiding principle that would motivate the female-child to advance their schooling and add more importantly to the development of education in the country Nigeria and precisely the northern states.

Ajayi and Afolabi (2012) in a related study studied tutor' output in South-west Nigerian secondary schools. The respondents involved 100 principals and 1000 secondary school tutors that were randomly chosen using multistage sampling from the secondary schools. Self- designed questionnaire was employed to gather information for the study. Percentage scores, t-test statistic and frequency counts were employed to analyze the data collected. The hypotheses formulated were tested at 0.05 level. The result of the study showed that level of tutors` output during the time of the findings was low. The research work also showed that no serious difference existed between female and male tutors 'output in the secondary schools. Based on the outcomes, it was suggested that all tutors should work harder to reach greater output irrespective of the gender.

Edu, Edu and Kalu (2012) examined the part of tutors' gender on their thoughtful of challenging concepts. The research study employed the ex-post- facto or relative design. Out of 5,200 tutors, a sample of 520 was arbitrarily chosen and employed for the research. In the research, 2

hypotheses were framed, verified and analyzed with ANOVA and t-test. The outcome revealed that tutors' gender has no serious impact on the understanding of tough terms in Basic Science. In line with the outcomes, the researchers suggested that the yearly tutor reequipping training of the Cross River State Government should be continuous and the approach of teaching observed tough terms in science should reflect majorly in the course outline for such training.

Okoro, Ekanem and Udoh (2012) considered the influence of tutor's gender on the educational accomplishment of children in basic schools in Uyo city. Through random sampling technique, 3 schools were chosen out of which 60 learners were chosen using classified purpose selection method. The study gathered educational achievement figures built on the first term examination and continuous assessment through ex-post-facto method of the chosen pupils for figures breakdown which was conceded out using 2-factor analysis ANOVA with repetition of the 3 schools. The outcomes revealed that scholar-tutor gender connections do seriously influence pupils' academic achievement as shown in the variances between the achievement of male pupils taught by male tutors and male pupils taught by female tutors and female pupils taught by female tutors and female pupils taught by male tutors.

Undousoro (2010) examined the impact of sex and Mathematics on educational ability of scholars in Chemistry. Senior secondary school 1

Chemistry scholars in 2 secondary schools constituted the sample of 100 in Oyo city. The tools used were the Mathematics Ability Test (MAT) and Chemistry Achievement Test (CAT). The data collected was evaluated using t-test statistics tool. The results of the investigation showed that achievement of students in Chemistry has nothing to do with gender, does not have any significant impact on the academic achievement of students in Chemistry.

Ogunseemi and Daramola (2010) observed that nobody argues that scientific understanding and technological education do not equally exist to the social gender/sets in the world. The study revealed further that it is largely known that females and women have shown fewer concerns in scientific and high-tech education. It was asserted that furthermost they see sciences as a field of study for men and males in particular. On the other hand it was found out that in schools that female students are really not showing interest in the study of science, which has led to low registration in science related courses.

Alabi (2014) investigated the execution of the new SSS program for the objective of free enterprise education in Ondo state, Nigeria. Sample for the study included. One principal and five tutors each arbitrarily chosen in 18 public and private SS from each of the 3 senatorial regions in Ondo State. This problem of low involvement of female in science and education generally, is also reflecting in academic

staff composition in our higher institutions of learning. NCCE (2009) confirmed this fact when the body reported that, "the composition of management in many of the colleges did not reflect gender equity; they were dominated by males". (NCCE, 2009, p 94-95)

The body recommended that efforts should be made to ensure gender equity in positions of authority in Colleges of Education. Looking at the distribution of school staff by sex for 2009/2010 session, it shows that in Nigeria, in all Colleges of Education, there were 15,344 male lecturers and 3,688 female lecturers! The variation is so much; it shows that male constitutes 80.6% while female constitutes only 19.4%! (NCCE, 2010). Looking at the distribution of academic staff by school and sex one sees that gender inequity cut across all the schools i.e. Arts and Social Sciences, Languages, Sciences, Vocational & Technical and Education.

Table 5

Distribution of Academic Staff by School and Sex 2009/2010 Session

		Languages		Sciences		Voc. & Technical		Education	
M	F	M	F	M	F	M	F	M	F
3404	634	2205	576	3381	687	3171	840	3183	951
(84.3%)	(15.7%)	(79.3%)	(20.7%)	(83.1%)	(16.9%)	(79.1%)	(20.9%)	(77%)	(23%)

Source: NCCE statistical digest (2011)

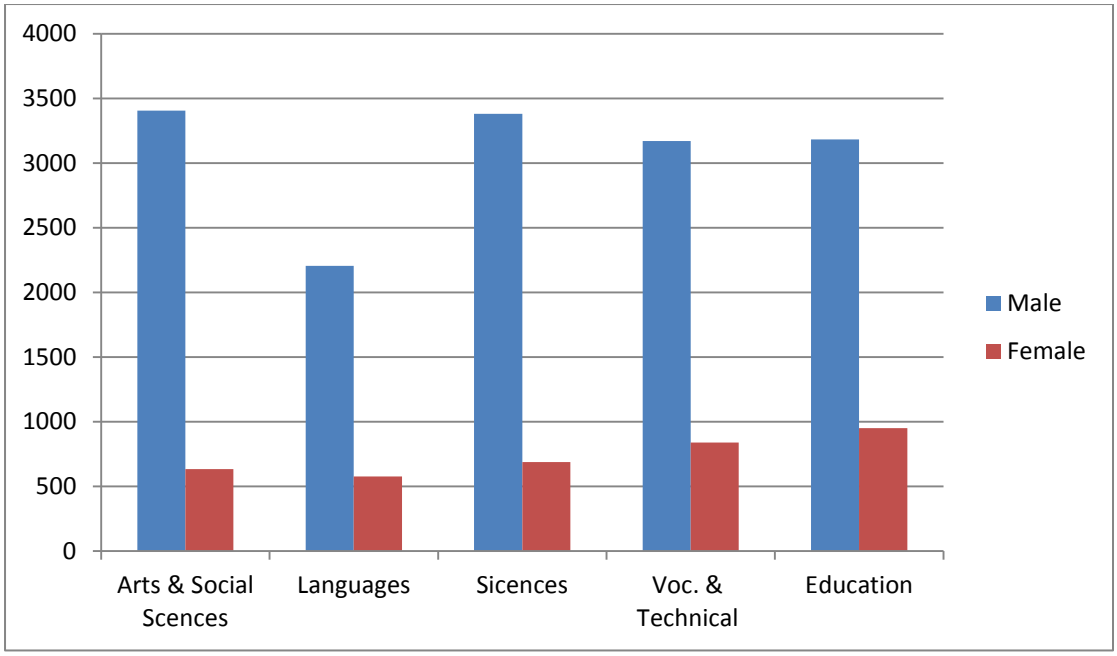


Fig 18: *Distribution of Academic Staff by School and Sex for 2009/2010 Academic Session.*

Source: NCCE statistical digest (2011)

The question before us now is that, what do we do to bridge the wide gap?

Influence of Lecturers' Perceptions on Implementation of Curriculum

For a country that wants to develop technologically, Chemistry education cannot be neglected. Chemistry students in Colleges of Education are groomed as science teachers for the future. It is therefore imperative that these students are well groomed **by the teachers** so as to produce sound students. Hence implementation of Chemistry curriculum

in the College of Education is very important as perceived by the researcher.

Perception is the impulse from nervous system. It also the results of the physical inspiration of the sense organs. Perception is also capability of seeing, hearing and becoming aware of something via the senses. *The study of Bernstein* (2010) *explicated* perception as the ultimate experience in the world. *Odewumi (2017)* explained perception as how human bei*ng perceived the entire world, especially his immediate* environment. In essence, Schacter (2011) submitted that perception is getting and gathering actions through the senses of sensory information. Previous studies have worked on the perception of teachers. For example, the study of Dowrich (2008) examined the teachers perception on the National continuous Assessment programme. It was recommended that the actualization of the continuous assessment programmer should be documented. Also, Bayer (2009) observed that perceptions of teachers of sciences, technologies and mathematics on curriculum implementation. The study further recommended that instructors should be well educated. In the same vein, Monynngi (2010) looked into the teacher's perception towards the execution of life skills curriculum. It was revealed that life skill were relevant and particularly useful to prevention of different terminal diseases and HIV/AIDS.

Similarly, Adal (2011) examined the perception of teacher on the technology of instructors via game. The study concluded by recommending in-service program for instructors. Also, Meshach (2015) investigated teachers' perception on the confrontations and revising educational program. The study revealed that inadequate financial support and proper monitoring of the assigned capital are the challenges facing the implementation. Olasedidun (2014) study the perception of South-west Nigerian Colleges of Education lecturer. The study concluded with the positive perception on the usefulness, intention towards and eases of use of social media in instruction.

Scholastic achievement is the focus of any teaching. The perceptions to teaching/implementation of curriculum greatly affect the result. Research findings showed that teachers' perceptions are very important in learning and teaching process. There are actual worries raised up by stake holders concerning the teachers' perceptions in execution of science program. Diane (2011) examined feelings towards and views of instruction in English as a Lingua Franca (ELF). The study was conceded out mainly through an online survey, carried out above a one-month at Aalto University Campuses. The survey contained of 8 themes, 4 of which connected to feelings towards English-medium training and 4 to feelings of instruction in English in a lingua franca in

educational context. The outcomes were evaluated with expressive statistics, including associations between nominated themes and upbringing variables. The results showed that there are some undesirable influences related to using English as the medium of instruction language. Nevertheless, according to the researcher in some situations, this influence is perhaps abridged by promising circumstance.

Abimbola and Abidoye (2013) investigated the impact of experience and qualification of Biology tutors on the rank of ecology instruction in Kwara State. 450 teachers from 8 LGA of Kwara State formed the sample. Analyses of the data gathered showed that both unqualified and qualified tutors had perceived ecology instruction the same way that ecology was not accurately taught because of the fact that some subject tutors skip those topics that seem difficult to teach.

Appraisal of the Reviewed Literature

Kosegen, Jaro, Odhiambo and Aygi (2013) conducted out an empirical study on the correlation between tutors` features and scholars ‘educational performance. The research study however was carried out among secondary school teachers and the researcher did not lay emphasis on how the program was executed. The research study of Badmus (2007) evaluated the contribution of tutors ‘understanding of program features,

value internalization and obligation, view of sufficiency of equipment, facilities, materials and level of performance of execution parts to students` achievement. Junior School Certificate Examination was used for Home Economics. The degree of performance of implementation was compared to students` achievement but the researcher did not extend the study to Colleges of Education.

Aderogba (1998) examined the status of integrated science teaching, the extent of real classroom coverage implementation of the integrated science curriculum as compared with official suggestions. The researcher compared the degree of implementation between specialist and non-specialist. The scope of the study did not extend to Colleges of Education but only secondary schools. Olarewaju (1987) identified some of the problems in the implementation of core-curriculum for integrated science.

The research focused on problems facing implementation but not how the curriculum was implemented. Mustapha (2001) investigated lecturers` characteristics that influence their perception of the features, the philosophy and goals, the intended teaching techniques and the content of the Nigeria Certificate in Education, Integrated science double major curriculum and how it affects to their classroom practices. Although the scope of the research was Colleges of Education, but

emphasis was not laid on how the program was executed and the research study was on Integrated Science.

Jeremiah and Diepreye (2012) carried out a research on the relationship between teachers` professional characteristics (qualification), physical amenities and text on the execution of NCE basic education curriculum. The scope was extended to Colleges of Education but emphasis was not placed on how the implementation was done. Alister Harlow and Cowiel (2004) examined the implementation of the technology curriculum to know how actual the program is in exercise and how the outcomes can influence forthcoming development.

The study was conducted among primary school teachers. Key (2003) examined how tutors' knowledge implemented on the execution of the science program. The research was conducted out among primary and secondary schools teachers. Abuseji (2007) created and attested a model for explanation of secondary schools` achievement. The researcher made use of students' characteristics and teachers' characteristics. The subject for the study was Chemistry. The study failed to lay emphasis on the mode/level of implementation. The study was limited to secondary school level. Bello (2002) investigated the execution of the SSS science program in Kano metropolis. The study sought the views of both the teachers and students on science curriculum implementation. All science subjects in secondary school were examined. The study considered if the

curriculum was implemented in relation to the objective of science education or not. However this study was also limited to secondary schools level.

Kobia and Nidiga (2013) assessed how tutors' characteristics effect the execution of Kiswahili program in Igembe region of Kenya. In this study the subject of interest was Kiswahili language newly introduced into the curriculum. The research was also limited to secondary school level. Emphasis was laid on how the teachers implemented the curriculum. Amadu and Babikkoi (2012) also examined the impact of lecturers` characteristics on the implementation of curriculum in the North- central of Nigeria. The research study was extended to Colleges of Education but the subject of interest was English Language. Only lecturers' characteristics were considered i.e. gender. The study also laid emphasis on how the curriculum was implemented which is similar to the present study.

None of the researchers in the literature reviewed studied how lecturers' characteristics and their perceptions influence the implementation of Chemistry curriculum in South-west Nigerian Colleges of Education. This is the gap which this research study had filled.

CHAPTER THREE

RESEARCH METHODOLOGY

Chapter three contains the methodology and procedures used in this study, under these sub-headings: Research Type, Population Sample and Sampling Techniques, Research Instrument, Validation of research Instrument, Procedure for Data Collection and Data Analyses Techniques.

Research Type

The study was descriptive research of the survey type. Descriptive methods mean describing event(s) exactly as they occur without the influence of external researchers. According to Ofo (1994), survey method involves the gathering of information from members of a population with an intention to ascertain the behavior of that population considering one or more variables. Vyhmelster (2001) defines descriptive survey as gathering of detail factual information that explains existing phenomena at a given moment in time.

This design was appropriate in this study because it enabled the researcher to gather full information from the respondents through the use of questionnaires and document analysis. This study used a research designed questionnaire to collect essential information from the respondents. The outstanding advantage associated with the use of the questionnaire is the accessibility given to a large population within a very

short period of time. This study determined lecturers' characteristics (qualification, experience, and gender) and also school type and their perceptions of the implementation of chemistry program in Colleges of Education in South-west Nigeria.

Population, Sample and Sampling Techniques

The population used for the research work was entire chemistry lecturers in all the Federal, State and Private possessed Colleges of Education in South – west Nigeria. There are 33 Colleges of Education in South – west Nigeria, 4 are possessed by the Federal Government, 6 are possessed by the State Government, while 23 are privately owned (JAMB Brochure 2016).Purposive sampling was employed to choose 15 Colleges on the basis of the courses offered (that is those institutions offering Chemistry as a course). The institutions have been on course for not less than five years and have been accredited and have been functional within the minimum standard stipulated by the NCCE.

Out of the 33 Colleges of Education in South – west Nigeria, it was established by the researcher that not all the Colleges offer science courses. Some Colleges offer only Integrated Science, while some Colleges that were accredited for Chemistry are presently not admitting students because of low enrolment of students in the department and also for the fact that it is very expensive to run. Based on these criteria, the purposively selected fifteen Colleges of Education are shown in

(Appendix II). All the Chemistry lecturers in each of the selected Colleges made up of the respondents.

As mandated by NCCE, that there should be a minimum of eight academic staff in each department (NCCE, 2009), the researcher found out that few Federal and State Colleges had more than eight academic staff while none of the Private Colleges of Education met with the minimum of eight academic staff. This might be to save cost by the proprietors or the management of the Private Colleges of Education. The researcher therefore employed total population technique for the 107 respondents that were on ground (that is thirty one respondents from Federal owned Colleges of Education, forty eight from State owned Colleges of Education and twenty eight from privately owned Colleges of Education). The respondents were stratified along qualification, experience, gender, and school type.

Students' performance is a good indicator of curriculum implementation; therefore final results of selected Colleges for NCE III Chemistry students were examined. Results of students were gathered from one Federal, one State and one Private Colleges of Education respectively.

Research Instrument

The instrument for the research study was adapted Lecturers 'Characteristics Questionnaire (LCQ) (Appendix III). The questionnaire was administered to lecturers in Chemistry Department of all the chosen Colleges of Education.

The LCQ contained two major sections, that is, sections I and II. Section I consisted of respondent's demographic data such as the respondents' institution, gender, years of teaching experience, teaching qualification and so on. Section II dealt with items seeking information on the implementation of chemistry curriculum. The response mode for the items is Likert response mode of Undecided (U), Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA) with 1,2,3,4 and 5correspondingly for negatively expressed items and vice versa for items that are positively worded.

Validation of Research Instrument

The instrument (LCQ) was given to 2 lecturers in Science Education Department, University of Ilorin, as well as2 science lecturers of Emmanuel Alayande College of Education Oyo, for the purpose of content and face validities. The final forms of the instrument was arrived at, as suggested by the lecturers.

To determine the index of reliability of the tool (LCQ), a test-retest approach was used. The instrument was administered to ten lecturers

from Kwara State College of Education Ilorin, College of Education Oro and College of Education Ilemona, all in Kwara State – that were not part of the selected Colleges of Education – for the study. The test was re-administered on the same sample after an interval of three weeks and then Pearson Product Moment Correlation formula was employed to decide the index of dependability of LCQ which was 0.81.

Procedure for Data Collection

A letter of introduction was collected from the Head of the Department Science Education, University of Ilorin to all the H.O.D.s of Chemistry, Schools of Science in all the sampled Colleges of Education.The consent and cooperation of the H.O.Ds and the chemistry lecturers to partake in the research study was sought. Also employed is the service of a research assistant in each of the Colleges to assist in the administration of the prepared research instrument. The research assistant also assisted in the retrieval of the instrument.

All ethical issues were well addressed. Consent forms were given to the respondents which they signed properly –having read through – and all were returned to the researcher.

Data Analyses Techniques

The collected data were analyzed by employing inferential and descriptive statistics. The frequencies were converted to means to answer the research questions. Lecturers qualifications were classified as

qualified (that is qualification with education NCE/PGDE) and unqualified (that is qualification without education).

One way ANOVA statistical analysis along with t-test were employed to test for the four hypotheses that were generated at 0.05 alpha level of significance using SPSS.

CHAPTER FOUR
DATA ANALYSES AND RESULTS

Chapter four presents the results of data gathered in the study. Descriptive analysis of the number of lecturers involved in the study was presented using frequency count and pie- charts. Research questions one, two, three, five were answered using means, while research questions four, was answered using percentages.

The statistical techniques employed to test the five hypotheses framed for the study are t-test and one way ANOVA.

Distribution of the Respondents

Table 6 and figure 19 show that 28.97%, 50.47% and 20.56% of the respondents were from Private, State and Federal Colleges of Education respectively.

Table 6

Percentage distribution of respondents based on school type

School proprietorship	**Frequency**	**Percent**
Federal	31	28.97
State	54	50.47
Private	22	20.56
Total	107	100.00

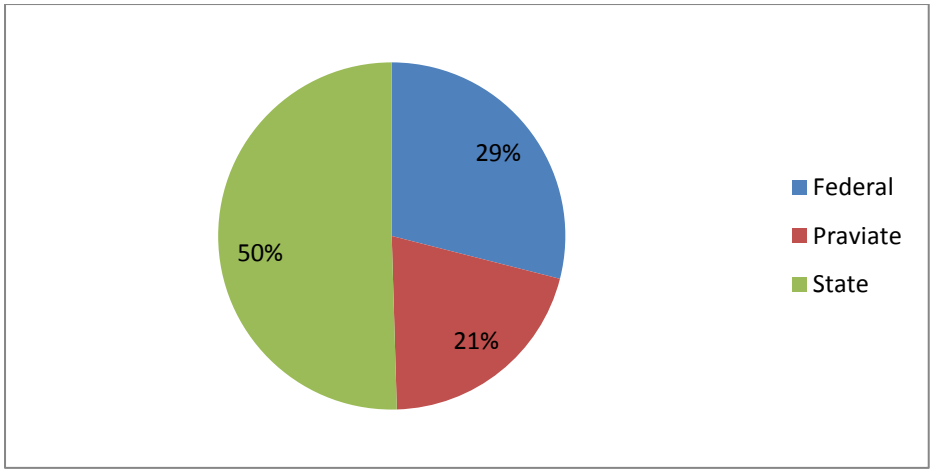


Figure 19: Pie- chart of respondents based on school type

Distribution of Respondents according to Gender

Table 7 and figure 20 show that 69.2% and 30.8% of the respondents were males and females respectively.

Table 7
Percentage distribution of Respondents based on gender

Gender	**Frequency**	**Percent**
Male	74	69.2
Female	33	30.8
Total	107	100.0

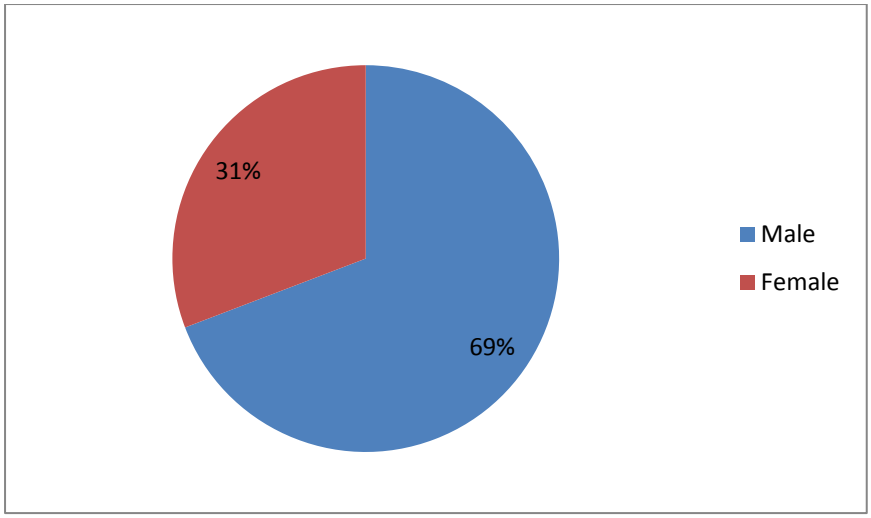


Figure 20: Pie-chart of respondents based on gender

Distribution of Respondents on basis of Qualification

Table 8 and figure 21 show that 81.3% of lecturers were qualified while 18.7% were not qualified.

Table 8

Percentage Distribution of Respondents based on Qualification

Lecturers' qualification	**Frequency**	**Percent**
Qualified	87	81.3
Unqualified	20	18.7
Total	107	100.0

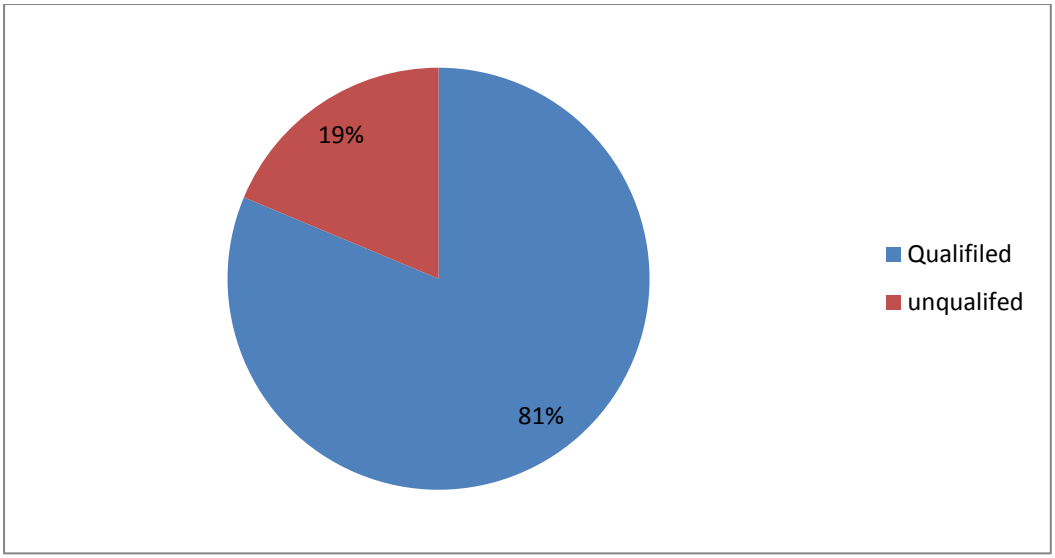


Figure 21: Pie-chart of respondents based on qualification

Distribution of Respondents on basis of Experience

Table 9 and figure 22 show that there were 26.2% experienced 43.0% moderately experienced and 30.8 less experienced lecturers.

Table 9

Percentage Distribution of Respondents on the basis of Experience

Years of teaching experience	**Frequency**	**Percent**
10years and above	28	26.2
5-9	46	43.0
0-4	33	30.8
Total	107	100.0

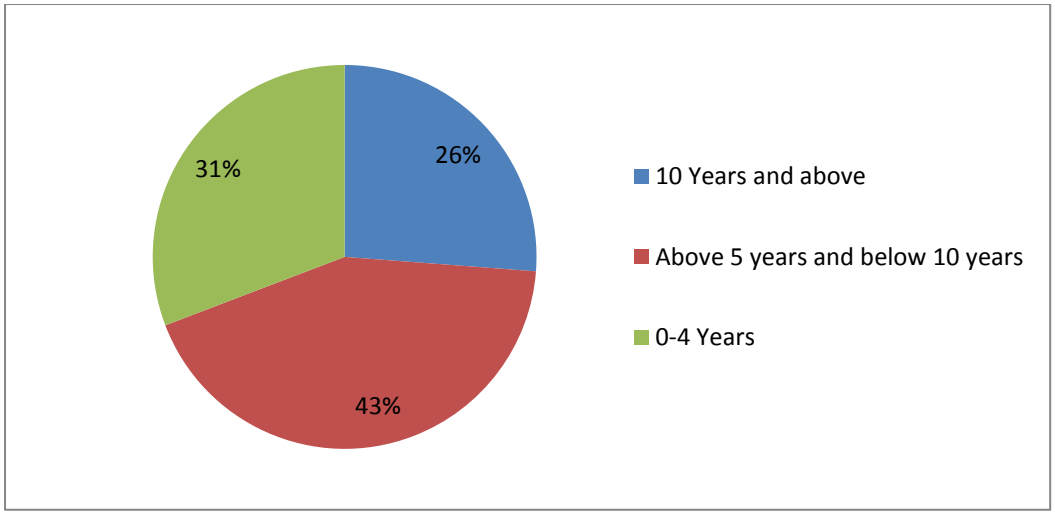


Figure 22: Pie-chart on experience of lecturers.

Research Question 1

What is the influence of Chemistry lecturers' academic qualifications on their perceptions of the implementation of Chemistry curriculum?

Table 10 shows that the first statement was ranked the highest are having the total mean score of 4.85 which showed that the qualified and unqualified Chemistry lecturers agreed with the statement that good understanding of science knowledge, skills and attitudes enhance implementation of the Chemistry curriculum. This is followed by the third 4.71 and the fifth 4.61 statements. The lecturers agreed that the school should be well resourced for effective implementation and that Chemistry lecturers should be regularly exposed to Chemistry curriculum

professional support. The lowest mean score was 2.87 with the statement, I always feel confidence to teach difficult topics.

However, using 4.14 as the average benchmark it can be inferred that from the 19 statements raised up to answer the research questions, 12 statements have average scores above 4.14, while the remaining 7 statements (items 7,8,10,11,13,16, and 18) have the mean scores below 4.14. This means that the respondents agreed with 12 statements on the implementation of the Chemistry curriculum while the respondents disagreed with the reaming 7statements. Generally, the respondents had positive perceptions of the implementation of Chemistry curriculum. However the mean rating of qualified lecturers is higher than unqualified lecturers.

Table 10 Rating of Chemistry Lecturers' Responses based on Qualification

S/N	Statements	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_t$	Remark
1	Lecturers should have a good thoughtful of science knowledge, abilities and attitudes to encourage implementation.	4.80	4.90	4.85	A
2	Characteristics have influence on effective curriculum implementation.	4.26	4.40	4.33	A
3	The school should be well resourced for effective implementation.	4.71	4.70	4.71	A
4	Lecturers should be adequately prepared for effective implementation of curriculum.	4.59	4.55	4.57	A
5	Lecturers should be regularly exposed to Chemistry curriculum professional support to enhance implementation.	4.61	4.60	4.16	A
6	Lecturers should have a good knowledge of tactics known to be effective for the teaching of chemistry for good implementation.	4.57	4.45	4.15	A
7	Lecturers should always feel confidence to teach difficult topics in Chemistry.	2.99	2.75	2.87	D

8	Collegial support is a positive factor in fostering the implementation of Chemistry curriculum.	4.03	3.90	3.97	D
9	Lecturers should be properly motivated to foster good implementation.	4.51	4.15	4.33	A
10	Incessant strikes affect effective implementation of Chemistry curriculum.	4.22	3.80	4.01	D
11	The school curriculum is overloaded hence, Chemistry curriculum suffers because of this.	3.66	3.35	3.51	D
12	Lecturers should be versed in their knowledge of concepts pertinent to the Chemistry curriculum.	4.25	4.15	4.2	A
13	The facilities in this College do not promote the teaching of Chemistry	3.22	3.40	3.31	D
14	Lecturers should have the opportunity to undertake professional development programe to enhance their pedagogical skills in Chemistry.	4.54	4.30	4.42	A
15	The school should have adequate science equipment necessary for the implementation of Chemistry curriculum	4.62	4.40	4.51	A
16	Large class size may affect effective implementation of Chemistry curriculum.	4.15	3.65	3.9	D
17	Effective implementation of Chemistry curriculum fosters good performance of students.	4.49	4.35	4.42	A
18	NCE Chemistry curriculum is overloaded which affect its effective implementation.	3.56	3.45	3.51	D
19	Having good knowledge of the philosophy of NCE Chemistry enhances its effective implementation.	4.23	4.10	4.17	A
$\bar{X}$ Grand mean				4.14	

Key

$\bar{X}_1$ = mean response of qualified lecturers

$\bar{X}_2$ = mean response of unqualified lecturers

$\bar{X}_t$ = mean total response of qualified and unqualified lecturers

A = agree

D = disagree

Research Question 2

What is the influence of Chemistry lecturers' teaching experience and their perceptions on the implementation of Chemistry curriculum?

Table 11 shows that the first statement was ranked the highest having the total mean score of 4.83 that is, good understanding of science knowledge skills and attitude enhance implementation. This is followed by the third statement with the total mean of 4.74 that is the school should be well resourced for effective implementation while the fifth statement was ranked third with a mean total of 4.61 that is, lecturer should be regularly exposed to Chemistry curriculum professional support to promote implementation. The lowest total mean score was 2.93 for the seventh statement which states that I always feel reluctant to teach difficult topics in Chemistry.

The ground total mean was found to be 4.19, which is used as the average bench mark. Therefore it can be inferred that from the 19 statements raised up to answer the research questions, 13 statements have average scores that are greater than decision level of 4.19, however, the remaining 6 statements (7, 8,10,11,13 and 18) have the averagescores lower than 4.19. It means that the respondents agreed with 13 statements on the implementation of Chemistry curriculum while the respondents disagreed with the remaining 6 statements. Generally, the respondents had positive perceptions of the implementation of the Chemistry

curriculum. However, experienced lecturers had the highest mean rating followed by less experienced and moderately experienced lecturers.

Table 11

Rating of chemistry Lecturers' Responses based on Experience

S/N	Statements	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_t$	Remark
1	Lecturers should have a good thoughtful of science knowledge, abilities and attitudes to encourage implementation.	4.89	4.80	4.79	4.82	A
2	Characteristics have influence on effective curriculum implementation.	4.43	4.24	4.24	4.30	A
3	The school should be well resourced for effective implementation.	4.86	4.59	4.76	4.74	A
4	Lecturers should be adequately prepared for effective implementation of curriculum.	4.61	4.48	4.77	4.60	A
5	Lecturers should be regularly exposed to Chemistry curriculum professional support to enhance implementation.	4.64	4.59	4.61	4.16	A
6	Lecturers should have a good knowledge of tactics known to be effective for the teaching of chemistry for good implementation.	4.54	4.41	4.76	4.57	A
7	Lecturers should always feel confidence to teach difficult topics in Chemistry.	3.21	3.13	2.45	2.93	D
8	Collegial support is a positive factor in fostering the implementation of Chemistry curriculum.	4.00	4.04	3.97	4.00	D
9	Lecturers should be properly motivated to foster good implementation.	4.43	4.37	4.55	4.45	A
10	Incessant strikes affect effective implementation of Chemistry	4.00	4.07	4.37	4.15	D

	curriculum.					
11	The school curriculum is overloaded hence, Chemistry curriculum suffers because of this.	3.61	3.59	3.61	3.60	D
12	Lecturers should be versed in their knowledge of concepts pertinent to the Chemistry curriculum.	4.18	4.17	4.36	4.24	A
13	The facilities in this College do not promote the teaching of Chemistry.	3.54	3.39	2.82	3.25	D
14	Lecturers should have the opportunity to undertake professional development programe to enhance their pedagogical skills in Chemistry.	4.54	4.43	4.55	4.51	A
15	The school should have adequate science equipment necessary for the implementation of Chemistry curriculum	4.68	4.52	4.58	4.59	A
16	Large class size may affect effective implementation of Chemistry curriculum.	4.11	3.91	4.21	4.08	A
17	Effective implementation of Chemistry curriculum fosters good performance of students.	4.61	4.37	4.48	4.49	A
18	NCE Chemistry curriculum is overloaded which affect its effective implementation.	3.50	3.54	3.58	3.54	D
19	Having good knowledge of the philosophy of NCE Chemistry enhances its effective implementation.	4.32	4.17	4.58	4.1	A
Grand mean					4.19	

Key

$\bar{X}_1$ = mean response of experienced lecturers

$\bar{X}_2$ = mean response of moderately experienced lecturers

$\bar{X}_3$ = mean response of less experienced lectures

$\bar{X}_t$ = total mean response of experienced, moderately and less experienced lecturers

A = agree

D = disagree

Research Question 3

What is the influence of Chemistry lecturers' gender and their perceptions on the implementation of Chemistry curriculum?

The responses from Table12 shows that the first statement was ranked the highest having the total mean score of 4.84, that is, lecturers should have a good knowledge of science, skills and abilities to encourage implementation. This is followed by the third statement that is the school should be well resourced for effective implementation which has the total mean score of 4.69, while the third ranked statement is the fifth one which states that lecturers should be regularly exposed to chemistry curriculum professional support to enhance implementation.

However, statement with the lowest total mean score was 2.99 which says, I always feel reluctant to teach difficult topics in Chemistry. The ground total mean was 4.18 which are used as the bench mark. Therefore, it can be inferred that from the 19 statements stated to answer the research question, 12 statements have average scores that are greater than decision level of 4.18, however the remaining 7 statements (7, 8, 10,

11, 13, 16, and 18) have the mean score below 4.19. This means that the respondents agreed with 12 statements, while the respondents disagreed with the remaining 7 statements. Generally, male and female respondents had positive perceptions of the implementation of Chemistry curriculum. However, the grand mean shows that male lecturers had higher positive perceptions than female lecturers.

Table12

Rating of chemistry Lecturers' Responses based on Gender

S/N	**Statements**	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_t$	**Remark**
1	Lecturers should have a good understanding of science knowledge, abilities and attitudes to encourage implementation.	4.80	4.88	4.84	A
2	Characteristics have influence on effective curriculum implementation.	4.30	4.27	4.29	A
3	The school should be well resourced for effective implementation.	4.74	4.64	4.69	A
4	Lecturers should be adequately prepared for effective implementation of curriculum.	7.61	4.52	4.57	A
5	Lecturers should be regularly exposed to Chemistry curriculum professional support to enhance implementation.	4.61	4.61	4.61	A
6	Lecturers should have a good knowledge of tactics known to be effective for the teaching of chemistry for good implementation.	4.58	4.48	4.53	A

7	Lecturers should always feel confidence to teach difficult topics in Chemistry.	2.88	3.09	2.99	D
8	Collegial support is a positive factor in fostering the implementation of Chemistry curriculum.	4.00	4.03	4.02	D
9	Lecturers should be properly motivated to foster good implementation.	4.41	4.52	4.47	A
10	Incessant strikes affect effective implementation of Chemistry curriculum.	4.26	3.88	4.07	D
11	The school curriculum is overloaded hence, Chemistry curriculum suffers because of this.	3.62	3.55	3.59	D
12	Lecturers should be versed in their knowledge of concepts pertinent to the Chemistry curriculum.	4.23	4.24	4.24	A
13	The facilities in this College do not promote the teaching of Chemistry.	3.27	3.21	3.24	D
14	Lecturers should have the opportunity to undertake professional development programe to enhance their pedagogical skills in Chemistry.	4.51	4.45	4.48	A
15	The school should have adequate science equipment necessary for the implementation of Chemistry curriculum	4.55	4.64	4.60	A
16	Large class size may affect effective implementation of Chemistry curriculum.	4.18	3.79	3.99	D
17	Effective implementation of Chemistry curriculum fosters good performance of	4.54	4.30	4.42	A

	students.				
18	NCE Chemistry curriculum is overloaded which affect its effective implementation.	4.47	3.70	3.59	D
19	Having good knowledge of the philosophy of NCE Chemistry enhances its effective implementation.	4.47	3.54	4.19	A
$\bar{X}$Grand mean				4.18	

Key

$\bar{X}_1$ = mean response of male lecturers

$\bar{X}_2$ = mean response of female lecturers

$\bar{X}_t$ = total mean response of male and female lecturers

A = agree

D = disagree

Research Question 4

What is the influence of school type and their perceptions on the implementation of Chemistry curriculum?

Table 13 shows that the first statement was ranked the highest are having the total mean score of 4.82 which states that good understanding of science knowledge skills and attitude promotes implementation. The third statement with the total mean of 4.71 was ranked the second which states that the school should be well resourced for effective implementation

while the fifth statement was ranked third with a mean total of 4.16 which states that lecturer should be regularly exposed to chemistry curriculum professional support to enhance implementation. The seventh statement which states that lecturers should always feel confidence to teach difficult topics in chemistry has the lowest total mean score of 2.94.

The ground total mean was calculated to be 4.18, which is used as the average bench mark. It can therefore be inferred that from the 19 statements raised up to answer the research question, 15 statements have average points that are greater than bench mark of 4.18 however, the remaining 4 statements (7, 11, 13, and 18) have the average points under 4.18. This means that the respondents agreed with 15 statements on the perceptions of the implementation of chemistry curriculum while the respondents disagreed with the remaining 4 statements. Therefore, school type that is Private, State and Federal had influence on the implementation of chemistry curriculum.

Table 13

Rating of chemistry Lecturers Responses based School Type

S/N	STATEMENTS	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_t$	REMARK
1	Lecturers should have a good understanding of science knowledge, abilities and attitudes to encourage implementation.	4.81	4.77	4.93	4.82	A
2	Characteristics have influence on effective curriculum implementation.	3.97	4.35	4.54	4.29	A

3	The school should be well resourced for effective implementation.	4.71	4.75	4.64	4.71	A
4	Lecturers should be adequately prepared for effective implementation of curriculum.	4.58	4.65	4.46	4.58	A
5	Lecturers should be regularly exposed to Chemistry curriculum professional support to enhance implementation.	4.58	4.58	4.68	4.61	A
6	Lecturers should have a good knowledge of tactics known to be effective for the teaching of chemistry for good implementation.	4.52	4.58	4.54	4.55	A
7	Lecturers should always feel confidence to teach difficult topics in Chemistry.	3.06	2.83	3.00	2.94	D
8	Collegial support is a positive factor in fostering the implementation of Chemistry curriculum.	3.90	4.06	4.04	4.01	D
9	Lecturers should be properly motivated to foster good implementation.	4.39	4.56	4.29	4.44	A
10	Incessant strikes affect effective implementation of Chemistry curriculum.	4.13	4.38	3.75	4.14	A
11	The school curriculum is overloaded hence, Chemistry curriculum suffers because of this.	3.65	3.60	3.54	3.60	D
12	Lecturers should be versed in their knowledge of concepts pertinent to the Chemistry curriculum.	4.13	4.37	4.11	4.23	A
13	The facilities in this College do not promote the teaching of Chemistry.	3.29	3.10	3.46	3.25	D

14	Lecturers should have the opportunity to undertake professional development program to enhance their pedagogical skills in Chemistry.	4.48	4.60	4.32	4.50	A
15	The school should have adequate science equipment necessary for the implementation of Chemistry curriculum	4.45	4.67	4.57	4.58	A
16	Large class size may affect effective implementation of Chemistry curriculum.	4.35	4.02	3.79	4.06	A
17	Effective implementation of Chemistry curriculum fosters good performance of students.	4.52	4.54	4.29	4.47	A
18	NCE Chemistry curriculum is overloaded which affect its effective implementation.	3.61	3.60	3.36	3.54	D
19	Having good knowledge of the philosophy of NCE Chemistry enhances its effective implementation.	4.13	4.19	4.32	4.21	A
Total Grand mean					4.18	

Key

$\bar{X}_1$ = mean response of Federal Colleges

$\bar{X}_2$ = mean response of State Colleges

$\bar{X}_3$ = mean response of Private Colleges

$\bar{X}t$ = total mean response of the school Type

A = agree

D = disagree

Hypotheses Testing

Research Hypothesis 1

$H0_1$: There is no significant difference in the average ratings of qualified and unqualified Chemistry lecturers' perceptions of the implementation of Chemistry curriculum.

Table 14 indicates that t (105) = 1.77, p = 0.101(P >0.05) It means that the stated null hypothesis is not rejected, since the significant value (0.101) is greater than 0.05 which means that no significant difference exist between the 2 groups. This implies that there was no significant difference in perceptions of the implementation of Chemistry curriculum between qualified and unqualified lecturers.

Table 14

t-test Analysis of Qualified and Unqualified Chemistry Lecturers and their perceptions of the Implementation of Chemistry Curriculum

Academic qualification of lecturers	**N**	**X**	**SD**	**df**	**t**	**Sig.(2-tailed)**	**Remark**
Qualified	87	80.02	6.33	105	1.77	.101	Not rejected
Unqualified	20	77.35	4.73				
Total	107						

Research Hypothesis 2

$H0_{2:}$ There is no significant difference in perceptions of the implementation of the Chemistry curriculum among experienced, moderately and less experienced Chemistry lecturers. Table15reveals F (104) = P= 0. 428. (P > 0.05). This means that the significant value of 0.428 is higher than 0.05 level of significance. The hypothesis is thus not rejected. This implies that experience did not determine perception of the implementation of Chemistry curriculum.

Table 15

One way Analysis of Variance (ANOVA) of experienced, moderately experienced and less experienced Chemistry lecturers and their perceptions of the implementation of Chemistry curriculum

Source	**Sumof squares**	**Df**	**Mean square**	**F**	**Sig.**	**Remark**
Between groups	64.651	2	32.326	.856	.428	Not rejected
Within groups	3926.041	104	37.750			
Total	3990.692	106				

Research Hypothesis 3

$H0_3$: There is no significant difference in the average ratings of female and male Chemistry lecturers' perceptions of the implementation of

Chemistry curriculum. Table 16 indicates that t (105) = 0.656, P = 0.967 (P > 0.05) this shows that the stated null hypothesis is not rejected. Since the significant value (0.967) is greater than 0.05 which means that there was no significant difference between the two groups. This implies that there is no significant difference in perceptions of the implementation of Chemistry curriculum between male and female lecturers.

Table 16

t-test Analysis of Male and Female Chemistry Lecturers and their perceptions of the Implementation of Chemistry Curriculum.

Gender	**N**	**X**	**SD**	**df**	**t**	**Sig. (2tailed)**	**Remark**
Male	74	79.78	6.10	105	.656	.967	Not rejected
Female	33	78.98	6.27				
Total	107						

Research Hypothesis 4

$H0_4$: There is no significant difference in the ratings of Federal, State, and Private College of Education lecturers' perceptions of the implementation of Chemistry curriculum. Table 17 shows F (104) = P =0.522. (P 0.55). Thus the null hypothesis is not rejected. This means that school type did

not determine perceptions of the implementation of the chemistry curriculum.

Table 17

one way Analysis of Variance (ANOVA) of the perceptions of the Implementation of Chemistry Curriculum by Lecturers based on school type of Colleges of Education

Source	**Sum of squares**	**df**	**Mean square**	**F**	**Sig**	**Remark**
Between Groups	49.598	2	24.799	.654	.522	Not rejected
Within Groups	3941.093	104	37.895			
Total	3990.692	106				

Summary of Major Findings

Findings from this study indicates that

1. Lecturers' qualifications influenced perceptions of the implementation of chemistry curriculum.
2. Academic qualifications of lecturers did not influence significantly perceptions of the implementation of chemistry curriculum.
3. Lecturers' experience influenced perceptions of the implementation of chemistry curriculum.

4. Teaching experience of chemistry lecturers did not influence significantly perceptions of the implementation of chemistry curriculum.
5. Lecturers' gender influenced perceptions of the implementation of chemistry curriculum
6. Gender of lecturers did not influence significantly perceptions of the implementation of chemistry curriculum.
7. School type of Colleges of Education influenced perceptions of the implementation of chemistry curriculum.
8. School type of Colleges of Education did not influence significantly perceptions of the implementation of chemistry curriculum.
9. Perceptions of the implementation of chemistry curriculum are independent of lecturers' characteristics and school type.

CHAPTER FIVE

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

In this chapter, results are discussed, conclusions are drawn, and relevant recommendations based on the findings of this research work are made. Suggestions for further studies were also given.

DISCUSSION

It was found from the study those lecturers' characteristics that are qualification, experience, and gender, and also school type had positive influence on perceptions of the implementation of chemistry curriculum in Colleges of Education in South-west Nigeria.

It was revealed that there was no significant difference in perceptions of the implementation ofchemistry curriculum between qualified and unqualified chemistry lecturers in South-west Nigerian Colleges of Education. This study showed that both qualified and unqualified chemistry lecturers perceived implementation of chemistry curriculum in a similar way.

This finding is in sequence with that of Ishiekwen and Benjamin (2014) that examined tutor's qualification, area of specialty and the putting into practice of the environmental education program in Cross River State, Nigeria. The goal of the work was to study the influence of teacher's professional qualification as well as how they predicted the execution of the environmental education program. Teachers constituted

the population for the study. The analyses of data collected revealed that professional qualifications of teachers did not influence significantly the effectuation of environmental education program. Also the result of this study is in line with the study of Brady and Kenney (1999) that arrived at no significant correlation between educational qualification of natural science teachers and their scores on a test. It shows that although teachers' educational qualification is important, however, teacher's perception of the program may be independent of qualifications. The outcome of this study is also related to the study of Edu, Edu and Kalu (2012) that investigated the role of teachers' qualifications and gender as well as their perception of toughterms.520 teachers were selected using random technique for the study. The outcome revealed that teachers' qualifications do not influence significantly perceptions of concepts that are difficult in Basic Science.

The outcome of this study is also in line with the study of Musau and Abere (2015) that worked on the extent at which teachers' qualifications affected performance in S.M.T subjects. 8 head teachers were involved.40 teachers teaching S.M.T. subjects, and 600 students that wrote final secondary school examination in Kenya for the year 2012. The study discovered that no significant difference exist between teachers' qualifications and performance of students in SMT subjects.

However, the result of this research study is in contrast to the study of Etiubon and Benson (2014) that investigated qualifications and knowledge to determine the quality of Education chemistry in Akwa Ibom State of Nigeria. All the chemistry teachers in the 31 Local Government Areas of Akwa Ibom state formed the population, where one 130 chemistry teachers' were randomly selected. Analysis of the result revealed that quality of chemistry education was significant affected by teachers' qualifications on quality of Chemistry Education.

The results of analyses of the implementation of the Chemistry curriculum by experienced, moderately experienced and less experienced Chemistry lecturers revealed that no significant difference existed in perceptions of the implementation of Chemistry curriculum among experienced, moderately experienced and less experienced Chemistry lecturers. This result confirmed that experience did not determine the perceptions of the implementation of Chemistry program in South-west of Nigerian Colleges of Education.

The result is in line with the research study of Reuben (2015) that investigated the effects of teachers' demographic variables on public secondary schools' implementation of ICT in Kenya. The independent variables were teachers' teaching experience and training. The Sample size was eighty two teachers. The data were analyzed and the result showed that teaching experience was not consistent in affecting ICT

implementation. Likewise the finding of this study is in agreement with the submission of Henrrietta (2016) that studied the effect of teachers' year of teaching experience over the implementation of secretarial curriculum in South –south region of Nigeria. The population involved seventy four secretarial education teachers as sample. The results from the data analyzed showed that tutors teaching experience did not significantly influence the curriculum implementation in College of Education.

However the result of this research study is in contrast to the study of Ahmet and Ayse (2011) that investigated whether experienced elementary school teachers of science and technology teaching process in terms of using meta- cognitive strategies. Fourteen elementary school teachers were sampled for the study including seven experienced and seven inexperienced. Analysis of the data showed that experienced elementary school teachers performed more activities related to meta-cognition before, during and after science and technology teaching than inexperienced teachers. Also the study of Bello (2002) is in contrast to the result of this study Bello appraised the effectuation of the SSS science program in Kano metropolis. Sixteen secondary schools were randomly selected where principals, teachers and students formed the sample. Analysis of the results identified inexperienced teachers as the major problem affecting implementation of science curriculum in Kano State.

In contrast to this study is that of Ajayi and Afolabi (2012) that examined productivity of teachers in South-west Nigeria secondary schools. One hundred principals and one thousand secondary school teachers formed the sample. The study showed that performance of teachers was influenced significantly by their experience. Furthermore the study of Onyekuru and Josephant (2013) is in contrast with the study. The study investigated teaching effectiveness of teachers in secondary school in Emohua local government areas of River state. However it was revealed that teachers with five or more years of teaching experience, the mean of their teaching effectiveness are 87.23 (mean) and 10.38 (standard deviation) respectively. Those teachers whose teaching experience is lower than five years had average point of 69.03 and 3.99 as standard deviation of 3.99.

From the analyses of result on perceptions of the implementation of the chemistry curriculum by male and female lecturers, it was shown no significant difference existed in perceptions of the implementation of Chemistry curriculum between female and male lecturers. This result showed that female and male chemistry lecturers perceived implementation of chemistry curriculum in a similar way.

The outcome of this study agrees with the study of Kobia and Ndiga (2013) that investigated how Kiswahili program was influenced by teachers' implementation of the program in Igembe district. The sample

population for the study was twenty four head teachers and twenty four Kiswahili teachers who are same time heads of Kiswahili teachers. Findings revealed that teachers' gender have no influence on the implementation of secondary school curriculum in Kenya. Likewise the submission of this study is in line with the study of Afolabi (2009) that examined the influence of teachers' gender and attitudes as factors affecting pupils of primary school academic performance. 50 science tutors formed the sample. The result showed that no significant differences existed in the performance of children taught by female and male tutors in primary science.

However, the result of this study is in contrast with the study of Okoro, Ekanem and Udoh (2012) that studied the influence of teachers' gender on primary school's children in relation to their academic performance in Uyo metropolis. 3 schools were selected for the research study from which sixty pupils were co-opted. The result revealed that academic performances of pupils were significantly influenced by teacher-pupil gender. The evidence was established in that differences occur in performance of boys taught by female teachers and girls taught by male teachers and boys taught by male teachers and boys taught by female teachers.

The result of this study is in contrast with the study of Alabi (2014) that examined the effectuation of the new SSS program for the objective

of entrepreneurship education in Ondo state, Nigeria. A principal and 5 teacher each formed the samples which were randomly chosen in 18 private and public secondary schools from the 3 Senatorial Districts in Ondo state. The study revealed that a significant difference in teachers perception of the implementation of new SSS program between private and public SSS in Ondo state.

The result obtained from the analyses of perceptions of the implementation of the chemistry curriculum by school type Private, State and Federal Colleges of Education chemistry lecturers showed that no significant difference exist in perceptions of the implementation of chemistry curriculum among Private, State and Federal Colleges of Education. School type of the Colleges of Education did not determine the perceptions of the implementation of chemistry curriculum. This finding is in line with the submission of Achimugu (2016) that examined the factors affecting active implementation of the SSS education chemistry program in Kogi state. Seventy six chemistry teachers formed the sample. The study revealed that location of the school had no significant influence on the response for the chemistry teachers on the factors affecting implementation of the chemistry curriculum.

However the result of this study is in contrast with the study of Afolabi (2014) that examined the effectuation of the new SSS program for the objective of entrepreneurship education in Ondo state, Nigeria. A

principal and 5 teachers each formed the sample which were randomly chosen in 18 private and public secondary schools from the 3 senatorial districts in Ondo State. The study revealed that a significant difference in teachers perception of the implementation of new SSS program between private and public SSS in Ondo state.

Conclusion

Based on the findings of this research study the following conclusions were made:

Lecturers' characteristics that are, qualification, experience, and gender, as well as school type did not influence significantly, perceptions of implementation of chemistry curriculum in Colleges of Education in South – west Nigeria.

The research study has also proven that no significant difference existed perception of the implementation of the chemistry curriculum between unqualified and qualified chemistry lecturers.

The study has also shown that no significant difference existed in views of the implementation of chemistry curriculum among experienced, moderately experienced and less experienced chemistry lecturers. It implies that experience did not significantly determine the perception of the implementation of chemistry curriculum in Colleges of Education in South-west Nigeria.

Furthermore, the research study indicated that no significant difference existed in perceptions of the implementation of chemistry curriculum between female and male lecturers. It showed that gender did not determine the perceptions of the implementation of chemistry curriculum in Colleges of Education in South – west Nigeria.

Finally, the research study showed that no significant difference existed in the perceptions of the effectuation of chemistry program among lecturers in Federal, State and Private Colleges of Education in South-west Nigeria. It showed that school type of the Colleges of Education did not determine the perceptions of the implementation of the chemistry curriculum. But looking at the answers to the research questions on pages 133 to 145, it was found that teachers' qualification, teaching experience, gender, and school type influenced the perceptions of the implementation of chemistry curriculum in the sampled Colleges of Education.

Also some past findings indicated that those characteristics influenced implementation of curriculum. The contribution of this study to knowledge is that lecturers' characteristics influence perceptions of the implementation of curriculum.

Limitation of the Study

The study is limited due to the following:

1. The study was designed to focus on lecturers' characteristics and their perceptions of the implementation of chemistry curriculum in

Colleges of Education in South-west, Nigeria.

The respondents were drawn from public and private Colleges of Education in South-west, which is Federal, State and Private owned Colleges of Education in South-West, Nigeria. The findings may not be generalized to other Colleges of Education in Nigeria.

2. The coverage of the research study was limited to Private, State and Federal owned Colleges of Education in South-West, Nigeria. Thus, the findings may not be generalized to other geopolitical zone in Nigeria and Africa.

3. Only schools that offer chemistry as a course were employed. The findings may therefore not be generalized to all lecturers.

4. The study did not look at the influence of lecturers' perceptions of the implementation of chemistry curriculum on the performance of students.

Recommendations

Based on the conclusion of the research study the following recommendations are made;

1. Qualified chemistry lecturers should be employed to teach in Colleges of Education most especially in Private Colleges of Education where qualified lecturers were very few compared to Federal and State

Colleges of Education. However, lecturers that are not qualified yet and are already teaching in Colleges of Education should embark on postgraduate study that will qualify them as lecturers such as postgraduate diploma in education.

2. Chemistry lecturers should endeavor to attend seminars, workshops, symposia, national and international conferences to update their knowledge in the field. In employing academic staff to Colleges of Education, years of teaching experience should not be priority since they gain experience on the job. However, chemistry lecturers should seek ways of implementing chemistry curriculum in such a way that will improve students' knowledge and more so, attract their interest to the learning of chemistry.
3. There should be no gender bias when recruiting academic staff to Colleges of Education. Female staff should also be given equal chances as their male counterparts and they should sit tight for serious work.
4. Government and Proprietors of Private Colleges of Education should find means of boosting the morale of the chemistry lecturers so as to enhance their attitudes in them. Such incentives include provision of modern teaching and learning instructional materials, prompt payment of salary and promotion as and when due.

5. The Federal government should extend intervention fund (Educational Trust Fund E.T.F) or any other assistance being enjoyed by State and Federal Colleges of Education to Private Colleges of Education as well, no matter how little once they are all working towards the same goals.
6. Curriculum developers such as the NCCE should be provided with relevant feedback on the level of compliance of the Colleges of Education with objectives for which the NCE chemistry curriculum is designed.
7. Students should be able to determine the benefit they can get from their lecturers based on their characteristics. This will enable them to know how best to interact with their lecturers.
8. More mathematics courses should be designed for NCE chemistry curriculum to improve students' poor performance especially in physical chemistry.

Suggestions for Further Studies

The researcher suggests that studies can be carried out in the following areas:

1. College of Education lecturers' characteristics and their perceptions of the implementation of chemistry curriculum in other Geo-political zones in Nigeria.

2. Qualifications, gender and experience of lecturers and their perceptions of the implementation of mathematics program in South-west Colleges of Education, Nigeria.

3. Qualifications, gender and experience of lecturers and their perceptions of the implementation of physics program in South-west Colleges of Education, Nigeria.

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APPENDIX 1

ADDRESS OF APPROVED NCE-AWARDING INSTITUTIONS AS AT 2016

FEDERAL COLLEGES OF EDUCATON

S/N	Name of college	Address and location
1	FCE Abeokuta	P.M.B. 2096, Abeokuta, Ogun State
2	FCE (T) Akoka	P. O. Box 269, Lagos, Lagos State
3	FCE (T) Asaba	P.M.B. 1044, Asaba, Delta State
4	FCE (T) Bichi	P.M.B. 3473, Bichi, Kano State
5	FCE Ahe-Amufu	P.M.B. 2001, Eha-Amufu, Enugu State
6	FCE (T) Gombe	P.M.B. 60, Gombe, Gombe State
7	FCE (T) Gusau	P.M.B. 1088, Gusau, Zamfara State
8	FCE Kano	P.M.B. 3045, Kano, Kano State
9	FCE Katsina	P.M.B. 2041, Katsina, Katisina State
10	FCE Kontagora	P.M.B. 39, Kontagora, Niger State
11	FCE Obudu	P.M.B. 1038, Cross River State
12	FCE Okene	P.M.B. 1026, Okene, Kogi State
13	FCE (T) Omoku	P.M.B. 11, Omoku, Rivers State
14	Adeyemi COE Ondo	P.M.B. 520, Ondo, Ondo State
15	FCE (sp) Oyo	P.M.B. 1089, Oyo, Oyo State
16	FCE Pankshin	P.M.B. 27, Pankshin, Plateau

		State
17	FCE (T) Potiskum	P.M.B. 1013, Potiskum, Yobe State
18	FCE (T) Umunze	P.M.B. 189, Umunze, Anambra State
19	FCE Yola	P.M.B. 2043, Yola, Adamawa State
20	FCE Zaria	P.M.B. 1041, Zaria, Kaduna State
21	Alvan Ikoku FCE Owerri	P.M.B. 1033, OWerri, Imo State

Source: JAMB Brochure 2016

APPENDIX 1B
ADDRESS OF APPROVED NCE-AWARDING INSTITUTIONS AS AT 2016
STATE COLLEGES OF EDUCATON

S/N	Name of college	Address and location
1	Akwa Ibom COE	P.M.B. 1019, Afara Nsit Etinan, Akwa Ibom
2	COE Agbor	P. M. B. 2090, Agbor, Delta State
3	COE Akwanga	P.M.B. 05, Akwanga, Nasarawa State
4	COE Ankpa	P.M.B. 1033, Ankpa, Kogi State
5	Adamu Augie COE, Argungu	P.M.B. 1012, Argungu, Kebbi State
6	COE Arochukwu	P.M.B. 1000, Arochukwu, Abia State
7	COE Azare	P.M.B. 44, Azare, Bauchi State
8	Umar IBN Ibrahim Elkanemi COE	P.M.B. 16, Bama, Borno State
9	Isa Kaita COE	P.M.B. 49, Dutse-Ma, Katsina State
10	COE Ekiadolor	P.M.B. 1144, Benin Edo State
11	COE Gashua	P.M.B. 02, Gashua, Yobe State
12	Kaduna State COE	P.M.B. 1024, Gidan Waya, Kaduna State
13	COE Gindiri	P.M.B. 1000, Gindiri, Plateau State
14	COE Gumei	P.M.B. 1002, Gumei, Jigawa State

15	COE Hong	P.M.B. 2237, Hong, Adamawa State
16	Ikere-Ekiti COE	P.M.B. 250, Ikere Ekiti, Ekiti State
17	COE Ila-Orangun	P.M.B. 207, Ila-Orangun, Osun State
18	COE Ilesa	P.M.B. 5089, Ilesa, Osun State
19	COE Ilorin	P.M.B. 1375, Ilorin, Kwara State
20	COE Zing	P.M.B. 1021, Jalingo, Taraba State
21	COE Katsina-Ala	P.M.B. 2008, Katsina-Ala, Benue State
22	COE Kombotso	P.M.B. 3218, Kumbotso, Kano State
23	COE (T) Lafiagi	P.M.B. 01, Lafiagi, Kwara State
24	Kashim Ibrahim COE	P.M.B. 1469, Maiduguri, Borno State
25	COE Maru	P.M.B 1002, Zamfara State
26	COE Minna	P.M.B 39, Minna Niger State
27	Michael Otedola of Primary Education	P.M.B 1028, MOCAPED Noforija Epe, Lagos
28	COE Nsugbe	P.M.B 1734, Nsugbe, Anambra State
29	COE Ojo	P.M.B 2035,Oju Otukpo, Benue State
30	COE Oro	P.M.B 309, Oro, Kwara State
31	Adeniran Ogunsanya COE	P.M.B 007, Oto,- Ijanikin, Lagoas State

32	Delta State college of Physical Education	P.M.B 4088, Mosogar, Sapele Delta State
33	Emmanuel Alayande COE	P.M.B 1010, Oyo State
34	Shehu Shagari COE, Sokoto	P.M.B 2029, Sokoto, Sokoto State
35	COE Waka- Biu	P.M.B 1502, Waka-Biu, Borno State
36	COE warri	P.M.B 1251, Waka, Delta State
37	FCT COE Zuba	P.M.B 61, Garki- Abuja
38	Mohammed Goni College of Legal and Islamic Studies	P.M.B 1526, Maiduguri, Borno State
39	Ebonyi State COE (T)	P.M.B 002, Ikwo, Ebonyi State
40	Enugu State COE (T)	P.M.B 01793, Abakaliki Rd, Enugu State
41	Tai Solarin COE	Omu- Ijebu, Ogun State
	Cross River State COE	P.M.B 1171, Akamkpa,
	Isaac Jasper Boro COE	Calabar, (Re-establishment).
43	COED Igueben	P.M.B.003 Igueben Edo State.
44	Jigawa State College of	P.O.Box 02, Ringin,Jigawa
45	Islamic and Legal Studies	State
46	Kano State College of Arts, Science and	Kano State
47	Remedial Studies	P.M.B. 242 Kaba, Kogi State
	Kogi State COE (T)	

Source: JAMB Brochure 2016

APPENDIX 1C

ADDRESS OF APPROVED NCE-AWARDING INSTITUTIONS AS AT 2016

PRIVATECOLLEGES OF EDUCATON

S/N	Name of Institution	Address and Location
1.	Alhikma College of Education	Ankpa, Kogi State
2.	Arabic and Islamic college of Education	P.O. Box 127 Potiskum Yobe State
3.	College of Education, Ero-Akure	P.O Box31, Akure Ondo State
4.	Aminu kano College of lslamic and legalstudies	Kano State
5.	Al-lbadan College of Education	Ibadan, Oyo State
6.	Angel Crown College of Education	FCT- Abuja
7.	Annur Institute for Islamic Education	Kano, Kano state
8.	Ansar –Ud-Deen College of Education	P.O. BOX 24, Oshodi Lagos
9.	Ameer Sheu idris College of Adviance	studies Zapia Kaduna State
10.	Assariusiyah College of Education	PMB 2000 Ipetumody Odeomu Osun state
11.	Apa College of Education	Okpoga, Benue State
12.	African Thinkers Communicaty of Inqury Collge of Education	P.M.B.15510 Enugu State
13.	Awori District College of Education	Ajibode Road,Ogun State
14	Baba Mayaki College of Education	Alobi- Aloma,Kogi State
15.	Best legacy College of Education	P.O.Box 1744, Oyo State
16	Betuel College of Education Ijare,	Ondo State
17.	Bauch Institute for Arabic and Islamic Studies	P.O. Box 2031, Bauch State
18.	Biga College of education	Nasarawa, Sokoto State
19	Calvin foundation College of Education	Naka, Benue State
20.	The college of Education	P.M.B. 2003, Nsukka, Enugu State
21.	College of Education, Ilemona	P.M.B. 4415, Offa kuwara State

22.	Coruerstone College of Education	Box 50, Ikeja, Lagos State
23.	Corana College of Education,	Lekki Lagos State
24.	City College Education	P.O. Box 3094 Garki Abuja
25.	Dellar College of Education	P.O. Box 6379 Agodi-Gate Ibadan
26.	Ebenezer College of Education, Edda	Ebonyi State
27	ECWA College of Education Igbaja	Kwara State
28.	ECWA College of Education	P.O. box 5398, Jos Plateau State
29.	Elder Oyama Memorial college of Education	Obura, Cross River State
30.	Festmed College of Education	P.O. Box 7, Ajowa Akoko Onoo State
31.	Global College of Education Dadina kowa	P.O.Box 1215 Plateanue State
32.	Gboko College of Education	P.M.B 024 Gboko Benue State
33.	Havard Wilson College of Education	P.O.Box 5216, Abayi, Abia State
34.	Hill College of Education Akwange	P.O.Box 06, Akwanga Nasarawa State
35.	Hope and Anchor College of Education	Suleja, Niger State
36.	Institute of Ecumenical Education (Thinker Corner)	Enugu,Enugu State
37.	Ipere College of Education	P.M.B. Lafia, Nasarawa State
38.	Jibwis College of Arabic and Islamic Education	Gombe , Gombe State
39.	Kinsey College of Education, Ilorin	P.O Box 589, Ilorin Kwara State
40.	Kwararafa College of Education	Otukpo, Benue State
41.	Lessel College of Education	P.M.B. 02, Ushongo LGA Benue State
42.	College of Education, Foreign links Campus	P.O.Box 1964, MoroIfe, Osun State
43.	Nana Aishat Memorial College of Education	P.O. Box 14730, Ilorin Kwara State
44.	Michael & Cecilia Foundation College of Education	Ughelli, Delta State

45.	Muyideen College of Education Ilorin	Ilorin, Kwara State
46.	Muftau Lanihun College of Education	P.O Box 27050, Ibadan
47.	Muritadha College of Education	P.O. Box 3346, Sokoto
48.	ONIT College of Education	P.O.Box 677, Njikoka Anambra State
49.	Our Saviour inst. of Sci. & Tech College of Education	Enugu, Enugu State
50.	Peace land College of Education	Enugu, Enugu State
51.	Piaget College of Education	P.O.Box 193, Abeokuta, Ogun State
52.	Royal City College of Education	P.o.Box 14712 Ikeja, Lagos State
53.	Steady Flow College of Education	Ikom, Cross River State
54.	The African Church College of Education	P.M.B. 21112, Agege Lagos State
55.	St. Augustine College of Education	Yaba, Lagos State
56.	Bayo Tijani College of Education	P.M.B. 01, Ikotun,Lagos
57.	Topmost College of Education	P.M.B. 005, Ipaja Lagos
58.	Unity College of Education	P.O.Box 2021, Otukpo Benue State
59.	Yewa Central College of Education	P.M.B. 2014 Abeokuta, Ogun State
60.	Yusuf Bala Usman College of Legal and General Studies	P.M.B. 2201, Katsina State

APPENDIX 1D

ADDRESS OF APPROVED NCE-AWARDING INSTITUTIONS AS AT 2016
OTHER NCE- AWARDING INSTITUTIONS

S/N	Name of Institution	Address and Location
1	National Teachers institute	P.M.B 2191, Kaduna State
2	Nigeria Army School of Education	P.M.B 1410, Ilorin Kwara State
3	Hassan Usman Katsina Polytechnic	P.M.B 2052, Katsina
4	Plateau State Polytechnic	Barkin Ladi Jos
5	Kano State Polytechnic	Buk Road, Kano, Kano State
6	Waziri Umaru Federal Polytechnic	Birnin Kebbi, Kebbi State
7	Ramat Polytechnic	P.M.B 1070, Maiduguri, Borno State
8	Kaduna Polytechnic	P.M.B 2021, Kaduna
9	Abubakar Tatari Polytechnic	P.O.Box 094, Bauchi

Source: JAMB Brochure 2016

APPENDIX 2

SELECTED COLLEGES OF EDUCATION

1. Adeyemi College of Education, Ondo, Ondo State
2. Federal College of Education Osiele, Abeokuta, Ogun State
3. Federal College of Education (Technical), Akoka, Lagos State
4. Federal College of Education (special) Oyo, Oyo State
5. Emmanuel Alayande College of Education, Oyo, Oyo State.
6. Adeniran Ogunsanya College of Education Ijanikin, Lagos
7. Tai Solarin College of Education, Ijebu- ode, Ogun State
8. College of Education, Ikere, Ekiti state
9. Osun state College of Education, Ila – orangun, Osun State
10. College of Education Ilesha, Osun state
11. College of Eduction, Ero Akure,Ondo State
12. Assanusiya College of Education, Ode-omu, Osun state
13. Best Legacy College of Education, Ogbomoso, Oyo State
14. College of Education, Foreign Links Campus Moro Ife, Osun State
15. The African Church College of Education, Ifako Ijaye, Lagos State

APPENDIX 3
DEPARTMENT OF SCIENCE EDUCATION
FACULTY OF EDUCATION,
UNIVERSITY OF ILORIN, ILORIN, NIGERIA.

QUESTIONNAIRE ON
LECTURERS' CHARACTERISTICS AND THEIR PERCEPTIONS OF THE IMPLEMENTATION OF CHEMISTRY CURRICULUM IN COLLEGES OF EDUCATION IN SOUTH-WEST NIGERIA

Dear Respondent

This questionnaire is designed to elicit your views on the above subject matter. Any information you give will be used purely for the purpose of this research work and will be treated confidentially.

Thank you.

Adeniran A. O.

SECTION I: Personal Bio-Data

Instruction: Fill in the blank spaces provided and tick (✓) as appropriate from options provided for each of the items.

1. Name of the Institution:

_____

2. Proprietorship status: Federal ( ) State ( ) Private ( )
3. Gender: Male ( ) Female ( )
4. Academic Qualification:NCE ( ); HND ( ); (B.A. ( ); B.Ed. ( ); B.Sc. ( ); B.Sc.(Ed) ( );B.Tech. ( ); M.A ( ); M.Ed. ( ); M.Sc. ( ); M.Tech.( ); PGDE ( ); M.Phil. ( ); Ph.D. in Education ( ); Ph.D. in other areas ( );Others(Please specify)
5. Years of teaching experience at the College level
   0-4 ( ) 5-9 ( ) 10 above ( )
6. Are you a per-time Lecturers? Yes ( ) No ( )

b. If yes name the college of education were you also lecture …….

SECTION II

Instruction: Please read each statement and tick (✓) the column that best reveals your perception.

A. Lecturers' Characteristics Questionnaire (LCQ)

SA = Strongly Agree, A= Agree, UD= Undecided, D= Disagree, SD= Strongly Disagree

S/N	STATEMENT	SA	A	D	SD	UD
1	Lecturers should have a good understanding of science knowledge, skills and attitudes to promote implementation.					
2	Characteristics have influence on effective curriculum implementation.					
3	The school should be well resourced for effective implementation.					
4	Lecturers should be adequately prepared for					

	effective implementation of curriculum.					
5	Lecturers should be regularly exposed to Chemistry curriculum professional support to enhance implementation.					
6	Lecturers should have a sound knowledge of strategies known to be effective for the teaching of chemistry for good implementation.					
7	Lecturers should always feel confidence to teach difficult topics in Chemistry.					
8	Collegial support is a positive factor in fostering the implementation of Chemistry curriculum.					
9	Lecturers should be properly motivated to foster good implementation.					
10	Incessant strikes affect effective implementation of Chemistry curriculum.					
11	The school curriculum is overloaded hence, Chemistry curriculum suffers because of this.					
12	Lecturers should be versed in their knowledge of concepts pertinent to the Chemistry curriculum.					
13	The facilities in this College do not promote the teaching of Chemistry.					
14	Lecturers should have the opportunity to undertake professional development programe to enhance their pedagogical skills in Chemistry.					
15	The school should have adequate science equipment necessary for the implementation of Chemistry curriculum					
16	Large class size may affect effective implementation of Chemistry curriculum.					
17	Effective implementation of Chemistry curriculum fosters good performance of students.					
18	NCE Chemistry curriculum is overloaded which affect its effective implementation.					
19	Having good knowledge of the philosophy of NCE Chemistry enhances its effective implementation.					

Source: Adapted from Brian (2003)

APPENDIX4

BUDGET PROPOSAL

	DESRCIPTION OF ITEM	EXPECTED FROM SPONSOR STUDENT OTHERS	TOTAL
1.0	**Personnel costs/allowance**		
1.1	Research Assistance (18x3,00)	Student	54,000:00
1.2	Research Informants	Student	Nil
1.3	Technical Assistants		Nil
	Sub Total (not>20% of budget		**54,000.00**
2.0	**Equipment (List & specify)**		
2.1	Laptop (Hp250)		80,750:00
2.2	Paper printer (1HP)		15,000:00
2.3	USB Modem (2) &flash drive (2)		15,000:00
	Sub Total (not>20% of budget)		**110,750:00**
3.0	**Supplies/Consumables**		
3.1	Books and Journals	Student	32,000:00
3.2	Printing paper (₦700x20packets)	Student	14,000:00
3.3	Printing ink (coloured)/toner (₦300X10	Student	30,000:00
3.4	Monthly subscription of modern at:		
	₦2000.00 per mouthx30	Student	60,000:00
3.5	Book bindings	Student	55,000:00
	Sub Total		**191,000:00**
4.0	**Data collection Analysis**		
4.1	Field test for reliability of instrument	Student	20,000:00
4.2	Date analysis (Questionnaire administration)		80,000:00

4.3	Date analysis	Student	25,000:00
	Sub Total		**125,000:00**
5.0	**Travels**		
5.1	Research's Regular transportation		
	(cost of ₦5,000x30 months)		150,000.00
5.2	Transportation cost for the period of field		
	work experience	Student	
	Sub Total		80,000:00
6.0	**Dissemination**		**250,000:00**
6.1	Dissemination via phone calls		
6.2	Dissemination via seminar	Student	35,000:00
	Preparation& presentations	Student	30,000:00
	Duplication of seminar papers		
	And fuel for power supply		
	Sub Total		
7.0	**Other /miscellaneous (specify)**		**65,000.00**
7.1	Off campus accommodation through friend	Student	45,000:00
7.2	Hotel accommodation during field work		
	₦50, 000x4 month		200,000:00
7.3	Conference registration and attendance	Student	27,000:00
7.4	Miscellaneous (40,000:00x3 years)		120,000:00
	Sub Total		**392,000:00**
GRAND TOTAL		1,187,750:00	

APPENDIX5A

UNIVERSITY OF ILORIN, NIGERIA, DEPARTMENT OF SCIENCE EDUCATION LECTURERS' CONSENT FORM.

Dear Sir,

I am pleased to inform you that you have been selected to participate in a research study. Your consent is needed to take part in the study.

Detail information about the research is provided below. After reading this document, kindly endorse the consent form in agreement to participate in the study.

Purpose of the research:- The purpose of the research is to assess the lecturers' characteristics as they influence implementation of chemistry curriculum with the view to have better implementation in chemistry in our colleges of education.

Procedure:- The researcher will distribute questionnaire to all the chemistry lecturers to answer, which will be collected after two weeks through the research assistants.

Confidentiality:- Information collected from you will be strictly used for the purpose of research and handled with utmost confidentiality.

Risk:- The questionnaire will be administered at your own leisure time within two weeks, hence, no risk envisage to your person during the research.

Benefit:- Through your involvement you stands to have idea of lecturers characteristics as they influence the implementation of chemistry curriculum which you can improve upon so as to have better implementation in chemistry.

Rights of volunteers:- Signing the consent form is not a legal bound. This implies that you are free to cease from participating in the study if you have important reason (s) to do so as you will not be punished or lose

anything. If you have any question about this research, you may contact the Department of Science Education, University of Ilorin, Ilorin Nigeria or call the researcher on cell phone number 07034920992.

Lecturer Respondent Agreement:-I hereby willingly consent to participate in the research, I am also aware that I will lose nothing neither will I be punished if I decided to stop my participation in the research at any time. I also understand my right to contact the Department of science Education University of Ilorin, Ilorin Nigeria or call the researcher on the ce4ll phone number 07034920992 in case I have question(s)

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Lecturer participant	Sign	Date
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Researcher	Sign	Date

APPENDIX 5B

UNIVERSITY OF ILORIN, NIGERIA, DEPARTMENT OF SCIENCE

EDUCATION LECTURERS' CONSENT FORM.

Dear Sir,

I am a post graduate student of the Department of Science Education, Faculty of Education, University of Ilorin, Ilorin, Nigeria; I am embarking on a Ph.D. Research work titled.

LECTURERS` CHARCTERISTICS AND THEIR PERCEPTIONS OF THE IMPLEMENTATION OF CHEMISTRY CURRICULUM IN SOUTH-WEST, NIGERIA.

The purpose of this form is to seek your consent for participation in the study with the assurance that any information collected from you will be treated with absolute confidentiality and for the research purpose only.

Thank you for your anticipating co-operation

Yours faithfully,

ADENIRAN A. Olusegun

Please tick (✓) below as appropriate lecturer

Agree ( )

Disagree ( )

APPENDIX 6

DISSEMINATION OF MAJOR FINDINGS

The findings of this study would be disseminated as explains below;

Journal publication: The results of this study would be published in a reputable journal, such as STAN journals.

Workshops: The researcher would organize workshops for chemistry lecturers based on the findings of the study on how lecturer's characteristics and their perceptions influence the implementation of chemistry to enhance effective implementation.

Conferences: The researcher would present papers in conferences organized by bodies like STAN and other non-governmental agencies on the need to know the influence of lecturer's characteristics and their perceptionsof the implementation of curriculum so as to have better improved implementation.

Seminars: Periodic seminar would be organized by the researcher with the view to covering large number of chemistry lecturers. This is to equip the lecturers with the importance of knowledge of lecturer characteristics and their perceptions for the better implementation of chemistry curriculum.

Media prints: The researcher will also explore the use of print and electronic media through weekly and monthly write-up to educate and bring to the known of the general public, the benefit of the result of the

assessment of lecturers characteristics and their perceptions of the implementation of chemistry curriculum in our colleges of education in Nigeria.

Memo writing: The research findings could also be forwarded through memo to the office of the Hon. Minister of Education and the National Commission for College of Education (NCCE) with the hope to improve the quality of implementation of chemistry.

Table 13

Response of Chemistry lecturers to the extent at which Chemistry programs were implemented

S/N	Courses	High extent	Medium extent	Low extent	Not Applicable	TOTAL
1	General Chemistry	48(44.9)	11(10.3)	-	48(44.9)	107(100)
2	Introductory Organic Chemistry I	47(43.9)	19(17.8)	1(0.9)	40(37.4)	107(100)
3	Chemistry Practical's I	23(21.5)	33(30.8)	4(3.2)	47(43.9)	107(100)
4	Application of Maths to Chemistry I	33(30.8)	21(19.6)	-	53(49.8)	107(100)
5	Chemistry Methodology I	27(25.2)	26(24.3)	3(2.8)	51(47.7)	107(100)
6	Introductory Physical Chemistry	32(29.9)	21(19.6)	-	54(50.5)	107(100)
7	Introductory Inorganic Chemistry	39(36.4)	16(15.0)	-	52(48.6)	107(100)
8	Properties of Ionic Compounds	27(25.2)	17(15.9)	1(0.9)	62(57.9)	107(100)
9	The Gaseous State	35)32.7)	15(14.0)	-	57(53.3)	107(100)
10	Environment and Industrial Chemistry	41(38.3)	22(20.6)	1(0.9)	43(40.2)	107(100)
11	Chemistry Practicals III	23(21.5)	29(27.1)	3(2.8)	52(48.6)	107(100)
12	Nuclear Chemistry	30(28.0)	20(18.7)	-	57(53.3)	107(100)
13	Metals and Alloys	38(35.5)	16(15.0)	1(0.9)	52(48.6)	107(100)
14	Basic Analytical Chemistry and Research Techniques	27(25.2)	20(18.7)	392.8)	57(53.3)	107(100)
15	Transition Elements	38(35.5)	13(12.1)	1(0.9)	55(51.4)	107(100)
16	Chemical Kinetics	34(31.8)	21(19.6)	2(1.9)	50(46.7)	107(100)
17	Chemistry of Alcohols, Carbonyl Compounds and Mono Carboxylic Acids	35(32.7)	19(17.8)	1(0.9)	52(48.6)	107(100)
18	Natural Products & Amines	33(30.8)	27(25.2)	1(0.9)	46(43.0)	107(100)
19	Thermodynamics	36(33.6)	17(15.9)	2(1.9)	52(48.6)	107(100)
20	Chemistry Practical V	15(14.0)	34(31.8)	10(9.3)	48(44.9)	107(100)

Research Question 5b

The questions were asked under research question 5 to find out the possible reasons why the Chemistry programs were implemented either to a great extent, medium extent or low extent. The respondents were given freedom to state the reasons. The researcher then collated all the reasons together under each medium and came out with the following summary. The responses were analyzed by percentages. Table-revealed that (Under high extent of implementation), the first three reasons with highest frequency count are; It is my area of specialization (44.9%), facilities are available (17.8%) and I have interest in the courses (11.2%).

Table 14

Reasons for the high extent of implementation of the Chemistry programs

Statement	**Frequency (%)**
1. It is my area of specialization	48 (44.9)
2. The course outline is well strured	1 (0.9)
3. I have been teaching the course for long	8 (7.5)
4. Time allocated for the curses are enough	4 (3.7)
5. Facilities are available	19 (17.8)
6. To fulfill the curriculum requirement	6 (5.6)
7. To ensure enough and effective classroom understanding by students.	1 (0.9)

8. Good subject knowledge, dedication and proficiency	5 (4.8)
9. I have interest in the courses	12 (11.2)
10. Uninterrupted school calendar	1 (0.9)
11. Good background knowledge of students	1 (0.9)
12. Good students attitudes towards learning	1 (0.9)

Under reasons for medium extent of implementation the first three reasons with high frequency count are as follows, inadequate of teaching materials (43%), inadequate rudimentary knowledge by students (17.8%) and outside my field of study (14%),

Table 15

Reasons for the medium extent of implementation of the Chemistry programs

Statement	**Frequency (%)**
1. Large class	10 (9.30
2. Team teaching of the courses	4 (3.7)
3. Inadequate of teaching materials	46 (43)
4. Outside My field of study	15 (14)
5. The courses are taught occasionally by me	5 (4.8)
6. Inadequate time allocation	1 (0.9)
7. Poor attitudesof students to practicals	7 (6.5)
8. Inadequate rudimentary knowledge by Students	19 (17.8)

Reasons for the low extent of implementation with the following first three reasons having high frequency are; outside my field of study (40.9%), inadequate teaching materials (36.4%) and poor understanding of students (13.6%)

Table 16

Reasons for the low extent of implementation of the Chemistry programs

Statement	**Frequency(%)**
Outside my field of study	9 (40.9)
Phobia for mathematical courses	1 (4.5)
Inadequate teaching materials	8 (36.4)
Large class	1 (4.6)
Poor understanding knowledge on the path of students	3 (13.6)

As shown in table 17 an approved format for research project was available in all the Colleges. Likewise evidence of external moderators moderating Examinations and marked scripts were also available in all the Colleges, continuous assessment record was available as well in all the Colleges. However it was observed by the researcher that there was no correlation in most cases between the continuous assessment score and the semester score which shows that lecturers often use continuous assessment to upgrade the total semester scores.

Table 17

Curriculum issues in each of the colleges

College	Project Approval Format	Records of external moderator	Continuous Assessment record	External Assessment of project
1. Adeyemi COE Ondo	A	A	A	A
2. Federal COE Osiele Abeokuta	A	A	A	A
3. Federal COE Akota	A	A	A	A
4. Federal COE special Oyo	A	A	A	A
5. Emmanuel Alanyande COE Oyo	A	A	A	A
6. Adeniran Ogunsanjo COE Lagos	A	A	A	A
7. Tai Solarin COE Ijebu Ode	A	A	A	A
8. COE Ikere Ekiti	A	A	A	A
9. Osun State COE Ila Oraiya	A	A	A	A
10. COE Ilesa	A	A	A	A
11. COE Ero Akure	A	A	A	A
12. Assanuiyah COE Odeouu	A	A	A	A
13. Best Legacy COE Ogbo.	A	A	A	A
14. COE Foreign Links Ife	A	A	A	A
15. The African Chnicl COE	A	A	A	A

Key:

A=Available

COE=College of Education

Research Question 6

The research question was asked to find out how often the Chemistry lecturers make use of the recommended methods of teaching in implementing the Chemistry programs. The responses were analyzed by using percentages.

Table 18 showed that discussion method of teaching was ranked highest 76.6% under very often, while 22.4% occasionally use the method. This is followed by lecture method of teaching where 70.1% of lecturers often used the method and 25.2% of them occasionally use the method. Demonstration methods is often used by 66.4% lectures while 31.8% use it occasionally. Project method is also used occasionally by 64.5% of the lectures while 25.2% of them used it very often. Activity method of teaching is occasionally used by 54.2% of lectures while 43.9% of them used it very often. However, games and simulation, concept mapping and computer assisted instruction methods of teaching are not used by 72.0%, 57.9% and 48.6% lectures respectively. The result shows that lecturers make use of different teaching methods to implement Chemistry programs. However, low usage of other methods of teaching (games and simulation, concept mapping and computer assisted instruction method)

may be due to the facts that they are new to majority and also it may be due to conservative nature of most lecturers.

Table 18 Use of the recommended method of teaching in Colleges of Education

S/N	Methods of teaching	Very often	Occasionally	Not at all	Not applicable	Total
1	Discussion	82 (76.6)	24 (22.4)	1 (0.9)	-	107 (100)
2	Activity	47 (43.9)	58 (54.2)	1 (0.9)	1 (0.9)	107 (100)
3	Demonstration	71 (66.4)	34 (31.8)	-	2 (1.9)	107 (100)
4	Lecture	75 (70.1)	27 (21.2)	5 (4.7)	-	107 (100)
5	Project	27 (25.2)	69 (64.5)	10 (9.3)	1 (0.9)	107 (100)
6	Tutorial	43 (40.2)	54 (50.5)	8 (7.5)	2 (1.9)	107 (100)
7	Field trips	7 (6.5)	51 (47.7)	47 (43.9)	2 (1.9)	107 (100)
8	Games and simulation	3 (2.8)	25 (23.4)	77 (72.0)	2 (1.9)	107 (100)
9	Concept mapping	8 (7.5)	35 (32.7)	62 (57.9)	2 (1.9)	107 (100)
10	Computer Assisted Instruction	12 (11.2)	40 (37.4)	52 (48.6)	3 (2.8)	107 (100)

Research Question 7

To what extent do male and female Chemistry lecturers make use of the recommended methods of teaching?

The research question was asked to find out the extent by which male and female Chemistry lecturers use the recommended methods of teaching. The responses were analyzed by means. Table19 showed that discussion, activity demonstration, lectures, project, tutorial and field trips were used at high extent by male and female lecturers, while games and simulation, concept mapping and computer assisted instruction are employed at low extent. Now that 2.13 is used as the decision point so therefore methods of teaching from number 1 to 6 have their means above the decision point, while the remaining teaching methods have their means below the decision point hence are employed at lower extent. However, the table shows that both male and female lecturers make use of similar methods of teaching and at same extent.

Table19 Extent of using the recommended methods of teaching in Colleges of Education by male and female lecturers.

S/N	Methods of teaching	$\bar{x}_1$	$\bar{x}_2$	$\bar{x}_t$	Remark
1	Discussion	2.20	2.24	2.22	H_E
2	Activity	2.53	2.48	2.51	H_E
3	Demonstration	2.27	2.30	2.29	H_E
4	Lecture	2.22	2.18	2.20	H_E
5	Project	2.47	2.67	2.57	H_E
6	Tutorial	2.36	2.45	2.41	H_E
7	Field trips	2.0	2.00	2.00	L_E
8	Games and simulation	1.47	1.48	1.48	L_E
9	Concept mapping	1.69	1.76	1.73	L_E
10	Computer Assisted Instruction	1.73	2.06	1.90	L_E
Grand mean				2.13	

Key

$\bar{X}_1$ = mean of male

$\bar{X}_2$ = mean of female

$\bar{X}_t$ = total means of male and female

H_E = high extent

L_E = low extent

Research Question 8

To what extent do qualified and unqualified Chemistry lecturers make use of the recommended methods of teaching?

The research question was asked to find out the extent by which qualified and unqualified Chemistry lecturers make use of the recommended methods of teaching. The responses were analyzed by using means. The benchmark score was found to be 2.11 therefore all the methods of teaching from number 1 to 6 were employed at high extent while the remaining methods of teaching are employed at low extent by both qualified and unqualified Chemistry lecturers.

Table 20 Extent of using the recommended methods of teaching in Colleges of Education.

S/N	**Method of teaching**	$\bar{x}_1$	$\bar{x}_2$	$\bar{x}_t$	**Remark**
1	Discussion	2.22	2.20	2.21	H_E
2	Activity	2.51	2.55	2.53	H_E

3	Demonstration	2.25	2.40	2.33	H_E
4	Lecture	2.26	2.95	2.11	H_E
5	Project	2.46	2.85	2.66	H_E
6	Tutorial	2.39	2.40	2.40	H_E
7	Field trips	2.05	1.80	1.93	L_E
8	Games and simulation	1.54	1.20	1.37	L_E
9	Concept mapping	1.75	1.55	1.65	L_E
10	Computer Assisted Instruction	1.82	1.90	1.86	L_E
Grand mean				2.11	

Key:

$\bar{X}_1$ = Mean response of qualified lecturers

$\bar{X}_2$ = Mean response of unqualified lectures

$\bar{X}_t$ = Total means response of qualified and unqualified lecturers

H_E = High extent

L_E = Low extent

Kkkk

APPENDIX 4
LETURERS' ATTITUDE QUESTIONNAIRE (LAQ)

Instruction: please read each statement and tick that column that best reveals your feelings.

SA = strongly Agree; A= Agree; UD = Undecided; D= Disagree; SD = strongly Disagree

LECTURERS' ATTITUDE QUESTIONNAIRE (LAQ)

Instruction: please read each statement and tick that column that best represents youropinion.

SA = Strongly Agree; A= Agree; UD = Undecided; D= Disagree; SD = strongly Disagree

S/N	Item	SA	A	D	SD	UD
1	I am obliged to help students improve their understanding of Chemistry.					
2	I feel a greater responsibility to the contents I teach.					
3	I encourage my students with a view to obtaining good grade					
4	I try to establish a good relationship with my students.					
5	I do not need to prepare for my lectures					
6	As a Chemistry Lecturer I do not need to follow the course contents to the core.					
7	I always find it interesting to teach Chemistry.					
8	There is no need of considering my students individual differences because they are matured students.					
9	I always work towards covering the course contents before the commencement of the examination.					

10	Non-payment of salary does not affect my effective teaching					
11	Non-implementation of my promotion does not affect my effective teaching					

