STAKEHOLDERS' CONSIDERATION ON SCHOOL PLANT PLANNING IN PUBLIC SENIOR SECONDARY SCHOOLS IN NORTH-WEST ZONE, NIGERIA

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JANUARY, 2023

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY (Ph.D) IN EDUCATIONAL ADMINISTRATION AND PLANNING, DEPARTMENT OF EDUCATIONAL FOUNDATIONS AND CURRICULUM, FACULTY OF EDUCATION, AHMADU BELLO UNIVERSITY, ZARIA-NIGERIA

JANUARY, 2023

DECLARATION

I, Garba Abdulrahman Ibrahim declare that the work in this thesis titled "Stakeholders' Consideration on School Plant Planning in Public Senior Secondary Schools in North-West Zone, Nigeria" has been carried out by me in the Department of Educational Foundations and Curriculum. The information derived from the literature has been acknowledged in the text and a list of references provided. No part of this thesis was previously used for the award of any degree at this University or any other Institution. I am responsible for mistakes found in this work.

_____ _____

Garba Abdulrahman Ibrahim Date

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CERTIFICATION

This Thesis titled "Stakeholders' Consideration on School Plant Planning in Public Senior Secondary Schools in North-West Zone, Nigeria" by Garba Abdulrahman Ibrahim, meets the regulations governing the award of a Doctor of Philosophy (Ph.D) Degree in Educational Administration and Planning in the Department of Educational Foundations and Curriculum, Faculty of Education, Ahmadu Bello University, Zaria, Nigeria and is approved for its contributions to knowledge and literary presentation.

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DEDICATION

This thesis is dedicated to my parent and the entire family members for their moral and financial supports throughout the period of my life and academic pursuit.

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TABLE OF CONTENTS

Cover Page		i
Title Page		ii
Declaration		iii
Certification		iv
Dedication		v
Acknowledgements		vi
Table of Contents		vii
List of Tables		xi
List of Figures		xiii
List of Abbreviations		xiv
Abstract		xvi
Operational Definitions of Terms		xvii
CHAPTER ONE: INTRODUCTON		
1.1	Background to the Study	1
1.2	Statement of the Problem	3
1.3	Objectives of the Study	7
1.4	Research Questions	7
1.5	Hypotheses	8
1.6	Significance of the Study	9
1.7	Scope of the Study	11
CHAPTER TWO: REVIEW OF RELATED LITERATURE		
2.1	Introduction	12
2.2	Conceptual Framework	12
2.2.1	Concept of Planning	12
2.2.2	Steps Involved in Planning	14

2.2.3 Planning Process 15

2.2.4 Concept of Educational Planning 20

2.2.5 Features of Educational Planning 24

2.2.6 Approaches to Educational Planning 27

2.2.7 Problems of Educational Planning in Nigeria 33

2.2.8 Concept of School Plant 35

2.2.9 Procurement of School Plant 42

2.2.10 Utilization of School Plant 44

2.2.11 School Plant Maintenance 47

2.2.12 Type of School Plant Maintenance 48

2.2.13 Maintenance of School Building and Infrastructures 49

2.2.14 School Plants Design 52

2.2.15 Evolution of School Plant Planning 53

2.2.16 Conceptual Clarification of School Plant Planning 59

2.2.17 Characteristics of School Plant Planning 69

2.3 Theoretical Framework 70

2.3 The System Theory 71

2.3.1 System Theory's View on Education 73

2.3.2 Application of System Theory to School Plant Planning 75

2.4 Challenges of School Plant Planning in Nigeria 79

2.4.1 School Plant Management 83

2.4.2 Relationship between School Plant Planning and School Achievement 87

2.4.3 School Plant Planning Practices 89

2.4.4 Concept of Secondary Education 98

2.4.5 Aims of Secondary Education in Nigeria 100

2.4.6 Steps for Developing a School Plan 101
2.5 Administrative Facilities Planning in Secondary Schools 108
2.6 Facilities for Convenience Planning in Secondary Schools 113
2.7 Playgrounds Planning in Secondary Schools 119
2.8 Instructional Facilities Planning in Secondary Schools 125
2.9 Health/Welfare Facilities Planning in Secondary Schools 132
2.9.1 Challenges of School Health Programme in Nigeria 136
2.9.2 Teachers' Welfare 137
2.10 Library Facilities Planning in Secondary Schools 141
2.10.1 Functions of School Library in Education 142
2.11 School Site Planning in Secondary Schools 144
2.11.1 Impact of School Site/Location on Students' Success 148
2.11.2 Perceived Factors for the Location of Secondary Schools 150
2.12 Empirical Studies 152
2.13 Summary 161

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction 163
3.2 Research Design 163
3.3 Population of the Study 163
3.4 Sample and Sampling Technique 164
3.5 Instrumentation 166
3.5.1 Validity of the Instrument 167
3.5.2 Pilot Study 167
3.5.3 Reliability of the Instrument 167
3.6 Procedure for Data Collection 168

3.7 Method of Data Analysis 168

CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.1 Introduction 169

4.2 Analysis of Bio-Data 169

4.3 Answers to Research Questions 170

4.4 Hypotheses testing 185

4.5 Summary of Hypotheses Testing 192

4.6 Summary of the Findings 193

4.7 Discussions of the Findings 194

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction 198

5.2 Summary 198

5.3 Conclusions 200

5.4 Recommendations 200

5.5 contributions to knowledge 202

5.5 Suggestions for Further Studies 203

REFERENCE 204

APPENDIX 1: Instrument for Data Collection 235

APPENDIX 11: Results of Data Analysis 240

APPENDIX III: Sample Size Table: Research Academic Advisors 253

APPENDIX IV: Instrument Validation Form 255

LIST OF TABLES

Table		Page
1:	Population of the study	164
2:	Sample of the study	166
3:	Descriptive Statistics of the Bio Data of the Respondents in Frequency and Percentages	171
4:	Descriptive Statistics on Stakeholders' Consideration on Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	171
5:	Descriptive Statistics on Stakeholders' Consideration on Facilities for Convenience Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	173
6:	Descriptive Statistics on Stakeholders' Consideration on Playgrounds Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	175
7:	Descriptive Statistics on Stakeholders' Consideration on Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	177
8:	Descriptive Statistics on Stakeholders' Consideration on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	179
9:	Descriptive Statistics on Stakeholders' Consideration on Library Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	181
10:	Descriptive Statistics on Stakeholders' Consideration on School Site Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	183
11:	Analysis of Variance (ANOVA) on Stakeholders' Consideration on Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	185
12:	Summary of Scheffe's Multiple Comparison Test on Stakeholders' Consideration on Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria	186

13: Analysis of Variance (ANOVA) on Stakeholders' Consideration on Facilities for Convenience Planning in Public Senior Secondary Schools in North-West, Zone, Nigeria 187

14: Analysis of Variance (ANOVA) on Stakeholders' Consideration on Playgrounds Planning in Public Senior Secondary Schools in North-West Zone, Nigeria 187

15: Analysis of Variance (ANOVA) on Stakeholders' Consideration on Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria 188

16: Summary of Scheffe's Multiple Comparison Test on Stakeholders' Consideration on Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria 189

17: Analysis of Variance (ANOVA) on Stakeholders' Consideration on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria 189

18: Summary of Scheffe's Multiple Comparison Test on Stakeholders' Consideration on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria, 190

19: Summary of Analysis of Variance (ANOVA) on the Consideration of Stakeholders on Library Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria 191

20: Summary of Analysis of Variance (ANOVA) on the Consideration of Stakeholders on School Site Planning in Public Senior Secondary Schools in North-West Zone, Nigeria 191

21: Summary of tested Null Hypotheses 192

LIST OF FIGURE

Fig 1: Planning Process 20

LIST OF ABBREVIATIONS

NOUN:	National Open University of Nigeria
WASSCE:	West African Senior School Certificate Examination
ANOVA:	Analysis of Variance
SMART:	Systematic, Measurable, Achievable, Realistic and Time-Bound
HR:	Human Resource
PDA:	Personal Digital Assistant
NECO:	National Examination Council
WAEC:	West African Examination Council
UN:	United Nations
UNESCO:	United Nations Education, Scientific and Cultural Organization
SUBEB:	State Universal Basic Education Board
NUC:	National Universities Commission
FRN:	Federal Republic of Nigeria
CMS:	Christian Missionaries School
NTI:	National Teachers' Institute
NEC:	National Education Council
ESDFP:	Education Sector Development Framework and Programme
AIP:	Annual Implementation Plan
NCEE:	National Common Entrance Examination
SE:	Secondary Education

UPE:	Universal Primary Education
PDE:	Philippines Department of Education
UND:	Virginia Department of Education
UNICEF:	United Nations International Children Emergency Fund
SSCE:	Senior Secondary Education
NGOs:	Non-Governmental Organizations
SNHB:	Swaziland National Housing Board
MOE:	Ministry of Education
TISSA:	Teachers' Initiatives in Sub-Saharan Africa
ILO:	International Labour Organization
NEMA:	National Emergency Management Agency
DE:	Department of Education
SPSS:	Statistical Package of the Social Sciences

ABSTRACT

This research titled "Stakeholders' Consideration on School Plant Planning in Public Senior Secondary Schools in North-West Zone, Nigeria" aimed at achieving these objectives among others: determine stakeholders' consideration on administrative facilities planning in public senior secondary schools in North-west Zone, Nigeria; examine stakeholders' consideration on facilities for convenience planning in public senior secondary schools in North-west Zone, Nigeria; evaluate stakeholders' consideration on playgrounds planning in public senior secondary schools in North-west Zone, Nigeria; assess stakeholders' consideration on instructional facilities planning in public senior secondary schools in North-west Zone, Nigeria; stakeholders' consideration on instructional facilities planning in public senior secondary schools in North-west Zone, Nigeria; stakeholders' consideration on health/welfare facilities planning in public senior secondary schools in North-west Zone, Nigeria; stakeholders' consideration on library facilities planning in public senior secondary schools in North-west Zone, Nigeria; and stakeholders' consideration on school site planning in public senior secondary schools in North-west Zone, Nigeria. Research questions and hypotheses were set according to the stated objectives. A descriptive survey research design was adopted to collect data from the respondents. The total aggregate population for the study was 34,038 while the total sample size was 381. The instrument used for the collection of data was questionnaire. The instrument was validated by experts in educational administration and planning and Supervisors of this research work. Stratified sampling technique was employed for this study. The data were analyzed and interpreted through the use of Analysis of Variance (ANOVA). Out of the seven hypotheses tested, four were rejected while three were retained. The findings of the study revealed that stakeholders considered that administrative facilities planning in public senior secondary schools in North-West Zone, Nigeria were not appropriately planned. This was supported by the aggregate mean of 2.8 on table 4, facilities for convenience in public senior secondary schools in North-West Zone, Nigeria were relatively adequate, with school cafeteria, staff bus and hand washing facilities not properly planned in the school planning document. This was supported by the aggregate mean of 3.2 on table 5, playgrounds were not properly planned. This was supported by the aggregate mean of 3.0 on table 6 and among others. It was therefore concluded that for effective implementation of educational programme in public senior secondary schools in North-west Zone Nigeria, variables of school plant planning must be appropriately designed and implemented. It was therefore recommended that when planning school plant, administrative facilities should be appropriately designed and the buildings should be central to the school and visitor access because it is school's access control point, so visibility and easy way finding is important and it is advised that school-based health/welfare advisory committee should be constituted in each school to include teachers, students, parents and community representatives. The committee should facilitate communication with the groups or individuals that are interested in school health/welfare services. This study will therefore, contribute to the body of knowledge in that, it will remind all the relevant stakeholders and the general public that no matter how teachers are professionally trained, if school plant is not appropriately planned and effectively implemented then the expected quality output in our secondary schools will be a mirage.

OPERATIONAL DEFINITIONS OF TERMS

i. **School Plant:** This refers to everything that makes up the school environment. These include buildings, furniture, laboratories and the entire environment of the school.

ii. **School Plant Planning:** this is a systematic process through which the spaces that could enhance teaching and learning in secondary schools are designed to achieve educational goals.

iii. **Stakeholders:** this typically refers to anyone who is invested in the welfare and success of a school and its students such as school administrators, teachers, quality evaluators and among others.

iv. **Administrative Facilities:** this refers to all the buildings and equipments where administrative activities are carried out.

v. **Facilities for Convenience:** these are non-classroom needs of staff and students that help to facilitate learning. They include: toilet facility, canteen, cafeteria, and among others.

vi. **Instructional Facilities:** these are facilities inside the school where instructional activities are maintained. These include; classrooms, libraries, laboratories, technical workshops etc.

vii. **Play Grounds:** these are facilities provided for extracurricular activities to both staff and students in the school system.

viii. **Health/Welfare Facilities**: health facility in school helps to promote staff and students' mental health while welfare facility is anything done to promote teachers' working condition and improve productivity and efficiency which in turn lead to quality output.

ix. **School Library:** this is esterblished in the school system to support the curriculum related research and instructional reading needs of both staff and students.

x. **School Site:** this refers to a particular place where school plant is situated after meeting the laid down criteria.

xi. **North-West Zone:** this is a geo-political zone in Nigeria which comprises Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto and Zamfara States.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

Over time, the concept of school plant planning in secondary schools has been embraced worldwide because of its perceived contributions to the realization of educational goals. This is because of the fact that secondary education plays a crucial role of preparing students for higher education and useful living in the society. It is considered by many Nigerians as education that would enable them prepare for living a "balanced socio-economic life". This accounts for why many parents work hard in providing the resources needed to send their children to quality schools. To many of them, the quality of a school depends largely on the physical, technical and stock of educative facilities that a school has per time. These further accounts for why successive governments at the Federal and State levels allocate a huge sum of money to education from its yearly budget to develop a better school plant that would provide qualitative education to the citizens in the country.

The impact of quality education on the contemporary society cannot be over emphasized. This is obvious because of the immense contributions of education to the technological and socio-economic advancement of the world of today. Basically, education equips the child with the needed skills, knowledge and attitudes to function effectively in the society. This is the crux of the human capacity thesis, which is at the vanguard of education as instrument par excellence for manpower development, and by extension, the development of the society. In view of this, educational institutions have been established at basic, upper basic and tertiary levels, with the objective that a nation's human resources would be transformed into competent and productive agents of development in all the sectors of the economy. This is

the reason why government, private individuals and organizations are investing heavily in education as a veritable tool for national development.

Furthermore, school plant planning entails the planning of school site, instructional facilities, administrative facilities, convenience facilities, circulation facilities, accessories, welfare facilities and among others. The extent to which these facilities could enhance teaching and learning depends on how they are appropriately planned. Consequently, school plant planning in this study encompasses administrative facilities planning, facilities for convenience planning, play grounds, instructional facilities planning, Health/Welfare facilities planning practices, library facilities planning as well as school site planning in public senior secondary schools in North-west Zone Nigeria. The extent to which students' learning could be enhanced depends on how such facilities are appropriately designed within the school environment, the structure of their classroom, availability of instructional facilities and accessories (Irele, 2003). It is therefore assumed that a well planned school will gear up expected outcomes of education that will facilitate good social, political and economic emancipation, effective teaching and learning process and academic performance of the students. The extent to which the aforementioned variables of school plant planning are designed determines whether or not the products of our public senior secondary schools are adequately prepared for higher education and useful living within the society.

It is therefore, against this background that the researcher was motivated to look at the situations of our secondary schools and how they are structurally planned based in accordance with the designed guidelines. This is because of the fact that the overall educational goals could only be achieved when there is effective school plant planning in the country. This necessitated for the need to undertake a research on "stakeholders' consideration on school plant planning in

public senior secondary schools in North-West Zone, Nigeria". The results of the findings have obviously helped the researcher to proffer recommendations for better school plant planning in North-western part of Nigeria.

1.2 Statement of the Problem

Public secondary schools in North western part of Nigeria were observed to be faced with combined challenges of deteriorating school plant, out-of-date design and capacity utilization pressures. The effects of these deteriorating conditions and poor maintenance of school infrastructure are threats to school management, curriculum delivery and the entire school performance. Many studies have revealed that poor educational standard lags in shabby school buildings, inappropriate siting of schools, poor or ill-equipped science laboratory and technical workshops, inadequate and poorly maintained instructional facilities and overcrowding (Soraj, 2017). These can be linked to poor school plant planning in the country. Nigeria as a developing country is striving hard to advance in new modern ways of school plant planning considering the fact that the quality of any education rests more squarely on how such education is been properly planned.

There have been series of reports about the state of school plant in Nigerian secondary schools and more worrisome is their planning. Akinyemi (2013) reported with dismay that specifically, teaching space such as classrooms, libraries, technical workshops and laboratories are structurally defective, that is, classrooms were not spacious enough. He added that there were inadequate ventilation and lighting, classrooms located very close to technical workshops and main road. There were inadequacies in laboratory equipment and workshops while furniture, fittings and tools were not provided. These inadequacies made teaching and workshops to be jeopardized. Despite tremendous efforts by the government to ensure effective

school plant planning in the country. Ahmed (2018) observed that most secondary schools were saddled with poor planning leading to leaking roofs, gaping holes for windows, unreadable black boards instead of whiteboards in the 21st century, no visual teaching aids or wall posters, no libraries or teaching facilities and many others.

In recent times, a lot is being said about lack of equipment and other facilities in our schools due to lack of proper planning in our secondary schools. These inadequacies have hindered effective teaching and learning process and consequently affected the performance of students. Adebayo (2009) in his findings stated that "a casual visit to any public school in Nigeria would reveal the extent to which these educational institutions have decayed". Educational facilities at all levels are in a terrible shape; schools are littered with battered structures; worn out equipment (where they are available at all); overcrowded classrooms; inadequate manpower in quantity and quality; instability in the academic calendar owing to strikes; very low teacher (staff) morale due to poor planning, remuneration and working conditions". Agabi (2010) revealed that most Nigerian public schools have been in existence for a relatively long period with the same limited classrooms, lack of adequate open space, inadequate library, limited or no laboratory, lack of sporting facilities and recreation centres etc. such schools have witnessed little or no renovation over time, while virtually nothing is done to increase provision of resources to them. Obviously, this is the result of poor school plant planning in our secondary schools and have no doubt contributed to the falling standard of education in the country.

The abysmal performance of senior secondary schools students has squarely been blamed on the teachers who are accused of apathy and high levels of inefficiency in the discharge of duties. Unfortunately, the deplorable working conditions under which teachers

break their backs to prepare the future leaders of the country have not been seriously considered by the authorities. Poor infrastructures, insufficient logistics, slackness in the upholding of ethical conducts, low salaries and inadequate reward system are characterized with the teaching profession (Akuhia, 2011). Akubia went further to state in his findings that inadequate welfare packages for the teachers; and teaching under unsuitable and deplorable conditions lead to negative effect on students. It is therefore, not surprising that students continue to have bad results at their final examinations and their inability to write, speak and comprehend simple English speaks volume. Sulaiman (2016) analyzed that educational objectives can hardly be realized because there were series of setbacks in the planning and provision of school plant in most parts of the North, Nigeria. He discovered that political interference has woefully influenced the location of schools. Poor infrastructure, poor welfare packages for teachers and inadequate provision of health and recreational facilities have adversely contributed to the falling standard of education in the country, he revealed. Ahmed's (2003) findings showed that in most of the nation's secondary schools, teaching and learning take place in poor environment, lacking basic materials and this hinder the fulfillment of educational objectives. In spite of the efforts by government to stem the negative tide, stakeholders still express dismay and concern over what is generally regarded as drastic setback in the planning and provision of effective school plant in the country.

In Nigeria, public school enrolment at all levels of education has continued to increase yearly without corresponding increase in school plants. Considering school plant planning as the most effective approach to the attainment of educational goals, a proper school plant planning is expected to be in place as population explosion in school enrolment evolves. Education sector competes for budgetary allocation with other sectors of the economy. This is

because the resources at government's disposal are limited and cannot meet all the financial needs of all the sectors of the economy. Proper school plant planning is therefore necessary in order to judiciously utilize the limited available resources devoted to education.

For some years now, students' poor academic performance particularly in West African Senior School Certificate Examination (WASSCE) has been persistent. For instance, in the 2012 May/June WASSCE, 38.81% of the total number of candidates that sat for the examination had a minimum of five credit passes including English and Mathematics. It got worse in 2013 as the performance dipped to 36.57%. In 2014, it further deteriorated as only 529,425 candidates out of the total1, 705,976 that took the examination (representing 31.28%) had five credits including English and Mathematics. However, it slightly improved in 2015 as only 616,370 candidates representing 38.68% out of1,593,442 candidates who sat for the 2015 May/June WASSCE obtained credits in five subjects and above including Mathematics and English Language. This has been the situation in senior secondary education system of the country. This poor academic performance of the secondary school students in Nigeria may not be unconnected with seemingly poor school plant planning (Ajayi and Yusuf,2009). On this basis, school plant planning is inevitable when a school system desires high level of academic performance from the students.

Principals' efforts towards achieving relative goals and objectives are often met with various constraints such as: poor instructional facilities, administrative facilities and facilities for convenience, welfare facilities, unfriendly school organization and evaluation of school programmes and activities. These and other related challenges motivated the researcher to examine stakeholders' consideration on school plant planning in public senior secondary schools in North-West Zone, Nigeria. Procedures used in school plant planning were

investigated and compared with recommended planning programmes as authorities have advocated in the literature.

1.3 Objectives of the Study

This study was determined to:

1. determine stakeholders' consideration on administrative facilities planning in public senior secondary schools in North-West Zone, Nigeria;
2. investigate stakeholders' consideration on facilities for convenience planning in public senior secondary schools in North-West Zone, Nigeria;
3. ascertain stakeholders' consideration on playgrounds planning in public senior secondary schools in North-West Zone, Nigeria;
4. assess stakeholders' consideration on instructional facilities planning in public senior secondary schools in North-West Zone, Nigeria;
5. evaluate stakeholders' consideration on health/welfare facilities planning in public senior secondary schools in North-West Zone, Nigeria;
6. analyze stakeholders' consideration on library facilities planning in public senior secondary schools in North-West Zone, Nigeria.
7. examine stakeholders' consideration on school site planning in public senior secondary schools in North-West Zone, Nigeria.

1.4 Research Questions

The following research questions were set for the study:

1. how do stakeholders considered administrative facilities planning in public senior secondary schools in North-West Zone, Nigeria?

2. in what ways have stakeholders considered facilities for convenience planning in public senior secondary schools in North-West Zone, Nigeria?
3. how have stakeholders considered playgrounds planning in public senior secondary schools in North-West Zone, Nigeria?
4. in what ways have stakeholders considered instructional facilities planning in public senior secondary schools in North-West Zone, Nigeria?
5. What is the consideration of stakeholders on health/welfare facilities planning in public senior secondary schools in North-West Zone, Nigeria?
6. what is the consideration of stakeholders on library facilities planning in public senior secondary schools in North-west, Nigeria?
7. to what extent have stakeholders considered school site planning in public senior secondary schools in North-West Zone, Nigeria?

1.5 Hypotheses

The following null hypotheses were formulated for the study:

1. there is no significant difference in the consideration of principals, quality evaluators and teachers on administrative facilities planning in public senior secondary schools in North-West Zone, Nigeria;
2. there is no significant difference in the consideration of stakeholders on facilities for convenience planning in public senior secondary schools in North-West Zone, Nigeria;
3. there is no significant difference in the consideration of stakeholders on playgrounds planning in public senior secondary schools in North-West Zone, Nigeria;
4. there is no significant difference in the consideration of stakeholders on instructional facilities planning in public senior secondary schools in North-West Zone, Nigeria;

5. there is no significant difference in the consideration of stakeholders on health/welfare facilities planning in public senior secondary schools in North-West Zone, Nigeria;
6. there is no significant difference in the consideration of stakeholders on library facilities planning in public senior secondary schools in North-West Zone, Nigeria;
7. there is no significant difference in the consideration of stakeholders on school site planning in public senior secondary schools in North-West Zone, Nigeria.

1.7 Significance of the Study

It is also anticipated that this study will be of great importance to educational planners, educational evaluators and or officials of state ministries of education, researchers, school administrators, teachers, policy makers, scholars/academicians, general public and the government.

When this research work is presented in conferences, the findings of the study would help educational planners to see the need for adjustments and flexibility in school plant planning practices and formulate effective strategies to improve and embrace school plant planning in secondary schools as a tool for effective provision of quality education.

When a communiqué is written to the government, the findings of the study will be of great importance to educational evaluators in particular and the entire officials of States Ministries of Education in North-Western States, Nigeria, in recognizing the need for effective school plant planning for qualitative education in the country. In addition, it would help in setting up inspectorate team to inspect secondary schools and provide reports on how to improve school plant planning in order to avoid waste, duplication, and misuses of scarce resources and to avoid under and over-estimation of school projects.

It is intended that this study will provide some insights for researchers in the field of educational administration and planning in advancement of knowledge and in their search for solutions to some of the school plant planning problems besieging the secondary schools in North-West Zone and provide a document that will serve as an academic reference for the subsequent researchers who may wish to carry out a similar research especially when the research work is published in a peer reviewed journal and or published online.

Through presenting this research work in a workshop, the study would be significant to school administrators and other relevant stakeholders to revisit and enrich with new knowledge, theories, methodologies and practical behaviors to ensure effective school plant planning in North-West Zone, Nigeria. The findings may also be relevant to teachers as they may give them courage in the provision of quality education to students.

Through the findings of this study, policy makers may gain from the information on the need to re-strategize the school plant planning in order to make education more effective and efficient to its users and would be provided with relevant information needed in providing the lacked planning aspects in secondary schools system. Scholars and academicians may equally use this study as a source for further study especially if the write up is presented in a seminar, conference or workshop. Besides, the entire public would be guided on the area where complementary effort is actually required.

1.8 Scope of the Study

The study was limited to stakeholders' consideration on school plant planning in public senior secondary schools in North-west Zone, Nigeria. Stakeholders in this research included: principals, teachers and quality evaluators. The study covered variables such as administrative facilities, facilities for convenience, instructional facilities, playgrounds, health/welfare facilities, library facilities as well as school site planning in public senior secondary schools in North-west Zone, Nigeria. However, the study was limited to only public senior secondary schools in all the seven North-western States, Nigeria.

CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter basically deals with review of what other scholars, authors, researchers, experts and professionals have done in relation to school plant planning in contemporary society. Various theoretical and empirical literatures related to the school plant planning practices in secondary schools as conducted in different places and time were therefore reviewed which helped to identify the research gap. Randolph (2009) posited that conducting a literature review is a means of demonstrating an author's knowledge about that particular field of study, including vocabulary, theories, key variables and phenomena and its method and history.

2.2 Conceptual Framework

This section reviewed some important concepts that have a direct relevance with school plant planning in secondary schools.

2.2.1 Concept of Planning

Planning is the process of taking decision for future actions in order to achieve predetermined objectives by optimum utilization of available resources in a limited time frame (Dare, 2009). Thus a pre-condition for planning is the existence of certain objectives which need to be achieved and constraints in this aspect are time and resources. Here resources include all the three types of resources namely; material, financial and human resources. It is said that, we plan because we have limited resources and we have to achieve our objectives within the constraints of these limited resources. Planning is also seen as an exercise of optimization of resources. It attempts to maximize output within the given resources and ensures that the benefits are distributed more equitably among various sections of the

population. Since planning activities attempt to indicate what is to be taken up and what is to be taken up at later stage, it is also seen as an exercise in prioritizing the activities to be undertaken. Though, priorities of a plan are decided by the planning bodies, the population is a part of the planning process itself (Yusuf, 2015).

However, the term planning is frequently used on daily basis and every person without exception does some planning at individual level when one has to accomplish some task. Households plan for meeting the requirements of the family within the income available and thus plan for monthly expenditure. When planning is undertaken at the individual or household level, decisions for future actions are taken by individuals. However, if planning is to be undertaken for a system for instance, planning for education, the important issues to be addressed are; who (and at what level) will decide about the goals, objectives, allocation of resources and time frame which are important and essential components of planning. At the system level these decisions are taken at various hierarchical units. The concept of availability of various hierarchical units for planning is called the multi-level planning framework. Under this framework, planning is possible at national, state, district, sub-district and village levels (Damian, 2014).

Furthermore, in the field of education, there can be a possibility of developing plans at various levels. Specifically, in the big countries and even in the medium sized countries the planning is undertaken at more than one level, that is, at various hierarchical administrative units. In many countries, the hierarchical units available for planning are national, provincial, district, sub-district and village levels (Aliyu, 2014). The researcher perceives planning as the systematic process that involves careful and purposeful designation of what is to be done in the

future with the sole aim of achieving the pre-determined objectives. Planning in education therefore leads to the successful attainment of the goals of education at all levels.

2.2.2 Steps Involved in Planning

Planning is a process which embraces a number of steps to be taken. Planning is an intellectual exercise and a conscious determination of cause of actions. It varies from one organization to another. Konntz (2009) stated the following steps involved in planning process of a major organization. They include:

a. **Establishing Objectives:** this is the first primary step in planning process. Definite objectives in fact speak categorically about what is to be done, where to place the initial emphasis and the thing to be accomplished by the network of policies, procedures, budget and programmes, the lack of which would invariably result in either faulty or ineffective planning. It needs mentioning in this connection that objectives must be understandable and rational to make planning effective because the major objectives in all programmes need to be translated into derivative objectives.

b. **Establishment of Planning Premises:** these are assumptions about the future understanding of the expected situation. These are the conditions under which planning activities are to be undertaken. These premises may be internal or external. Internal premises are variables that affect the planning. These include organizational policies, various resources and the ability to withstand the environment pressure. External premises include all factors in tasks environment like political, social, technological, competitors, government policies, market conditions, and among others. Both external and internal factors should be considered in formulating plans.

c. **Determining Alternative Courses:** the next logical step in planning practices is to identify the alternative courses of action. It may be mentioned that there can be hardly any occasion when there are no alternatives and it is most likely that alternative properly assessed may prove worthy and meaningful. As a matter of fact, it is imperative that alternative courses of action must be developed before deciding upon the exact plan.

d. **Evaluation of Alternative:** having sought out the available alternative along with other strong and weak points, planners are required to evaluate the alternative giving due weight-age to various factors. Likewise, another course of action may be found contributing significantly to organization's long range objectives although immediate expectations are likely wise to go unfulfilled at a decision otherwise it would be difficult to choose the best course of action in the perspective of organizational needs and resources as well as objectives laid down.

2.2.3 Planning Process

The aforementioned steps involved in planning suggest that educational planning is a "process". This means that the outline of activities to be done is drawn up and sequentially arranged for implementation. A plan is described as efficient if the resources put into it are sufficient in meeting the stated objectives. An effective plan is one in which the desired objectives have been achieved. It is essential for educational production to be both efficient and effective if it is to properly guide the internal changes in the school as it utilizes the educational resources available. In other words, educational planning provides a foundation for all educational activities (Ololube, 2006a,b). It is the process of outlining the activities that are necessary to achieve the goals of education. Through planning, educational planners determine how education resources are to be allocated and how the activities of the education system will

be assigned to individuals and work groups. Therefore, educational planning is a concise and deliberate attempt, through organized and continuous processes to identify the different elements and aspects of the educational industry. It helps us in determining the present state and interaction, hence projecting them throughout a given period of time. This is done by analyzing, formulating, implementing and controlling the actions that have evolved to attain the desired aims and objectives of education (Ololube, 2013). This leads us to focus on enhancing the competitive position and the overall performance of teachers and students.

However, in a very clear term, planning process involves a number of stages that will lead to the accomplishment of the goals of a plan. It starts form simple to complex until when the result is finally attained. The researcher however, maintains that for a successful planning to take place, a number of processes or stages should be put into account of consideration. These are:

1. Goal Setting Stage

This involves the development of an action plan designed to motivate and guide a person or group toward a goal. Goal setting can be guided by goal-setting criteria (or rules) such as SMART criteria where S stands for specific, M for measurable, A for achievable, R for realistic and T for Time-bound. The SMART protocol offers a guide to help steer you towards setting goals that are suited to your abilities, timely, and measurable. If you are unsure of the goal-setting process, the SMART framework offers a sense-check to ensure your goals are the best they can be. Goal setting is a major component of personal-development and management literature. If not properly designed the process of goal setting has potential drawbacks. If utilized incorrectly, goal setting has the potential to cause rather than solve problems. For example, if goals are used with a threat of negative

consequences, stress and anxiety can be increased. Additionally, when there is a conflict between two or more goals, performance with respect to each goal may be undermined.

As long as the planners accept the goal, they should also have the ability to attain it, and do not have conflicting goals. Goals that are difficult to achieve and specific tend to increase performance more than goals that are not. A goal can be made more specific by quantification (that is, making it measurable), such as by pursuing "increase productivity by 50%" instead of "increase productivity" and enumeration, such as by defining tasks that must be completed to achieve the goal instead of only defining the goal. Where goal setting comes in, Goals are the first step towards planning for the future, and play a fundamental role in the development of skills in various facets of the planning process and everything in between. They are the target at which we aim our proverbial arrow. Understanding the importance of goals and the techniques involved in setting achievable goals paves the way for successful planning.

Goal setting can be a useful tool to enhance interest in a task. However, if a goal is deemed arbitrary or unattainable, then dissatisfaction and poor performance may result. If difficult goals are set without proper quality controls, quantity may be achieved at the expense of quality.

2. Data Collection Stage

This is the process of gathering and measuring information on variables of interest in an established systematic that enables one to answer stated research questions, test hypothesis and evaluate outcomes. Through the collection of data, the planner will be able to ascertain what is to be done during the formulation stage of the planning.

3. Analyzing Data

Statistics represent an essential part of the planning process because planners need to summarize the collected information for interpretation. In fact, there is need to have a clear

analysis plan that will guide the planners from the initial stage of the planning process. The first step in a data analysis plan is to describe the data collected in the study. This can be done using figures to give a visual presentation of the data and statistics to generate numeric descriptions of the data.

4. Formulation Stage

This is the process of designing and establishing planning objectives, evaluating management measures that will address the set objectives, developing potential alternatives that will meet the objectives, screening out plans based on the comparison criteria and identifying plans for implementation. After setting the goals of the planning process, what comes next is the formulating stage and at this stage, a careful designation of what is to be implemented will be clearly spelt out.

5. Implementation Stage

This simply means "planning in action". It is the process of carrying out, execution or practice of a plan in order to achieve the predetermined objectives of the planning process. It is through careful implementation that the achievement of the goals of a plan will be judged. Plan implementation is the process of making a plan active or effective in a manner that the implementation of the designed goals would be easier.

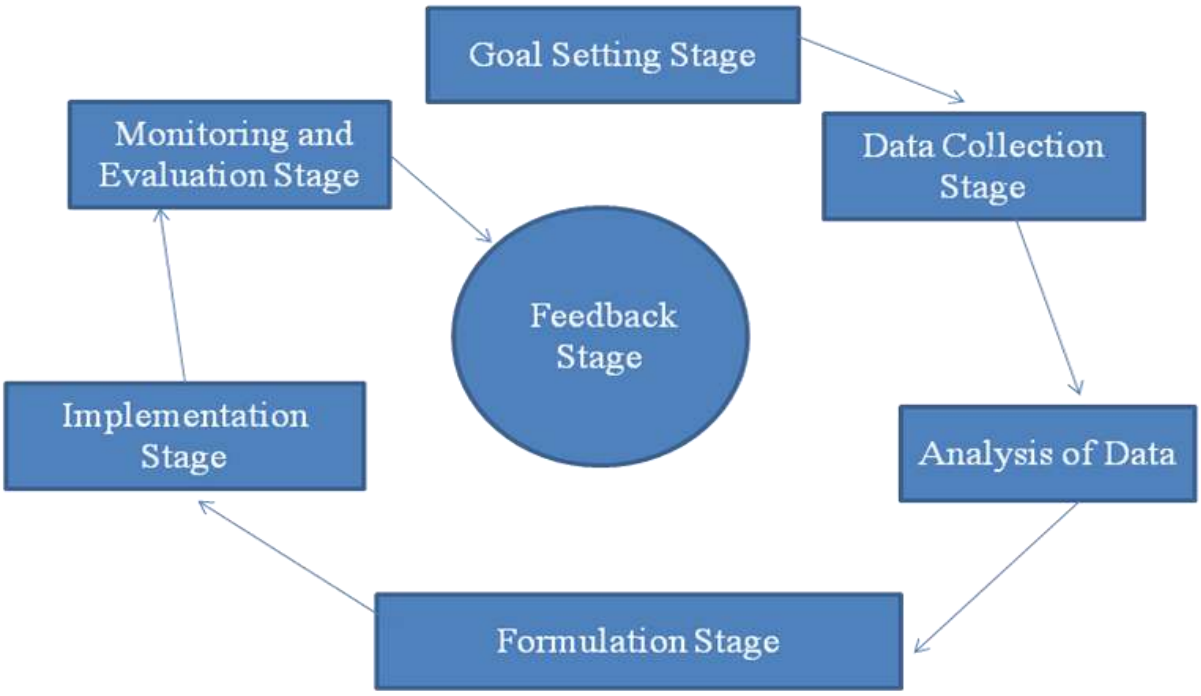
6. Monitoring and Evaluation Stage

This is a combination of data collection and analysis in order to determine the extent to which a plan has or has not met its objectives. Monitoring and evaluation is used to assess the performance of projects, institutions, set up by the government. It is the continuous assessment of programmed based on early detailed information on the progress or delay of the ongoing planned activities.

7. Feedback Stage

This is the transmission of evaluative or corrective information about an action, event or process to the original or controlling source. Goal setting is more effective in the presence of immediate feedback. Feedback including internal feedback that helps to determine the degree to which a goal is being met and how you are progressing. Unambiguous feedback ensures that action can be taken if necessary. If performance falls below the standard required to achieve a goal, feedback allows us to reflect upon our ability and set new, more attainable, goals. When such feedback is delayed, we cannot evaluate the effectiveness of our strategies promptly, leading to a potential reduction in the rate of progress. When we perceive our progress towards a goal as adequate, we feel capable of learning new skills and setting more challenging future goals. The following diagram shows the stages involved in the planning process:

Fig. 1: **Planning Process**



Source: Researcher (2020)

2.2.4 Concept of Educational Planning

Education, the world over has been recognized and appreciated as a critical instrument for socio-economic and political development. Nigeria stated in its National Policy on Education that education is the "instrument par excellence" for national development (Federal Republic of Nigeria, 2014). Education equips individuals with relevant skills, capacities, knowledge and attitudes to be productive in life thereby contributing to the development of the society. This is at the heart of the human capital thesis which argues that education and training are critical in improving the productive capacity of an individual, improves his earning capacity and at the same time contributes to national development. Education is a complex task process

that requires a lot of planning and input to make it worthwhile. It cuts across the three levels with their distinctive peculiarities, demands and implications. Their interconnectivity must always be taken into consideration in the planning and implementation process for the integral development of the human person. All the three levels of education therefore, require proper attention to ensure that their specific goals and objectives are realized (Bade, 2011).

Educational planning plays important functions in human collectivities in periods of great social and intellectual ferment to help change a society to fit into new goals. Like in any other sphere, educational planning is looking beyond one's nose to programme and provide for the future in education. Educational Planning was defined by Agi (2009) as a process of preparing a set of decisions about the educational enterprise in such a way that the goals and purposes of education will be sufficiently realized in future with the available resources. Educational planning deals with how to harness the available human and materials resources to achieve educational goals. One unique thing about educational planning is its comprehensive consideration of factors. It considers the human resources, materials, managerial input, seeming options and the future relevance of our set goals. It is not short-sighted but peeps into the future, giving a holistic view of human educational aspirations (Adeniyi, 2001). All these definitions explain that educational planning is a tool fashioned to analyze and plan, on a regular basis, the future development of education. It is a continuous process concerned with where to go and how to get there by the best possible route. Educational planning is preoccupied with formulations for the future, but it draws its assumptions from the past. Planning becomes necessary if education must be used to address the challenges of any society.

Furthermore, Educational planning entails the process of collecting, tabulating and interpreting appropriate data to show how well the educational system has performed, what are

its current strengths and weaknesses, and on the basis of this understanding, to prescribe solutions for its healthier growth. Fabumi (2005) therefore described educational planning as a continuous process of obtaining and analyzing facts, and from empirical base of providing information for decision makers on how best the educational system is to accomplish its goals and how best to achieve cost effectiveness of educational programmes. In other words, educational planning is the method for obtaining educational statistics, which when analyzed, reveals the true position of the education system so that the necessary steps can be taken to correct any anomaly and make it more effective and efficient.

Educational production is the determination of schooling quality as reflected in students' educational performance (see Bishop and Wößmann 2001). They went further to argue that the parameters which influence the level of schooling quality achieved in the model of educational production are mainly driven by the institutional setting in the schooling system. Okah (2011) views educational planning from the pragmatic point of view. According to him, educational planning could be seen as "a process of analyzing the educational needs of the society to be able to make economically viable allocation of the available scarce resources for the education of their children". He further defines it as "a process of preparing a set of decision for future action". Bade (2011) reiterates that any effective educational planning at all levels should reflect the national philosophy on education and development. He further stresses that educational planning in Nigeria must focus attention on the main national objectives as stated in the second national development plan of Nigeria which was endorsed by the federal government in 1970 as the necessary foundation for National policy on education (2004) which include the building of:

1. A free and democratic society;

2. A just and egalitarian society;
3. A united, strong and self-reliant nation;
4. A great and dynamic economy and
5. A land of bright and full opportunities for all citizens

Scholars like Adeniyi (2001), and Agi and Adiele (2009) have discussed in their respective works the crises and problems facing education in Nigeria. These problems are not peculiar to developing countries; schools in developed countries still compete for public funds with other sectors of the economy. Educational objectives can be achieved when resources are made available and put into maximum use. Educational planning, human resources (HR) training and development have evolved as disciplines to guide the allocation and utilization of educational resources in the school system. This is required to arrest areas of waste of resources to make educational production more effective. In this regard, educational planning, HR training and development have become indispensable tools in the management of the school system in order to achieve the desired goals of education systems around the world.

The output of the planning process is the plan itself, which is a blueprint for action. It prescribes the activities needed for the education industry to realize its goals. Therefore, the purpose of planning is simply to ensure that the educational industry is effective in its activities. In a broader sense, an educational system must develop a plan that ensures that the appropriate products and services are offered to its students. A wise person who has enough money to build a house must necessarily make some initial decisions prior to the actual building of the desired house. In the first place, he may decide on the area or site of his interest and find out ways of representing the proposed building on paper for approval by experts. He may need to consult other experts to estimate the cost of the building so that he will know how much money will be

required at each stage of the work. This is planning in action: planning is the process of determining a scheme for accomplishing a purpose. Such a scheme of arrangement is to be made beforehand by preparing a purposeful method of achieving the desired objectives (Whawo, 1993, p. 106). Admittedly, planning is a guide to the actions that are to be implemented at a future date. In other words, planning is futuristic. The rationale for planning is to effectively utilize available resources to attain a predetermined objective. The process involves strategies for manipulating several variables at the time of planning and their projection into the future.

Therefore, in the words of Ololube (2009), educational planning in its broadest generic sense is the application of rational, systematic analysis to the process of educational development with the aim of making education more effective and efficient in responding to the needs and goals of its students and society. The principal focus of educational planning in this definition is to make education more result-oriented for the development of the individual and the larger society. The researcher in this regard, sees educational planning as the process of making adequate preparation for the utilization of the available educational resources to achieve educational goals.

2.2.5 Features of Educational Planning

The following are the characteristics of educational planning:

1. It must have objectives: A good plan is based upon clear, well-defined and easily understood objectives. General objectives like improving morale or increasing profits are ambiguous in nature and do not lend to specific steps and plans. If possible, objectives must be quantified for sake of simplicity. This clearly shows that before making any plan, there must be the direction which the planning should take and this is what we referred to as the

"objectives/aims/goals". Objectives are the path finder of any meaningful plan. In education industry therefore, the goals of educational planning are to ensure teaching and learning are effectively carried out and the national goals of education are realized.

2. It is simple: A good plan must be simple and comprehensive. When the plan is simple, all employees of the organization can know its significance and it can be easily put into operation, which leads to the attainment of the desired goals.
3. Plan Making: is a feature of the planning process. The stakeholders that are concerned with the plan will express their desires/needs, and their agitation and observation will inform the policy makers on what to do. The issue bothering the entire society could be thrown to the stakeholders in form of public opinions. The response of stakeholders will then give direction to the next phase.
4. Plan Formulation: During the Plan formulation, the opinions expressed in the first phase of the planning process serve as guides to plan formulation. The necessary committee has to be set up where professionals in the field of planning and the education sector brainstorm on the opinions generated. The terms of reference will be provided for the body saddled with the responsibility of drafting the plan. The necessary data are gathered at this stage. The responsibilities of key role players at implementation phase will be highlighted. The envisaged resources needed for the achievement of the plan will also be specified.
5. A clear time frame: The plan formulated must have a specified range of time with which it is going to be executed and how much time it is expected to take. A plan cannot just be executed without having time coverage. It could either be long, medium or short term plan and each of these plans has its own specified range of time. The time period allowed for achieving goals should be reasonable even though planning is an attempt to anticipate the

future. Long-range planning is more uncertain. Hence, the time period covered should be reasonable and reasonably stable.

6. It is Flexible: Planning should be flexible enough to incorporate any changes in the resources, if necessary. Additionally, it should be responsive to changed conditions so that if future events do not follow the anticipation, the same plan can be modified and adopted to the altered situation.
7. Unity: Planning is initiated by different managers of different divisions at different times. It is necessary that a good plan should incorporate all these departments, maintaining the consistency, and centralized objective must be the focus.
8. It Provides for a Proper Analysis and Classification of Action: It provides for a proper analysis and classification of action i.e., it establishes standards. A good plan should establish standard. Comparing actual results with standards can make a proper analysis. It leads to effective control.
9. Cost implication: A good educational plan must also have what is called “cost implication”. That is the total amount of money expected to be spent during the execution of the plan. Money is considered the heartbeat of any educational plan without which the whole plan will be meaningless.
10. It must be Comprehensive: It is comprehensive and includes each and every aspect of the objectives.
11. Participation by Subordinates: Planning should not be an exclusive responsibility of top management. Subordinates will not be responsible if a plan is imposed upon them. Also subordinate participation generally ensures the sincere and serious effort on their part to make the plan successful.

12. It is Balanced, Practicable and Suitable According to the Size and form of the organization: A good plan should be well balanced so that the existing resources are properly utilized for all functions and short-term gains are not at the cost of long-term gains and vice-versa.
13. Implementation: In this feature, the plan formulated is put into action. The task at this stage is more of administrative functions and the organization of resources (both human and material) takes place here. The effective plan made could be a failure if the implementers deviate from the blue-print. If adequate resources are not committed to the plan; the resultant effect could be a school failure.
14. Feedback: The feedback aspect in the planning characteristics links the evaluation with plan making. This makes the planning process cyclic in nature. The success recorded at implementation will inform the planners in the beginning of another plan on how to improve on the digital plan, while the failure recorded will assist them to rectify the problems or constraints that resulted in such failure.
15. Evaluation: Finally, the actions taken so far at the feedback is assessed against the objectives or goals of the plan. The strengths of the plan are reviewed, while the major lapses or weaknesses are exposed. The lapses are as well as the strengths are traced to the different key players. The strengths are to be improved upon, while the weaknesses are to be rectified. (Soli, 2015).

2.2.6 Approaches to Educational Planning

The following approaches could be linked to educational planning in Nigeria. These are:

1. Social Demand Approach

This approach requires the education authorities to provide schools and find facilities for all students who demand admission and who are qualified to enter school. This approach looks

on education, as service demanded by people just like any other social service. Politicians in developing countries often find the approach expedient to use because of its appealing nature. The approach provides planners with the approximate number of places where educational facilities has to be provided. It is as well a suitable political tool to meet the need to satisfy the demands of the general public.

However, Ogom (2013) focuses attention on the demand for educational places by students so as to ensure that those qualified to pursue full time courses in educational institutions are not denied the opportunity. Under this approach, educational institutions are expected to adapt themselves to such demands. This might entails extending various levels of educational institutions in order to ensure that such demands are satisfied. This approach according to Ahmed (2003) was used in the Robbins Committee Report on higher education in Britain. In India too, this approach is a popular one while opening new schools and colleges in particular. Dare (2009) opined that social demand approach is often referred to as the aggregate demand by all and sundry at a given place and time under prevailing socio-economic, political and cultural situations. The social demand approach in Nigeria context is restricted to the primary and secondary school levels. It is a method used in predicting social demands for education by parents and children. With social demand approach, education is considered as the public service and as a right to everyone and must be provided at all cost. Thus, social demand approach can be regarded as a traditional approach to educational planning because it is more prevalent in those societies which favour traditional or cultural values where decisions are taken on the basis of public opinions in a fragile policy and sometimes in a democracy and in societies where the social environment is generally pessimistic in nature (Ahmed, 2003). At this point however, the

researcher reiterates that in order to make this approach effective, the relevant stakeholders should work closely to do the needful thereby making all the necessary arrangements to provide the compulsory education to masses regardless of tribal, religious or socio-economic background.

Advantages of Social Demand Approach

Social demand approach is significant in that it:

i. Reduces social problems in societies such as crimes and other vices
ii. Creates job opportunities to citizens through self-employed jobs
iii. Increases political awareness among citizens
iv. Enables leaders to win political power
v. Solves crises among citizens. (Jumare, 2016).

2. Manpower Requirement Approach

The focus of this approach is to forecast the human resources needs of the economy. That is, it stresses output from the educational system to meet the human resources needs at some future date. Manpower requirement approach could usefully call attention to extreme gaps and imbalances in the education out-put pattern that need remedy and provides educators useful guidance on how roughly educational qualifications of the labor force ought to be developed in the future. That is, the relative proportion of people who would have primary education, secondary education and various amount of post-secondary trainings. This varies in time places due to human dynamism. For example, Nigeria may require teachers or medical personnel this year but by the coming year, they may require other professionals not the aforementioned. This approach looks at the unemployment and underemployment situations, which may result from some over-emphasis on human resources approach, may become a challenge to move towards

the right kind of education which may be development oriented, and thereby creating its own job. Manpower requirement approach focuses on 3 main elements, namely:

i. Specification of the composition of human resources need at some future date, for example, 2020-2025.
ii. Specification of human resources availabilities, for example, in 2013.
iii. Specification, which reconciles the former specification with the later. (Olambo, 1995)

Agom (2013) stresses that the manpower planning approach takes note of the fact that the teaching profession requires approximately 60% of the highly qualified human resources of the country which competes with the demand for manpower in other economic sectors. A detail projection of human resources is difficult due to the uncertainty of productivity trends. Some developed nations such as Norway, France and Sweden estimates their future manpower needs so as to meet the demands of economy whereas others such as Great Britain, estimate the numbers to be educated on the basis of students' demand.

Advantages of Manpower Requirement Approach

The following are some of the advantages of human resources approach n planning:

a. It reduces wastages of both human and material resources
b. It creates job opportunities among citizens
c. It accelerates development
d. It reduces crimes in the society
e. It creates insight on proper resources allocation to sector of development
f. It establishes relationships between education and other sectors of development. (Jumare, 2016).

3. Cost-Benefit Approach

This approach to educational planning is associated with a careful exploration of the various alternatives to a problem in terms of the cost benefit before making a decision on what steps to be taken. This is because education is now generally recognized as a form of investment in human beings. It yields economic and non-economic benefits. The cost-benefits analysis therefore requires a systematic comparison of the magnitude of the cost and benefit to the investment on education in order to determine its profitability. This approach is management technique that is used to determine the alternative plans or programmes that will yield the required number of benefits with the least cost. The approach is also referred to as the rate of return. With the rates of return, programmes in which net profit incomes are positive would be encouraged while those which show negative result would be discouraged. If with the aid of available data, the present value of the future incomes to be earned from such programme is calculated. (Agom, 2013). In the calculation of the benefit of this approach, the planner should take into consideration the period of time for completing the academic programme, the income of years, if they have been working and the amount of money spent on the training of students (Dare, 2009).

These approaches, as outlined earlier, are by no means exhaustive. In practice, combinations of these are used, although, in most cases, one or the other is emphasized. For instance, in United States of America, in areas where educational planning is used at the state and the industrial levels, it is the manpower requirement approach that seems to be used more, while in the United Kingdom, there is greater emphasis on social demand approach (Agom, 2013).

In the case of Nigeria, in view of the current prevailing circumstances of high rate of unemployment and abject poverty, one should buy the idea of USA which adopts the manpower requirement approach of educational planning. This is in view of the benefits accruing to it for the following reasons:

i. It leads to a realistic assessment of the relationship between education and the manpower needed by the country;
ii. It enhances advancement in the provision of the required manpower;
iii. It leads to rational application of available resources and avoidance of waste;
iv. It could help to solve the problem of high rate of unemployment in the country (Dare, 2009).

4. Reactive Approach in Planning

This approach in planning refers to actions taken by the educational planners when an event occurred. This approach is seen by scholars as crisis management approach. Thus, it happens when there is an existing problem at hand.

Advantages of Reactive Approach to Educational Planning

The following are some of the advantages of reactive planning approach:

a. it is used in the event of crisis in education
b. it gives an insight on future decisions in education
c. it gives planners areas of research activities
d. it opens ways to innovation in education practices

5. Negotiated Approach to Educational Planning

Jumare (2016) is on the view that this approach implies having agreement with government on issues that affect education. For example unions demanding for increase in enrolment

opportunities from government. The government could move from its position not accepting the union's demands.

Advantages of Negotiated Approach in Planning

Some of the advantages of negotiated approach could be seen as follows:

i. increases government commitment to education

ii. reduces unwanted project and program of government

iii. increases union's commitment in the pursuance of public rights

iv. increases proper utilization in government

v. Creates avenue for checking government's activities.

2.2.7 Problems of Educational Planning in Nigeria

A very remarkable problem that has tended to inhibit educational production especially in Nigeria over the years is lack of human and material resources. In general, the major problems affecting the school system in Nigeria are poor management and control of teacher education programs, teacher training and retraining, the selection and organization of curriculum content, curriculum implementation and evaluation, the development, distribution and use of teaching materials, and the relevance of the curriculum to the needs of society. Not surprisingly, there is also a problem with poor motivation and discipline (Adeniyi, 2001, pp. 7-11).

However, the following are the challenges facing education in Nigeria:

i. Inaccurate Data

One of the most difficult challenges that educational planners face is the issue of inaccurate statistical data. The quality of technical planning is in most cases inhibited by statistical deficiencies and inaccurate data. Nigerian education systems has failed to effectively plan

because of lack of accurate data, which is because of the use of mediocre to prepare data for use in the planning and forecasting processes.

ii. Inadequate Skilled Personnel

Most educational planners in Nigerian do not have complete competence in planning. Qualified planners are the single most significant resource that can lead to greater and efficient planning productivity and performance. In planning, what is needed is the effective utilization resources by connecting the totality knowledge, skills and talents to achieve planning objectives. The quality of planners should not be nothing less than the basic acceptable standards worldwide.

iii. Technological Problem

Another serious problem in the planning of education in Nigeria is the lack of attention paid to emerging technological innovations planning mechanisms. The success of Nigerian education planners depends upon their ability to identify and respond to technological changes in other to elevate their planning output. Over the years, a number of technological changes have taken place that involves the introduction of modern advancements into the planning process and approaches, and understanding emerging issues related to educational planning and development.

iv. Political Arrangement

The existing political arrangement has influenced the control over educational planning in Nigeria. Political instability has had its toll on educational programmes. Planning process started by one administration is brutally interrupted by the next and the differences between federal and state government education policies are quite challenging. The inability of the

Nigerian political structure does not allow for education planners to be accountable for their wrong doings.

v. Economic Circumstances

The budgetary allocations that are available for educational planning in Nigeria is nothing to write home about. Funds provide for education planning is too small for proper planning to take place. The condition of the sector remains a thing of concern. Under-funding and systemic corruption makes the matter worse. The insufficient funding of the education planning sector stands as one of the major factors working against effective planning and implementation of education programmes.

vi. Inadequate Planning

There is a popular saying that "he or she who has failed to plan has planned to fail". Education planning in Nigeria has always been inadequate in line with the enormous facing our educational system. The lack of effective planning poses a significant obstacle to the advancement of education across the country. The success of any educational system hinges on proper planning. Planning of human and material resources has evolved to guide the allocation and utilization of educational resources in the school systems. Such planning is required to arrest areas of wasted resources and to make educational production more successful. Consequently, for any educational system to truly develops, effective planning is indispensable as education and planning are essential characteristics for effective education (Ololube, 2013).

2.2.8 Concept of School Plant

The school could be viewed as an organized environment where educational curricular are interpreted. It is a formal organization which serves as a transitional stage in life between family and the society (Olabode, 2002; Musa, 2004; Tabir, 2004). Meanwhile, the school plant

is the totality of all things that make up a school system, as reported by Ijaduola, Oni, and Muraina (2011).

However, the school plant is seen as everything that makes up the school environment. These include physical and material facilities such as buildings, furniture, laboratories and the entire environment of the school. Discussing school plant in their various works, Irele (2003), Dimmock (2004) and Adegoke (2003) agreed that school plant referred to school site, the buildings, equipment, school libraries, laboratories, and workshops, among others. In the same vein, Yusuf and Akinnioranye (2011) stated that school plant includes the site, the buildings, and the equipment used during the process of teaching and learning, permanent and semi-permanent structures and other items such as machines, the black board or white board and laboratories. Asiabaka (2008) asserted that the curriculum finds its physical expression in the design and construction of school plant. Subscribing to the views of Asiabaka, Agabi (2002) posited that school plant forms the hardware through which the educational curriculum (the software) is transmitted to the groups being educated. By implication, therefore, all facilities, that is, all the material resources in the school are school plant. He equally maintained that school plant are the physical structure, the furniture, the equipment, and other material resources that directly or indirectly aid the teaching and learning process. School plant, according to Abraham (2013), implies all facilities and equipment within the school which are used by members of the school community; and all the physical structures in the school are within this category. Enaohwo and Eferekeya, as cited by Maduagwu and Nwogu (2006:14) asserted that "school plant is the entire scope of the infrastructural facilities provided in the school for the purpose of educating the child". School plant therefore is the life wire of teaching and learning as well as other non-teaching activities carried out within the process.

However, for the effective and efficient utilization of these facilities, and to guarantee their relevance, they must be adequately planned. School plant planning is the first and the most critical stage in the process of providing them. They are planned based on the curriculum to be implemented and the level of education to be provided, which is basically tied to the curriculum.

School plant refers to the material provisions of the school which includes the premises, buildings, playgrounds, libraries, laboratories, classrooms, hostels, common room, canteens etc. The school plant is an integral part of the learning environment. Uko (2001) stated that when school facilities are considered from the point of the school plant, then one will be considering a gamut of facilities such as: science laboratories, school library, and technical workshops. Mgbodile (2004) described the school plant as the space interpretation of the school curriculum. The programmes of the school are expressed through school site, buildings, playgrounds, arrangement and design of the buildings. Accordingly, Onwurah (2004) maintained that school plant is the school site, buildings, play grounds, equipment and other material resources provided in the school for effective teaching and learning operations.

Njoku (2004) opined that school plant or educational facilities are tangible assets of an institution such as: building and land which are put into use for producing excellent educational services. Educational facilities also known or referred to as school plant include school buildings reflecting on classrooms, laboratories, libraries and workshops etc. Idoko (2005) viewed school plant to mean the same thing as school facilities or physical facilities in the school which include: school grounds, buildings, sporting facilities, furniture, educational equipment, library, school health clinic, transport facilities, school records etc. In the same vein, Bryce (2006) described school plant as facilities that enable a skilled teacher to achieve a

level of instructional effectiveness that far exceed what is possible when they are not provided. This therefore implies substantial cost to the school system for their establishment but they facilitate teaching and learning in the school system.

Additionally, Alimi et al (2012) defined school plants as systems and structures that are put in place to enable educational institution function effectively and achieve its establishment objectives. Simply put, they are physical and spatial facilities that enable effective teaching, learning and in turn lead to the production of desirable results; an evidence of good academic performance. Nigerian educational system is still many decades behind to what is obtainable in a developed nation. Based on the opinion of Maicibi (2003), institutions are made up of both human and non-human resources. An effective integration and utilization of these two resources will result to the achievement of institutional goals and objectives. An excerpt from Scales and Leffert (1999) in Olaniyan and Anthony (2013) on the effect of school plant on students has it that "adequate school plant is a sine qua non for higher grades, punctuality, higher attendance, scholastic competence, low disruption of school activities, fewer suspension rate of students, timely progression of students through grades, improved self-esteem and self-concept by students, reduction of students' anxiety, depression and loneliness as well as reduced substance abuse". School plants have shown to have a positive effect in improving the standard and quality of education (Ojedele, 2000).School plant refers to the material provisions of the school which includes the premises, buildings, playgrounds, libraries, laboratories, classrooms, hostels, common room, canteens etc. The school plant is an integral part of the learning environment. Uko (2001) stated that when school facilities are considered from the point of the school plant, then one will be considering a gamut of facilities such as: science laboratories, school library, and technical workshops. Mgbodile (2004) described the school

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It seems that a well-designed functional school plant with a wide array of teaching aids therefore provide effective delivery of schools‟ curriculum and are positively related to academic achievement. Thus, it is required that necessary attention be given to available school plants in order to achieve set goals and also to build confidence in stakeholders. It is in this vein that Adesina (1990) opined that, the school plant has to be well maintained because the physical nature and the appearance can be the yardstick by which the administrative capability of the school head can be measured. This is so because the headship provided by him

determines how the generality of the school ground and physical environment are utilized and cared for. This determines part of the successes of the school administrator. For instance, Edemas cited in Idoko (2005), points out that a beautiful school not only facilitate high enrolment but also provides adequate comfort to the learners, thereby improving the standard of education in that school. Accordingly, Asiyai (2012) revealed that the quality of education delivered by teachers and the academic achievement of pupils of any school is dependent on several factors of which school plant is paramount. This is because they are material resources that enhance teaching and learning thereby making the process meaningful and purposeful. Ideally, school plant is grouped into two types;

1. Direct teaching facilities

2. Non-teaching facilities (Ogunu, 2000)

Direct teaching facilities refer to academic instructional materials that have a direct link to teaching and learning while non-teaching facilities are non-instructional materials, that do not have a direct link to teaching and learning but could enhance quality service delivery. From the view point of Odunfowokan (2011), school plant refers to the following:

i. Instructional Spaces: These include classrooms, auditorium, gymnasium, library, workshops, laboratory, arts room, home economics rooms, multipurpose rooms/halls, music area and any other space where students receive instruction.
ii. Administrative Spaces: These comprise principal`s office, clerk's office, staff room, Guidance Counselors' office and Health clinics.
iii. Circulation Spaces: These include corridors, lobby, staircases and other spaces where students recreate.

iv. Spaces for conveniences: These consist of toilets, cafeteria, kitchen, dormitories, custodian sheds and stores, and

v. Accessories: These include parks, garden, fields, courts and lawns.

Yusuf (2008) categorized school plant into subgroups namely:

a. Landscape consisting of trees, grasses, lawns, hedges and accompanying paths,
b. Security facilities such as walls, gates, alarm system, phones, visitors' books,
c. Utilities such as electricity, pipe-borne water/borehole and transport facilities,
d. Educational equipment such as computers, chalkboard, chalk, chart, flannel graph, beakers, burette, pipettes, test tubes, thermometers, weighing balances, map, glass jars, globes
e. Office equipment such as cupboards, generator, typewriter, photocopying machines,
f. Sports facilities like football, table tennis, basketball,
g. Classroom/educational equipment such as chairs, desks, tables, chalkboards, dusters, wash-hand basin, napkins, chalk
h. Buildings like classrooms, administrative blocks, library, laboratories, health blocks, kitchen, examination hall, dining hall, assembly hall, clinics, rest rooms, toilets, hostels, store, staff rooms, workshops, and
i. Play grounds including football, volley ball, basketball and badminton, tennis court, swing slide ground.

With these, there will be a proper implementation of curriculum for effective classroom instruction delivery. A study carried out by Wordu and Oneobari (2019) revealed that academic performance has positive relationship with each aspect of school plant such as instructional materials, library facilities, school building design and science laboratory provision.

However, school plant is defined as the entire school facilities that make the teaching and learning process effective thereby leading to the attainment of the predetermined objectives of education. School plant entails all the components that could be found in the school setting such as administrative facilities, instructional facilities, facilities for convenience, accessories, recreational facilities to mention but a few (Researcher, 2020).

2.2.9 Procurement of School Plants

One significant aspect of school plant practices is its equipment and facilities for functional operation of the educational activities. Onwurah (2004) stressed that the following points be taken into consideration while procuring educational facilities:

i. School administrations, supervisors and teachers have been aware of modern trends in equipment. For example, desks and seats tend towards greater comfort and improved posture. There is also improvement in texts or reference books, lighting fixtures, charts, audio-visual aids, game equipment etc.

ii. Instructional equipment need be working or functional conditions. Laboratory tables be comfortable and of reasonable heights. Dormitories be equipped with box rooms and, if possible, wardrobes.

iii. Committees mainly of administrators, supervisors and teachers, with representatives of certain professionals like: architects and businessmen may be used for procuring equipment. This serves as aids and safeguards.

iv. Sufficient funds be provided for procuring educational facilities.

Ejieh, Fadipe and Ajaredi (2010), asserted that equipment and furniture requirements are determined by the content of curriculum and teaching activities associated with them, needs of the students and the staff for comfortable and healthful accommodation, the approaches of the

teachers to lesson delivery; functions and services performed by the non-teaching staff, recreational activities of students and staff members among others are virtually considered. Accordingly, Ninikanwo (2014) noted that since school plant is a tool for implementing the school programme, the determination of the requirements depends primarily on: the nature of the schools programmes, method of delivery needs of students and staff of the school. Thus, procurement of items needs to be appropriated in consonance with the designed objectives of acquiring curriculum content and job satisfaction. The procurement has to adhere to modern trends that take the students and administrative demands (Nwokike, 2012). It is stressed further that their durability, the school location as well as available funds for their purchase and maintenance be considered also. Olutola (1981) as cited in Olujide, 2001) argued that the principals are to pay attention to the extent of use of the present school plant to ensure effective use before buying new ones.

Also, the number and nature of students to be accommodated now and in the near future has to be considered. An evaluation of the current condition of the facilities to determine those that require rehabilitation for further use and those that may be abandoned in near future has to be taken into account by the principals. The procurement of school plant in any secondary school depends entirely on the government and proprietor to provide the bulk of the school plant while the principal purchases minor items that are needed for emergency use through the impress (Nwokike, 2012). In other words, it is posited that the federal, state and local governments remain the paramount suppliers of school plant items.

By this, the principals always forward their requisition in advance to the state education management board to ensure their supply. In all, the procurement of school plant materials has to be based on the approved educational guidelines and standards. By so doing, the procured

equipment and facilities are made to serve the purpose of enhancing teaching and learning in the schools for the realization of educational goals and objectives.

2.2.10 Utilization of School Plants

The procurement of facilities is one thing; the effective utilization is another and the success or failure of any organization, business or enterprise depends highly on the proper management and utilization of human and material resources. Effective management and utilization increases productivity (Uloma, 2011).Utilization is the-degree or extent to which an item has been put into effective use (Adeboyeje, 2000). It is of various degrees and according to Uko (2015) this includes: non-utilization, underutilization, maximum utilization, optimum utilization and over- utilization. Non-utilization occurs when a facility is not put into use at all; when a facility is not used to its fullest capacity, underutilization occurs. There is over utilization, when a facility is used more than its capacity. All of these require the ingenuity of the principal to balance the usage and maintenance of available facilities. It is the responsibility of the school administrator to ensure that the school plant is ready for use when due and that it is correctly used for the purpose for which it is meant. Effective use of school plants requires orientation to the users, educating the intending beneficiaries the values or reasons for its provisions of the any materials or equipment in the school system. By this, the principal, staff, consultant, architect and engineer have to participate in this orientation for effective collaboration in the utilization. This is necessary in order to prevent any disruption of educational programme.

Kochlar cited in Ejieh, Fadipe, and Ajaredi (2010) opined that using the school plant for educational purposes requires careful direction or much of its effectiveness can be lost. If the design of a facility follows function, then the type of activity specified for the facility should be

taken place in that facility otherwise the facility is being incorrectly used. Effective use of the school buildings and classrooms needs careful planning and supervision/inspection.

Effective use of school buildings involves the following according to Ejieh, *et al* (2010);

a) Ascertaining that each room in the building is used to its capacity. It will amount to underutilization if a classroom meant for 40 students is occupied by 20 students or less for most of the school year. On the other hand, assigning 50 or more children to a classroom meant for 40 of them is tantamount to overcrowding which is educationally unadvisable.
b) Ensuring that assignment of space reflects the best educational use of that space. Educational effectiveness in the use of space is not ensured by holding Literature or History lessons in Chemistry or Biology laboratories or English or Biology lessons in the Fine Art room. In each of the above cited cases, there may be much distraction of students‟ attention when lessons are not conducted in the appropriate learning spaces.
c) Making sure that all non-instructional spaces are used for their intended purposes. When store are used for purpose other than storing equipment, materials and supplies, they may be put in places where they may easily be damaged or stolen. Unless adequate care is taken, it may take some time to locate some of them when they are needed.
d) By studying the allocation of students to learning spaces as reflected on the school
e) Timetable, armed with a good knowledge of students' enrolment in each class and the scheduled for use in the school can ensure better results by occasionally conducting spaces utilization studies in the school. Following this, the administrator can make such necessary amendment as will ensure optimal use of spaces in the school.

f) The principal need to produce and give to every teacher a lot of available special teaching equipment, materials and supplies in their respective subject areas and encourage them to make use of them regularly.

g) Making the occupants aware of any newly purchased equipment in the school and if necessary organize a workshop, demonstration or talk on how to use it for the relevant teachers.

h) Undertaking some classrooms visit from time to time to see whether and how they use the available equipment.

i) Members of the community need not be denied the use of any school facility. When such requests are made, the school head has to make the conditions for the use of the facilities known to them.

School plant is a costly investment which must be protected by careful and proper operation and utilization. It is mostly the responsibility of the school administrator to ensure that the facility is kept open for use and also kept neat or made to be in a good sanitary condition for the occupants. The school principal has to ensure that they are optimally used to the advantage of students, teachers, and members of the local community. In managing facilities, and for them to meet the objectives, caution must be taken in the usage, that is, facilities must not be underutilized nor over-utilized, but optimally used (Uko, 2015).This implies that maximum utilization occurs when facilities are put into effective use in line with the primary objectives and its failure will lead to counter-productive. The success of any educational programme depends largely on the provision of efficient school plant and the efficiency of school plant rests more squarely on its proper utilization.

2.2.11 School Plant Maintenance

Having known the importance of school plant in the overall development of education, it has become pertinent to look inward on maintenance of school plant for effective service delivery. Facilities used daily are prone to ageing, extreme weather conditions and some many other ill effects. Nigeria has a poor maintenance culture as a result of which many facilities are underutilized. Otu (2002) and Asiegbu (2014) have admitted that school plant is poorly maintained at all levels of education. Studies have revealed the importance of school plant to academic performance. Sani (2007) reported a significant positive and high relationship exist between school plant maintenance and student academic performance. In conclusion, effective school plant planning has been implicated to have a positive effect on academic performance of secondary school students. Therefore, cautions should be taken in planning and development of school plant for efficient academic service delivery.

No building is maintenance-free, so every structure, heritage or new, requires care to limit deterioration. As part of construction process, maintenance has an important role to achieve a long life of the constructed building. Building maintenance can be defined as the regular inspection of all parts of building and the execution of work necessary to keep the structure, finishes and fittings in a proper and acceptable state of repair, including decoration both internally and externally. The primary purpose of a school is to promote equitable physical teaching and learning environment (FFC, 2009). A school in a dilapidated condition poses a challenge to the achievement of this goal. (UNICEF, 2003) emphasized that the unexciting and dilapidated schools can be a breeding ground for illiteracy, violence and disease. If the infrastructure is in a poor condition even the teachers cannot deliver the much needed teaching in such condition.

2.2.12 Types of School Plant Maintenance

Effectiveness and efficiency of a maintenance program are achieved if the maintenance of the school facilities is scheduled instead of only responding to emergencies. This means planning the program in such a way that some maintenance services are performed on a regular basis, some periodically and others as the need arises. Based on these, the following types have been highlighted:

i. **Preventive Maintenance:** this type of maintenance as the name implies, is the service rendered on school facilities in order to prevent malfunctioning or early deterioration of such facilities such as buildings, furniture, equipments and among others to maximize their useful life. Preventive maintenance protects buildings, grounds, furniture and equipments in order to avoid expensive maintenance. Preventive maintenance is carried out by custodial staffs. By performance of this task may be enhanced by on-the-job training. It is rarely practiced in Nigerian public schools most of which do not even have the custodial staffs to render such services. Absence of any type of maintenance programs and school inspection schedule in schools also hinder the rendering of such maintenance services.

ii. **Periodic Maintenance:** This is a type of work done on regular intervals of time-yearly or two-year intervals or more. It is the type of work most often done on contract basis at predetermined times. It is the type of work associated with servicing of offices, laboratory, and other equipment in the school periodically. This type of maintenance also includes such work as painting and repair of leaking roofs which can be scheduled to take place periodically as building continue to age.

iii. **Replacement Maintenance:** This type of maintenance involves removing and replacing an equipment or part of it when due. Some machines and vehicles' parts and some plumbing fixtures, for instance, need to be replaced before they become so bad that the item breaks down. It is poor practice to wait until an item of equipment or machine becomes completely unusable before replacing it. Regular replacement of an item of equipment or some of its parts prevents occasional embarrassment. It also prevents unbudgeted expenses during the school year.

iv. **Emergency Maintenance:** No matter how well a maintenance program is planned and adhered to, there will always be some unforeseen or unexpected emergencies. This type of maintenance is the work done when a system, an equipment especially one that is frequently in use, unexpectedly breakdown. It is also the type of work done when a part of a building collapses because of natural disaster and other reasons. This type of maintenance is the most common in Nigerian schools. Some of the emergency maintenance works could, perhaps, been avoided if there were operational maintenance programs in the school systems (Ahmed, 2017).

2.2.13 Maintenance of School Buildings and Infrastructure

Ikoya and Onoyase (2008) identified three key problems that required national attention in the education sector. These were:

i. provision of infrastructure

ii. maintenance and refurbishment of dilapidated classrooms and

iii. construction of new buildings.

Asiabaka (2008) examined the deficiency of public school infrastructure in Imo State, Nigeria and identified dilapidated floors that need plastering, most buildings with mud walls,

without doors and windows and non-availability of sanitary convenience as their major constraints in public schools. It is impossible for anyone to notice that the most widely disappointment in Nigerian public schools infrastructure today is the dilapidated structures.

i. Provision of Infrastructure

A study conducted by the United Nations Education Committee (2005) indicated that 60 percent of classrooms are not suitable for learning while 90 percent of Laboratories, 68 percent of Libraries, 50 percent of toilets and 45 percent of furniture are in bad conditions and need either replacement or refurbishment. Also according to Ikoya and Onoyase (2008), in their study of public school building in Edo State of Nigeria, found that only 27.3% of classrooms were in good condition while 17 schools had classes in the open under trees.

ii. Maintenance of dilapidated classrooms

Ali (2009) studied cost decision making in building maintenance practice in Malaysia to systematically identify factors considerable in decision making of maintenance cost and performance. The research employed mix-method (qualitative and quantitative) approaches with semi structured interview and questionnaires in Malaysia. The study provides important factors to be considered by building managers to improve effectiveness and accuracy in preparing maintenance budget. Ajayi and Adeyemi (2011) examined the level of articulation by the Ogun State Government of its UBE policy within the general framework of the scheme in providing facilities for schools. The study also reveals that more deliberate and aggressive provision of these facilities with the influence of positive school performance be achieved. The study also shows the level of commitment to funding and funds utilization in providing these facilities aimed at achieving educational objective through its implementation of the framework.

However, Bello and Loftness (2010) in their study of addressing inadequate investment in school facility maintenance stated that the physical and environmental conditions were estimated at $254.6 billion in 2008 due to deferred maintenance of schools in United States and suggested that there is need to implement an effective method for estimating the adequate amount for the maintenance. A new plan value model was developed introducing adequate increase in annual maintenance budgets including necessary resources to address accumulated maintenance backlog, upgrading school facilities to appropriate standard and ensuring health and performance of the occupants. Asiabaka (2008) carried out a study in Imo state University, Owerri, Nigeria, reviewing the need for effective facility management in schools dealing with the relationship that exists between the quality of school facilities provided and the quantity of the products of the school that will improve the quality of learning and teaching. The paper described the concepts, nature, types of school facilities, need for facilities in schools and facility management problems. The methodology adopted for the review paper was an archival document analysis. The study suggested methodologies for facilities management and concluded that school facilities give meaning to the teaching and learning process. The study recommended that school managers should carryout comprehensive assessment of the facilities to determine areas of need as this type of assessment will assist in policy formulation as it relates to facility management in schools. Abdulkareem and Fasasi (2014) focused on the management of educational facilities in Nigeria secondary schools in Ilorin, Kwara State, Nigeria. The study suggested that Administrators and inspectors of schools are responsible for effective management of the facilities in order to prevent wastages and ensure achievement of educational objectives since increase in demand for education has exert pressure on existing facilities in schools. The study was a review paper which highlighted the stages in facility

management and the functions which could be performed by management of educational institutions in order to achieve effective management of the facilities.

iii. Construction of New Buildings

Asiyai (2012) revealed that the school facilities are in a state of disrepair, and maintenance carried out was inadequate. He further stated that the factors responsible poor maintenance condition were excessive pressure on facilities and delay in maintenance among others. He indicated that the roles of managers include periodic inspection and decentralized maintenance. He further recommended that all stakeholders should develop and inculcate good maintenance culture and government should budget and allocate adequate fund for the provision and maintenance of school plant.

2.2.14 School Plant Design

An architect is responsible for designing the building to house the school program developed through the educational facilities planning process. Usually, the architect participates in that process so that educational planning and design do not constitute separate and distinct steps. The architect uses other specialists in designing the building and the system(s) it will contain; for example, structural engineers, heating and cooling specialists, electrical engineers, and environmental specialists should be involved in the total process. Some broad guidelines appropriate to school building design are:

a. A site (plot) plan should be developed to show the most effective use of the site for present needs and to guide future expansion.
b. The site design and orientation should show awareness of the principles of "Crime Prevention Through Environmental Design" (CPTED) including natural access control, natural surveillance, and territorial reinforcement;

c. A building should be functional in design; it should meet the needs of and facilitate the attainment of the designed or planned program of the school;
d. The building must be made safe and healthful for all students and school staff personnel by observing all safety and sanitary regulations appropriate to school plants;
e. A balance should be achieved between quality and economy in construction and the anticipated maintenance and operation of the plant;
f. A building should be designed to permit economical expansion both in terms of additional classrooms and special facilities which will eventually serve the ultimate capacity of the school; e.g., media centers, cafeterias, circulation, sanitation, utilities, and administration should be built to their ultimate maximum sizes if additional classrooms are going to be needed for future expansion;
g. Adequate lighting, natural and artificial, should be provided for all instructional spaces;
h. A building should be designed to control the transient noise level; the objective in sonic design of instructional spaces is to secure the best hearing and speaking conditions without adversely affecting the surrounding or adjacent instructional programs;
i. Thermal conditioning of school spaces should be provided by economically designed systems that also render long-term cost savings in maintenance and operations. (Ahmed, 2017).

2.2.15 Evolution of School Plant Planning

Any discussion of the progress made in the planning and design of school plant should begin with the history of school building architecture. Early schoolhouses of the seventeenth century were as uncivilized as the frontier that they served. Most of these facilities were one-room structures with limited furnishings functioning primarily as shelter (O'Neill, 2000). The

nineteenth century ushered in such advances as chalkboards, gas lighting and central heating (O'Neill, 2000). As the century progressed, the need to separate children based upon age prompted schools to separate students into grade levels and to separate older students into specific rooms for instruction in certain content areas (Siegel, 1995).

Early school design failed to consider the instructional process. The psychological and physical needs of children were greatly ignored (O'Neill, 2000). At the turn of the twentieth century, O'Neill (2000) notes that schools such as Frank Lloyd's Hillsdale Home School began to convert to a more open design concept. Contemporary educators such as John Dewey also took note of the physical environment and its impact upon student success. Arrangement of the building and classrooms allowed for active student participation. However, the traditional, egg-crate design prevailed throughout the early and mid twentieth century. During the 1960's and 1970's, educational research indicated that students performed better in a variety of settings and groupings.

Many of these open designs failed due to a lack of input from understanding by educators. This lack of staff development involved in the design process spelled the doom of open-concept schools (Rittner-Heir, 2003b). The past decade has seen an insurgence of technology into the educational program, and hence in school buildings. The role of technology in the classroom is actually an issue of literacy. The term "literacy" now refers to concepts beyond reading and writing. Literate students must be knowledgeable of and skillful with globalization, automated social interaction, the World Wide Web, and new cultural dynamics (Stokes, 2000). Stokes (2000) provides examples of the way in which technology will transform education from augmenting traditional textbooks to providing Web-based tutorials outside of the classroom.

Technology has impacted the content of learning as much as it has pedagogy. Programs such as industrial arts have been replaced with technology education. Such changes transform curriculum and facilities (Daniels, 2003). The processing of information that is afforded by technological advances changes the very layout of the classroom. No longer are desks arranged in rows with the teacher positioned at the front of the room from where she can lecture. Many schools are beginning to replace desks with tables so that students can interact with one another (Daniels, 2003). Daniels (2003) stated that these modern furniture arrangements provide the appropriate physical placement for computers and other technological tools. The need to adjust classroom design to accommodate technological advances exists beyond computer labs and media centers.

In order to support the increase in technology equipment, school designers must also address items such as lighting, power supply and classroom size. While natural lighting has been found to enhance learning, it can also raise the heat index of a classroom and decrease the life and operation of computers (Syvertsen, 2002). Syvertsen (2002) found that classroom space must be increased to allow room for computer hardware as well as raising ceiling heights to accommodate projectors and video screens. The increase of electronic media such as computer monitors, projectors, digital whiteboards and file servers have greatly increased the burden placed upon the power infrastructure of school buildings. The challenges facing older building reach beyond simply adding electrical circuits and service.

Electrical capacity is not the only wiring issue facing school designers and administrators when dealing with technology integration. The insertion of the World Wide Web and networking into educational programs necessitates the availability of network wiring. Industry standard for data, voice and video transmission is fiber optic wiring. The speed

required for data, voice and video transmissions should be considered when designers and education officials determine the scope of a building or renovation program. From an infrastructure standpoint, the development of wireless networks has made the most significant impact in recent years. In 2002, two out of three campuses reported some use of wireless technology (Swanquist & Garza, 2003). This technology, according to Swanquist and Garza (2003) is having a direct impact upon teaching and learning strategies. For example, students in some schools transfer their homework assignment from their own Personal Digital Assistant (PDA) to their teacher's computer as they enter the classroom.

Modern technology advances are transforming the acts of teaching and learning. One technological tool introduced into the instructional program is the use of video conferencing and distance learning. Hardware and software are allowing teachers to vary instruction based upon the need and learning styles of their students. Amplification systems, video systems and interactive whiteboards have expanded the tools available to teachers as they deal with students with varying capabilities and modes of learning (Milshtein, 2003). Technology allows educators to focus on the development of lifelong learners. Through information attainment systems, teachers can focus less on feeding facts to students and more on providing them with the skills to find the facts for themselves (McDonough, 2000).

Advances in technology have changed school design in ways other than instructionally. With heightened security concerns stemming from shootings and terrorist attacks, architects and school officials are increasingly advancing technological tools used for campus safety and security. Digital surveillance cameras are becoming the norm on campuses in many developed countries (English, 2003). It further reports that schools in Atlanta have invested hundreds of thousands of dollars improving the safety of their campuses with digital technology. Emphasis

has also been placed on designing automated access to buildings that control and record those allowed entering schools. This technology has advanced to the realm of biometric identification such as hand geometry or face recognition required to enter the most secure areas of schools (Szczerba, 2000). Along with surveillance and access control, the introduction of telephones in classrooms, two-way radios and cellular phones have provided more tools for teachers so that they can communicate with administrators for security purposes (Fickes, 2003b).

Efforts to reform education and improve performance of an increasingly diverse students' population have led to many advances and adjustments to teaching styles and curriculum delivery. Approaches such as interdisciplinary teaming and cooperative learning place different demands on our traditional schools settings (Day, 2001). Day (2001) suggests that modern schools should contain elements such as teaching museums, ecological landscapes, technology studios and flexible furniture systems to meet the special needs of all students. Flexible classroom space increases the capability for the students to interact in participatory learning exercises. Increased classroom size and flexibility will allow teachers to utilize modern educational strategies such as project-based assignments and interactive laboratories in an environment that allows for multiple group sizes and well as individual investigation (Day, 2001).

As educators have become increasingly involved in the design process, school plants have become more flexible and suited to innovative instructional approaches. The developmental level of students housed on the campus must be taken into account when developing instructional space. Sanoff (2001) notes that modern schools will include a wide variety of classrooms in contrast to the twentieth century schools with their egg-crate designs and symmetrical classrooms designs. Brain-based research has profoundly affected both the

medical and educational fields. A vast field of literature is focusing on the physiology of the brain and implications for teachers and educational leaders. As this research becomes readily available and analyzed, it will impact decisions ranging from school start times to teaching strategies to assessment methods (Jensen, 1998). Noted brain research scholar Eric Jensen (1998) notes that this body of research will also impact the design of classroom environments. Brain-based learning scholars promote the creation of a constructivist environment. This term relates to the idea that students learn best when they are able to construct knowledge from their experiences and other connections rather than receive it in a rote manner from the teacher.

With enrollment expected to grow exponentially along with heightened accountability for student success, it is definite that school construction must increase and improve during the coming years. Research leans toward smaller campuses with larger classrooms (Cook, 2002). This arrangement assists school leaders in addressing the personalization and safety of a small school while allowing spatial flexibility to accommodate technology and multiple student groupings. In moves that appear retrospective, school buildings are designed with traditional facades and allow increased amounts of natural lighting (Cook, 2002). Other aspects of school plant design will change as a result of modern research and limited resources. In order to increase parental involvement, community awareness and access to additional financial resources, schools of the future will be designed to be central to community activity (Geiger, 2001b). In an era of more enduring construction and more limited financial resources, school plant planners must adhere to instructionally and physically sound design approaches in order to avoid the erection of a monument of poor planning that may stand for decades (Stevenson, 2001).

2.2.16 Conceptual Clarification of School Plant Planning

Planning is the first stage in any administrative role. It is the making of arrangement for the future. It consists of ideas on how to utilize time, money, human resource and equipment in future. Plans are made after objectives are set. Planning is usually considered as a search for the best method of realizing these goals. In organizing, the administrator chooses what task would have to be filled and the function assign to each one. Effective organization implies that the main people are assigned to do the appropriate job at the right time. Activities should be assigned to individuals on the basis of their ascertained qualification, experience and interests. On the part of the administrator, the knowledge of leadership is required. Directing involves giving staff all they needed on now to go about their duty. It is not once for-all activity but an on-going one. Officers should be directed on the right path to do their job.

School plant planning is an integral part of the over-all educational planning. As a concept, school plant planning has been subjected to several definitions by various scholars though they shared similar view. For example, according to Ajayi and Yusuf (2010), school plant planning is a process in which a suitable site is selected and instructional space, administrative space, circulation space, and spaces of convenience are designed to facilitate the teaching and learning process in the school system. School plant planning which include instructional space planning, administrative space planning, circulation space planning, space for conveniences planning and accessories planning are essential In teaching-learning process. The extent to which these spaces could enhance teaching and learning depends on their location within the school compound, their structure, and accessories. It is believed that a well planned school plant will gear up expected outcomes of education that will facilitate good social,

political and economic emancipation, effective teaching and learning process and academic performance of the students.

Planning is the determination in advance what to do; when to do and how to do it, hence, failure to plan is planning to fail (Okoroma, 2000). It is the putting together presupposed actions in an attempt to accomplishing set goals. School plant planning and management therefore deal with constructions and maintenance of school building, workshop, laboratories and totality of physical facilities. However, this requires maximum cooperation and hard work from the principals, teachers, students and other school personnel as well as the community. The common goal of operation and maintenance is to keep school plants in the best possible condition at all times. Ayeni (2008) asserted that school plant planning usually implies building and provision of physical equipment in the school for the fulfillment of the designed goals and objectives. This scholar believes that the principals have to create opportunities to tap the creative potentials of teachers, school administrators, professionals and non-professional groups that functions as a subsidiary bodies or agencies. Thus, it is only when the cooperation and collective efforts of these people had been sought and won that wastes from lopsided planning can be avoided. According to Odufowokan (2011) school plant planning also reflects on: instructional, administrative, convenience space and accessories planning which are essential in teaching-learning process. The extent to which these spaces could enhance teaching and learning depends on their location within the school compound, their structures, and accessories. It is believed that a well-planned school plant will gear up expected outcomes of education that will facilitate good social and academic emancipation.

However, Akinyemi (2013) maintained that in order to plan the school plant facilities, the needs of the school has to be considered in respect of:

i. The age and number of students using the facility

ii. The regularity of use of facility

iii. The maintenance of the present plant facilities

iv. The sitting or locating of every plant facilities in relation to the master plan.

The above illustration has certain consequences on the future development and growth of the educational sector. Thus, maintaining high level of the entire school performance may not be guaranteed where instructional space such as classrooms, libraries, technical workshops and laboratories are structurally defective, that is, not properly ventilated and spacious enough for curriculum activities (Ajayi ,2007).

Consequently, Ayeni (2008) maintained that for school plants to be meaningful and contribute to effectiveness of education, it has to meet the following standards:

a. The building has to be designed to satisfy the pupils ,,physical and emotional needs.

b. Meet the objective of education in the area where the school is to be located.

c. The school building must be planned to make maximum contribution to the educational programme both at present and in future.

d. The plan need not be too rigid but should accommodate new development in the educational system either of local, state or national level.

e. There must be strict compliance with the outline of council of educational facilities planners

f. The growth of the community where the school is located had be considered.

g. There must be spaces for health centers, parks recreational facilities, and street and highways public utilities.

h. The school has to be nearer and accessible to the students i.e. it must not be too far for students to trek to avoid fatigue by the students.

i. The school plant has to be planned in such a way that it should be a functional one i.e. it has to meet the performance needs of the pupils. This implies that the schools need to be comprehensive where students could learn various courses like: sciences, technical, commercial and so on.

j. It also has to meet the students‟ social needs in form of opportunity to interact with one another

k. It must also meet the psychological needs of the students in terms of self-awareness creation and performance within potentials.

l. The designing of the school plant must also make it mandatory the integration of any policy, procedure, directive or rules on educational at National level.

m. The school plant must be free from danger and health hazard. Its social condition must be suitable i.e. it must not be too muddy, rocky or hilly. The choice site must have a natural beauty and there must be space for expansion which later will be necessary.

Kolawole (2000), Adepoju and Akinwunmi (2001) and Fehintola (2009) as cited in Akinyemi (2013) revealed in their respective studies that schools that are well planned, maintain higher students' academic performance. It is in line with the above fact that Oluchukwu (2000) asserted that school plant planning is an essential aspect of educational planning and unless schools are well sited, buildings adequately constructed and equipment adequately utilized and maintained, much teaching and learning may not take place.

While emphasizing the importance of school plants planning to students‟ learning outcome, Oyesola (2007) stated that the main objective of school plants planning is to satisfy educational

goals which have been pre-determined by educational planners. It is emphasized that better planned school plant will enhance better school programmes and the community needs by providing a place for psychological and physical safety for students and teachers. It is likely that poor instructional space planning may lead to poor teaching and learning situation which in turn may lead to poor students‟ learning outcomes. Stricherz (2000) as cited in Ajayi and Yusuf (2010), in his study showed that students‟ achievement lags in shabby school buildings, that is, those with poor or no science laboratory, library, technical workshop, inadequate ventilation. School plant planning is very important because any error at this stage will have adverse effect on the implementation of the set objectives and consequently on the students‟ general rate of learning (Akinyemi, 2013). Thus, school plants which are also referred to as physical facilities available in the school system need to be well planned to enhance better learning outcomes of the students. This is because the aim of planning school plant is always to ensure that favorable environment for learning is provided and this can only be done through careful choice of school site, adequate provision of buildings and facilities (Ninikanwa, 2014).

Emphasizing the importance of school plant planning to students academic performance Oluchukwu (2000), asserted school plant planning as an essential aspect of educational planning, he went further to explain that “unless schools are well suited, buildings adequately constructed and equipment adequately utilized and maintained, much teaching and learning may not take place. Accordingly, Ajayi and Yusuf (2009), asserted that the observed poor academic performance of the secondary school students in south west Nigeria may not be unconnected with seemingly poor school plant planning in the schools.

A broader definition comes from Odunfowokan (2011) who said that school plant planning refers to the following:

i. Instructional Spaces: These include classrooms, auditorium, gymnasium, library, workshops, laboratory, arts room, home economics rooms, multipurpose rooms/halls, music area and any other space where students receive instruction.

ii. Administrative Spaces: These comprise principal`s office, clerk's office, staff room, Guidance Counselors' office and Health clinics.

iii. Circulation Spaces: These include corridors, lobby, staircases and other spaces where students recreate.

iv. Spaces for conveniences: These consist of toilets, cafeteria, kitchen dormitories custodian sheds and stores, and

v. Accessories: These include parks, garden, fields, courts and lawns.

Essentially, Odufowokan (2008), asserts that "the planning, design and execution of a school building should take into consideration the total space available to it. Most modern schools within the urban areas have limited space for accommodations, hence the reason for two, three storey buildings within their compound." Accordingly, a school that is cited on an acre of land will have more space than another cited on two plots of land. While it is possible for us to ride within some schools, you hardly trek within some and concluded that the more spacious a school, the more healthy are the students" (p. 86). Ajayi and Yusuf (2009) asserted that the planning of technical workshops in some of the secondary schools seems to be defective too. Apart from the fact that schools use classroom as ad hoc technical workshops, in some cases, technical workshops are located very close to the classrooms. Some technical workshops are stocky and lack adequate facilities and cross ventilation. Highlighting recent research on improved efforts that linked the multiple dimension of school improvement from 1990sto 2000s, and sampling school improvement effort that link multiple dimension of school

improvement, more recent works than in the previous study are discussed because there is a gap in the literature positing a positive relationship between school climate-(transforming the learning environment through reduced class size `space`, theme based curricula and newly-developed advisory programs) and increasing school achievement.

In addition, Adeyemi (2006) also refers to school plant planning as the process of management, construction, utilization and maintenance of school facilities to ensure goal achievement. They include the sitting, the building and physical equipment, recreation places for the achievement of educational objectives, as reported by Adesina (2011). School plant planning includes teaching spaces planning, administrative places planning, circulation spaces planning, facilities for conveniences planning and accessories planning are essential in the school system. Teaching facilities such as classrooms, libraries, laboratories and technical workshops are essential in teaching-learning process. The extent to which these spaces could enhance effective teaching and learning depends on their location within the school premises, their structure and physical facilities. There is no gain saying that well planned teaching spaces in terms of location, structure and physical facilities will facilitate effective teaching and learning process and as well enhance good academic performance of the students.

According to Mark (2002), one cannot expect high level of students' academic performance where teaching space such as classrooms, libraries, technical workshops and laboratories are substandard. He emphasized that clean, quiet, safe, comfortable and healthy environment are important components of successful teaching and learning. Ajayi (2007) also maintains that high level of students' academic performance may not be guaranteed where teaching space such as classrooms, libraries, technical workshops and laboratories are structurally defective with poor ventilated and not spacious enough for use. He further

emphasizes that structural effectiveness, proper ventilation and well located teaching space may lead to successful teaching and learning process.

However, Banuso (2003) highlighted educational parts as perishable or non-perishable, consumable or non-consumable, movable or immovable, tangible for teaching and learning to take place in an atmosphere conducive for the realization of the lofty objectives of the national policy on education and which need to be properly planned. In a nutshell, Olaniyomi (2007) divided school plants into seven categories with their component elements as follows:

i. Buildings: instructional, administrative, circulation convenience and accessories.

ii. Machinery: workshop, machines and duplicating machines.

iii. Transports: vehicles, i.e. school bus, staff bus, tractors etc.

iv. Equipment: laboratory and workshop equipment, sporting equipment, teaching aids, computer.

v. Furniture: table, desks, bookshelves.

vi. Books: library books.

vii. Utilities: electricity, water supply, communication system.

However, school plant planning is a process in which a functional educational programme is developed, suitable site is chosen, appropriate structures (buildings) are architecturally expressed and constructed with adequate resources provided for effective teaching and learning in order to ensure the attainment of educational goals and objectives. From the above definitions, the following can be deduced as features of school plant planning:

a. It is a detailed and systematic process: The task of planning school plant should not be hurriedly carried out but should be systematically approached because of the salient steps involved. It is future oriented: It projects into the future course of actions to be carried out.

b. Identification of strategies, policies and procedures in plant planning is essential in order to chart the course of action that is needed.
c. Judicious use of resources: It ensures that the limited available resources at the disposal of planners (public or private) are judiciously utilized.
d. It is goal-oriented: The essence of school plant planning is to achieve a set of educational goals and objectives.

It can therefore be said that educational goals are attainable through appropriate school plant planning. Corroborating this, Oyesola (2007) stated that the main objective of school plant planning is to satisfy educational goals which have been predetermined by educational planner. He explained that better planned school plants will enhance better school programmes and the community needs by providing a place for psychological and physical safety for students and teachers and enhancing the good, quality and quantity of instruction. As a result, school plant planning is often considered an essential aspect of educational planning (Oluchukwu, 2000). It therefore behooves that school plant is appropriately planned to facilitate the effectiveness of school system so as to bring about the achievement of educational goals.

However, in spite of the importance accorded school plant planning in realizing educational goals, it has not been given the adequate attention it deserves especially in developing countries like Nigeria. According to Amanchukwu and Ololube (2015), one of the strongest problems with the Nigerian educational system is the inappropriate school plant planning. It is worrisome that majority of the schools in our cities and towns are not properly planned in terms of school plants. For instance, students, especially in government-owned primary and secondary schools, sit on floors to receive instruction. They receive instruction in classrooms which are similar to death traps due to their poor construction. Most of these schools are ignorantly sited near

market places, highways, rail line, industries, airports, very close to main roads etc. and these prevent students from paying rapt attention to what is being taught in class. Most private-owned schools are sited in either private homes or makeshift buildings and do not have capacity for further expansion in the nearest future (Agi, 2013). This ugly situation poses a serious concern to as many that have stake in educational sector of the nation.

Nevertheless, school plants planning require maximum cooperation and hard-work from a combined team of the school principal, teachers, students and other school personnel and the community. The common goal of operation and maintenance as remarked by Ojedele (2008) is to keep physical plants in the best possible condition at all times. The importance of school plant planning in the development of an effective educational programme at all level of the educational system; particularly at the secondary school cannot be overemphasized. The attainment of an effective teaching and learning is therefore closely related to the location of the school, the organization and arrangement of the physical structures and other educational facilities in the school (Adepoju and Akinwunmi, 2001; Amosun, 2002, Ojerinde, 2004, Massachusetts, 2005 and Fehintola, 2009). Kolawole (2000), Abdulkareem (2003), Usaa (2008), Ijaduola (2008b) and Abayomi (2009) remarked that the physical appearances and general condition of school facilities are the striking bases upon which many parents and friends of educational institution make their initial judgment about the qualities of what goes on in the school. They all agreed that schools with well coordinated plant planning and maintenance practice, recorded better students' performance be they in rural or urban schools. Kolawole (2000), Adepoju and Akinwunmi (2001) and Fehintola (2009) studied school plant planning in relation to academic performance of secondary school students in different areas. They used the factor of location of school, utilization and maintenance as measure of school

plant planning and used the results in National Examination Council (NECO) and West African Examination Council (WAEC) as the measures of academic performance. They found that schools that are well planned and maintained had higher student academic performance than others.

However Olakoya (2004), Uya (2004), and Ijaduola (2007) contended that in an educational environment like a secondary school, it is indisputable that facilities such as furniture, laboratory equipment and material have great influence in the teaching and learning process; because without them the empty buildings and structures no matter how attractive they are cannot be used for educational purpose. Hence, school plant planning is no doubt an essential part of educational planning without which the overall school's performance cannot be enhanced.

It is against the foregoing background information that this study was embarked upon to investigate stakeholders' consideration on school plant planning in public senior secondary schools in North-West Zone, Nigeria.

2.2.17 Characteristics of School Plant Planning

Any school plant planning must first and foremost meet the objectives for which the educational institution is established on the aspiration of the users. An efficient school plant planning should therefore take care of the physical, emotional and educational needs of the learners. Oyesola (2009) maintained that certain characteristics of school plant planning are worthy of consideration. These include among others:

i. The school plant must be functional: this implies that the school plant must satisfy the aspirations or the set objectives of the school. It must be capable of allowing varying and

flexible instructional activities which are consistent with the implementation of educational programmes.

ii. It must be safe: school plant must be located in such a way as to provide ready and easy access to students, teachers and the community. A situation where students have to cross railways or highways to get to the school should be avoided. Construction of poor building by using poor quality materials or non-adherence to specifications is dangerous to all users.

iii. The school plant must be helpful to students, teachers and other users. The school buildings and facilities must help in facilitating school programmes as well as the community. Each component (building) of the school must be designed to meet some specific purpose and must be planned in such a way that its use does not constitute a nuisance to others. For instance, the school workshop or football pitch should not be constructed in such a place that community could use the facilities without interference with other components in the school.

iv. The physical environment of the school must influence the creation of a feeling of pride in both staff and students. This means that school plant should be attractive, psychologically helpful in other word and must be aesthetically appealing thereby making learning easier.

v. It must provide easy access to the users and easy access for maintenance purposes. It must be of such simple structure as to make its maintenance economically reasonable.

2.3 Theoretical Framework

The use of theoretical framework has become imperative considering the fact that some terminologies in this research work are beyond conceptual explanations. For this reason, the researcher deemed it necessary to apply a theory that is relevant to the topic of the research. In view of the above, systems theory is employed to guide this research work.

2.3 The Systems Theory

During the early 1950s, the basic concepts and principles of a general theory of systems were set forth by such pioneers of the systems movement as Ashby, Bertalanffy, Boulding, Fagen, Gerard, Rappoport, and Wienner. They came from a variety of disciplines and fields of study. They shared and articulated a common conviction: the unified nature of reality. They recognized a compelling need for a unified disciplined inquiry in understanding and dealing with increasing complexities, complexities that are beyond the competence of any single discipline. As a result, they developed a trans-disciplinary perspective that emphasized the intrinsic order and interdependence of the world in all its manifestations. From their work emerged systems theory, the science of complexity.

Additionally, Ludwig von Bertalanffy (1972) often cited as the father of general systems theory, first introduced GST in the 1930's, which gained recognition in scientific circles in the 1950's and 1960's. Ludwig von Bertalanffy was prominent in 20th Century science. He formulated the theory of systems in general to account for similarities in the functioning of such diverse phenomena as living organisms, machines, galaxies and organizations. It was a unique departure from the earlier emphasis on separate analysis of individual parts. All forms, from atomic particles through atoms, molecules, crystals, planets, solar system, and even galaxies may be regarded as 'systems'. The system was subdivided into two; closed and open systems. The closed system is called closed if it neither takes in nor emits matter (only energy exchange is possible and taken into account). The system is called open if there is a continual input and output of both energy and matter in it. Inputs, processes, and outputs of an organisation are all stages in the system's cycle of events. The open system theory also emphasizes the necessary dependence of any organisation upon its environment. It reveals

that an organisation imports various forms of energy from the environment, and transforms that energy into some other forms in the production process. At the processing stage the organisation creates a new product, process materials, trains people, or provides a service. Something is done to the input. The output is then exported (with value added) to the environment. It then becomes input for another system or the system itself. Systems thinking have become a new way of looking at the world, according to well-known authors such as Bar-Yam (2003), Lin (1999) and Wolfram (2002). Wolfram (2002) has noted that "general systems theory was concerned mainly with studying large networks of elements often idealizing human organizations. But a complete lack of the kinds of methods made it almost impossible for any definite conclusions to emerge."

Furthermore, systems theory is an interdisciplinary theory about the nature of complex systems in nature, society, and science, and is a framework by which one can investigate and/or describe any group of objects that work together to produce some result. This could be a single organism, any organization or society, or any electro-mechanical or informational artifact. In the opinion of Bailey (2004), the central focus of systems theory is self-regulating systems, i.e. systems self-correcting through feedback. Bánáthy (1996) in explaining systems posits that, Self-regulating systems are found in nature, including the physiological systems of our body, in local and global ecosystems, and in climate and in human learning processes (from the individual on up through international organizations like the UN). It can therefore be deduced that systems can be employed in any form of organization, schools not exempted.

However, according to Bausch's opinion (2001), the systems view is a world-view that is based on the discipline of system inquiry. Central to systems inquiry is the concept of system. In the most general sense, system means a configuration of parts connected and joined

together by a web of relationships. Von Bertalanffy in Odia and Omofonwan (2007) defined system as "elements in standing relationship. Cliff and Francis (2013) add that contemporary ideas from systems theory have grown within diverse areas, as demonstrated by the work of biologist Ludwig von Bertalanffy, linguist Béla H. Bánáthy, sociologist Talcott Parsons, ecological systems with Howard T. Odum, organizational theory and management with individuals such as Peter Senge, and insights from educators such as Debora Hammond and Alfonso Montuori. Charlton and Andreas (2003) stated:

> *Systems theory was proposed in the 1940's by the biologist Ludwig von Bertalanffy, and furthered by Ross Ashby. Von Bertalanffy was both reacting against reductionism and attempting to revive the unity of science. He emphasized that real systems are open to, and interact with, their environments, and that they can acquire qualitatively new properties through emergence, resulting in continual evolution. Rather than reducing an entity (e.g. the human body) to the properties of its parts or elements (e.g. organs or cells), systems theory focuses on the arrangement of and relations between the parts which connect them into a whole. This particular organization determines a system, which is independent of the concrete substance of the elements (e.g. particles, cells, transistors, people, etc). Thus, the same concepts and principles of organization underlie the different disciplines (physics, biology, technology, sociology, etc.), providing a basis for their unification. Systems concepts include: system-environment boundary, input, output, process, state, hierarchy, goal-directedness, and information. (p.86).*

2.3.1 Systems Theory's view on Education

For any system of interest, systems view enables us to explore and characterize the system of our interest, its environment, and its components and parts. We can acquire a systems view by integrating systems concepts and principles in our thinking and learning to use them in representing our world and experiences with their use. A systems view empowers us to think of ourselves, the environments that surround us and the groups and organizations in which we live in a new way: the systems way. This new way of thinking and experiencing enables us to understand and describe the following:

i. Characteristics of the “embeddedness” of educational systems operating at several interconnected levels (e.g., institutional, administrative, instructional, learning experience levels)

ii. Relationships, interactions, and mutual interdependencies of systems operating at those levels

iii. Purposes, the goals, and the boundaries of educational systems

iv. Relationships, interactions, and information/matter/energy exchanges between our systems and their environments

v. Dynamics of interactions, relationships, and patterns of connectedness among the components of systems

vi. Properties of wholeness and the characteristics that emerge at various systems levels as a result of systemic interaction and synthesis

vii. Systems processes, i.e., the behavior and change of systems and their environments over time.

The systems view generates insights into ways of knowing, thinking, and reasoning that enable us to pursue the kind of inquiry described above. Systemic educational renewal will become possible only if the educational community will develop a systems view of education, if it embraces the systems view, and if it applies the systems view in its approach to reform. Systems inquiry and systems applications have been applied in the worlds of business and industry, in information technology, in the health services, in architecture and engineering, and in environmental issues. However, in education except for a narrow application in instructional technology, systems inquiry is highly under-conceptualized and underutilized, and it is often manifested in misdirected applications.

Acquiring a “systems view of education” means that we learn to think about education as a system, we can understand and describe it as a system, we can put the systems view into practice and apply it in educational inquiry, and we can design education so that it will manifest systemic behavior and make our schools stronger and better. Through the application of systems approach, a sound educational planning could be made leading to the effective school plant planning in secondary schools. This helps to ensure that administrative space, instructional space, space for convenience, accessories space, welfare facilities planning, recreational space and among other are properly planned, implanted and utilized in our secondary schools. Once we individually and collectively develop a systems view, then and only then can we become “systemic” in our approach to educational reform, only then can we apply the systems view to the re-conceptualization and redefinition of education as a system, and only then can we engage in the design of systems that will nurture learning and enable the full development of human potential.

2.3.2 Application of systems theory to school plant planning

A system within the context of school plant planning can contain regularly interacting or interrelating groups of activities such as site selection, building plans, construction, fittings and equipping for educational standard. The system theory recognizes that schools are complex social systems and that reducing the parts from the whole reduces the overall effectiveness of the school organization. This means that rather than basing on the practices of school plants on individual structures, departments or units, separate in part from the whole school administrators should recognize the interdependence between groups of individuals, structures and processes that enable the school organization to function properly. This theory however shows that school as a system requires some basic component to make it a complete system.

Such components may include; the site with which the school is to be situated, administrative facilities where administrative activities are to be carried out, facilities for convenience, playgrounds, instructional facilities, library facilities and among others.

Furthermore, this theory is relevant considering the fact that school could be seen as sub-system that needs to be re-structured to make teaching and learning very effective. In view of this, there is need to make adequate planning on school site selection, structure that could aid the smooth running of the administrative activities, instructional facilities that will make teaching learning process effective and meaningful, facilities for convenience that will enable both staff and students to live comfortably within the school setting, recreational facilities which will enable teachers and students to interact, keep healthy and promote motivational impetus to students, welfare facilities that will motivate staff and ensure extreme job security and among many others. When these components are well planned in the school system, then a conducive teaching and learning environment will be actualized thereby producing competent, committed and qualified products (school graduates) that are capable of competing with outside world.

The environment is made up of several social, economic and political institutions, which are constantly interacting and inter-dependent. Everything in an environment is a complete system on its own. But it is a unit or subsystem of yet a larger system and all are inter-dependent. The same is true of the school system. Norlin (2009) advanced that schools are essentially living systems and that without people they are nothing but concrete and paper. As living systems, they are in constant process of interaction with their communities and other institutions in them. They see the school system as a living and dynamic organization, and though a complete system on its own, yet it is a sub-system of the nation's educational system

which in turn subsists in the larger social supra system called the environment. This is why it requires adequate planning to make it function effectively. The planning should therefore capture all the aspects that can make the school plant to produce the expected results.

The throughout process involves mainly the teaching-learning process. Examples of subsystems include:

a. Organizational structure which includes classrooms, school levels, hierarchy, and departments.
b. Instructional technology which involves data base learning theory, teaching, administering tests, and conducting extra-curricular activities. The output or products of the educational system are students in the form of educated people now better equipped to serve themselves and society.

These students have acquired more knowledge, intellectual and manual skills, and powers of reasoning and analysis. Also affected are their values, attitudes and motivation, creativity, communication skills, cultural appreciation, sense of social responsibility and understanding of the world. Some of the outputs go back to the system as new inputs. The feedback process is evaluative because it provides the necessary information about the performance so that appropriate modifications can be effected on the objectives and other inputs. Feedback is the process by which self-regulating and self-directing systems adjust themselves. It entails drawing some of the systems output back into the system as information inputs so that possible discrepancies between intended outputs and actual outputs could be compared. Feedback is positive when no discrepancy exists but it is negative when there is.

A subsystem is a system that exists within a larger system. It is a set of components interrelating for a purpose that relates to the purpose of the larger system. Examples of

subsystems within the school system are instructional and support service sub-systems all made up of people and things that are the components of the school system. A supra-system is a larger system of which a particular system is a part. It is a set of system interrelating to fulfill a broad purpose that includes the purpose of a particular system. For example the school system (including its own subsystems) is a sub-system of the school system which in this wise is a supra-system to the school sub-system. An important feature of system is that any system has a tendency to achieve a balance among many forces operating upon and within the system. The quality of the school as a sub-system depends largely on the facilities available within the school system that will make the realization of educational goals possible. The quality could only be attained when there is efficient planning on administrative facilities, instructional facilities, convenience facilities, health/welfare facilities, recreational facilities and among others.

It is possible and easy for the educational administrator, organizational developer or manager to discover the existence, and locate the source of a problem in school organisation, using the system approach. Equally, the total systemic view presents him with the reality and hence prods him to search for appropriate solutions. Administrative problems in education related to policies, objectives, falling standards, poor planning, use of resources, programmes, evaluation, staff turnover, conflicts (of students and staff), and others can be easily identified by systemic analysis of the content, functions and operations of the major components of education. In addition, through systematic analysis, the areas that need prompt response and those that are of appreciable standard in the area of school plant planning practices could be identified. It also serves the purpose of locating the source (and the linkages or the flows) of any educational problem and, no doubt, helps to suggest ways of tackling such.

Without mincing words, one of the critical educational problems of contemporary times is school plant planning (which is a key to the entire school success). This manifests in diverse ways like wrong location of school, poor administrative structure of the school, inadequate instructional facilities, a situation where both staff and students defecate in the outskirt of the school due to lack of toilet facilities, inadequate recreational facilities, poor health services in the school, insecurity and other forms of crises in the school resulting from poor school plant planning. These of course, according to the researcher, produce dastard consequences not only for the public secondary schools but also for the entire education system in Nigeria. The researcher therefore maintains that through the application of systems theory, a sound education standard will be realized and our secondary schools will be revitalized.

2.4 Challenges of School Plant Planning in Nigeria

The following are the monumental challenges, among other challenges, confronting school plant planning in Nigeria:

1. **Under-Funding:** The frivolous way and manner in which Nigerian government responds to financial needs of the education sector as witnessed in today's Nigeria, especially judging from the budgetary allocation to the sector is worrisome and it simply indicates, without doubt, that education is not given a top priority. In spite of a number of recommendations by different agencies and organizations with regards to Nigeria's education system, the sector still suffers from the low or inadequate funding. For instance, United Nations Education Scientific and Cultural Organization (UNESCO) recommended that for a Nigerian education to revive, 26% of the nation's budgetary allocation should be given to education. However, up till now, no effort has been made to respond such recommendation by the UNESCO. For instance, in the 2016 budget, the education sector had a total

allocation of N369 billion, representing 6.06 percent of the total budget (6.08 trillion). 92% of this amount was allotted to recurrent expenditure like salaries.

However, it is from the balance of 8% that all the federal universities, polytechnics, colleges of education, secondary schools and primary schools were run. In this circumstance, it would be extremely difficult to procure all the required school plants for all the levels of education with this meager allocation. This has been the case in all the nation's budgetary allocations. This challenge is not peculiar to public schools; private schools have their funding challenges as well. The high cost involved with procurement of school equipment has made school proprietors to settle for less quality ones. This cost factor accounts for the unavailability of very essential school facilities in most private-owned primary and secondary schools in Nigeria (Amanchukwu and Ololube, 2015).

2. **Corruption:** Most of the public office holders in Nigeria have come to power only for the ulterior motive they stand to gain and not to serve the interest of the masses. They unlawfully dip their hands in the coffers of government, withdraw public funds meant for provision of educational facilities/maintenance of existing ones and fraudulently divert it into personal accounts for their private use. Similarly, due to endemic nature of corruption that has found its way into virtually all sectors, it not surprising that some private-owned schools also suffer in the hand of unscrupulous staff that 'cat away' with school fund meant to be used for procurement of school plants. Also, commonly reported cases of corrupt officers from Ministry of Education who visit schools to ascertain level of compliance with required school plant in schools only go to schools to extort money and leave their statutory functions unattended to.

3. **Cultural Problem:** Nigeria is an amalgamation of over 300 ethnic groups and each of these ethnic groups has its own unique culture and worldview. The fact remains that these ethnic groups within our country are not only multitudinous but are also distinctly pronounced in culture. Therefore, the task of planning school plant that will meet the entire needs of students from different ethnic groups is a serious undertaking which requires the appointment of professionals who have adequate knowledge about what it requires to plan school plant.
4. **Manpower Problem:** Top government functionaries and political class in most cases exert their influence over whom to be appointed as school plant planners without considering and evaluating their suitability, capabilities and cognate experience for the job. Meanwhile, when unqualified educational planners are made to be in charge of planning school plant either at national or at state/grassroots level, there is certainty that the seed of ineffectiveness and inefficiency will germinate in the school system.
5. **Political Problem:** Another monumental challenge confronting school plant planning in Nigeria is the frequent change of government and this does not bode well for the smooth implementation of school plant planning. Since October 1960 when Nigeria gained independence, policy inconsistency by the government has been the major problem of the country. Successive administration in the country had had significant change in government policies to suit its administration. This poses a great concern to majority of private-owned schools in the country, because, school plants' requirement and recommendations frequently change as new government comes into power.
6. **Administrative Problem:** Both technocrats and bureaucrats play a pre-eminent role at the implementation stage of educational planning through the control and operation of

governmental administrative machinery. Unfortunately, most of the education plans have ended up failing because of the internal rivalry and clashes of interest that exist between technocrats and bureaucrats. For instance, technocrats do claim that they are vastly superior to the bureaucrats while the bureaucrats do claim otherwise. Such internal rivalry arising from the plan environment usually leads to slowness of action in plan implementation. This also surface in private-owned schools where school owners who have little or no professional experience in right mix of school plant planning that could deliver the deliverables will be insisting that school facilities that appeal to his/her fancies should be secured irrespective of its relevance.

7. **The Problem of Accessibility to Fund:** Acquisition of proper and well-articulated school plants require huge funds. Most of the school proprietors/proprietresses are facing a lot in accessing fund from our financial institutions. Some of these challenges ranging from high interest rate, lack of collateral, lack of surety, etc hamper execution of proper school plant planning among private school owners.
8. **Economic Recession:** Due to economic recession that the nation and the world at large are witnessing, the prices of facilities have been skyrocketed in the recent times. This among others makes procurement of these facilities unaffordable by prospective school managers/administrators thereby making them resort to running the school with poor school plants/facilities.
9. **Government Policies:** Government policy becomes a threat when prospective school owners cannot afford what it takes to meet up with such policy. In a situation where government set a policy that is not realistic or too demanding for the establishment of school, proprietors/proprietresses disregard such policy and operate with what they can

afford not minding whether or not it will enhance effective teaching and learning process and academic performance of the students (Soli, 2015).

2.4.1 School Plant Management

The word management has been viewed in diverse ways by different authors. Griffin (2003) viewed it as a set of roles which point at making good use of available resources in the achievement of organizational objectives: Terry and Franklin (2003) were more involved in the activities of management. According to them, management is a process involving the activities of planning, organizing, coordinating and controlling; execute to achieve the stated objectives with the utilization of human and material resources. School plant management is an area of management which deals with making of decisions by individuals and groups in school facilities based on requirements. According to Ejieh and Fadipe (2011) school plant management involves a number of related activities to determine the need for school plants, educational programme, school facility design, building construction, furnishing of the school at the right time. Effective school plant management ensures that school facilities are adequately used for teaching and learning without disruptions. Facilities management is a process that ensures that structures support the organizational need. School plant management should ensure that school facilities support the provision of education by a school (Fenker, 2004).

According to Agboola (2015) school plant management should ensure that facilities are kept in good condition and are properly utilized to achieve the purpose for which they were meant. Ogbodo (1995) classified school plant management into three activities namely: procurement (availability), utilization (usability) and maintenance (renovation). This classification is adopted in this study and only availability/procurement and utilization were of

the interest of this research work. That means that this study is interested in all the external conditions, objects available and their usage in public secondary schools in North-west Zone, Nigeria. These include classroom space and furniture among others. The term furniture refers to such items as desks, tables, chairs, seats, and benches. They can be made of wood, mental or plastics and are easily moveable. According to Agboola (2015) furniture in education are provided in the school to enhance students' academic achievement. The two major factors that needed consideration before the provisions of furniture in the school are comfort and the safety of the students who will make use of the furniture. Furniture is an important aspect of the school management because students spend most of their time seated on it. "It should be moveable and easy for arrangement as to allow students sit in best seated for their learning pattern" (Lawrence, 2009, p.167).

Consequently secondary education as the driving force of national development can only be successful when its objectives are well considered and administered using the available facilities. Thus, it is the responsibility of school administrators to ensure that all available resources are geared towards the attainment of the set objectives. In the secondary schools system, the goals are facilitated by the principals who are the de facto heads and have the administrative command of authority, unity of subordinates as well as ensuring division of labour for accomplishing tasks and responsibilities (Okoroma & Roberth-Okah, 2007).The success of a principal rests within his ability to manage available human and non-human resources in the attainment of set objectives. Idoko (2005) maintained that one of the primary functions of secondary school principals is management and maintenance of school plant. Accordingly, Okoroma (2016) inferred that principals are the chief executive officers of secondary schools who influence the results that are obtainable with available educational

resources. Therefore, the administrative functions of planning, organizing, directing, staffing, coordinating, reporting and budgeting are part of the daily activities of principals.

School plant, however, is important to the administration of the school activities and principals as heads of these schools always ensure proper management of the available resources to achieve administrative success. Administrative success in this context is the level of performance in achieving set objectives. It is the results attain based on laid down procedures and responsibilities. Akomolafe (2012) viewed administrative process as the positive responses, efforts and actions with the intention to accomplish stated goal. This scholar stressed further that it reflects on decision making, delegation of duties to subordinates, setting good examples and motivating the teachers and the students alike in an effort to create a conducive working environment. This, therefore, bothered on accomplishing the set goals and objectives as well as enhancing productive capacity of the subordinators. Similarly, Ibukun (2011) viewed administration as the rate or frequency at which principals carry out their daily functions towards the attainment of educational goals. Eniola (2006) as cited in Muraina (2014) stated that the success and effectiveness of the principals depend on his ability to discharge managerial functions and make judicious use of his body of knowledge and skills. A skilled and competent principal is one who facilitates the use of the inputs to the school by ensuring that desired goals are achieved (Akinola, 2013). school include: level of discipline, tone of the school, school climate, teachers‟ performance and the number of students who successfully pass their school leaving certificate examinations. Hence, there is need for principals to justify the use of school plant by producing adequate results which will reflect good performances (Okoroma, 2000).

The International Facilities Management Association (2002) described school plant management as the practice of co-ordination of the physical workplace with the people and the work of the organization; it integrates the principles of business administration, architecture and the behavioural and engineering sciences. School facilities management is the application of scientific methods in the planning, organizing, decision-making, co-ordination and controlling of the physical environment of learning for the actualization of the educational goals and objectives. This involves among other things, collective decision making in relation to selection of site for establishment of new schools, design and construction of new school plants including grounds, renovation and modernization of old plants, provision of equipment for academic and non-academic activities, maintenance of all facilities and review of management practices and processes.

An aspect of school management that is generally overlooked is school plant maintenance. When new buildings are constructed and taken over by the appropriate authorities, practically no attention is paid to the maintenance of such buildings. Several school buildings that are over fifty years old have never undergo renovation or any form of modernization in spite of the changes in the educational system. Facility maintenance is an issue that concerns all levels of the educational system ranging from the pre-kindergarten to the tertiary levels. Some of these facilities are architecturally obsolete and therefore cannot contribute to functional education. Maintaining the new buildings, renovating and modernizing the old ones require considerable expertise and commitment of human and material resources. Changes in weather conditions and lack of maintenance culture are responsible for the aging and deterioration of school buildings, grounds and equipment. School managers and teachers who constantly use school facilities lack knowledge of facilities maintenance planning.

Consequently, they fail to integrate facility maintenance into the management of the school. The issue of facility maintenance is haphazardly addressed at all levels of the educational system. Repairs take place only when problems arise due to break down of the existing facility. Facility maintenance entails providing clean and safe environment for teaching and learning. It also involves provision of adequate facilities for teaching and learning. This type of maintenance should be adopted in the facility maintenance plan. These are preventive, routine, emergency repairs, and predictive maintenance.

2.4.2 Relationship between School Plant Planning and School Achievement

The extent and quality of the plant planning such as site selection, size of classrooms, quality and size of library, types of sporting facilities, electrification etc. will determine the quality of education that will be provided by the proposed school. Asiabaka, (2008) opined that the level of education planned for will determine the nature and types of the school plant to be provided.

In selecting a school site, accessibility and proximity is a vital factor to be put into consideration. From my observation and personal communications, many pupils in public schools trek daily to school; some cover up to 2 km. This is in line with the observations of Arubayi (2005) and Duze (2005) that a majority of pupils in Nigerian schools especially in the rural areas, walk long distance to and from school on daily basis. This definitely has a negative impact in their academic performance as it could promote absenteeism, fatigue leading to loss of concentration and interest in school activities, with indirect negative effects on delinquency and indiscipline. Therefore, schools should be sited in close proximity to pupils with good road networks to enhance its accessibility. Another important factor to consider should be the geographical location of the school. The location of a school has impacts on the conduciveness

of learning, teaching and also on the average academic performance obtained of the pupils. School should not be sited near markets, hospitals, highways, railway stations, refineries, churches that conduct services during school hours, campaign grounds, industries, or close to hazardous environments like rivers, steep hilltops, high tension electric lines, or close to dreaded or bizarre environments like mortuaries, burial grounds, and ritual shrines (Ebinum *et al*., 2017).

Poor conducive learning environment has been implicated to lower academic performance among pupils and students such that they breed distractions of different sorts. On that note, Ajayi and Yusuf (2010) indicated poor learning outcomes to manifest in poor students' academic performance in both internal and external examinations. Primary schools should be sited on plain grounds and not on unfavourable topographies such as slopes, rocks, and swampy area as they can be source of accidents for pupils especially during their play time. Some of these accidents could be casual or fatal; a situation that can hamper academic performance. Bakare (2004) reported that school topography could affect the academic performance of the learners. There are conflicting views about effect of school site on academic performance. Bankole (2003) and Osiki (2004) in their different studies found out that there was no significant relationship between school site and learning outcomes while Ajayi and Yusuf (2010) reported the outcome of their study, that there is a significant relationship between school site planning and learning outcomes. This report further stated that even in the midst of better job commitment, administrative effectiveness and appreciable incentives for teachers and pupils, wrong school sating will not guarantee effective learning outcome. That in fact will lead to negative academic performance. Classroom and other instructional spaces should be planned in such a way that allows for cross-ventilation and other conducive learning

environment. Classroom and its facilities assist learning process especially in primary schools where audio, visual and audio-visuals aid in effective subject delivery and enhance pupils' understanding and retention. Since instructional space is directly linked with teaching and learning activities, it has a positive relationship with academic performance which is in tandem with the result of the findings of Ajayi and Yusuf (2010). Moreover, a well-equipped administrative space can be linked to quality service delivery.

Conversely, a study conducted by Ajayi and Yusuf (2010) revealed that there is non-significant relationship between administrative space planning and students' learning outcomes, an implication that better administrative space planning may not warrant better learning outcome. Good recreational facilities will invariably enhance body and mind development of pupils. The secondary school age is known for cognitive development. Indoor games such as chess and ludo will enhance cognitive and behavioural development as they require brain tasking and also expose the students involved to the concept of thinking outside the box. This will invariably boom their academic performance especially in sciences, verbal and quantitative reasoning.

2.4.3 School Plant Planning Practices

Planning refers to the process of deciding what to do and how to do it. It occurs at many levels, from day-to-day decisions made by individuals and families, to complex decisions made by businesses and governments. This study therefore, focuses on school plant planning practices in public senior secondary schools. Planners are professionals who facilitate decision-making. They do not make decisions themselves; rather, they support decision-makers (managers in education, public officials, and citizens) by coordinating information and activities. Their role is to create a logical, systematic decision-making process that results in the

best actions. Planning requires preparing for a future that is often impossible to predict, and so must incorporate uncertainty. Forecasts should usually describe ranges and probabilities rather than point estimates, and plans should usually incorporate contingencies. Such contingency-based plans can include various actions, some to be implemented only if future conditions require. For example, a parking management plan might include some strategies that will be implemented immediately, some that will be implemented a few years in the future, and some that will be implemented only if warranted (Booz, 2012).

The Nigerian education consists of three levels which include primary, secondary and tertiary education. Each of these levels of education has its distinct features which planners must take into consideration, otherwise the school plant planning will be considered a failure if it does not meet the requirements of the level of education being planned for. For example, the principles guiding school site selection, size of classroom, hall, laboratories, and libraries are different in proportion to the level of education. This therefore means that the level of education being planned for will determine the nature and types of the school plant to be provided (Asiabaka, 2008). However, for the purpose of this research, the school plant planning practices will determine if the following are given due consideration:

a) **Development of Educational Programme:** To venture into school site selection, school plant design and construction without a prior dynamic, creative, relevant and functional educational programme already in place is to venture into futility. In essence, development of educational programmes is the kickoff of school plant planning process. According to Amanchukwu and Ololube (2015), the logical place to start school plant planning is the development of educational programme. In like manner, Asiabaka (2008) asserted that planning of school plant starts with the conceptualization of the educational programmes to

be offered in the school. It is therefore advised that adequate time should be devoted in developing a functional educational programme for the school before school site selection. In educational programme development, the following should be borne in mind and adequate attention is expected to be paid to it: The type of school proposed, the grade level of target audience, specific needs of the pupils and community where the school is to be situated, the scope of the program, the curriculum content, the required space a student needs to perform each type of the educational experiences, the building, furniture, equipment and instructional materials. When these are adequately considered in developing an educational programme, the educational system will be functional and its recipient will be self-reliant.

b) **Selection of School Site:** Having developed a functional educational programme, the next stage of school plant planning practices is to carefully select a suitable site for the construction of school buildings. In selecting the site for school, the following important criteria must be taken into consideration;

i. Accessibility: The school should be sited where it is accessible for easy location.

ii. Geographical location: The school should not be sited near markets, highways, rail line, industries and airports to avoid external distraction or disturbance knowing fully well that effective teaching and learning require total focus as well as rapt attention of students.

iii. Topography: School should be sited on a plain ground, not rocky and hilly area in order to avoid students' injury while playing.

iv. Health safety: The school should not be sited near industrial areas where carbon-monoxide is emitted from heavy duty machines. It should not also be sited near cigarette factories and

abattoirs as offensive odours which emanate from such areas may hamper the health of students and staff.

v. The soil condition: The planner may need to consult a soil geographer who will examine whether or not the soil condition of the selected site is prone to gully erosion or other environmental decadence so as to avoid collapse of building in the nearest future.

vi. Expansibility**:** The site should have adequate space that can accommodate future expansion.

vii. Security: The school should not be sited in an area where rape, cultism, stealing, drug abuse among others are daily occurrences. The life of teachers and students in such area will no doubt be threatened and thus affect teaching and learning.

c) **Acquisition of Land:** The educator, at this stage, acquires the land through purchase and ensures that the necessary legal documents such as land agreement, survey plan, certificate of occupancy etc. are obtained. This is necessary because land matters are very sensitive issues that require adequate documentation to forestall future challenges and trespassers on the land. Meanwhile, in a public situation, the master plan resides with the government who provides facilities like schools, security, hospital etc. for community development.

d) **Designing School Plant:** After acquisition of land comes the school plant design stage. At this stage, the planner consults an architect for proper architectural expression of the planned curriculum. The architects help to translate the building needs as conceived by the educator into practical terms through designs and specifications (Ugiomoh, Ememe and Obike, 2013). It is important to note that no architect, no matter how knowledgeable, skillful and talented he might be in school plant design, can design a functional school plant without proper guidance from the educators who will use it. Unfortunately, most private school owners often fail to employ the service of architects. This therefore results in the

construction of school plants that are not attuned to the specific needs of students who would use them or the community in which the school is located which of course inhibits the progress and development of education in Nigeria (Amanchukwu and Ololube, 2015). Expectedly, the architect should not only know what subjects would be taught but should know the basic educational concepts and student experiences that underlie the design of the buildings. He should know what equipment is needed and how much space the teachers feel a student needs to perform each type of educational experience (Ogbodo, 2005) as this could assist him/her in designing a functional school plant that will suit the intended curriculum and use.

e) **Approval of the Building Plan:** The Ministry of Education as appropriate authority through which school operation is approved, is at this stage fully involved to see to the approval of the building plan. Officers in the Land Matters Unit in the Planning, Research and Statistics of the Ministry of Education for Secondary Education, SUBEB for Primary education and National Universities Commission (NUC) for Universities vet as well as correct errors where necessary in the building plan so as to meet the standard specification before approval.

f) **Construction of School Plants:** It is unwise to embark on the building construction without feasibility study on cost and estimate. It is expected therefore that planner/educator consults other experts to estimate the cost of the building so that he will know how much will be required at each stage of the work (Ololube, 2013). One must ensure that the huge investment in school plant is justified by providing its long term usefulness. Thus the following principles are suggested as guidelines:

i. Flexibility: The school buildings should be constructed in such a way that it is adjustable to future modification both in the structure and school curriculum.

ii. Durability: The building should be constructed with materials that last for a very long time.

iii. Maintainability: The building should be constructed with materials that can easily be maintained with possible minimum cost.

iv. Conformity: The structures must conform to the standard specifications required by the government.

g) **Provision of Educational Resources:** Educational resources are perhaps the wheel on which educational system ride. These resources include human, material, financial and managerial. The availability and adequacy of resources are indeed very germane to the school success (Adu, Akinloye and Adu, 2015). It is important that adequate provision of resources be made according to standard specifications since the school curriculum cannot be implemented if the resources needed for teaching and learning are not available. When resources are provided according to standards, they provide facilitating and stimulating environment for effective teaching and learning in schools (Ugiomoh, Ememe and Obike, 2013). Unfortunately, African leaders earnestly desire good education programs for their people, but in many cases the resources are so meager that little progress can be made (Amanchukwu and Ololube, 2015).

h) **Implementation of School Curriculum:** School curriculum remains an ordinary document until it is fully and well implemented. According to Ali and Ajibola (2015), objectives of any level of education cannot be achieved if the planned programme for such level of education is not well implemented.

i) **Proper Utilization of Educational Resources:** National educational goals could be achieved and realized when human, material and financial resources within and outside the organization (such as school system) are well harnessed and judiciously used by the management. However, in Nigerian educational system, the available resources are often not properly utilized due to poor planning which ignores educational goals, types of schools and the number of classrooms required if the quality of education is to be maintained (Amanchukwu and Ololube, 2015).

j) **School Plant Maintenance:** All components of school plant need to be maintained regularly and made functional in order to ensure a long life span since they exist to facilitate effective teaching and learning. The school head must ensure that the equipment/facilities that have either been broken, worn out or stolen must be replaced and roofs that leak must be repaired without delay as prompt maintenance will no doubt continue to create an enabling environment conducive for effective teaching and learning. Ajayi (2007) identified five types of maintenance in the school system. These are:

i. Corrective maintenance: This is concerned with repairing faults on time. Repairs of electrical faults in the school building and mechanical faults in generating sets and vehicles are examples of corrective maintenance.

ii. Preventive and predictive maintenance: This refers to maintenance carried out for the purpose of preventing break downs or situations which can put part of the plant out of use.

iii. Shut down maintenance: This involves the shutting down of a school plant or part of it in order to carryout maintenance work.

iv. Running maintenance: This is the maintenance carried on while the plant or a component of it is operating.

v. Break down maintenance: This focuses on rectifying breakdowns in any component of the school plant.

k) **Evaluation of School Programme:** Whether the educational progranmme is fully and well implemented, it has to be evaluated. This help to know the extent to which the programme has been implemented. School programmes are evaluated for the purpose of efficiency, effectiveness and productivity. In the school system, the evaluation of programmes should be based on a thorough knowledge of their results or outcomes, roles and functions in consonance with stated goals and objectives of the school system. School programmes are evaluated through various ways. It could be by roles, results, functions and expectation or set standard. If a programme is evaluated according to role, the ability of a programme is assessed to know whether it delivers the deliverables or not. When a programme is evaluated according to results, programme performance is measured against predetermined goals and objectives of the school. When a programme is evaluated according to function, the efficacy of such programme is tested to know if the outcome of the programme is able to function as programmed and budgeted. When a programme is evaluated according to expectation or set standard, the outcome of such programme is compared at the end with the expectation set at the beginning.

Corroborating the above, Lockwood (2004) lament that the following help achieve effective school plant planning practices:

i. Planning should be integrated, so individual, short-term decisions are consistent with broader, strategic goals.

ii. Analysis should be comprehensive, reflecting all significant perspectives, impacts and objectives. A broad range of options and impacts should be considered.

iii. Planners should be objective, fair and respectful.

iv. The planning process should be understood by all stakeholders, with clearly defined vision or problem statement, goals, objectives, evaluation criteria and performance indicators.

v. Insure adequate public involvement. Stakeholders should be kept informed and have opportunities for involvement.

vi. Clearly define the goals (what you ultimately want), and regularly revisit the question, "what exactly are we trying to accomplish?"

vii. Consider a wide range of possible solutions including some that may initially seem unrealistic but could be appropriate as part of an integrated program. Support innovation: recognizing that some new strategies fail, but even unsuccessful experiments provide useful information.

viii. Identify resources, constraints, and conflicts. Draw attention to potential problems.

ix. Make sure analysis results are comprehendible to the intended audience, using suitable language and visuals (graphs, maps, images, etc.). Highlight key differences between options.

x. Be prepared for setbacks. A planning process sometimes initially fails, but succeed if repeated due to changing circumstances, more stakeholders understanding and commitment.

xi. Changes should be implemented as predictably and gradually as possible.

xii. When appropriate use contingency-based planning, which identifies a wide range of potential solutions and implements the most cost-effective strategies justified at each point in time, with additional strategies available for quick deployment if needed in the future.

2.4.4 Concept of Secondary Education

Secondary education is education children receive after basic education and before the tertiary stage (Federal Republic of Nigeria [FRN], 2004, p18). Secondary education in Nigeria started in the year 1859 when the CMS Grammar School Lagos was opened. This was followed by Methodist High School Lagos. It is interesting to note that the first Government Secondary school, Kings College Lagos was established in 1927 (NTI as cited by Nyamibo, 2006). Today there are many schools found by private, community, faith based institutions and the government at various levels. The management of these schools has been in the hands of the government and these private individuals and groups. These schools have contributed in no small measure to the educational development in Nigeria and manpower needs of the nation. Of course secondary schools serve as the recruitment grounds for the tertiary institutions in the country. In the contemporary Nigeria, it appears they are producing more than the tertiary institutions can absorb. The place of secondary school education in the country's educational system is of paramount importance. However, it appears that secondary schools are not living up to expectation in discharging their obligations. Omoregie (2005) lamented that the products of today's secondary system can either usefully live in the society or move into higher institution without their parents' aid or forgery. They cannot in fact think for themselves or respect the views and feelings of others. In other words, they have no iota of dignity of labour

except for the things that will give them quick money. It must be stressed here that education cannot be an instrument par excellence for achieving national development where secondary education is not effectively managed to accomplish its aims and objectives. According to Ajayi (2002) and Omoregi (2005) secondary education in Nigeria is riddled with crises of various dimensions and magnitude all of which combine to suggest that the system is at the cross road.

However, senior secondary education is the intermediary between basic and tertiary education. It is designed to equip the students to either transit to the tertiary level or to exit into the world of work with some basic skills, competencies, knowledge and attitudes. This obviously makes secondary education very critical in the entire education process since its basic objective is double barreled. The main reason why the acquisition of senior secondary education in Nigeria is very important is because, the curriculum of basic education is not sufficient enough to help a child to acquire certain educational qualities such as lasting literacy, communication skills, language fluency, and numeracy skills (Chinelo,2011). In other words, it is at this educational stage that the additional knowledge and skills needed to help the child function effectively at the tertiary level are inculcated into him/her. This however, cannot be achieved without proper planning of the school plant.

The researcher however contends that the secondary education is the education that intermediates between primary and tertiary levels of education. Senior secondary education is the education children receive immediately after basic education system. It is a link that paves way to the tertiary level of education and useful living in the society. The quality of the tertiary education depends largely on the quality of education children received at the secondary education level.

2.4.5 Aims of Secondary Education in Nigeria

The Federal Government of Nigeria (FRN, 2004 pp18-19) has clearly spelt out the aims and objectives of secondary education in the country to include preparation for:

a) Useful living within the society; and
b) Higher education

In specific terms secondary education shall:

i. Provide all primary school leavers with the opportunity for education of a higher level, irrespective of sex, social status, religious or ethnic background.
ii. Offer diversified curriculum to cater for the differences in talents, opportunities and future roles,
iii. Provide trained manpower in applied science, technology and commerce at sub-professional grades,
iv. Develop and promote Nigerian languages, art and culture in the context of world's cultural heritage,
v. Inspire students with a desire for self improvement and achievement of excellence,
vi. Foster national unity with an emphasis on the common ties that unite us in our diversity,
vii. Raise a generation of people who can think for themselves, respect the views and feeling of others, respect the dignity of labour, appreciate those values specified under our broad national goals and live as good citizens;
viii. Provide technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development.

The above stated aims and objectives of secondary education give a sense of direction as to what secondary education should be in Nigeria. There is no doubt that these objectives are

likely achieved. For instance secondary schools have remained the recruitment grounds for tertiary institutions in Nigeria while absorbing the end products of the primary education. What is alarming is the rate and quality of the products produced nowadays when compared and contrasted with the yesteryears. It appears secondary schools do not meet up with the societal demand in terms of quality. It appears that secondary education is bedeviled by a lot of challenges that are pulling down the system at a faster rate.

2.4.6 Steps in Developing a School Plan

In order to ensure a successful school plan, Sule (2019) stated in his work that the following major steps should be adhered to:

Step I: Situational Analysis: the first step in preparing the plan is the situational analysis. As schools are educational organizations, the planners should be aware of the general aims and objectives f education. The factors that need to be considered here include:

a. Various philosophers have defined the objectives of education defending on their perceptions. Transmission of the cultural heritage, socialization, personality development (physical, mental, emotional, social and spiritual) skills to earn a living are some these goals. Teachers as educational professional are aware of these.
b. The National Education Commission (NEC) in the first report of the commission (1992) and proposal of the National Policy framework of general education in Sri Lanka (2003) have spelt out the national goals and a set of competencies as an approach to achieving these goals. The study and the reflection on these will help to determine the goals and objectives of the schools.
c. The official policy document of the government which contains statement on education policy. The constitution of the democratic socialist of Sri Lanka on its chapter in directive

principles of state policy refers to the need for eradication of illiteracy and providing equal opportunities in education from Kindergarten to university levels. The there are the education acts and subsidiary legislation, reports published as sectional papers and ministry circulars. Ministry of education publishes five year development plans under the Education Sector Development Framework and Programme (ESDFP). Even the manifestos of political parties refer to their education policies.

d. Children are the most important group in the school. The school is maintained for their benefit. Planners must know how children grow up, how they behave, what are their needs and problems, in short the psychology of child development.

e. The main transaction in the school is facilitating children to learn or motivating them, hence it is also necessary to know how children learn. Teachers are proficient in methodologies of education, child-centred and activity based approaches to learning.

f. The curriculum prescribes the subjects and the content but it is necessary to have an understanding of the co-curriculum or the hidden curriculum through which the character building takes place.

Step II: Understanding the School

i. The physical environment of the school, whether there is catchment area from where the children are coming to school should be taken into consideration. In the rural area, there is only one school in the village. Do all children enroll in that school or do they go out to other schools? If has secondary classes, do children from other school seek admission to this school? The distances children have to travel. If the school is in urban area it has no clear catchment area. There are the feeder schools, children travel by bus from different directions. What are their problems? The socio-economic conditions of the community?

Who are the people in the community who can support the school? How can they help financial or by rendering a service? How can school community relations be developed for mutual benefit?

ii. The basic data about the school, how classes should be organized to obtain maximum result from students number, teacher requirements, physical facilities, lands, buildings, laboratories and technical rooms, auditoriums, playgrounds, libraries and health facilities and whether these are adequate. As a guideline the standard facilities required for school depending on students' enrollment and the subject offered are specified by the Ministry of Education. The facilities available at school as against the requirement can be checked and the gaps identified compared to national norms.

iii. Identify the existing problems with regard to the instructional programme.

iv. How is attendance and participation of students? What are the reasons for absenteeism?

v. Are the students performing well at the school tests and assessment as well as public examination? What are the reasons for low-performance?

vi. What are the subjects and subject-streams taught in the schools? For example, optional, technical and aesthetic subjects.

vii. What are the subjects in which children are weak?

viii. What are the available extra-curricular activities?

ix. What are the rates of students' participation in co-curricular and extra-curricular activities?

x. What students' welfare measures are implemented in the school, for instance school health programme, midday meal, canteen facilities, welfare clubs e.t.c?

xi. What are the common disciplinary problems?

xii. How are teacher welfare facilities? What techniques are in place to promote collegiality? What are the welfare facilities available for teachers? Do they consider a school to be a place where they can spend their free time leisurely? What about living accommodation for teachers from distance places?

xiii. What are the resources available to the school? Apart from the supply of human resources, what other grant are given by the government? Are there ways and means of enhancing these grants? What are the other organizations which help the school, e.g NGOs, parents, past-students, politicians and other donors? How much can be generated from school resources, school garden, renting out school premises and fund raising activities? (Virginia Department of Education, 2016).

It will be very useful for planning and management of the school to have a complete data-base on the school that will provide all the data necessary to take rational decisions. In large schools and where facilities are available, the database can be computerized and you can have an electronic database. If such facilities are not available, it can be maintained manually but should be kept orderly so that it can be easy to trace information. In this process, the planning committee should compare their own analysis of school data and also the information and data revealed by the Quality Assurance Criteria-based School Internal Examination and External Evaluation.

Step III: Preparation of the Strategic Plan

The planning after identifying the goal to be attained over the long-term will have to formulate a vision and a mission for the school. The vision is the ideal state of affairs which the organization will eventually achieve in the long-run. It should be a statement which will rally all the stakeholders together and strive to achieve the aim. The mission statement is a short

paragraph summarizing the overall goal which the organization is trying to accomplish, the method it is going to follow to reach the goal and the basic principles and values which will guide the fulfillment of the mission.

The next step is to set up overall policy goals determined on the basis of situation analysis to be reached in the long run. It is not necessary to specify the details but a broad indication of the long term aims of the organization, pointing out the direction in which the organization is desirous of reaching. They are a part of the policy setting process.

The most important stage in planning is to prepare a medium term strategic plan for the organization. This may be for a period of five years. It defines what needs to be done, when, how and with what resource inputs in order to attain the long-term policy goals. It sets specific objectives, targets and outlines implementation programmes including the financing of the plan. An important task here is to identify the strategies through implementation of which the intended results are to be achieved. The objectives as stated earlier should be SMART (Specific, Measureable, Attainable, Realistic, and Timely).

A group of activities which are to be implemented to achieve the related targets is called a programme. The programme may have one or more objectives. It could also be that the programme may have one principal objective and the components parts have specific objectives. A number of strategies have to be designed to achieve the objectives in the programme. There can be specific projects under various strategies. The strategy will be implemented through a number of activities under one or few projects. The projects and activities have to be implemented within a specified time period. Some activities need to be completed before the next activity begins, whereas in some cases, they can be carried out

concurrently. The plan should also indicate the costs, the person responsible for accomplishing the task and the output from the activity. Sometimes if there is a greater activity which requires attention and crucial for the success of the plan, a project can be developed. It will have an objective, strategies for implementation, activities, costs and other details as described above (Hommeier and Kluth, 2011).

Step IV: Preparation of Annual Implementation Plan

The medium term plan is generally prepared for a period of five years (in the general education sector). The next step would be to derive the AIP for the first year based on the five year plan. There may be certain objectives that can be achieved in the first year itself while there may be others which may take more than one year or running through the full five year period. Unlike in the five year plan, the strategies and activities have to be broken into greater details in the AIP. The AIP should be prepared as a separate document and as before the details should be presented in a grant chart giving the strategic, activities, timeframe, responsibility, cost and outputs (Fasasi, 2008). Planning is a continuous process. Once the activities envisaged for the first year of implementation of the five year plan are completed, it is necessary to prepare the rolling plan for the next five years. If for the first five year is for the period 2015 to 2019 at the end of the year 2015 next five year plan for the period from 2016 to 2020 needs to be prepared. It is an easier task than the preparation of the first plan as most of the data is available. What has to be done is to take stock of the achievements of the first year and amend the plan in the light of experience or due to change in the environment. This approach is known as rolling planning.

Step V: Implementation and Monitoring

Implementation and planning is a continuous process in planning. Once the plan documents are finalized, arrangements should be made for implementation. The work to be carried out should be entrusted to various members of the organization. They should be provided with necessary resources, men, materials and money. The leader should coordinate the implementation of activities. Once the implementation commences, it is necessary to monitor the progress. Monitoring is an internal management process by which systematic information is gathered and analyzed with a view to identify strengths and weakness and formulating practical proposals for taking necessary actions to reach the planned targets. A description of the monitoring arrangements is an integral part of the plan. Such arrangements must be summarized in the form of a monitoring framework which includes indicators, methods, responsibilities and timeframe for monitoring the progress of implementation of the plan in order to achieve the objectives and targets.

A complete monitoring mechanism:

a. Gives immediate signals when the plan implementation is off and track
b. Helps to maintain a critical path
c. Helps to identify unforeseen elements and situations
d. Records information for evaluation and future planning
e. Provides a basis for decision making

In the process of monitoring, it has to be remembered that goals, objectives and targets as well as the activities that lead to the achievement of goals should be monitored. So both goals monitoring as well as activity monitoring has to be included in the monitoring framework. Goals are monitored using indicators. Indicators may be classified as inputs, processes and

outputs. Indicators are derived for information. Information is a set of processed data that can be tabulated to help users understand the pattern and trends. A statistical reports containing tables on different headings is an example of information.

Step VI: Financing the Plan

The plan also should give an estimate of the cost of implementing the plan. As teachers' salaries are paid from government funds by the zonal education office, it is not necessary to include teachers' salaries in the cost estimates of a school plan but it may be useful to have such data collected as it is necessary in computing per-student expenditure. The expenditure of the medium term plan can be shown in charts by main items while the expenditure for the AIP should indicate details by activities. Generally, expenditure is categorized under two different headings: current and capital. The sources of funding too need to be shown.

Step VII: Evaluation

Evaluation is a high level process than monitoring and is a tool used to assess the achievement of goals and objectives. It is carried out at longer intervals such as mid-year, end of year, mid-term and end of the plan period. In an evaluation, the aim is to find out whether the strategies adopted are working satisfactorily or need amendments or new strategies are necessary and the goals and objectives are realistic or there are unanticipated constraints. It also examines the expenditure patterns and reviews the financial plan.

2.5 Administrative Facilities Planning in Secondary Schools

Planning is an indispensable tool for achieving any meaningful progress in any aspect of human endeavor. Soraj (2017) conceived planning as preparing for a goal oriented action through the most advantageous means. In other words, it is the exercise of intelligence to deal with situations as they are, and finding means to solve them optimally. Planning is a continuous

exercise that must be regularly carried out in response to the dynamic behavior of the environment. It is a proactive management strategy that significantly guarantees relevance, functionality, effectiveness and economy. Planning education therefore, remains sacrosanct if educational goals and objectives, at all levels are to be realistic, rational and relevant.

A very important aspect of school plant planning is administrative facilities planning which is concerned with spaces and buildings specifically designed for administrative purposes. They include the Principals and vice Principals offices, other administrative offices, staff rooms, guidance councilors' office, security office and health clinics etc. The fundamental function of the administrative building is to serve the administrative needs of the school (Strincherz, 2000). It is planned to feature openness and easy access for students, teachers, non-teaching staff and the public. The administrative offices shall be pleasant and attractive in design, reflecting the spirit of friendly and helpful atmosphere. The operation of administrative offices shall provide for children, teachers and parents opportunities for active participation in the democratic process. These facilities are to be centrally located where they will be easily accessible to the public. While the offices need not be too elaborate, their general appearance should impress the visitors. Ideally, the main office should be divided into two areas, one of which should be large enough for conferences with teachers, or other groups. The outer office should provide adequate space for clerical personnel and equipment. In a large school, a separate office should be provided for the Vice Principals. This is in consonance with the position of Fillion (2006). The scholar highlighted that central office should be equipped with adequate filing facilities, intercommunication system, suitable furniture, safe electrical equipment and air-conditioning systems. He added that adequate security should be provided for school funds and financial records.

The administrative facilities of secondary schools settings have a direct influence on the school instructional processes. According to Adebayo (2001), there has to be administration in any organization as long as an organization consists of people brought together in hierarchical set-ups, making use of tools, equipment, human and material resources, all in the quest of attaining the goals for which the organization is established. This implies that, in secondary schools, the hierarchical setups have indicated that the principals are heads, with the major duty of pooling the resources of the institutions, both human and material together for the achievement of educational goals. In order to realize these goals of education, the school heads as administrators are charged with the task of deploying qualified and specialist instructors within the system for positive results. The school heads who are well trained to manage the system contribute immensely in the implementation of the curriculum in secondary schools.

The idea that human and material resources are to be assembled together by educational administration, within the school system for effective teaching and learning cannot be overemphasized. It is supported on this ground that, in secondary schools, the principals play the role of administrators and that of supervisors, even instructors and they also participate in teaching activities when necessary. All staffs, teaching and non-teaching are made to realize their responsibilities of improving and developing instruction in the school system. This is possible through harnessing the available resources to the schools to realize the goals of education. This ground is extolled by Edem (2008) that educational administration focuses on the enhancement of teaching and learning process. Classroom instructional process gets its productivity index by adequate supervision programme from the school principals. The principals' ability to monitor the entire school programmes depends on the provision of

effective administrative space for them to be able to carry out their assigned responsibility diligently.

Subsequently, effective administrative facilities and supervision of instruction in education, is anchored on the adoption of scientific application of knowledge through which the objectives of education can be attained. School administrative structure has a direct bearing on state educational policies. It should be stated here also, that effective use of instructional materials by teachers for proper motivation of students is as a result of effective administrative facilities. Administrative facilities are also required for the food service director, head custodian and any other staff member with administrative duties. The space needs to be properly designed and furnished to reflect the specific administrative function. It should not be simply a desk placed in the corner of a storage room or similar type of space. The planning of guardian counselors' office should be done in such a way that it should be located near the library/media centre, to encourage greater students use.

Furthermore, Fillion (2006:224) emphasized these specifications for school facilities:

i. One counselor's office for every 300 students of high school.

ii. Each councilor's office should be at least 100 square feet in size.

iii. One conference room large enough to seat twelve people comfortably.

Also, buildings, such as conference room facilities, clinics, auditoriums, etc, should be properly planned and equipped so as to make them meaningful, relevant and functional in schools. For instance, teachers require a properly furnished room to prepare lessons, review students work, and meet with individual students and parents. There should also be a place for teachers to relax and socialize during break. A teacher lounge can be durable as a meeting facility. On the aspect of school health facilities, qualified health personnel should be consulted

when planning the health facility. It should be located near the guardians' office and the administrative office and should be easily accessible to students, parents and staff as possible.

Asiyai, (2012) acknowledged that some secondary schools in Delta state are highly rated in terms of administrative facilities; moreover, good number of them are rated poorly. This has been blamed on poor compliance with the guidelines for secondary education, a situation that has eroded quality secondary education delivery in the state (Ezeanya, 2016). The question therefore is, are the secondary schools complying with the standards governing secondary education in the state? Preliminary observations denote that most of the set guidelines were largely flouted by many secondary schools in the state.

The findings of the study carried out by Odufowokan (2011) showed that significant relationship exists between administrative facilities planning and student's academic performance. This further confirms that better administrative facilities planning would enhance students' academic performance.

Furthermore, the importance of administrative facilities planning cannot be over-emphasized, considering the fact that all school activities are coordinated from the administrative blocks. A very important aspect of administrative facilities are the internal structure and organization; the structure of the blocks should be designed such that there will be smooth operations of administrative activities. For instance, the Principals' offices should not be far from the Vice-Principal and vice-versa. This will enhance free flow of work and promote efficiency among the staff. In addition, the offices of the guidance and counselling services should be provided to help in coaching the academic activities of the students in senior secondary schools in North-western Nigeria.

2.6 Facilities for Convenience Planning in Secondary Schools

Educational planning is not a goal or an end in itself, rather it is an instrument to examine the problems involved in educational change which compels the educational planner to look for the socio-economic and political factors necessary for the successful actualization of the stated objectives. Indeed, its significance, thus seen as preparing and subsequently evaluating a set of decisions of future actions aimed at achieving specific sets of goals (UNESCO, 2005). School plant planning is an integral aspect of educational planning which denotes the proper distribution of educational facilities within the school premises. Adequate planning of the available educational facilities significantly ensures effective and efficient teaching and learning. This is why Adesina in Abraham (2013) posited that the quality of education that our children receive has direct relevance to the availability or lack of physical facilities and overall atmosphere where the learning takes place. Thus, for the presence of quality education in the school system, the school plant has to be adequately planned and provided for.

Facilities for convenience planning are one aspect of school plant planning which is often ignored. Facilities for convenience consist of toilets, cafeteria, kitchen, dormitories, custodian sheds and stores. Convenience facilities in schools serve to accommodate the non–classroom needs of students and staff. These facilities must be carefully planned, taking into consideration such factors as the current and future enrollment rates in the educational system and the different methods of instruction. Classrooms can be added to a building without much difficulty, but facilities for convenience are often difficult to expand at an expense after the initial construction.

Over-crowded support facilities are inefficient and may neglect much of the effectiveness of the instructional areas. Facilities for convenience planning play a significant role in the teaching and learning process. The extent to which these may enhance better teaching and learning depends on the location, structure and facilities within the school premises (Ajayi & Yusuf, 2010). While emphasizing the importance of space for convenience planning, Jaiyeoba and Atanda (2011) stated that their availability and accessibility to students could also result in better performance and if otherwise, the opposite will be the case. As a result, spaces for convenience in schools need to be properly planned as they play fundamental roles in the improvement of the teaching and learning process. Lionel (2006) emphasized that school planners should be aware of the possibility of multipurpose use of support spaces. An initial step in this direction is an analysis of the basic function of each support space required to fulfill the educational specification in general.

Facilities such as custodial quarters, kitchen and rooms for mechanical plant equipment and operations do not lend themselves readily to multipurpose use, unless they can be used for classes relating to their specific function. For instance, the use of the kitchen for service program, such spaces as the cafeteria, gymnasium and the auditorium may be combined in several ways. For example, the cafeteria can serve as a lunchroom and auditorium, the gymnasium can also serve as auditorium, the area can serve all three of the above functions and the auditorium can be combined with a theatre. Sirengo (2015) maintained that dual use of these areas requires careful planning and usually places some restrictions on their adequacy for specific purposes. Once the basic function of each support space has been determined, planners should consult the architect in order to integrate these spaces into the total project. In planning these facilities, the planners ensure that they are relevant within the school. For instance, the

school canteens should always have nutritional foods, intoxicating beverages are strictly prohibited. Also the toilet system must be such with washing facilities and preferably with the toilet for boys and that for girls located far apart.

However, people have been complaining about poor placed space for convenience such as toilet, cafeteria and so on in some secondary schools. This scenario whereby convenience spaces are not properly planned may likely have a negative impact on the effective delivery of education. The Philippines Department of Education (PDE), (2016), insisted that every school should have toilet facilities within the school premises; with toilet for boys and girls located separately. It recommended the following standards:

1. Boy's toilet: 1 seat per 100 students, 1 seat designed for disabled students, 1 detached urinal per 100 students per 50 students, 1 seat designed for disabled students.
2. It also recommended the provision of hand washing facilities approximate to play grounds, gardens, school canteens and toilets.

On the other hand, the Virginia Department of Education (VDE) (2010) recommended that school cafeteria should have a dining room with 11-14 square feet per student and rectangular tables with stacking chairs. However, the dining room floor areas is determined by the number of seats needed based on a total enrollment. While the size of a dining room is determined by dividing the total enrollment by the number of launch seating times the square footage per student as mentioned above, in the same vein, dining rooms under 3,000 square feet should have a ceiling height of 12 feet, while dining rooms over 3,000 square feet should have a ceiling height of 14feet.

The recommended kitchen layout design, receiving area, area for storage, of recycling, space for food preparation, serving lines, area for food and non-food storage, employee's

locker, toilet facilities and all other proposed equipment of the general kitchen is 1,000 square feet plus one square foot times the total enrollment, Virginia Department of Education (VDE) (2010). Odufowokan (2011) observed that convenience space planning facilitates the delivery of effective secondary education. This position was corroborated by Yakubu (2017) in the findings of his study that convenience facilities planning aids academic performance. The relevance of facilities for convenience planning in the delivery of quality education at all levels, is therefore not in doubt. This is because they serve the non-classroom needs of both students and staff, and impacts indirectly on the teaching-learning process. The proper planning of convenience facilities in senior secondary schools is therefore imperative for the effective and efficient realization of set educational goals and objectives.

Facilities for convenience planning play fundamental role in the teaching and learning process. The extent to which these spaces may enhance better teaching and learning depends on their location, structure and facilities within the school premises (Ajayi and Yusuf, 2010). While emphasizing the importance of space for convenience planning to students' academic performance, Jaiyeoba and Atanda (2011) stated that their availability and accessibility by students could also result in better performance and if otherwise, the opposite will be the case. As a result, facilities for conveniences in schools need to be properly planned as they play significant roles in the improvement of the teaching and learning process. However, it has been observed that facilities for convenience such as toilets, cafeteria, water, corridors and so on, in some of the schools, are not properly planned and adequately catered for. Where space for convenience is poorly planned, it is likely that the teaching and learning process may be affected negatively which in turn may affect the students' learning outcomes negatively (Ajayi

and Yusuf, 2010). Facilities for convenience consist of toilets, cafeteria, kitchen, dormitories; custodian sheds and stores water facilities, corridors e.t.c (Odufowokan, 2011).

Toilet facilities among others are often considered a necessity that should be provided to meet the physical and emotional needs of students and staff, as well as to prevent incidence of infectious diseases in schools. Apart from its availability, the facilities should proportionately meet the demand of the population of both students and members of staff in such institutions (Agbo, Envuladu, Adah and Zoakah, 2012). To achieve this, the World Health Organization (2010) states that schools should provide not just toilets but toilets which should be in the ratio of 1:30 learners, that is, at least a toilet should be provided for every 30 students so as to allow students have easy access to toilet facilities whenever nature demands the removal of waste from the body. It also states that separate toilet be provided for the opposing sexes. In addition, toilet facilities should be constructed in convenient places near the classroom and administrative block areas (Jedo, 2007).

However, none of the schools studied met these criteria. This may either be that, it was not taken into consideration during the construction process or that these schools have suddenly been overwhelmed by the growing population of school attendees with no existing policy in place to cater for future expansion (Agbo, Envuladu, Adah and Zoakah, 2012). An insufficient toilet/student ratio contributed to overuse filthy conditions and in extreme cases, open defecation around schools or absenteeism in order to use a home toilet (Pillitteri 2012).

Similarly, Jaiyeoba and Atanda (2011) stated that unavailability or poor toilet facility repels students' regularity in school. If such happens, important topics missed may not be recovered, thereby leading to students' failure since the continuity of such subject's content has been tampered. Studies have revealed the relationship between toilet facilities and students'

performance. For instance, Jaiyeoba and Atanda (2011) discovered that toilet facility has a relationship with students' academic achievement in mathematics and has contributed significantly. Similarly, Sirengo (2015), in his study, found that toilet has significant positive relationship with students' academic achievement. Water facilities are necessary requirements for institutions, whether running day or boarding system (Jedo, 2007). According to Adu and Aremu (2012), providing adequate levels of water supply in schools is of direct relevance to the United Nations Millennium Development Goals of achieving universal primary education, promoting gender equality and reducing child mortality. In view of the importance accorded water facilities in the school system, its provision in schools ought to be one of the requirements for granting approval for its commencement. However, this is not usually enforced by the government. Even in some schools with such facilities, the water is found to be contaminated and therefore, undrinkable. The students, therefore, go out of the school premises during the break period to get drinking water and return after the break period has passed (Afework and Asfaw, 2014). Topics missed when the students were absent owing to unavailability of portable water supply may not be taught again by the teacher and thereby affect their academic performance negatively.

In addition, the water drunk is untreated and could be adulterated, capable of causing water borne diseases such as cholera, diarrhea which may become widespread. In fact, it is estimated that 88% of diarrhea disease is caused by unsafe water supply (UN, 2008). These could question the health situation of students as the infected one would not be in school go to seek treatment at the hospital (Afework & Asfaw, 2014). This invariably means that, schools with portable water supply for consumption have students who are healthy and thereby have better chances of achieving high academic excellence. According to the United Nations

Children Emergency Fund (UNICEF) (2006), water is linked to school attendance and academic performance. The cafeteria is a place set aside for food vendors to sell food to students. Students who are famished would find it difficult to concentrate in class, especially those ones whose parents do not cook before leaving home. The school administrator should therefore, endeavour to provide a school cafeteria, built under strict sanitary condition as it is essential for students to take their meals in a serene and hygienic environment. In light of this, the cafeteria has to be attractively built and spacious enough to occupy all students conveniently and make for free movement into and out of the place (Jedo, 2007). However, experience has shown that most public secondary schools do not have cafeteria. The food vendors, in most cases, use the classroom corridors or stay under trees to sell their food. This is no doubt as a result of poor planning in secondary schools system because where proper planning is made; students would buy and eat their foods conveniently within the school setting. In addition, due to poor planning of facilities for convenience, staff and students could be found around the school premises urinating and defecating which is a great challenge to the health and well-being of both staff and students (Researcher, 2020).

2.7 Playgrounds Planning in Secondary Schools

School playgrounds are the designated area that is located in the school where children play or participate in sports and games for the improvement of their physical and mental skills. students use the playground as a learning environment with corresponding behavioral consequences that enable them to digest both pleasant and unpleasant experiences by freely using their senses of taste, smell, touch, sight and hearing. Consequently, children start to take control of their feelings in relation to their experiences (Olgan & Kahriman-Ozturk, 2011). School playgrounds give children a chance to build active, healthy bodies and develop their

decision-making, negotiating, and motor skills (Hyndman, Bredon & Telford, 2015). Becoming more aware of the facilities for and barriers to children's active play seems vital for effective school playground interventions that encourage and sustain these developmental benefits (Kriemler et al., 2011). In addition, active play helps children hone their social and cognitive skills through the informal curriculum of school playground activities (Pellegrini & Holmes, 2016; Hyndman, Amanda, Caroline & Amanda, 2012). Active play on school playgrounds makes up to 50 percent of children's recommended daily physical activity (Tudor-Locke, Charles, Aaron & Robert, 2012).

A survey conducted by Eigbobo, Nzomiwu, Amobi, and Etim (2014) in Nigeria on standard of playgrounds and safety measures found that majority of schools had playground yet guideline given by the Ministry of Education was not observed. One of the objectives of a healthful school environment is to provide safe and clean recreational facilities in schools such as playgrounds. The Outdoor Play Area Standard Manual for Centre Based Child Care (2011) recommends that the ideal play space per child should be seven square meters inclusive of fixed equipment and protective surfacing zones. It stimulates children positively and motivates them to seek more activities to involve themselves in (Curtis, 2012). If the space is too large or poorly designed it will lead to reduced attention span, more supervision and more non-developmental (or down-time), noise, confusion, aimless wondering and under use of play spaces (Moore, 2014).

Clayton (2010) infers that a safe playground should be marked. This involves separating or zoning play areas into activity and equipment-based areas from other spaces that serve other purposes like car parks and school garden posits that if the play area is clearly defined with distinct boundaries and obvious pathways, children use it more appropriately and successfully.

Students at different ages and stages of development have different needs and abilities. Their development is a rather complex process that involves a mixture of progressive changes in physical, cognitive, emotional, social, moral, spiritual aspects. Failure to provide developmentally appropriate experience for children during the formative year can inhibit the acquisition of motor and perceptual skills.

Traditionally, at the secondary schools level, organizing playgrounds activities are usually the responsibilities of those persons who are in-charge of physical education and sports programme. The activities for which they are responsible include outdoor activities such as playgrounds, pools, skate parks, courts and fields and indoor facilities such as locker and shower rooms, natatorium, racket, sport courts, weight and exercise rooms, arenas, climbing walls, and gymnasiums, their supplies and equipment. The Supplies of such facilities depends to a very large extend on the commitment of both teachers and school head. Sometimes, the provision and management includes not only the effective scheduling, operation, and maintenance of such facilities, supplies and equipment but also, at times, planning new structures to keep pace with the demand for participation in physical activities and sports programmes of the school. (Crompton 2005).

The effective planning of playgrounds activities and sports programmes in secondary schools involves the determination, allocation and development of funds for the achievement of the school sports programmes. The programme requires a large amount of money every year and effective leadership on the part of school leaders. This is because facilities such as courts and pitches are constructed and maintained for the use of the students. Also equipment and supplies such as balls, nets, javelin, rackets, hockey sticks, bats, gymnastic and athletic (track and field) materials require either purchasing, replacement or repairs.

Playgrounds exist at all levels of education. Such activities are generally voluntary as opposed to mandatory, non-paying, tend to be social or philanthropic as opposed to scholastic, and involve others of the same age. Playgrounds are the places where students undertake activities that are not part of the school or work obligations. Playgrounds activities are part of informal education, which consists of learning activities that are voluntary and self-directed, life-long, and motivated mainly by intrinsic interests, curiosity, exploration, manipulation, fantasy, task completion, and social interactions. Informal learning occurs in an out-of-school setting and can be linear or non-linear and often is self-paced and visual or object-oriented. It provides an experiential base and motivation for further activity and learning. Out of school hours learning look to extend and enrich the curriculum, to tie such learning more closely to schooling objectives. They aim at complimenting the work carried out during the normal school day.

Planning for playgrounds in secondary schools is particularly effective in providing a healthy setting for the task of forming new and more matured relationships with age mates of both sexes, achieving an appropriate masculine or feminine social role, accepting one's physique and using the body effectively, and acquiring a set of ethics as a guide to behavior. Perhaps most importantly, these organized school activities (freely chosen by the student rather than imposed by well- meaning adults) may provide a critical setting for the task of developing social literacy or the ability to undertake one physical activity or the other through many forms. Every child is able to find one or more activities to broaden their education beyond the classroom. They enhance the learning and development of students. While the taught curriculum offers a broad range of experience and learning opportunities, it is firmly felt that learning will be enhanced by offering the students the opportunity to participate in a variety of

physical activities after school. A great emphasis is placed on ensuring that students take up hobbies and interests outside the taught curriculum. This enables students to develop as fully as possible whilst giving them the chance to sample a wide variety of different experiences.

Ipso facto, playground is an essential component of secondary education. It is essential for helping students maintain proper physical and mental well being. As the popular saying goes "all work and no play makes jack a dull boy". Recreation is also a career path some students can decide to follow after secondary education. Sporting activities play an important and crucial role in the development of balance personality of the child. Play grounds however, have been known to be an integral component of the educational programmes of the most, if not all nations of the world. In Plato's Republic, physical education was included as an integral component of the educational system. It is therefore the function of the school to socialize the individuals. Play grounds are important for both teachers and students. Children, youth and adults who play, may develop skills that would be beneficial for personal and societal advancement. Many great athletes who have won laurels at International events for Nigeria horn their skills in secondary schools sports facilities. Most of the games can be played in the gymnasium or on the school grounds by the available equipments and facilities. Indoor games for recreation are monopoly, scrabble, billiard, chess, table tennis, draught, badminton, luddo etc. These games can be played in a big common room and each game has a need of various equipments. To buttress this point Joseph Etso in an interview with the Guardian (2012) urged all school owners and would be school owners to consider provision of sports facilities as top priority in their structural plans. He said, "I believe that if children are exposed to good facilities, they will do better both on the field and in the classroom. He further described secondary schools as laboratories where sports talents are discovered, nurtured and groomed to

represent the country. The Federal Ministry of Education (2013) recommends that every school shall have playground and a large room for indoor activities such as:

1. Ludo, Draft, Scrabble and Chess for recreational purposes.
2. Playground in the school shall be clean and safe to avoid accidents, injuries and bites from reptiles.
3. The facility shall have a fall zone of about 2.00m in all directions from the perimeter of the equipment/facility installed within. The fall zone shall be a distance twice the height of the pivot point where applicable.
4. The facilities must be adequate and properly located within the school i.e adequate space of not less than 2.5m away from fences, buildings, walls, walkways, tree branches and other obstruction
5. The facility must be accessible to learners and other members of the school community.
6. The recreational facilities and equipment shall be properly maintained.
7. The facilities must be adequate and properly located within the school i.e adequate space of not less than 2.5m away from fences, buildings, walkways, walls, tree branches and other obstruction. All equipment shall be properly stored and not left indiscriminately for the protection of learners.

Furthermore, students who participate in sports generally benefit from the many opportunities afforded them. Benefits of participating in sports included having better grades, having higher standardized test scores and higher educational attainment, attending school more regularly, having a healthy body due to regular exercising and having a higher self-concept. Participants in sporting activities often learned skills such as team work and leadership while decreasing the likelihood of alcohol use and illicit drug use and related problem

behaviors. Those who participate in school sporting activities often have higher grade point averages, a decrease in absenteeism, and an increased connectedness to the school. Students who are over-scheduled in too many activities find that the benefits of participating in recreational activities may actually decrease. Overscheduled children may be tired, irritable and show little interest in participation. Over scheduling too many physical activities may result in some students pushing themselves too far with the potential of having a serious sports-related injury as students may need time for relaxation and recovery from intense athletic training. Sports often cost money to participate in some type of arranged "pay-to-play" fee. Whether it is paying the school activity fee or paying for private lessons or trying to further develop skills at summer camps, some families just are not economically able to be involved with recreational activities.

Therefore, the researcher is on the opinion that school playground is an open area located within the school but away from school buildings where school children play and do other activities that will promote their learning experience. In this regard, when planning for school plant, a reasonable space should be provided for playing activities in order to enable children engage in one extra-curricular activity or the other.

2.8 Instructional Facilities Planning in Secondary Schools

Instructional facilities such as classrooms, libraries, laboratories and technical workshops are essential in teaching learning process. The extent to which these spaces could enhance effective teaching and learning depends on their location within the school premises, their structure and facilities. It is not unlikely that well planned instructional spaces in terms of location, structure and facilities will facilitate effective teaching and learning process and as well enhance good academic performance of the students. While emphasizing the importance

of instructional spaces to the entire school performance, Mark (2002) maintained that one cannot expect high level of school performance where school buildings such as classrooms, libraries, technical workshops and laboratories are substandard. He emphasized that clean, quiet, safe, comfortable and healthy environment are important components of successful teaching and learning. Similarly, Ajayi (2007) maintained that high level of students' academic performance may not be guaranteed where instructional space such as classrooms, libraries, technical workshops and laboratories are structurally defective, not properly ventilated and not spacious enough for use. He further emphasized that structural effectiveness, proper ventilation and well located instructional space may lead to successful teaching and learning process. Akubuiro and Joshua (2004) reported that there was persistent mass failure of students in the Senior School Certificate Examination (SSCE) conducted by the West African Examination Council (WAEC). The observed poor academic performance of the secondary school students in Nigeria may not be unconnected with seemingly poor instructional space planning in the schools. In some cases school library are not spacious enough and not well located within the school premises. In some cases, the libraries do not have adequate lighting and ventilation that could make them comfortable for the students and teachers to use. In such cases, effective teaching and learning may not be enhanced. It has been observed that laboratories are not well planned in some of the secondary schools. Apart from the fact that the required facilities are not in the laboratories, some of the laboratories are not spacious, not properly located while some do not have cross ventilation and adequate lighting. Such laboratories may not enhance effective teaching and learning thereby impeding the students' academic performance. The planning of technical workshops in some of the secondary schools seems to be defective. Apart from the fact that some schools use classrooms as ad-hoc technical workshops, in some cases,

technical workshops are located very close to the classrooms. Moreover some technical workshops are not spacious and they lack adequate facilities, cross ventilation and adequate lighting. In such cases, the technical workshops may not be conducive for teaching and learning.

It is likely that poor instructional facilities planning may lead to poor teaching and learning situation which in turn may lead to poor delivery of education. Strincherz (2000) in his study showed that quality education lags in shabby school buildings, those with poor or no science laboratory, library, technical workshop, inadequate ventilation and facility heating system. All these inadequacies will have negative impact on the effective delivery of education. The Philippines Department of Education (PDE), (2016), therefore recommended the following minimum standards for instructional space:

i. Classroom: 1.40 sq meters per place
ii. Science laboratory: 2.10 sq meters per place.
iii. Home economic: 2.50 sq meters place.
iv. Wood works – 5.00 sq meters per place
v. Metal works: 5.00 sq meters per place
vi. Electrical works: 5.00 sq meters per place.
vii. Farm machine works – 5.00 sq meters per place.
viii. Fish farm – 2.50 sq meters per place.
ix. Computer room – 2.50 sq meters per place

It stated that the computer laboratory is a special instructional facility necessary to meet the current and future advancement in information and communication technology. The facilities should accommodate at least 10 networked personal computers with other basic facilities such

as computer tables and chairs, proper electrical connections with stable electricity supply, two window type or split unit air conditioning units preferably 1.5hp and protected windows and doors library/learning resources centre 2.40 sq meters. It should have a capacity of 10% of the environment. In a study carried out by Akah (2014), it showed that instructional space planning facilitates academic performance in senior secondary schools in Rivers State. This finding was in line with the study of Odufurokan (2011) that instructional space enhances effective delivery of secondary education.

Instructional school plant planning has had tremendous impact on teachers moral and disposition to duties and subsequently affects their effectiveness and productivity. Accordingly, Wiles, (2003: 42), Joel, (2003: 61), Ayedun, (2005: 92), Ijaduola, (2007: 114), Odufowokan, (2011: 41), observed that good interpersonal relationships, emotional adjustment and morale are contagious in any community like educational setting. Hence, the provision of school instructional plant by the Ministry of education and its agencies and subsequent supervision by the principals and teachers of schools will help provide good efficient and conducive teaching and learning environment for both students and teachers which also provide needed respect and dignity for teachers and self-realization and security for students on the long-run. Consentingly, the objectives of education and that of the school in particular will not be achieved if there is faulty school plant in place. Students and teachers do not enjoy teaching and learning respectively, while the expected supervision and monitoring from the principal too will also be hindered, irrespective of the leadership style he possesses.

Corroborating the above, Odufowokan, (2011: 43) affirms education`s capital intensive nature to diverse curriculum design, Teachers, Students, Textbooks, Teaching Resources, and Infrastructural facilities of which instructional school plant is related. The fact is that the huge

investment and expenses in education will only be justified if and only if the stated goals and objectives are achieved in the long-run. Contextually, School Instructional Plant refers to Classrooms, Laboratory, Arts room, Home Economics room, Auditorium, Gymnasium, Library, Halls, Music Area and Multi-purpose room while Durosaro, (2000: 54) defines instructional school plant as both permanent and semi-permanent structures on the school site as well as machines, transport, teaching equipment and even the cleaners` tool. He asserted further that ``generally five specific educational spaces that must be provided for on a school site and that the architects involved in the construction of plant must ensure that they are built within the limits prescribed by the Ministry of Education, the Community and the States` Town Planning Authority. Hence, the vital instructional spaces in the school site include; classrooms, auditorium, gymnasium, library, workshop, laboratory, Arts room, home-economics, multi-purpose school halls, music area and any other space where students receive instruction.

This explanation agrees with the view expressed by Odufowokan, (2011: 43), Ajayi and Yusuf (2009: 73), Olagboye, (2000: 66), Fadipe, (2005: 74), Oluchuckwu, (2006: 95) that instructional plant provision in required quantity and quality contribute significantly to teachers` and students task performance in schools which in turn affects educational performance. Consentingly, since the general perception of individuals to instructional school plant provision is that it is a veritable tool in achieving the objectives of education and teaching-learning processes. It should be noted that only a few variation in age, sex, educational qualification, religion, social, economic, and political background is recorded. However, Ojelade, (2008: 88) affirmed school plant as a powerful tool in the hand of the administrator in achieving effectiveness and efficiency in the various institutions of learning, more so, if it is entrenched by the government and adopted by institutional administrators.

Corroborating the essentiality in Nigerian schools, Odufowokan, (2011) affirmed that educational facilities such as instructional school plant have been found repeatedly to have positive relationship with standard and quality of educational system, also increase students and teachers task performance in the school. Emphasizing, the importance of instructional plant planning to students' academic performance and teachers' task performance, Oluchukwu, (2000) and Odufowokan, (2011) maintained that teachers` task performance may not be guaranteed where instructional space such as classroom, libraries, technical workshops and laboratories are structurally defective. They concluded with the emphasizes that structurally effectiveness, proper ventilation and well sited instructional facilities plant led to successful teaching-learning in Nigerian secondary schools.

Consequently, the provision of instructional plant is not the only motivational factor which assures high level of teaching and learning process, while the effect is large in students, it is only recognizable in teachers as principals and educational administrators are expected to know that what motivates a teacher significantly, might not motivate another to an extent. Lloyd, (2004: 126) opined that the principal amongst other institution administrators should be knowledgeable enough to note this and be able to discern their needs and motivate them towards the need. Duncanson and Achilles (2008) affirmed that teachers and the physical environment are two major tools that can bring about new outcomes in teaching-learning process.

Discussing further the relationship on the international scene, William, Persuad and Turner, (2008) quoting Marsden, (2005) reported that safe and orderly classroom environment (aspect of instructional school plant), school facilities (accessories) were significantly related to students` academic performance in elementary schools. Contributing immensely to this study is

Mcgowen, (2007), quoting Johnson, (2001) as confirming that states funds sources in the United States is targeted at poor schools located predominately in urban or rural areas. Sandham, (2001), noted in Education Week the robust economy of the late 1990`s persuaded many voters to support the local bond elections, providing hundreds of millions of Dollars in local currency in local property revenue for new school construction. However, he further noted that a vast majority of this construction address enrollment growth and did nothing for existing facilities. It is no longer new that proper planning ensures efficiency and effectiveness, this truism is also applicable to educational environments. Adequately planned instructional facilities ensure effective teaching and learning.

However, in the context of this study, instructional facilities planning refers to the location, structural design and facilities of places such as classrooms, libraries, technical workshops and laboratories where students received academic instruction. In some of the secondary schools, classrooms are not spacious enough, there are no adequate lighting and ventilation in the classrooms, and there are instances where classrooms are located very close to the technical workshops and the main roads, while adequate furniture and fittings are not provided in some of the classrooms. Instructional facilities are spaces that have direct impact on the teaching-learning process. They include classrooms, laboratories, auditoriums, multipurpose rooms/halls and technical workshops which are essential in the teaching and learning process. The extent to which these facilities facilitate teaching and learning depends on their location within the school premises. It is not unlikely that well planned instructional facilities in the form of location and structure will enhance effective and efficient teaching and learning process and as well ensure effective education delivery (Researcher, 2020).

However, a situation where spaces are not properly planned in the school calls for concern as such situation can hamper educational progress of the affected society. This led to the conduct of this research work to ascertain the appropriateness of instructional facilities in public senior secondary schools in North-west zone, Nigeria.

2.9 Health/Welfare Facilities Planning in Secondary Schools

With incessant outbreak of deadly diseases such as Corona virus Ebola, Lassa fever, Zika virus, HIV/AIDS, Hepatitis, Meningitis, Cholera, Typhoid, Malaria, and rest of others, which claimed thousands lives of people in Africa and Nigeria in particular, among which are school going age, one of the nation's responsibilities is to protect the lives and health of its citizens from any life threatening diseases and other health related issues. Adequate school plant planning will thus play vital role in protecting, preserving and promoting health of individuals in schools since there is relationship between students, staff, and community health. It is a well known saying that "health is wealth", and one of the most important aspects of all human development is health. According to the World Health Organisation (WHO) (2003) health is a state of complete physical mental and social well-being and not merely the absent of disease or infirmity.

Thus, the health of students and staff in the schools is a matter of great concern if we are to ensure effective school plant planning for the realization of educational goals and objectives. Students' health is one of the factors that determine the learning outcomes of students; this is because a well nourished and healthy student is expected to perform better than the mal-nourished and sick student. Kolbe (2002) opined that children, who are unhealthy or injured, hungry or depressed, abusing drugs or pregnant, are less likely to learn than those who are not. Sarkin-kebbi (2016) stressed that if student is sick he/she might not be able to give maximum

attention to his/her lesson or might not be able to come to school thereby breaking learning process.

Furthermore, Abdou (2009) opined that if health and nutrition are determinants of qualitative and basic education, they are also the product of education. To get a full access to educational activities and its benefits, children must be in good health and well-fed. A safe school environment helps in protecting children against health problems, bad treatments and exclusion. In view of the above therefore, school health programmes should as a matter of fact, be part and parcel of the school plant planning in secondary schools system. According to WHO (2014), an effective school health programme can be one of the most effective investments a nation can make to simultaneously improve education and health. School health programmes is a strategic means to prevent important health risks among youth and to engage the education sector in effort to change the educational, social, economic and political conditions. In 2001, the Federal Ministry of Health and Federal Ministry of Education in collaboration with WHO took the initial step by conducting a Rapid Assessment of School Health System in Nigeria to ascertain the status of school health. The assessment noted the several health problems among learners, the lack of health and sanitation facilities in schools, and the need for urgent action in school health (Federal Ministry of Education, (FME) 2006a). A statistical study on the state of school health system in Nigeria by Federal Ministry of Health and Federal Ministry of Education in collaboration with WHO in 2003 have shown that only 14% administrators indicated that pre-medical examination was mandatory in their school, only 17% of schools have school nurses, about 30% of students have low Body Mass Index (BMI), about 20% of students do not have normal visual acuity, and about 19% of students do not have normal hearing. The study also identified that five common health problems of students that contribute to

absenteeism are fever/typhoid with 55%, headache 43%, stomach ache 29% cough/catarrh 38% and malaria with 40%. As a result of the above, it becomes imperative for school plant planners, education policy makers and administrators in education to ensure that School Health Programme is well planned and implemented into their schools in collaborative effort with ministries of education, health, environment, etc, as well as the stakeholders and communities (FME, 2006a).

The declarations of Dakar 2000 which stipulates Education for All (EFA) and Health for All (HFA) also paved the way for the formulation of Nigerian National School Health Policy in the year 2006. The mission of the National School Health Policy was to put in place adequate facilities, resources and programmes, which will guarantee physical and mental health, social well being, and safety and security of the school community, which promotes the learning outcomes of the child (FME, 2006a). Despite the provision of National School Health policy with the vision of promoting health of learners to achieve Education For All (EFA) and Health For All (HFA) in Nigeria, School Health Programme is been neglected in Nigerian schools, right from primary, secondary and tertiary institutions and the programme is still suffering from dwindling problems ranging from inadequate facilities, inadequate funding, lack of awareness, mismanagement, etc, and this policy becomes a mere rhetoric with poor implementation.

The Federal Ministry of Education identifies the goals and objectives of National School Health Policy which should be to:

a. enhance the quality of health in the school community
b. create an enabling environment, for teaching and learning and health development.
c. provide necessary legal framework for mobilization of support for the implementation of the school health programme;

d. set up machinery for the co-ordination of community efforts with those of Government and Non-Governmental Organizations, toward the promotion of child friendly school environment;
e. guide the provision of appropriate professional services in the schools by stakeholders for the implementation of the school health programme;
f. promote the teaching of skilled-based health education;
g. facilitate effective monitoring and evaluation of the school programme; and
h. set up modalities for the sustainability of the school health programme (FME, 2006a).

The statement of objectives of any programme or activity becomes necessary for the success of that programme, the objectives have to be clearly stated in order to avoid problem in the process of implementation of that programme. The Federal Ministry of Education (2006a), have clearly stated the objectives of School Health Programme in Nigeria in National School Health Policy these are to:

i. promote growth and development of every child taking into consideration his/her health needs;
ii. create awareness of collaborative efforts of the school, home and the community in health promotion;
iii. develop health consciousness among learners;
iv. create awareness on the availability and utilization of various health related resources in the community;
v. promote collaboration in a world of interdependence, social interaction and technological exposure in addressing emergent health issues; and
vi. build the skills of learners and staff for health promotion in the school community.

2.9.1 Challenges of School Health Programme in Nigeria

From the discussion so far it was observed that School Health Programme in Nigeria faces a lot of crises which need urgent attention and to be addressed properly. These include:

1. Poor implementation of National School Health Policy: In 2006 the Federal Republic of Nigeria formulated National School Health Policy to support SHP with adequate and necessary facilities, resources and programmes to ensure physical and mental health, social well-being, safety and security of school community for better learning outcomes. But the policy was poorly implemented right from Federal, state and local government levels, some of the stakeholders of SHP are not discharging their duties properly to the extent that some are not even aware of this policy after a decade of formulation.
2. Inadequate School Health Facilities: In order to implement SHP successfully, there must be adequate provision of school health facilities. As examined in this paper, it has shown that most of schools in Nigeria especially primary and secondary are suffering from inadequate and lack of health facilities such as school clinic/sickbay, drugs, safe drinking water, waste disposal facilities, safe buildings, sport facilities, recreational facilities, etc.
3. Inadequate Health Personnel: In the implementation guidelines of National School Health Policy the FME (2006b) stated that, School health services should be provided by physicians, dentists, school health nurses, teachers and other appropriate personnel to appraise, protect and promote the health of members of the school community. In most schools in Nigeria the common health personnel is health master and only few schools with nurse as the overall health officer in the schools. The worst part is that some of the school health masters don't have any health related certificate or training.

4. Poor Commitments from Stakeholder of School Health Programme: There are poor commitments and lack of political will to support the programme effectively from the stakeholders of school health programme such as school administrators, School Based Management Committee, community, federal and state ministries of education, health, environment, water resources works and related departments in the local government.
5. Poor Implementation of School Health Education: Despite the importance of school health education/instruction in educating our children in schools and other health related awareness and campaign is dying in Nigerian schools mostly in senior secondary schools. Study by Idehen (2004) revealed that in many parts of Nigeria, health instruction in secondary schools was poorly carried out due to the non implementation of instructional components of health education curriculum.
6. Inadequate Funding: One of the common and most difficult problems of education is funding issue. SHP covers many areas such as school health services, healthful school environment, school feeding services etc. These require large amount of money to support the programme appropriately.

2.9.2 Teachers' Welfare

However, Ntho and Lesotho Council of Non-Governmental Organizations (NGOs) (2013) and Akinsolu (2010) posit that teachers are a critical resource and the key determinant of quality in education; and if they are unmotivated, then development in the nation is doomed because education is a key instrument of social, economic and political transformation. This view is supported by Kosgei (2014) and Lyimo (2014) who opine that quality of education is the foundation of the wealth and security of every country. The role of teachers in quality education is recognized (Tao, 2013) but as to why they no longer perform their duties as

educators is still troubling. The performance of teachers is critical to the survival of the quality of any education system (Namuddu, 2010; Khan & Mansoor, 2013; Awan & Asghar, 2014). Whether in educational or corporate settings, production processes are supported by a well streamlined system, with purpose-driven employees who are willing and determined to exert themselves to the maximum to surmount whatever challenges they encounter since the performance of organizations is dependent on employee performance (Emojong, 2004;Khan & Mansoor, 2013; Veeraselvam, 2014). In the general view, every organization should have interest in igniting employee performance through different strategies such as motivation, retention and development. Among these strategies are employee welfare, remuneration, compensation, and incentives. The welfare strategy is considered vital because the quality of teachers is crucial to any education system (Kitunga, 2009; Akisolu, 2010; Tao, 2013).

The studies Fredrick Herzberg's (1959) Two Factor theory and Abraham Maslow's need Hierarchy theory (1954) were used to guide the linkage between welfare services of teachers and school plant planning practices in secondary schools. Fredrick Herzberg Two Factor theory has been accepted as one of the theories of motivation in the field of management that can explain contemporary employee performance. This theory was advanced by Fredrick Herzberg in 1959 to explain employee work motivation. Herzberg states that there are certain factors in the work place that can cause job satisfaction while others cause dissatisfaction. Herzberg divided the factors into motivating and hygiene factors. The motivating factors are strong contributors of job satisfaction and include things like challenging work, recognition and responsibility (Nairuba, 2011; Linda & Hannah, 2015). The hygiene factors, however, are not strong contributors of job satisfaction but must be present to meet workers' expectations and prevent job dissatisfaction. Hygiene factors include things like provision of employee

accommodation, break tea, lunch, and medical support to ensure that an employee is not dissatisfied and ultimately promote effective employee performance (Namuddu, 2010).

Abraham Maslow's need hierarchy theory (1954) postulates that people are motivated to fulfill their needs. Maslow claimed that people can only be healthy and properly adjusted when their basic needs are met. He categorized human needs in five different types which he argued are triggered in a hierarchy from the lowest upwards to the highest level. Maslow categorized the lowest need as physiological needs that specifically satisfy fundamental biological drives such water, food, air to breathe, shelter and sleep. This is followed by safety needs. After the first level needs have been satisfied, then the next level of safety needs is triggered. The second level is concerned with an environment that is physically safe and secure from harm, danger and assurance for tomorrow. The third level comprises social needs. After satisfaction of physiological and safety needs, social needs are activated. Social needs are concerned with the desire for love, affection and belongingness. Once physiological, safety and social needs have been satisfied, the need for self-esteem is activated. The need for self-esteem is concerned with the desire to gain respect and approval by others. Maslow claimed that the highest level of needs is self-actualization. After all the first four needs have been satisfied, people strive for self-actualization. People desire to become all that they are capable of becoming by performing at their maximum levels. Given that welfare in the present study will be focused on provision of staff housing, staff meals at school, medical care, allowances and the school environment, it can be noted that from a theoretical perspective, Herzberg's two theory and Abraham Maslow's need hierarchy theory greatly contributes to understanding and shaping of the linkage between housing, food, medical care, allowances and school

environment and the need for better school plant planning practices in North-West Zone, Nigeria.

On the other hand, Veeraselvam (2014) contends that welfare means to fare well. It means maintenance of the health and good attitudes of organizations' employees. Employee welfare means better working conditions for employees in terms of their well-being. It refers to anything done for workers, for their comfort and improvement over and above their salary or wages (Rajkuar, 2014; Veeraselvam, 2014; Lalitha & Priyanka, 2014;Venkata & Lokanadha, 2015). It includes accessibility of services; facilities and amenities in or near the organization to enable employees perform their work in a healthy environment that is conducive to good health and high morale for both the workers and their families in the most comprehensive sense. The main objective of employee welfare is to keep enriching the quality of life of the workers, keep them happy and contented and have their job motivation levels high (Odeku& Odeku, 2014; Rajkuar, 2014; Veeraselvam, 2014; Venkata & Lokanadha, 2015; Lumu& Kiwuuwa, 2016).

Teachers' welfare means taking care of the teachers by the government, private employers, non-governmental organizations, parents, school administrators and the teachers' trade union directly and indirectly through provision of housing, meals, payment of allowances, construction of classrooms, guidance and counselling, provision of loans, and provision of instructional materials (Rajkuar, 2014; Odeku & Odeku,2014).Welfare in the present study is measured in form of housing teachers, provision of meals to teachers at school, provision of medical care, allowances and the school environment in which the teachers perform their duties as educators. Welfare may help minimize absenteeism and retain teachers in the teaching service which contributes to good quality public education.

Therefore, the researcher is of the view that health and welfare are paramount to the effective management of schools. They are issues that have attracted a great deal of attention and concern from

learners, educators, teachers, parents, and the public at large. Consequently, it could be said that adequate equipment and healthy atmosphere planning are a prerequisite for the entire school performance for a highly motivated workforce in public secondary schools. If teachers' working conditions are cautiously handled and they are well remunerated then an effective teaching and learning process will be realized.

2.10 Library Facilities Planning in Secondary Schools

The school library belongs to the category of libraries found in primary and secondary schools. The library therefore, is the academic nerve centre of the secondary school system (Anyaegbu, Aghauche and Okafor, 2016). The Nigerian government acknowledges the importance of the school library in the *National Policy on Education* (2013). This policy document made provision for the establishment of school libraries by both the state and federal governments in every school in Nigeria. School libraries serve both students and their teachers by providing reading materials to meet their various information and academic needs. Expectedly, reading culture is first nurtured in this category of libraries. A child should be introduced to the habit of reading from his formative years. Once this is achieved in both primary and secondary school children, the foundation for literacy is secured from an early age. However, when the reverse becomes the case, the educational foundation of such children becomes problematic. The resultant effect is usually visible in their academic performance.

However, school libraries enable students acquire life-long learning skills so that they can develop their imaginative skills as well as critical thinking skills. School library, helps students acquire the habit of reading and are able to evaluate and use information appropriately. School libraries, as learning laboratories, allow students to interact directly with library materials and acquire research skills for future academic pursuits (Unagha, 2008: 3). Moreover,

school libraries give students the chance to read about other cultures to broaden their minds, and opportunities for voluntary reading which are crucial for the development of the enjoyment of reading, which has positive benefits on learning (Nassimbeni and Desmond, 2011: 95).

An effective library facility is one that is adequately resourced and able to provide educational materials appropriate for teachers, students and the entire school population. In addition, it should be manned by a professional librarian. The effective school library is also well-stocked, well-staffed, and able to provide a collaboratively designed programme linked to the school curriculum (Mokhtar & Majid, 2005: 4). The school library is effective when the school management acknowledges the role it plays in the school. Other attributes that help to make the school library effective and efficient is where teamwork exists between teachers and the librarian. The teachers and the librarian share the achievements of students together, by openly showing students' works in public; regular current awareness bulletins for teaching staff; and educating students on media and information literacy skills (International Association of School Librarianship, 2012).

2.10.1 Functions of School Libraries in Education

Generally, a library is a collection of books and other resources organized for use by students and teachers, which should meet the needs of both students and teachers (The American Association of School Librarians, 2012). Resources such as books, periodicals, magazines and newspapers, films and filmstrips slides, video tapes, audio recordings of all forms, maps and charts, computers and other information bearing resources are found in the library. School libraries are essential in the educational process since they provide the needed materials to support the school's curriculum. They are established to be used by both students

and teachers in the teaching and learning process. The role and functions played by the school library are well documented by a wide array of associations in librarianship.

According to the International Association of School Librarianship (IASL) (2012:3) school library supports learning and creates a conducive environment for reading which enables; students to enjoy reading and other voluntary activities; and adds value to the individual's life. Furthermore, Gretes (2013) also stresses that the real role of the school library is to make available and accessible good reading materials to students to enhance their studies. Thanuskodi (2009) asserts that a well-equipped and well managed library is the foundation of modern educational structure. Accessibility and usage of the school library's materials and learning tools enable students to develop learning skills. Specific to the school library, Todd and Heinstrom (2006: 1) posit that the school library should provide information and information technology structures together with a collection of teaching facilities that support teaching and learning; and creates a conducive atmosphere that encourages and boosts students learning outcomes. Hay and Todd (2010: 4) also indicate that the school library offers the academic environment for acquiring knowledge and further argue that school libraries develop advanced thinking skills that students require for deep knowledge and deep understanding. Because the school library is fundamental in an educational system, it should be well established and developed as an essential part of the physical resources of the school; well-resourced to offer quality teaching and learning as well as support the curriculum of the school. The value of the school library is such that it must be established in every secondary school and should be well-resourced in order to be beneficial to teaching and learning of the school.

2.11 School Site Planning in Secondary Schools

Having decided to esterblish a school, the choice of site on which the school buildings are to be constructed becomes very important. In selecting the school site, the coordinated effort of the professionals and non-professionals is necessary. Members of the community, Parent-Teachers' Association, officials of the ministry of education and other experts must be brought into assistance. School site refers to the particular place, in relation to other areas in the physical environment (rural or urban), where the school is sited. In Nigeria, rural life is uniform, homogenous and less complex than that of urban centers, with cultural diversity, which often is expected to affect students' academic achievement. This is because urban centers are better favored with respect to distribution of social amenities such as pipe borne water, electricity, healthcare facilities while the rural areas are less favored. This is also true in the distribution of educational facilities and teachers. These prevailing conditions imply that learning opportunities in Nigerian schools differ from school to school. It would appear therefore that students in Nigerian urban schools have more educational opportunities than their counterparts in rural schools have. While some studies have shown positive influence, others have shown negative influence of school location on the students' learning outcome or achievement. Some studies (Bosede, 2010; Ezeh, 1998) showed no difference in academic achievement of students because of location. Others showed that rural students performed better on practical skills than their urban counterparts did. Bosede (2010) showed that there is no difference in performance of students because of location. Location here is in terms of whether the place of study or school is sited in rural or urban community.

Obe (2004) observed a significant difference in urban-rural performance of 480 primary six school finalist on the aptitude sub-tests of the (Nigeria) National Common Entrance

Examination (NCEE) into secondary schools. In his study tagged scholastic aptitude test, he concluded that children from urban schools were superior to their rural counterparts. Also However, Axtel and Bowers (2002) found that students from the rural areas perform significantly better than their urban counterpart in verbal aptitude, English Language and total score using the National Common Entrance as a base. In another development, a research team at University of Aston recorded that it had received several well-founded reports that secondary schools have found (pupils from small rural schools) not only as well prepared academically as pupils from other schools, but they generally had a better attitude to work. Having been accustomed to working most of the time on their own, they could be given more responsibility for the organization of their work. Size could not exert significant direct effect on pupils' attitude towards their academic programmes. From the various review of literature on school location influence on academic are not the same.

Demand for secondary education (SE) is growing as more countries progress towards attaining Universal Primary/Basic Education (UPE). In 2005, about 512 million students were enrolled in secondary schools worldwide, making an increase of more than 73 million from 1999 (UNESCO, 2007). Similar increase in secondary school enrolment has occurred in Tanzania from (2000) to (2011) as observed by Mbiti (2009). Education, consideration of the school site was not given prior critical concern in some parts of the country. Establishment of secondary schools did not consider factors which could contribute to high quality education for improved academic performance particularly traveling distance of learners and teachers to and from their schools. Expanding enrolment through increased schools close to the people has been a great step towards universalizing education as the eligible students would access schools and participate in all the planned school activities. Site of secondary schools in different

countries is widely dispersed from the students' homesteads. As a result, longer walking or travelling distance from home to school/college has mostly impacted school students particularly girls (Subrahmanian, 2003).

However, before locating the school site, the following important criteria must be in mind:

a. The type of school proposed and the grade level of students and educational programmes envisage must be born in mind.
b. Educational needs: the educational needs of the community in which the school is situated and which it is meant to serve should be carefully considered
c. The accessibility of the school: the school should be centrally placed taking into account the availability of essential amenities such as water, electricity, transport facilities and among others
d. Safety of the school: the school should be sited free from danger and health hazard such as crossing the railways or highways to get to the schools and free from swamps and industrial areas such as oil refineries, cigarette factories where offensive odours emanate and pollute the air.
e. The soil condition and topography: the soil condition and topography of the chosen land must be examined in order to ascertain its stability. Many school buildings are known to have collapsed as a result of poor soil support for buildings or that the school premises have become into sheds by gully erosion as a result of poor drainage qualities of the soil.

Furthermore, in the assessment of effect of travelling distance among students in public secondary schools in relation to the quality of education by Galabawa and Lwaitama (2008) revealed that most of the students arrived at school late, tired and lost interest in leaning and hence, poor academic performance. Access to quality Secondary Education is essential for

developing active workforce for socio-economic development. To achieve the high quality workforce, involvement of educational stakeholders deems appropriate. In this regard, planning for school location depends heavily on stakeholders (local development activists and policy makers) involvement in improving the quality of learning environment including the location of the school.

However, Raychaudhuri, Debnath, Sen and Majumder (2010) report a positive relationship that exists between school location (closer distance to homesteads) and students' academic performance as they attend school regularly. Emore (2005) shares that distance to school together with school discipline; family background and school location caused truancy (attendance irregularity) among school students. Distance in association with location of the school seems to be one of the strong influencing origins for the academic performance among students. Most of the ward or commonly known as public secondary schools were built through decentralization strategy which transferred decision making authority from higher authorities to the community members. The strategy mandated local authorities to decide about the location at which a new school was to be built. Following such mandate, most of the newly established schools were located far away from the vicinity of the community. Though political influences interfered with the decision of locating a given school/college (Hanson, 2003), such political interests aimed at gaining political popularity from the community members without considering other factors for secondary schools location.

However, Ezeudu (2003) opined that school site implies urban-rural setting. Urban schools are those schools in the municipalities or schools found within the towns and rural schools are those located in the villages or semi-urban areas. Ezechi (2014) stated that location of a school determines to a large extent the level of students' performance in biology. This means that the

performance of students is directed by the location of the school. Therefore, the area in which a school is located can affect the educational performance of a student. Owoeye & Yara (2011) in their studies on school location and academic performance of secondary school students in Ekiti State, Nigeria asserts that the various review of literature on school location influence on academic performance is not the same. While some maintain that urban students perform better in examinations than their rural counterparts, others found out that rural students (in spite of all odds) perform better. Some have submitted in their findings and concluded that no particular set up (urban or rural) can claim superiority over the other because their performances are the same. The location of a school is the sole responsibility of school plant planners and other relevant stakeholders of the school. The location of a school has a direct relevance to the success of the entire educational programme run by the school organization. This is why school plant planners are always required to commit themselves fully in order to ensure that school meets the standard or approved criteria before it is finally sited (Researcher, 2020).

2.11.1 Impact of School Site/Location on Students' Success

The success or failure of secondary school students has been associated with the location of public secondary schools in various studies. Numerous studies link learner's achievement in specific with the walking distance which the learners travel to reach their schools. The investigation by Morakinyo (2003) on the effect of distance to school students found that the falling level of academic achievement was attributed to teacher's non-use of verbal reinforcement strategy. Moyo (2013) investigated the effects of poverty on access to education involving students from Secondary Schools through questionnaires, interviews and content analysis. In that study, Moyo associated walking over long distances to and from school might lead to late coming at school and at home after school in evening. It was also explained

that because of longer walking distance, fatigue and hunger lead students to drowsiness during learning as a result of walking over long distances compared to students from rich families who usually cycled to school making them at the advantage of arriving at school early without having lost any considerable amount of energy.

Walking distance as it has been identified by several researchers appears to be a common factor for poor academic performance. Adeboyeje, Olaniyi and Adepoju (2003) identify home-school distance through involvement of stakeholders as one among several factors that causes poor performance of students in public examinations. Other factors were identified to include poor location of the school, incessant changes in government policies, closure of schools, which is contingent upon teachers‘ strike action, high student teacher ratio, poor supervision, monitoring and evaluation machinery, lack of good textbooks, poor content and context of instruction, poor and unconducive environment among others. In their explanation, Onderi, Kiplangat, and Awino (2014) citing Oriko (2002) and Reche *et al.* (2012) indicate that walking long distances to school greatly make students reach it with empty stomachs and lateness influencing negatively, which may not yield positive results.

Other studies have found that the performance of students can be affected by little time to concentrate in studies due to distance as explained with and non-use of verbal reinforcement strategy by teachers. Factors such as school facilities, class size, school location, and school plant planning were also examined to determine their effects on the overall development of secondary school students. In that study it was found out that most of secondary schools have inadequate facilities to support teaching and learning process thus leading to mass failures. Moreover, Adell (2002) argued that poor performance in schools is an international problem that has been linked to the low social-economic background of the learners and school location

which affect academic performance. This implies that these differences in academic performance are linked to social factors such as poverty, political, socio-economic problems.

Provision of education in a developing country like Nigeria is vital for the development of the Nation. In that regard, efforts are required to improve our education standards, particularly on the involvement of community members in matters related to education as key beneficiaries and sources of curricular contents. Joseph (2004) conducted a doctoral study on the effects of location using questionnaire to collect the data to 40 schools considered to be poorly performing and forty schools that were performing well in the metrics examinations based in disadvantaged community. The data obtained suggested that many schools (66.5% of schools surveyed) lacked effective management structures that are essential for the implementation of quality teaching and learning.

Similarly, Galabawa (2002) in a study which he conducted to and using and revealed that, when schools are located far distance from home, learners' achievement is affected, as most of them remain with little time to concentrate on their (private or in school) studies due to the long distances they travel to reach their schools.

2.11.2 Perceived Factors for the Siting of Public Senior Secondary Schools

In this sub-section, the study presents various studies conducted in different areas identifying factors which community members and their leaders consider appropriate for locating a school. Siting of a particular school all around the world is conducted in the view of ensuring that effective teaching and learning process would take place. This is to argue that infrastructures, proximity, and other amenities for approving learning environment come at its emphasis. Joshua and Modupe (2012) employing descriptive survey design to 60 principals and 540 teachers, examined the state of learning environment and infrastructure with their effects

on teaching and learning activities. Their study concluded that the school should have developed learning infrastructure and environment created collaboratively by the school and other stakeholders for more conducive working environment which would sustain high-quality education assurance practices in secondary schools. Infrastructures are focused by several stakeholders in the view of the leave no child behind academically (Isaiah, 2013). Isaiah identifies that school facilities are critical as they determine trends in school activities and processes in the view that are essential influences on teacher performance and student achievement. The author elaborates that school physical environment play key roles in influencing teachers level of satisfaction and their level of performance or productivity.

Cohen (2010) despite acknowledging that most of the studies conducted on environmental conditions and its positive academic performance of students are limited, he informs that the quality of the school environment is essential on positive learning outcomes. He identifies two major sources of environmental problems in schools: the quality of the land on which the school is built, and the quality of the school facility itself. He further added that there is a need for stakeholders to involve environmental planners to focus their attention on particular facility, and area in which the school facility will be located. School staffs should be involved as environmental injustices affect school‘s student and staff population. Their involvement is necessary as without their involvement experiences on the quality of the school and the extent to which it may affect or influence other buildings and developments in the neighborhood, city, or region would be missed. It is therefore in view of the above that the researcher deemed it necessary to carry out this research work in order to investigate the planning practices made by the relevant stakeholders in the siting of public senior secondary schools in North-west zone, Nigeria.

2.12 Empirical Studies

The study reviewed relevant researches that were in one way or the other related to the study variables.

Obasi (2019) carried out a study on instructional space planning for secondary education in Delta State. It adopted the descriptive survey design. The population was all the public and private secondary schools. The sample for the study was 225 schools (public-115, private-110), which is 25% of the population. Stratified random sampling technique was used. A checklist was used to obtain data from the study. Data generated were analyzed using percentage. The study revealed that the level of instructional space planning was higher in public schools than in private schools. The study recommended that stringent measures should be put in place to ensure strict compliance to policy provisions in this regard especially among privately owned schools. Public private partnership (PPP) should be pursued in funding education in order to ensure the provision of standardized learning facilities in view of the heavy financial implications.

The study has a direct relationship with the present research because it tallies with variable number four of the present research which is set to examine the instructional facilities planning practice in public senior secondary schools in north-west zone, Nigeria. The only different between the previous and the present research is that, the previous research covered both public and private secondary schools and it was conducted in Delta State while the present study focuses on public senior secondary schools in north-west zone, Nigeria.

Obasi and Opene (2019) conducted a study on convenience planning in the provision of secondary education in Delta State. It adopted the descriptive survey design. The population was all the 891secondary schools in the state. Through stratified random sampling technique, a

sample size of 225 schools was drawn (public -115, private -110). A checklist was used to obtain data for the study. The data generated were analyzed using percentage. The study revealed that convenience space was adequately planned in both public and private secondary schools, though with minor differences in some areas. The study recommended that there should be a collaborative framework between the ministry of education and the schools both public and private to ensure strict compliance with convenience space specified standards. This will help improve those areas where there are deficiencies in convenience space planning.

The study is relevant to the present research because it has a direct relationship with variable number two which sought to determine the stakeholders' perceptions on facilities for convenience planning practice in public senior secondary schools in north-west zone Nigeria. Even though, the two studies differ significantly in location and scope because the previous study was conducted in Delta State while the present study covers both the seven states of the north-west zone Nigeria.

Obasi and Opene (2019) in a study investigated the planning of administrative facilities for secondary education delivery in Delta State. It adopted the descriptive survey design. The population of the study comprised all the 891 public and private secondary schools in the state. The stratified random sampling technique was used to select a sample size of 225 schools (public-115, private-110). Document analysis through the use of checklist was used to obtain the data for the study. The data generated were analyzed using percentages. The study revealed that administrative space was planned in both public and private secondary schools. However, the study showed that the level at which the planning was carried out was higher in public schools than in privately owned schools. The study therefore recommended among other things that private school owners should always employ the services of educational planners when

planning schools. This is to ensure compliance with recommended planning standards in all areas.

The study is relevant to the present study because it tallies with objective number one of the present research. The objective number two of the present research and the previous research both centre on administrative buildings planning in secondary schools with a view of promoting the standard of secondary education. Both studies employed descriptive survey design both varied in location and scope. The present study is broader in scope than the previous study because it covers both the seven states of the north-west zone while the previous study investigated the situation in Delta state.

Edo, Luke and Abere (2019) conducted a study on influence of school plant management on principals' administrative effectiveness in senior secondary schools in Rivers State, Nigeria. Thus, two research questions and two hypotheses were drawn for the study. Descriptive survey research design was adopted for the study. The population of the study was 257 (principals) and 187 (supervisors) of the Rivers State Post Primary Schools Board. The entire population was used for the study. It was concluded that principals need adequate planning and procurement for effective utilization of school plant. In other words, a well-planned school plant produces expected outcomes of education for the students. Hence, principals need to plan for the allocation and utilization of the available school plant for effective usage. The study is relevant because they both emphasized on how well planned school plant will produce the expected outcomes of education. Though, the previous study centred on management f school plant while the present study seeks to find out the planning practices of school plant in secondary schools.

Akinyemi et'al (2017) in a study, investigated the relationship between teaching space planning and students' academic performance in Lagos State senior secondary schools. The study adopted a descriptive and correlation design type. Stratified random sampling technique was used to select 300 respondents comprising principals, teachers and students from schools in Education District II of Lagos State, Nigeria. In each school, 1 principal, 4 teachers and 20 students were selected from the 12 sample schools selected for the study. Three hypotheses were formulated and to guide the study. A self-constructed questionnaire titled Teaching Space Planning Questionnaire (TSPQ) and record observation of Students' West Africa Senior School Certificate Examination (WASSCE) results of May/June from 2009-2011 were used to collect relevant data. The questionnaire was validated by experts in the field of research. The reliability coefficient of 0.78 was obtained using split-half reliability method to test the reliability of the questionnaire. Pearson's product-moment correlation statistics was used with the aid of SPSS (version 20) to test all the null hypotheses at 0.05 significance level. Analysis of data revealed that a significant relationship exists between teaching space planning, classroom planning, laboratory planning and students' academic performance in Lagos State senior secondary schools. It was recommended that government and all stakeholders should give necessary financial and professional support to the secondary schools toward ensuring good teaching space planning as this will facilitate good academic performance of the students. Furthermore, educational planners and administrators should intensify efforts at ensuring that adequate provision is made in the budget for more provision of teaching space specifically class rooms among others.

The study is closely related to the present study because both researches center on effective space planning for better secondary education. Though, the previous study was

conducted in Lagos State while the present study is determined to investigate the phenomenon in north-western part of Nigeria. The present study is broader in scope than the previous study.

Kigenyi (2017) undertook a study to establish the effect of welfare planning on teachers' performance in public primary schools in Bugisu sub-region. The study was guided by five research objectives and five research questions. The overall objective was to find out how welfare planning has shaped the performance of teachers in the study area. The study employed a descriptive cross-sectional survey research design with both qualitative and quantitative approaches, and data was collected from 559 respondents out of a total population of 10381. Quantitative data was analyzed using SPSS computer software (Version 20) to generate frequencies, percentages, mean, and standard deviation. Principal Component Analysis and Regression were employed to determine the pattern of interrelations and robustness among the constructs of welfare planning variable and their level of effect on teachers' performance. Qualitative data analysis was done through thematic content analysis. The findings revealed that welfare planning is positively associated with teachers' performance in public primary schools in Bugisu sub-region. The findings also revealed that housing, meals, and the school environment have a statistically significant effect on teachers' performance in public primary schools in Bugisu sub-region, while medical care and allowances did not. It is concluded that welfare may account for teachers' performance in Bugisu sub-region. The researcher recommended that education policy makers, implementers and managers pay much attention to the provision of teachers' welfare in public primary schools in Bugisu sub-region.

The study is relevant to the present study because it tallies with objective number five of the present research which aimed at determining stakeholders' perceptions on health/welfare facilities planning practice in public senior secondary schools in north-west zone, Nigeria.

Though, the research investigated the effect of welfare planning on primary school teachers' performance and was conducted in Uganda while the welfare planning variable of the present study is on public senior secondary schools in north-west zone, Nigeria.

Darki and Onobumeh (2014) investigated the availability and application of school Health services in selected primary and secondary schools in Ovia Local Government Area of Edo State. The purpose of the study was to survey the availability and application of school health services in both public primary and secondary school in Ovia Local government Area of Edo State using a self developed four point modified Likert attitudinal scale questionnaire. The population of the study included all the heads and assistant heads of the primary and secondary schools. The sample size of the study comprised of one hundred and sixteen (116) participants which are the population of the study. 48 principals, 48 vice principals, 10 headmistress and 10 headmasters drawn from the 24 secondary schools and 10 primary schools in Ovia Local Government Area of Edo state. The study had four variables on availability of school health service, qualified personnel, facilities & equipment and financial & material resources. The face and content validity was used to determine the validity of the instrument while the Test Re-test method of reliability was used to test the reliability with r value as 0.85. Inferential statistic of Pearson product moment correlation coefficient to test all the hypotheses at 0.05 alpha level. The findings of the study were that there is a correlation between availability of school health services, qualified personnel, facilities and equipment; financial and material resources; and health habits of pupils and students. The study thus recommended that school health services such as facilities and qualified personnel should be made available in all primary and secondary schools and government, NGOs and other able and willing individuals or group of people should provide constant financial aid in Ovia local government of Edo State.

The study is relevant to the present study because it relates with variable number five of the research which sought to examine stakeholders' perceptions on health/welfare facilities planning practices in public senior secondary schools in north-west zone, Nigeria. Both studies differ in scope and location; the previous study was conducted in Ovia Local Government Area of Edo state while the present study is concentrated in the investigation of the situation in public senior secondary schools in north-west zone, Nigeria.

Musibau etal (2013) in a study examined the influence of school type and location on school plant planning in South West Nigerian secondary schools. The main objective of the study was to find out the prevailing situation regarding the various aspect of school plant planning in the schools. A descriptive research of the survey design was used in the study. The sample consisted of 150 school principals. Multistage stratified and simple random sampling techniques were used to select the sample. The Data collected were analyzed using frequency counts, percentages means score, standard deviation and t-test statistical analysis. The research question was answered descriptively while the two null hypotheses formulated were tested at 0.05 level of significance. The study revealed that the prevailing situation for school plant planning variables were moderately high except for circulation space planning that had low prevailing situation. It was further revealed that school plant planning was also high. The study further revealed that there was no significant difference in school plant planning between, rural and urban areas and between private and public secondary school. Based on the findings, it was recommended that government should not relent in their effort in sustaining best school plant planning in schools. The study is related to the present research because it investigated the various aspects of school plant planning in secondary schools only that the two studies varied

in location. The previous study was conducted in south-west, Nigeria while the current study focuses on north-west zone, Nigeria.

Odufowokan (2011) carried out a study to examine the school plant planning as correlate to students` academic performance in south west Nigeria secondary schools. The major objective of the study is to examine the relationship between school plant planning and students` academic performance in south west Nigeria secondary schools using descriptive survey research design. The sample consists of 1650 respondents comprising 150 school principals and 1500 students. Multistage, stratified and simple random sampling techniques were used to select the sample. Data collected were analyzed using frequency counts, percentages, means and Pearson product moment correlation. Five null hypotheses were tested at 0.05 level of significance. The study revealed that the levels of school plant planning and students` academic performance were relatively close, and as such students` academic performance was significantly related to instructional space planning, Administrative space planning, circulation space planning, planning for accessories and space for convenience planning. Based on the findings, it was recommended that authorities concerned should implement architectural designs of buildings and spaces for education to ensure students` academic performance.

The study is said to be related to the current research because it covers almost all the variables of the present research and both studies tried to investigate the level of school plant planning in secondary schools and how it affects students' success. The two studies differ in location because the previous study was conducted in south-western part of Nigeria while the present study focuses on north-west zone, Nigeria.

Another study was conducted by Isaac and Musibau (2010) on school plants planning and students learning outcomes in south-west Nigeria. A descriptive research of the survey design was used in the study. The sample consisted of 1650 respondents comprising 150 school principals and 1500 teachers. Multistage, stratified and simple random sampling techniques were used to select the sample. Data collected were analyzed using frequency counts, percentages, means, Pearson Product Moment Correlation, multiple regression and F-ratio. The two null hypotheses formulated were tested at 0.05 level of significance. The study revealed that the levels of school plants planning and students' learning outcomes were relatively high during the period under investigation. The study also revealed that school plants planning and its components such as school site planning, instructional space planning and circulation space planning were significantly related to students' learning outcomes. Moreover administrative space planning and space of convenience planning were not significantly related to students' learning outcomes. Based on the findings, it was recommended that government should continue to lay more emphasis on school plants planning particularly in the areas of school site planning, circulation space planning and instructional space planning in order to improve students' learning outcomes.

The study is relevant to the present research because it covers almost all the study variables and it aimed at improving the standard of secondary education in the country. Even though, the previous study was conducted in south-western part of Nigeria while the present study pays emphasis in public senior secondary schools in north-western part of the country.

Isacc and Musibau (2009) carried out a study on the relationship between instructional space planning and students' academic performance in south west Nigeria secondary schools. A descriptive research of the survey design was used in the study. The sample consisted of

1650 respondents comprising 150 school principals and 1500 students. Multistage, stratified and simple random sampling techniques were used to select the sample. Data collected were analyzed using frequency counts, percentages, means and Pearson Product Moment Correlation. The five null hypotheses formulated were tested at 0.05 level of significance. The study revealed that the levels of instructional space planning and students' academic performance were relatively high during the period under study. The study also revealed that students' academic performance was significantly related to instructional space planning, classroom planning, library planning and technical workshops planning. Based on the findings, it was recommended that stakeholders should not relent in their effort in sustaining good instructional space planning in order to enhance good students' academic performance.

The study is relevant to the present study because it relates with objective number five which tried to find out stakeholders' perceptions on instructional space planning practice in public senior secondary schools in north-western part of Nigeria.

2.13 Summary

This chapter reviewed the relevant literatures that have a direct relationship with school plant planning practices in public senior secondary schools. The chapter reviewed some important concepts in relation to the topic of the research such as; planning, school plant, secondary schools and educational planning. In every aspect of human endeavour, planning is of paramount important. In the context of education, planning from the pragmatic point of view could be seen as the process of identifying and analyzing the educational needs of the society and systematically set actions that would be put in place in order to ensure viable allocation of the available resources for the betterment of the education of children. However, the school plant planning at secondary education level could be seen as the appropriate designation and

provision of plant spaces in secondary schools that may lead to the attainment of secondary education goals and the overall national educational objectives.

The major variables reviewed are such that can make secondary schools par excellence in the context of the nation's education system. These include among others; administrative buildings, facilities for convenience, instructional facilities, playgrounds, health/welfare facilities, school library and school site planning practices in public senior secondary schools. These are some of the school plant planning practices in secondary schools that could make secondary education extremely effective and efficient in the world of learning. Many at times, planning at all levels of education is faced with a quiet number of problems especially in developing countries like Nigeria. Some of the problems may include; inaccurate data, politicization of the planning aspect, poor participation of relevant stakeholders, poor funding, poor implementation and among others.

The study applied systems theory because the theory made vital discussions which directly or indirectly relate with the present study. The rationale behind the application of system theory was because school is considered as a system. However, a lot of researches reviewed in this chapter have made significant contributions in gathering the literature.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a description of the various sub-sections that constitute the methodology of the study that was adopted by the researcher in executing the study along with the justifications behind them. The sub-sections in this chapter include: research design, population of the study, sample and sampling techniques, research instrument, validity of the research instrument, pilot study, reliability of the instrument, procedure for data collection and methods of data analysis.

3.2 Research Design

A descriptive survey research design was adopted for this study. This has helped the researcher in enhancing the validity and reliability of the study Amin (2005); Creswell (2009). The design was chosen because it allowed the researcher in getting a detailed description of stakeholders' consideration on school plant planning in public senior secondary schools in North-west Zone, Nigeria. Orodho and Kombo (2002) maintained that descriptive survey research design is an efficient method of collecting original data from a wide range of respondents and provides an opportunity for the researcher to study and explore the status and current situations in the school.

3.3 Population of the Study

The population of this study consisted of two thousand and thirty eight (2,052) senior secondary school principals, thirty thousand nine hundred and thirty eight (30,938) senior secondary school teachers and one thousand and forty eight (1,048) quality evaluators in the quality assurance section under the ministries of education in north-west zone, Nigeria.

Therefore, the total aggregate population was thirty four thousand and thirty eight (34,038). Details could be seen in table 1.

Table 1: Shows Population Distribution

S/N	States	Principals	Teachers	Quality Evaluators
1.	Jigawa	195	2,730	113
2.	Kaduna	370	5,525	121
3.	Kano	763	8,536	259
4.	Katsina	244	4,260	190
5.	Kebbi	173	2,079	102
6.	Sokoto	128	2,787	148
7.	Zamfara	179	5,021	115
Total	**07**	**2,052**	**30,938**	**1,048**

Source: Department of Education Management Information System and Quality Assurance units of the State Ministries of Education, North-west Zone, Nigeria 2018/2019 school census.

3.4 Sample and Sampling Techniques

A sampling technique is an approach used to select the representatives of the study population. It is the process of selecting units from a population of interest so that we may fairly generalize our results back to the populati**o**n they were chosen (Trochim, 2006). However, 60% sample size was used to select the sample size of States in the Northwest Zone. In this regards, four (4) out of the seven (7) States in the Northwest Zone were randomly selected to participate in the study. The use of 60% sample size was in compliance with the opinion of Mora (2005) who recommended that "in the event where the population is not much, sample size of 50-60% sample size is appropriate". Furthermore, 10% of the entire public

senior secondary schools in the Northwest Zone was used to represent the entire schools in the study area. This means that out of the one thousand two hundred and sixty five (1,265) public senior secondary schools in the study area, one hundred and twenty six schools were selected which served as a representative of the entire schools. Silverman, (2011) maintains that sample size of 10 to 20 percents was determined to be adequate about providing detailed accounts of beliefs, perceptions, and personal experiences.

Moreover, Research Academic Advisors (2006) at 0.05 Confidence level was used to determine the sample size of principals, quality evaluators and teachers of public senior secondary schools in the selected States in North-west Zone, Nigeria. In view of this, the total sample size for the study was three hundred and eighty one (381) comprising twenty three (23) principals, three hundred and forty four (344) teachers and fourteen (14) quality evaluators of public senior secondary schools in North-west Zone, Nigeria. In addition, stratified random sampling technique was applied in order to reduce the potential for any bias in the selection of cases to be included in the sample. This helped in getting principals, teachers and quality evaluators who were relevant and rich in information regarding school plant planning in public senior secondary schools in North-west Zone, Nigeria. In addition, simple random sampling technique was applied in the selection of four sample States which represented the entire States in the Northwest Zone. In this regards, the States that were randomly selected included Kano, Jigawa, Zamfara and Sokoto States respectively. Details are captured on table 2.

Tables 2: Shows the Sample Size Distributions of Principals Quality Evaluators and Teachers

S/N	State	Sampled Schools	Sampled Principals	Sampled Teachers	Sampled Quality Evaluators
1.	Jigawa	19	04	49	03
2.	Kano	76	13	154	05
3.	Sokoto	13	02	51	03
4.	Zamfara	18	04	90	03
	Total	**126**	**23**	**344**	**14**

The table above shows sample size distribution of respondents. The total aggregate sample size for the study was three hundred and eighty one (381). However, to obtain the actual sample size for each of the three categories of respondents per State, proportional distribution was applied.

3.5 Instrumentation

The research instrument used for this study was questionnaire with the Likert five point scale options of Strongly Agreed (SA), Agreed (A), Undecided (U), Strongly Disagreed (SD) and Disagreed (DA) for the collection of data. Bowling (1999) as cited by Nabeela (2014) stated that, questionnaire for survey research is the best instrument for collecting data because as surveys are carried out in natural settings, questionnaire increases the external validity of the study. This is in line with assertion of Orodho (2009) who maintained that questionnaire is the best instrument used to gather data, which allows measurement for or against a particular viewpoint.

The questionnaire was self-designed and it included ten (10) sections such as; section one request letter, section two personal data of the respondents, section three guidelines for filling the questionnaire and section four to ten opinion statements for testing the hypotheses. The questionnaire was designed to collect information from public senior secondary schools principals, teachers and quality evaluators from the sampled schools in the study area. The questionnaire consisted of seventy (70) items which were constructed on the basis of the research questions.

3.5.1 Validity of the Instrument

Mazaki (2009) echoes LoBiondo-wood & Haber (2002) recommend the validation of the research instrument stating that it helps to determine the extent to which an instrument measures what it supposed to measure and whether it measures it accurately. The questionnaire was validated by the researcher's supervisors and experts in educational administration and planning. Best and Khan (2002) observed that, content validity of the research instruments could be enhanced through experts judgment.

3.5.2 Pilot Study

Pilot study was conducted in two of the seven states in North West Zone, namely, Katsina and Kebbi States; 40 questionnaires were used for the pilot study. 20 questionnaires were administered to principals and teachers of public senior secondary schools and quality evaluators in each of the States chosen for the pilot study. Four secondary schools were selected in each of the two States. The public senior secondary schools where the instrument was administered in Kebbi State included: GSS Natsini, GSS Gulma, GSS Yeldu, GGSS Augie and GSS Bui while in Katsina State they included: GDSS Yankara, GSSS Dayi, GDSS Ruwan Godiya, GSSS Dutsin-Ma and GDSS Dutsin-Ma respectively. Test re-test method was used for the administration of the questionnaire. The data collected was subjected to Pearson Product Moment Correlation (PPMC) to determine the reliability of the instrument at 0.05 levels significance.

3.5.3 Reliability of the Instrument

To estimate the reliability of the instrument, Pearson Product Moment correlation (PPMC) was used to test the data collected from the pilot study. The yielded reliability coefficient of the instrument was 0.83 at 0.05 level of significance. Mugenda and Mugenda

(2003) stated that the extent to which a research tool gives consistent results after repeated trials is what accurately shows the reliability of the study.

3.6 Procedure for Data Collection

The researcher obtained an introductory letter from the Department of Educational Foundations and Curriculum, Faculty of Education, Ahmadu Bello University Zaria to carry out this research. The data collected from the state ministries of education in North-West Zone was a comprehensive list of senior secondary schools, accurate number of teachers and quality evaluators in each of the States in the study area. The researcher administered the questionnaires to the respondents with help of two research assistants who were briefed on how to administer the instrument which made it more economical and convenient for the researcher. The research assistants were engaged for security reason because some areas in the North-west zone have security threats which the researcher could not visit alone. Other justifications may include; economic and time factors.

3.7 Methods of Data Analysis

Descriptive statistics frequency and simple percentage was used to analyze the bio-data of the respondents, while weighted mean of 3.0 was used to analyse responses of the respondents to the research questions. To test the postulated hypotheses of this research, One Way Analysis of Variance (ANOVA) statistical tool version 21, was used at 0.05 level of significance. The justification behind the use of Analysis of Variance was because there were more than two categories of respondents. These categories of respondents included: public senior secondary schools principals, teachers and quality evaluators in North-west Zone, Nigeria.

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter deals with the presentation and analysis of the data collected. The data were analyzed and presented based on the respondents' consideration on each aspect of the study. The analysis therefore, focused mainly on the responses of respondents on Stakeholders' Consideration on School Plant Planning in Public Senior Secondary Schools in North-West Zone, Nigeria. The Data analyzed was based on the personal data of the respondents, the research questions and the null hypotheses. In this regards, a total of three hundred and eighty one (381) copies of the questionnaires were distributed to the respondents but only three hundred and sixty five (365) copies were successfully retrieved. Table of frequency and percentage was used to analyze personal data of the respondents. Weighted mean of 3.0 was used to analyze responses of the respondents to the research questions. By implication, a bench mark of 3.0 and above was set for acceptance while anything less than 3.0 was set for rejection of the item statements. One way Analysis of Variance was used to analyze the null hypotheses at 0.05 levels of Significance.

4.2 Analysis of Bio-Data of the Respondents

This section contains personal data of the respondents such as status, years of experience, type of school and location of school. This could be seen in table 3.

Table 3: Presents the Distribution of Bio-Data of the Respondents in Frequency and Percentages

S/N	Bio-Data	Category	Frequency	Percentage %	Cumulative Percentage
1.	Status	Principals	22	6	6
		Teachers	331	91	97
		Evaluators	12	3	100
2.	School location	Urban	260	71	71
		Rural	105	29	100

Table 3 shows that 22 principals, 331 teachers, 12 evaluators representing 6%, 91%, and 3% respectively took part in the study. In addition, there were 260 urban schools and 105 rural schools with 71% and 29% respectively.

4.3 Answers to Research Questions

The researcher used 3.0 as the weighted mean otherwise known as decision mean since the instrument was structured along a modified five point Likert scale options to take decision on whether to accept or reject the responses of the respondents to item statement. Therefore, a mean score of 3.0 and above indicate positive responses to the item statements and showing acceptance; while a mean score below 3.0 indicate negative answers to the item statement implying rejection. This is shown as follows: SA = 5 points, A= 4 points, UD= 3 points, D= 2 points, SD= 1 point.

$$\frac{5+4+3+2+1}{5} = \frac{15}{5} = 3.0$$

4.4: Research Question One: In what ways have Stakeholders Considered Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria?

The research question relates to items 1-10 in section C of the questionnaire. The responses of all the respondents were collated, analyzed and presented in a table. Details are captured in table 4.

Table 4: Mean Scores of Respondents on Consideration of Stakeholders on Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

S/N	Item statement	Respondent	SA	A	UD	D	SD	N	MEAN
1	School principal's office with enough equipments for work is provided in the school planning document	Principals	-	5	2	14	1	22	2.5
		Teachers	58	10	2	106	142	331	1.1
		Evaluators	-	-	2	10	-	12	2.3
2	Staff room has been scheduled in school planning schedules	Principals	2	10	-	7	3	22	3.0
		Teachers	50	220	-	26	37	331	3.6
		Evaluators	2	10	-	-	-	12	3.3
3	Examination office is provided in the school planning document	Principals	10	10	-	1	1	22	4.2
		Teachers	70	38	-	115	110	331	2.5
		Evaluators	-	2	-	10	-	12	2.3
4	Conference hall is considered in the school's future planning schedules	Principals	-	2	1	16	1	22	2.0
		Teachers	32	21	5	227	51	331	2.4
		Evaluators	-	3	-	7	1	12	2.3
5	Account office is planned spaciously for better record keeping	Principals	5	-	2	10	5	22	2.5
		Teachers	38	53	2	179	61	331	2.5
		Evaluators	-	2	2	7	1	12	2.4
6	School vice principal's office is provided in the school's future planning schedule	Principals	10	10	-	1	1	22	4.7
		Teachers	154	42	-	41	78	331	3.6
		Evaluators	1	10-	-	1	-	12	4.6
7	ICT office with enough facilities is included in the school's future planning document	Principals	-	1	1	20	-	22	2.2
		Teachers	27	28	7	165	106	331	2.2
		Evaluators	1	-	-	10	1	12	2.2
8	Maintenance office is projected in the school planning document	Principals	2	2	1	11	6	22	2.2
		Teachers	11	100	6	144	72	331	2.5
		Evaluators	-	3	-	7	2	12	2.3
9	Multipurpose room is included in the school planning schedules	Principals	2	5	-	14	1	22	2.7
		Teachers	47	38	-	170	78	331	2.1
		Evaluators	2	-	-	9	1	12	3.4
10	Guidance and counselling centre is scheduled in school planning schedules	Principals	9	10	-	2	1	22	4.0
		Teachers	143	96	-	86	58	331	3.0
		Evaluators	2	7	-	3	-	12	3.1

Aggregate mean= 2.8

Table 4 shows the responses of respondents on stakeholders' consideration on administrative facilities planning in public senior secondary schools in North-West Zone, Nigeria. Item 1 showed that it was rejected by all the respondents with principals having mean score of 2,5 teachers 1.1 and evaluators 2.3. This implies that school principal's offices with enough equipment for work were not provided in the school planning document. Item 2 showed that principals have mean score of 3.0, teachers 3.6 and supervisors 3.3 which indicated that the item statement was accepted by all the respondents. It shows that Staff rooms were scheduled in school planning document. Item 3 was rejected by the respondents with the mean score for principals 4.2, teacher 2.5 and evaluators 2.3. This implies that Examination offices were provided in the school planning schedules. Item 4 was further rejected with the mean score of 2.0, 2.4 and 2.9 for principals, teachers and evaluators representatively; this implies that Conference halls were not considered in the school's future planning document. Item 5 had mean score for principals 2.5, teachers 2.5 and evaluators 2.4 which imply it was rejected meaning that, account office was not planned spaciously for better record keeping. Item 6 showed that principals had mean score of 4.7, teachers 3.6 and evaluators 4.6 which was accepted implying that school vice principal's office is provided in the school's future planning schedule. .Item 7 was rejected by principals, teachers and supervisors with the respective mean scores of 2.2, 2.2, and 2.2. Item 8 have the mean score of 2.2, 2.5 and 2.3 for principals, teachers and evaluators accordingly, indicating that maintenance office was projected in the school planning document. Item 9 have the means score of 2.7, 2.1 and 3.4 for principals, teachers and evaluators respectively and was accepted. Similarly, item 10 was accepted with the corresponding mean score of 4.0, 3.0 and 3.1 for principals, teachers and evaluators. By this

analysis, it was revealed that stakeholders considered administrative facilities planning as inappropriate in most public senior secondary schools in North-West Zone, Nigeria.

4.5: Research Question Two: what is the Consideration of Stakeholders on Facilities for Convenience Planning in Public Senior Secondary Schools in North-West Zone, Nigeria?

The research question relates to items 1-10 in section D of the questionnaire. The responses of all the respondents were collated, analyzed and presented in a table. Thus, table 5 gives the details.

Table 5: Mean Scores of Respondents on Consideration of Stakeholders on Facilities for Convenience Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

S/n	Item statement	Respondent	SA	A	UD	D	SD	N	MEAN
1	School cafeteria is included in the school's future planning activities	Principals	2	5	-	10	5	22	2.4
		Teachers	53	52	-	170	58	331	2.6
		Evaluators	-	3	-	6	3	12	2.3
2	Toilet facilities for students are scheduled in the school planning document	Principals	20	-	-	1	1	22	4.6
		Teachers	110	60	-	96	67	331	3.2
		Evaluators	2	6	-	2	2	12	3.9
3	Toilet facilities for staff are considered in the school planning activities	Principals	5	10	-	3	4	22	3.4
		Teachers	159	108	-	60	23	331	4.2
		Evaluators	6	1	-	3	2	12	3.5
4	Buses for staff and students' use are included in the school's future planning schedules	Principals	1	3	-	19	1	22	2.5
		Teachers	32	43	-	132	120	331	2.2
		Evaluators	-	2	1	7	2	12	2.3
5	Hand washing facilities are provided in all convenience spaces in the school plans document	Principals	1	9		11	1	22	2.9
		Teachers	45	90	2	129	68	331	2.5
		Evaluators	7	1	-	2	2	12	4.2
6	Canteen is scheduled in the school planning document	Principals	1	1	-	11	9	22	1.8
		Teachers	54	42	-	135	96	331	2.4
		Evaluators	-	7	-	5	-	12	3.1
7	Corridors for relaxation are considered in the school planning document	Principals	10	6	2	2	2	22	3.9
		Teachers	120	135	7	35	30	331	3.7
		Evaluators	2	6	-	1	3	12	3.3
8	Dormitory facilities for students' use are designed in the school planning document	Principals	10	2	1	-	9	22	3.3
		Teachers	61	64	6	144	55	331	2.9
		Evaluators	7	1	-	2	2	12	3.4
9	Necessary devices for toilet facility are included in the school planning schedules	Principals	2	15	-	5	-	22	3.6
		Teachers	115	52	-	70	80	331	4.1
		Evaluators	6	1	-	4	-	12	2.4
10	Staff and students' common rooms are scheduled in the school planning document	Principals	12	6	-	2	2	22	4.0
		Teachers	103	96	-	120	58	331	3.6
		Evaluators	3	4	-	2	3	12	3.0

Aggregate mean= 3.2

Table 5 shows the responses of respondents on consideration of stakeholders on facilities for convenience planning in public senior secondary schools in North-West Zone, Nigeria. Item 1 was rejected by all the respondents with principals having mean score of 2.4, teachers 2.6 and evaluators 2.3. This implies that School cafeteria was not included in the school's future planning activities.. Item 2 showed that principals have mean score of 4.6, teaches 3.2 and evaluators 3.9 which indicate that the item statement was accepted by all the respondents. It shows that toilet facilities for students were scheduled in the school planning document. Item 3 was retained by all the respondents with the mean score for principals 3.4, teacher 4.2 and evaluators 3.5. This implies that Toilet facilities for staff were considered in the school planning practices. Item 4 was rejected with the mean score of 2.5, 2.2 and 2.3 for principals, teachers and evaluators representatively this implies that Buses for staff and students' use were not included in the school's future planning schedules. Item 5 had mean score for principals 2.9, teachers 2.5 and evaluators 4.2 meaning that, hand washing facilities were not adequately are provided in all convenience spaces in the school plans document. Item 6 showed that principals had mean score of 1.8, teachers 2.4 and evaluators 3.1 which was rejected implying that canteen was not scheduled in the school planning document. Item 7 was accepted by principals, teachers and evaluators with the respective mean scores of 3.9, 3.7, and 3.3. Item 8 have the mean score of 3.3, 2.9 and 3.4 for principals, teachers and evaluators accordingly, indicating that Dormitory facilities for students' use were designed in the school planning document. Item 9 have the means score of 3.6, 4.1 and 2.4 for principals, teachers and evaluators respectively and was accepted. Similarly, item 10 was accepted with the corresponding mean score of 4.0, 3.6 and 3.0 for principals, teachers and evaluators. By this

analysis, it was revealed that facilities for convenience in public senior secondary schools in North-West Zone were provided in the school planning schedules.

4.6: Research Question Three: How did Stakeholders Considered Playgrounds Planning in Public Senior Secondary Schools in North-West Zone, Nigeria?

The research question relates to items 1-10 in section E of the questionnaire. The responses of all the respondents were collected, analyzed and presented in a table. Details could be seen in table 6.

Table 6: Mean scores of Respondents on Consideration of Stakeholders on Playgrounds Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

S/N	Item statement	Respondent	SA	A	UD	D	SD	N	MEAN
1	Fitness Field is provided in the school planning schedules	Principals	2	3	-	10	7	22	2.7
		Teachers	40	20	-	210	57	331	2.3
		Evaluators	-	1	-	11	1	12	2.3
2	Slides playground is included in the school's future planning document	Principals	5	-	-	15	2	22	2.6
		Teachers	60	58	-	69	90	331	3.1
		Evaluators	1	4	-	6	1	12	2.8
3	Playground for balance beams is scheduled in school's future planning activities	Principals	-	10	-	12	-	22	2.0
		Teachers	73	52	-	150	58	331	2.8
		Evaluators	4	-	-	5	3	12	2.8
4	Modern spinning playground is provided in the school planning schedules	Principals	20	-	-	1	1	22	3.4
		Teachers	110	60	-	96	67	331	3.1
		Evaluators	2	6	-	2	2	12	2.6
5	Playground for climbing activity is projected in the school planning document	Principals	5	10	-	3	4	22	3.3
		Teachers	59	108	-	60	123	331	3.2
		Evaluators	6	1	-	3	2	12	3.5
6	Inclusive playground is included in the school planning document	Principals	10	-	-	1	1	22	3.3
		Teachers	132	20	-	132	43	331	2.2
		Evaluators	5	2	1	2	2	12	3.4
7	Running swift playground is provided in the school planning schedule	Principals	2	10	-	10	-	22	2.1
		Teachers	50	25	-	180	78	331	1.8
		Evaluators	4	3	-	2	3	12	3.3
8	Traditional playground is considered in the school planning document	Principals	12	10	-	-	-	22	4.5
		Teachers	103	96	15	105	8	331	3.5
		Evaluators	1	9	-	2		12	1.9
9	Freestanding playground is scheduled in the school planning document	Principals	5	3	-	12	2	22	2.8
		Teachers	38	13	2	229	43	331	2.2
		Evaluators	6	-	-	3	3	12	3.1
10	Playground for spring riding activity is designed in the school planning document	Principals	-	6	2	12	2	22	2.6
		Teachers	9	58	-	154	78	331	2.0
		Evaluators	-	4	-	6	2	12	2.5

Aggregate mean= 2.7

Table 6 shows the responses of respondents on consideration of stakeholders on playground planning in public senior secondary schools in North-West Zone, Nigeria. Item 1 was rejected

by all the respondents with principals having mean score of 2.7, teachers 2.3 and evaluators 2.3. This implies that fitness playground was not provided under school plans. Item 2 showed that principals have mean score of 2.6, teaches 3.1 and evaluators 2.8 which indicated that the item statement was rejected by the respondents. It shows that slides playground was not included in the school's future planning document. Item 3 was also rejected by the respondents with the mean score for principals 2.0, teacher 2.8 and evaluators 2.8. This implies that School playground for balance beams was not scheduled in school's future planning activities. Item 4 was further accepted with the mean score of 3.4, 3.1 and 2.6 for principals, teachers and evaluators representatively this implies that modern spinning playground was provided in the school planning schedules. Item 5 had mean score for principals 3.3, teachers 3.2 and evaluators 3.5 which implies that, playground for climbing activity was projected in the school planning document. Item 6 showed that principals had mean score of 3.3, teachers 3.2 and evaluators 3.4 which was accepted implying that inclusive playground was included in the school planning document. Item 7 was rejected by principals, teachers and evaluators with the respective mean scores of 2.1, 1.8, and 3.3. Item 8 have the mean score of 4.5, 3.5 and 1.9 for principals, teachers and evaluators accordingly, indicating that running swift playground was considered in the school planning document. Item 9 have the means score of 2.8, 2.2 and 3.1 for principals, teachers and evaluators respectively and was rejected. Similarly, item 10 was also rejected with the corresponding mean score of 2.6, 2.0 and 2.5 for principals, teachers and evaluators. By this analysis, it was revealed that playgrounds were not provided in the school planning document.

4.7: Research Question Four: In What Ways have Stakeholders Considered Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria?

The research question relates to items 1-10 in section F of the questionnaire. The responses of all the respondents were collected, analyzed and presented in a table. Thus, table 7 gives the details.

Table 7: Mean Scores of Respondents on Consideration of Stakeholders on Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

S/N	Item statement	Respondent	SA	A	UD	D	SD	N	MEAN
1	School laboratories and equipments are provided in the school planning document	Principals	8	10	1	2	1	22	4.0
		Teachers	160	58	-	25	90	331	3.5
		Supervisors	10	2	-	-	-	12	4.8
2	Adequate classrooms for students' learning have been scheduled in the school's future planning activities	Principals	-	-	-	21	1	22	1.9
		Teachers	29	18	5	207	22	331	2.0
		Supervisors	5	-	-	7	-	12	3.3
3	Classrooms necessary facilities have been scheduled in school's future plans	Principals	10	10	-	1	1	22	4.2
		Teachers	38	13	2	229	51	331	2.3
		Supervisors	-	1	-	9	2	12	2.9
4	Seminar room is projected in the school planning activities	Principals	16	-	2	4	-	22	4.0
		Teachers	109	68	-	60	78	331	3.1
		Supervisors	5	2	-	5	-	12	3.9
5	Workshops room with enough technical equipments are considered in the school planning document	Principals	-	5	2	14	1	22	2.5
		Teachers	8	50	2	156	102	331	1.7
		Supervisors	-	-	2	10	-	12	2.3
6	Internet facilities for researches are designed in the school planning schedules	Principals	2	-	-	17	3	22	2.1
		Teachers	50	20	-	226	37	331	2.5
		Supervisors	2	-	-	10	-	12	2.5
7	Art room for students' creative thinking skills has been scheduled in the school planning document	Principals	-	10	-	11	1	22	2.8
		Teachers	50	38	-	115	410	331	2.0
		Supervisors	2	2	-	8	-	12	2.9
8	Music room for students' language development is scheduled in the school planning document	Principals	13	6	1	1	1	22	4.3
		Teachers	52	21	5	227	21	331	2.1
		Supervisors	1	3	-	7		12	2.7
9	Permanent buildings have been scheduled in school plans	Principals	10	5	2	4	1	22	3.9
		Teachers	158	50	2	6	102	331	3.1
		Supervisors	10	-	2	-	-	12	3.4
10	Computer room with enough facilities is considered in the school planning document	Principals	2	10	-	7	3	22	4.1
		Teachers	50	20	-	226	37	331	2.5
		Supervisors	2	10	-	-	-	12	3.7

Aggregate mean= 2.8

Table 7 shows the responses of respondents on consideration of stakeholders on instructional facilities planning in public senior secondary schools in North-West Zone, Nigeria. Item 1 was

retained by all the respondents with principals having mean score of 4.0, teachers 3.5 and evaluators 4.8. This implies that school laboratory and equipments were provided in the school planning document. Item 2 showed that principals have mean score of 1.9, teaches 2.0 and evaluators 3.7 which indicated that the item statement was rejected by the respondents. It showed that adequate classrooms for students' learning have not been scheduled in the school's future planning activities. Item 3 was rejected by the respondents with the mean score for principals 4.2, teacher 2.3 and evaluators 2.9. This implies that classrooms necessary facilities were not scheduled in school's future plans. Item 4 was accepted with the mean score of 4.0, 3.1 and 3.9 for principals, teachers and evaluators representatively and this implies that seminar room was projected in the school planning activities. Item 5 had mean score for principals 2.5, teachers 1.7 and evaluators 2.3 which imply it was rejected meaning that, Workshop with enough technical equipments were not considered in the school planning document. Item 6 showed that principals had mean score of 2.1 teachers 2.5 and evaluators 2.5 which was rejected implying that internet facilities for researches were not designed in the school planning schedules. Item 7 was rejected by principals, teachers and evaluators with the respective mean scores of 2.8, 2.0, and 2.9. Item 8 have the mean score of 4.3, 2.1 and 2.7 for principals, teachers and evaluators accordingly, indicating that Music room for students' language development was not scheduled in the school planning document. Item 9 have the means score of 3.9, 3.1 and 3.4 for principals, teachers and evaluators respectively and was accepted. Similarly, item 10 was accepted with the corresponding mean score of 4.1, 2.5 and 3.8 for principals, teachers and supervisor. By this analysis, it was revealed that instructional facilities in most of the public senior secondary schools in North-West Zone were not adequately provided in the school planning practices.

4.8: Research Question Five: What is the Consideration of Stakeholders on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria?

The research question relates to Items 1-10 in section G of the questionnaire. The responses of all the respondents were collected, analyzed and presented in a table. Thus, table 8 gives the details.

Table 8: Mean Scores of Respondents on Consideration of Stakeholders on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

S/N	Item statement	Respondent	SA	A	UD	D	SD	N	MEAN
1	School clinic is provided in the school's future planning activities	Principals	5	10	-	3	4	22	3.4
		Teachers	59	8	-	160	123	331	2.3
		Evaluators	6	1	-	3	2	12	3.5
2	Sanitary facilities are projected in the school planning schedule	Principals	1	-	-	10	1	22	1.2
		Teachers	132	43	-	132	20	331	3.4
		Evaluators	5	2	1	2	2	12	3.5
3	First aid boxes are included in the school planning document	Principals	1	9		11	1	22	2.9
		Teachers	45	90	2	129	68	331	2.7
		Evaluators	7	1	-	2	2	12	3.8
4	Potable drinking water is provided in the school planning schedule	Principals	1	1	-	10	-	22	1.3
		Teachers	54	42	-	135	96	331	2.0
		Evaluators	1	-	-	9	2	12	2.0
5	School ambulance van is projected in the school planning schedules	Principals	-	6	2	12	2	22	2.5
		Teachers	20	35	7	135	130	331	2.1
		Evaluators	2	6	-	1	3	12	3.2
6	Soft loans for teachers are considered in the school planning document	Principals	-	5	-	7	10	22	2.0
		Teachers	-	50	-	226	57	331	2.3
		Evaluators	5	-	-	5	2	12	2.6
7	Residential quarters for teachers are scheduled in the school planning document	Principals		2	1	12	7	22	1.9
		Teachers	10	58	-	175	90	331	2.2
		Evaluators	-	2	-	10	-	12	2.3
8	Allowances for non-accommodated teachers are considered in the school planning activities	Principals	2	-	-	19	1	22	2.2
		Teachers	29	18	5	207	22	331	2.0
		Evaluators	1	-	-	9	2	12	2.0
9	Prompt payment of teachers' allowance are included in the school planning document	Principals	10	1	1	5	5	22	3.5
		Teachers	127	45	1	100	58	331	4.1
		Evaluators	2	5	-	5	-	12	3.3
10	Incentives for all categories of teachers are scheduled in the school planning document	Principals	-	10	-	12	-	22	2.7
		Teachers	3	96	15	105	108	331	2.3
		Evaluators	1	4	-	2	5	12	2.5

Aggregate mean= 2.5

Table 8 shows the responses of respondents on consideration of stakeholders on health/welfare facilities planning in public senior secondary schools in North-West Zone, Nigeria. Item 1 was

rejected with principals having mean score of 3.4 teachers 2.3 and supervisors 3.5. This implies that school clinic was not provided in the school's future planning activities. Item 2 showed that principals have mean score of 1.2, teaches 3.4 and evaluators 3.5 which indicated that the item statement was retained by the respondents. It shows that first aid boxes were projected in the school planning schedule. Item 3 was rejected by all the respondents with the mean score for principals 2.9, teacher 2.7 and evaluators 3.8. This implies that potable drinking water was not provided in the school planning document. Item 4 was further rejected with the mean score of 1.3, 2.0 and 2.0 for principals, teachers and evaluators representatively this implies that school sanitary facilities was not considered in the school planning schedule. Item 5 had mean score for principals 2.5, teachers 2.1 and evaluators 3.2 was rejected meaning that, ambulance van was not scheduled in the school planning document. Item 6 showed that principals had mean score of 2.0, teachers 2.3 and evaluators 2.6 which was rejected implying that soft loans for teachers were not considered in the school planning document. Item 7 was rejected by principals, teachers and evaluators with the respective mean scores of 1.9, 2.2, and 2.3. Item 8 have the mean score of 2.2, 2.0 and 2.0 for principals, teachers and evaluators accordingly, indicating that Allowances for non-accommodated teachers were not considered in the school planning practices. Item 9 have the means score of 3.5, 4.1 and 3.3 for principals, teachers and evaluators respectively and was accepted. However, item 10 was rejected with the corresponding mean score of 2.7, 2.3 and 2.5 for principals, teachers and supervisor. By this analysis, it was revealed that obviously, health/welfare facilities in public senior secondary schools in North-West Zone were not given due attention in the school planning schedules.

4.9: Research Question Six: In what ways have stakeholders considered Library facilities planning in public senior secondary schools in North-West Zone, Nigeria?

The research question relates to items 1-10 in section H of the questionnaire. The responses of all the respondents were collected, analyzed and presented in a table. Details are captured in table 9.

Table 9: Mean Scores of Respondents on Consideration of Stakeholders on Library Facilities Planning Practices in Public Senior Secondary Schools in North-West Zone, Nigeria

S/N	Item statement	Respondent	SA	A	UD	D	SD	N	MEAN
1	School library with enough space is designed in the school planning activities	Principals	2	10	-	10	-	22	3.1
		Teachers	173	52	-	50	58	331	3.7
		Evaluators	4	3	-	2	3	12	3.3
2	Enough textbooks of all subjects are considered in the school planning document	Principals	2	-	-	20	8	22	2.6
		Teachers	10	60	-	196	67	331	2.3
		Evaluators	2	6	-	2	2	12	2.9
3	Enough computers are included in the school planning document	Principals	5	10	-	13	4	22	3.6
		Teachers	139	28	-	60	123	331	3.2
		Evaluators	6	1	-	3	2	12	3.5
4	Periodical is designed in the school planning schedules	Principals	5	-	-	6	1	22	1.7
		Teachers	32	13	-	162	120	331	1.9
		Evaluators	5	2	1	2	2	12	3.5
5	Enough furniture is scheduled in school planning activities	Principals	5	3	-	12	2	22	2.8
		Teachers	38	13	2	229	43	331	2.3
		Evaluators	6	-	-	3	3	12	3.2
6	Audio-visual materials are projected in the school planning activities	Principals	9	6	2	3	2	22	3.8
		Teachers	109	58	-	54	78	331	3.0
		Evaluators	5	4	-	1	2	12	3.8
7	Reference materials is provided in the school planning document	Principals	2	10	-	10	-	22	3.1
		Teachers	173	52	-	50	58	331	3.7
		Evaluators	4	3	-	2	3	12	3.3
8	Shelves for safe-keeping of books are provided in the school planning document	Principals	20	-	-	1	1	22	4.7
		Teachers	110	60	-	96	67	331	3.2
		Evaluators	2	6	-	2	2	12	3.3
9	Enough catalogues are scheduled in the school planning document	Principals	5	10	-	3	4	22	3.4
		Teachers	59	8	-	160	123	331	2.3
		Evaluators	6	1	-	3	2	12	3.5
10	Internet facility is included in the school planning document	Principals	5	-	-	6	1	22	1.7
		Teachers	32	43	-	132	210	331	2.4
		Evaluators	-	2	1	7	2	12	2.3

Aggregate mean= 3.2

Table 9 shows the responses of respondents on consideration of stakeholders on library facilities planning in public senior secondary schools in North-West Zone, Nigeria. Item 1 was

accepted by the respondents with principals having mean score of 3.1, teachers 3.7 and evaluators 3.3. This implies that library with enough facilities was provided in the school planning activities. Item 2 showed that principals have mean score of 2.6, teachers 2.3 and evaluators 2.9 which indicated that the item statement was rejected by the respondents. It shows that enough textbooks were not scheduled in the school planning document. Item 3 was accepted by all the respondents with the mean score for principals 3.6, teacher 3.2 and evaluators 3.5. This implies that enough computers were provided in the school planning document. Item 4 was rejected with the mean score of 1.7, 1.9 and 3.5 for principals, teachers and quality evaluators respectively. This implies that periodical section was not designed in the school planning schedules. Item 5 had mean score for principals 2.8, teachers 2.3 and evaluators 3.2 which implied that it was rejected meaning that, enough furniture was not scheduled in the school planning activities. Item 6 showed that principals had mean score of 3.8, teachers 3.0 and evaluators 3,8 which was accepted implying that audio visual materials were considered in the school planning activities. Item 7 was retained by principals, teachers and evaluators with the respective mean scores of 3.1, 3.7, and 3.3. Item 8 have the mean score of 4.7, 3.2 and 3.3 for principals, teachers and evaluation accordingly, indicating that shelves for safe-keeping of books were provided in the school planning document. Item 9 have the means score of 3.4, 2.3 and 3.5 for principals, teachers and evaluation respectively and was accepted. However, item 10 was rejected with the corresponding mean score of 1.7, 2.4 and 2.3 for principals, teachers and evaluators. By this analysis, it was revealed that emphasis was given to planning for library facilities in the school planning document in public senior secondary schools in North-West Zone, Nigeria.

4.10: Research Question Seven: What is the Consideration of Stakeholders on School Site Planning in Public Senior Secondary Schools in North-West Zone, Nigeria?

The research question relates to items 1-10 in section I of the questionnaire. The responses of all the respondents were collected, analyzed and presented in tabular form. Thus, table 10 gives the details.

Table 10: Mean Scores of Respondents on Consideration of Stakeholders on School Site Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

S/N	Item statement	Respondent	SA	A	UD	D	SD	N	MEAN
1	Potentialities for future expansion of the school are considered in the school planning schedules	Principals	15	5	-	2	-	22	4.5
		Teachers	210	10	-	41	72	331	3.5
		Evaluators	1	8	-	3	-	12	3.5
2	School is far from riverine areas in the school planning document	Principals	10	10	-	2	-	22	4.2
		Teachers	200	50	-	26	57	331	4.0
		Evaluators	5	5	-	-	2	12	3.9
3	School is far from railroad tracks in the school planning document	Principals	8	10	1	2	1	22	4.0
		Teachers	160	58	-	25	90	331	3.5
		Evaluators	10	2	-	-	-	12	4.8
4	School is far from highways in school planning activities	Principals	20	-	-	1	1	22	4.7
		Teachers	229	18	5	7	22	331	3.8
		Evaluators	10	-	-	2	-	12	3.5
5	School is located far away from zoo in the school planning document	Principals	10	10	-	1	1	22	3.8
		Teachers	138	103	2	29	51	331	3.6
		Evaluators	9	1	-	2	-	12	3.5
6	School is sited centrally to minimize staff and students' travel distance in the school planning schedules	Principals	4	-	-	16	2	22	1.7
		Teachers	9	68	-	160	78	331	2.2
		Evaluators	-	2	-	10	-	12	1.3
7	Open spaces are scheduled in the school planning document	Principals	16	2	2	1	1	22	3.8
		Teachers	100	32	7	35	100	331	3.8
		Evaluators	2	8	-	2	-	12	3.5
8	School is surrounded by different means of transportation that are useful to both staff and students in the school planning document	Principals	10	10	-	2	-	22	3.9
		Teachers	131	40	6	144	8	331	4.2
		Evaluators	10	1	-	-	1	12	3.2
9	School is far from social gathering places such as cinemas and clubs in the school planning document	Principals	10	2	-	8	-	22	3.3
		Teachers	127	22	-	96	28	331	3.0
		Evaluators	10	-	-	1	1	12	4.4
10	School is provided with access roads network in the school planning schedules	Principals	3	-	-	14	2	22	2.0
		Teachers	9	96	15	105	158	331	2.5
		Evaluators	5	4	-	2	1	12	3.8

Aggregate mean= 3.6

Table 10 shows the responses of respondents on consideration of stakeholders on school site planning in public senior secondary schools in North-West Zone, Nigeria. Item 1 was retained by all the respondents with principals having mean score of 4.5, teachers 3.8 and evaluators 3.5.

This implies that Potentialities for future expansion of the school were considered in the school planning schedules. Item 2 showed that principals have mean score of 4.2, teaches 4.0 and evaluators 3.9 which indicated that the item statement was accepted by all the respondents. It shows that schools were far from riverine areas in the school planning document. Item 3 was also accepted by all the respondents with the mean score for principals 4.0, teacher 3.5 and evaluators 4.8. This implies that schools were far from railroad tracks in the school planning document. Item 4 was further accepted with the mean score of 4.7, 3.8 and 3.5 for principals, teachers and evaluators representatively this implies that schools were far from highways in school planning activities. Item 5 had mean score for principals 3.8, teachers 3.6 and evaluators 3.5 which implied it was accepted meaning that, schools were located far away from zoo in the school planning document. Item 6 showed that principals had mean score of 1.7, teachers 2.2 and evaluators 1.3 which was rejected implying that school were not located centrally to minimize staff and students' travel distance in the school planning schedules. Item 7 was accepted by principals, teachers and evaluators with the respective mean scores of 3.8, 3.8, and 3.5. Item 8 have the mean score of 3.9, 4.2 and 3.2 for principals, teachers and evaluators accordingly, indicating that schools were surrounded by different means of transportation that are useful to both staff and students in the school planning document. Item 9 have the means score of 3.3, 3.0 and 4.4 for principals, teachers and evaluators respectively and was accepted. Similarly, item 10 was rejected with the corresponding mean score of 2.0, 2.5 and 3.8 for principals, teachers and evaluation. By this analysis, it was revealed that public senior secondary schools were planned and sited in areas devoid of unnecessary public distractions in North-West Zone.

4.4 Hypotheses Testing

In this section, all results of the null hypotheses raised and tested in line with the objectives of this study were summarized and presented. Data obtained as responses from the principals, teachers, and quality evaluators from the questionnaire administered were tested. The test of hypotheses was carried out using one way Analysis of Variance (ANOVA). This was determined at 0.05 level of significance. In all, seven hypotheses were tested and acceptability or rejection of the Null Hypothesis was determined by comparing the p-value against the significance level set by the study (0.05). Therefore, hypothesis is rejected if the p-value is less than the level of significance and it is retained if p-value is greater than the level of significance set by the study.

4.5 Hypotheses 1(HO_2): There is no Significant Difference in the Consideration of Stakeholders on Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

Item 1-10 in section C of the questionnaire relate to this hypothesis. Responses of all respondents were collected and analyzed using One Way Analysis of Variance (ANOVA). The summary of data analyzed in respect of null hypothesis two is presented in table 11.

Table 11: Summary of Analysis of Variance (ANOVA) on the Consideration of Stakeholders on Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria,

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6.865	3	2.288	2.409	0.017
Within Groups	355.360	363	.950		
Total	**362.225**	**365**			

Table 11 shows that the p-value (0.017) is less than the level of significance (0.05) implying that there is a significant difference in the consideration of stakeholders on administrative

facilities planning in public senior secondary schools in North-West Zone, Nigeria. Therefore, the null hypothesis is rejected.

Table 12: Summary of Scheffe's Multiple Comparison Test on Stakeholders' Consideration on Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria,

Respondents	**N**	**Mean**
Teachers	331	88.68
Principals	12	4.28
Quality Evaluators	22	6.02
Total	**365**	

As indicated in table 12, the mean score of principals was found to be closer to that of Quality Evaluators, implying that the difference between the two groups of respondents was not significant. However, the mean score of teachers was found to be higher than that of principals and quality evaluators. This implies that teachers differ significantly in their opinions regarding Stakeholders' Consideration on Administrative Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria.

4.6 Hypotheses 2 (HO_3): There is no Significant Difference in the Consideration of Stakeholders on Facilities for Convenience Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

Item 1-10 in section D of the questionnaire relate to this hypothesis. Responses of all respondents were collected and analyzed using One Way Analysis of Variance (ANOVA), the summary of data analyzed in respect of null hypothesis three is presented in table 13.

Table 13: Summary of Analysis of Variance (ANOVA) on the Consideration Stakeholders on Facilities for Convenience Planning in Public Senior Secondary Schools in North-West Zone

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	13.292	3	4.431	4.200	0.056
Within Groups	394.505	363	1.055		
Total	**407.797**	**365**			

Table 13 shows that the P-value (0.056) is greater than the level of significance (0.05) implying that there is no significant difference in the consideration of stakeholders on facilities for convenience planning in public senior secondary schools in North-West Zone, Nigeria. Therefore, the null hypothesis is retained.

. 4.8 Hypotheses 3 (HO_4): There is no Significant Difference in the Consideration of Stakeholders on Playgrounds Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

Items 1-10 in section E of the questionnaire relate to this hypothesis. Responses of all respondents were collated and analyzed using One Way Analysis of Variance (ANOVA). The summary of data analyzed in respect of null hypothesis four is presented in table 14.

Table 14: Summary of Analysis of Variance (ANOVA) on the Consideration of Stakeholders on Playgrounds Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.630	3	1.543	1.494	0.019
Within Groups	386.352	363	1.033		
Total	**390.982**	**365**			

Table 14 shows that the P-value (0.19) is greater than the level of significance (0.05) implying that there is a significant difference in the consideration of stakeholders on playgrounds

planning in public senior secondary schools in North-West Zone, Nigeria. Therefore, the null hypothesis is rejected.

4.9 Hypotheses 4 (HO_5): There is no Significant Difference in the Consideration of Stakeholders on Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria.

Item 1-10 in section F of the questionnaire relate to this hypothesis. Responses of all respondents were collated and analyzed using One Way Analysis of Variance (ANOVA). The summary of data analyzed in respect of null hypothesis five is presented in table 15.

Table 15: Summary of Analysis of Variance (ANOVA) on Consideration of Stakeholders on Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5.511	3	1.837	1.711	0.042
Within Groups	401.511	363	1.074		
Total	407.022	365			

Table 15 shows that the p-value (0.042) is less than the level of significance (0.05) implying that there is a significant difference in the consideration of stakeholders on instructional facilities planning in public senior secondary schools in North-West Zone, Nigeria. Therefore, the null hypothesis is rejected.

Table 16: Summary of Scheffe's Multiple Comparison Test on Stakeholders' Consideration on Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria,

Respondents	N	Mean
Teachers	331	69.32
Principals	12	13.40
Quality Evaluators	22	11.16
Total	**365**	

As indicated in table 16, the mean score of quality evaluators was found to be closer to that of principals, implying that the difference between the two groups of respondents was not significant. However, the mean score of teachers was found to be higher than that of principals and quality evaluators. This implies that teachers differ significantly in their opinions regarding Stakeholders' Consideration on Instructional Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria.

4.10 Hypotheses 5 (HO_6): There is no Significant Difference in the Consideration of Stakeholders on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

Item 1-10 in section G of the questionnaire relate to this hypothesis. Responses of all respondents were collected and analyzed using One way Analysis of Variance (ANOVA). The summary of data analyzed in respect of null hypothesis six is presented in table 17.

Table 17: Summary of Analysis of Variance (ANOVA) on the Consideration of Stakeholders on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7.086	3	2.362	2.428	0.042
Within Groups	363.801	363	0.973		
Total	370.887	365			

Table 17 shows that the P-value (0.042) is less than the level of significance (0.05) implying that there is a significant difference in the consideration of stakeholders on health/welfare facilities planning in public senior secondary schools in North-West Zone, Nigeria. Therefore, the null hypothesis is rejected.

Table 18: Summary of Scheffe's Multiple Comparison Test on Stakeholders' Consideration on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria,

Respondents	**N**	**Mean**
Teachers	331	21.20
Principals	12	25.10
Quality Evaluators	22	53.70
Total	**365**	

Table 18 shows that the mean score of quality evaluators was found to be higher than that of principals and teachers. This implies that quality evaluators differ significantly in their opinions regarding Stakeholders' Consideration on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria.

4.11 Hypotheses 6 (HO_7): There is no Significant Difference in the Consideration of Stakeholders on Library Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

Item 1-10 in section H of the questionnaire relate to this hypothesis. Responses of all respondents were collected and analyzed using One way analysis of Variance (ANOVA). The summary of data analyzed in respect of null hypothesis seven is presented in table 18.

Table 19: Summary of Analysis of Variance (ANOVA) on the Consideration of Stakeholders on Library Facilities Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7.086	3	2.362	2.428	0.071
Within Groups	363.801	363	0.973		
Total	370.887	365			

Table 19 shows that the P-value (0.071) is greater than the level of significance (0.05) implying that there is no significant difference in the consideration of stakeholders on library facilities planning in public senior secondary schools in North-West Zone, Nigeria. Therefore, the null hypothesis is retained.

4.11 Hypothesis 7 (HO_1): There is no significant difference in the consideration of stakeholders on school Site planning in public senior secondary schools in North-West Zone, Nigeria

Item 1-10 in section I of the questionnaire relates to this hypothesis. Responses of all respondents were collated and analyzed using one way Analysis of Variance (ANOVA). The summary of the data analyzed in respect of null hypothesis one is presented in table 19.

Table 20: Summary of Analysis of Variance (ANOVA) on the Consideration of Stakeholders on School Site Planning in Public Senior Secondary Schools in North-West Zone, Nigeria

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	23.932	3	7.977	9.084	0.054
Within Groups	328.421	363	.878		
Total	352.353	365			

Table 20 shows that the P-value (0.054) is greater than the level of significance (0.05) implying that there is no significant difference in the consideration of stakeholders on school site

planning in public senior secondary schools in North-West Zone, Nigeria. Therefore, the null hypothesis is retained.

4.5 Summary of Hypotheses Testing

The summary of the seven Null Hypotheses tested for this study is hereby presented in table 21.

Table 21: Summary of tested Null Hypotheses

S/n	H0 Statement	Statistical Tool Used	Result	Level of sig.	Decision
1	There is no significant difference in the consideration of stakeholders on administrative facilities planning in public senior secondary schools in North-West Zone, Nigeria	Analysis of variance (ANOVA)	F-ratio is 2.409, While the p-value is 0.017	0.05	**$H0_1$** was rejected. This means that there is a significant difference in the considerationof respondents
2	There is no significant difference in the consideration of stakeholders on facilities for convenience planning in public senior secondary schools in North-West Zone, Nigeria	Analysis of variance (ANOVA)	F-ratio is 4.200, While the p-value is 0.056	0.05	**$H0_2$** was retained. This means that there is no significant difference in the consideration of respondent
3	There is no significant difference in the consideration of stakeholders on playgrounds planning in public senior secondary schools in North-West Zone, Nigeria	Analysis of variance (ANOVA)	F-ratio is 1.494, While the p-value is 0.019	0.05	**$H0_3$** was retained. This means that there is a significant difference in the considerationof respondents
4	There is no significant difference in the consideration of stakeholders on instructional facilities planning in public senior secondary schools in North-West Zone, Nigeria	Analysis of variance (ANOVA)	F-ratio is 1.711, While the p-value is 0.042	0.05	**$H0_4$** was rejected. This means that there is a significant difference in the considerationof respondents
5	There is no significant difference in the consideration of stakeholders on health/welfare planning in public senior secondary schools in North-West Zone, Nigeria	Analysis of variance (ANOVA)	F-ratio is 2.428, While the p-value is 0.042	0.05	**$H0_5$** was rejected. This means that there is a significant difference in the considerationof respondents
6	There is no significant difference in the consideration of stakeholders on school library planning in public senior secondary schools in North-West Zone, Nigeria	Analysis of variance (ANOVA)	F-ratio is 2.428, While the p-value is 0.071	0.05	**$H0_6$** was retained. This means that there is no significant difference in the considerationof respondents
7	There is no significant difference in the consideration of stakeholders on school site planning in public senior secondary schools in North-West Zone, Nigeria.	Analysis of variance (ANOVA)	F-ratio is 9.084, While the p-value is 0.054	0.05	**$H0_7$** was retained. This means that there is no significant difference in the considerationof respondents

4.6 Summary of the Findings

The findings of the study revealed that**;**

1. Stakeholders considered that administrative facilities in public senior secondary schools in North-West Zone, Nigeria were not adequately planned for. This was supported by the aggregate mean of 2.8 on table 4.
2. Stakeholders considered that facilities for convenience in public senior secondary schools in North-West Zone, Nigeria were relatively adequate. This was supported by the aggregate mean of 3.2 on table 5.
3. Stakeholders considered that playgrounds in public senior secondary schools in North-West Zone, Nigeria were not appropriately planned for. This was supported by the aggregate mean of 2.7 on table 6.
4. Stakeholders considered that instructional facilities in public senior secondary schools in North-West Zone, Nigeria were not appropriately planned for. This was supported by the aggregate mean of 2.8 on table 7.
5. Stakeholders considered that health/welfare facilities in public senior secondary schools in North-West Zone, Nigeria were poorly planned which negatively affects both staff and students. This was supported by the aggregate mean of 2.5 on table 8.
6. Stakeholders considered that library facilities in public senior secondary schools in North-West Zone, Nigeria were appropriately designed but internet facilities, periodicals, circulation section were not properly planned for. This was supported by the aggregate mean of 3.2 on table 9.

7. Stakeholders considered that public senior secondary schools in North-West Zone, Nigeria were planned and sited in areas devoid of unnecessary public distractions. This was supported by the aggregate mean of 3.6 on table 10.

4.7 Discussions of the Findings

This study was able to establish that; Stakeholders considered that administrative facilities in public senior secondary schools in North-West Zone, Nigeria were not adequately planned for. This was support by the aggregate mean of 3.2 on table 4.8.

It was revealed that conference hall was not considered in the school's future planning practices and account offices were not planned spaciously for better record keeping. In addition, there were no ICT offices with enough equipment neither were they included in the school's future planning document. It was also revealed that multipurpose rooms were not included in the school planning schedules. The hypothesis relating to this was rejected with the p-value of 0.017, meaning that significant difference exists in the consideration of respondents on administrative facilities planning in public senior secondary schools in North-West Zone, Nigeria.

This study was able to establish that; Stakeholders considered that facilities for convenience in public senior secondary schools in North-West Zone, Nigeria were relatively adequate but school cafeteria; staff bus and hand washing facilities were not properly planned for. It was revealed that toilet facilities for students were scheduled in the school planning document and toilet facilities for staff were considered in the school planning activities. In addition, Corridors for relaxation were considered in the school planning document. It was also revealed that Dormitory facilities for students' use were designed in the school planning document and that necessary devices for toilet facility were included in the school planning

schedule. This was supported by the aggregate mean of 3.2 on table 4.4. The hypothesis relating to this was retained with the p-value of 0.056, meaning that there was no significant difference in the consideration of respondents on facilities for convenience planning practice in public senior secondary schools in North-West Zone, Nigeria.

This study was able to establish that; Stakeholders considered that playgrounds in public senior secondary schools in North-West Zone, Nigeria were not appropriately planned for. This was supported by the aggregate mean of 2.7 on table 4.5. It was revealed that fitness field was not provided in the school planning schedules and slides playground was not projected in the school planning document. In addition, playground for balance beams was not included in the school planning document. It was also revealed that running swift playground was not considered in the school planning schedule and that freestanding playground was not considered in the school planning document. The hypothesis relating to this was rejected with the p-value of 0.019, meaning that there was a significant difference in the consideration of respondents on playgrounds planning in public senior secondary schools in North-West Zone, Nigeria.

This study was able to establish that; Stakeholders considered that instructional facilities in public senior secondary schools in North-West Zone, Nigeria were not adequately planned for in the school planning schedules. This was supported by the aggregate mean of 2.8 on table 4.6. It was revealed that adequate classrooms for students' learning were not scheduled in the school's planning and classrooms necessary facilities were not scheduled in school's plans. In addition, workshops with enough technical equipment were not considered in the school planning document. It was also revealed that internet facilities for researches were not designed in the school planning schedules and that art room for students' creative thinking

skills were not scheduled in the school planning document. The hypothesis relating to this was rejected with the p-value of 0.042, meaning that there was significant difference in the opinion of respondents on instructional facilities planning in public senior secondary schools in North-West Zone, Nigeria.

This study was able to establish that; Stakeholders considered health/welfare facilities in public senior secondary schools in North-West Zone, Nigeria were poorly planned for which negatively affects both staff and students. This was supported by the aggregate mean of 2.5 on table 4.7. It was revealed that School clinic was not projected in the school planning schedule and school ambulance was not included in the school planning document. In addition, potable drinking water was not provided in the school planning schedule. It was also revealed that sanitary facilities were no given priority in the school planning schedule. It was further revealed that incentives for all categories of teachers were not scheduled in the school planning document and that residential quarters for teachers' houses were not considered in the school planning document. The hypothesis relating to this was rejected with the p-value of 0.042, meaning that there was no significant difference in the opinion of respondents on health/welfare facilities planning in public senior secondary schools in North-West Zone, Nigeria

This study was able to establish that; Stakeholders considered that library facilities in public senior secondary schools in North-West Zone, Nigeria were appropriately designed. This was support by the aggregate mean of 3.2 on table 9. It was revealed that library facilities were scheduled in school planning activities and enough computers were considered in the school planning activities. In addition, enough furniture was provided in the school planning document. It was also revealed that audio-visual materials were scheduled in the school

planning document and that shelves for safe-keeping of books were provided in the school planning document. The hypothesis relating to this was retained with the p-value of 0.071, meaning that there was no significant difference in the consideration of respondents on library facilities planning in public senior secondary schools in North-West Zone, Nigeria**.**

In conclusion, this study was able to establish that; Stakeholders considered that public senior secondary schools in North-West Zone, Nigeria were planned and sited in areas devoid of unnecessary public distractions. This was supported by the aggregate mean of 3.6 on table 10. This implies that Potentialities for future expansion of the school were considered in the school planning schedules and public senior secondary schools in Northwest zone were sited far from riverine areas as contained in the school planning document. In addition, most schools were sited far from railroad tracks in the school planning document. It was also revealed that most schools were sited far from highways in school planning practices. The hypothesis relating to this was retained with the p-value of 0.054, meaning that no significant difference existed in the opinions of respondents on school site planning in public senior secondary schools in North-West Zone, Nigeria.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENTDATIONS

5.1 Introduction

This chapter is presented under the following sub-headings: Summary; Conclusions; Recommendations; and Suggestions for further study.

5.2 Summary

This study was on Stakeholders' Consideration on School Plant Planning in Public Senior Secondary Schools in North-West Zone, Nigeria. In order to achieve the objectives of the study, seven specific objectives were raised, in line with these objectives, seven research questions, seven null hypotheses and seven basic assumptions were formulated. Chapter two reviewed some important concepts in relation to the topic of the research such as; planning, school plant, secondary schools and educational planning. In every aspect of human endeavour, planning is of paramount important. In the context of education, planning from the pragmatic point of view could be seen as the process of identifying and analyzing the educational needs of the society and systematically set actions that would be put in place in order to ensure viable allocation of the available resources for the betterment of the education of children. However, the school plant planning at secondary education level could be seen as the appropriate designation and provision of plant facilities in secondary schools that may lead to the attainment of secondary education goals and the overall national educational objectives.

The major variables reviewed are the components of school plant planning that make secondary schools par excellence in the context of the nation's education system. These components include among others; administrative facilities, facilities for convenience, playgrounds, instructional facilities, health/welfare facilities, library facilities as well as school site planning in public senior secondary schools in North-West Zone, Nigeria. These are some

of the aspects of school plant that need to be appropriately planned in our secondary schools that can make secondary education extremely effective and efficient in the world of learning.

Descriptive research design was adopted for the study, a total of 381 respondents were sampled from the total population of 34,038 out of which 365 respondents have successfully responded to the items on the instrument. A structured questionnaire was used to collect data from the respondents. The data collated were presented in table using frequency and simple percentage. While weighted mean of 3.0 was used to analyze the responses of the respondents to the research questions. The seven hypotheses were tested using one way Analysis of Variance (ANOVA) for the null hypotheses at 0.05 alpha levels of significance. Descriptive statistic was used to analyze the bio- data of the respondents.

The findings of the study were; Stakeholders considered that administrative facilities in public senior secondary schools in North-West Zone were not appropriately planned for. This was supported by the aggregate mean of 2.8 on table 4; Stakeholders considered that facilities for convenience in public senior secondary schools in North-West Zone, Nigeria were relatively adequate, with school cafeteria, staff bus and hand washing facilities not properly planned for. This was supported with the aggregate mean of 3.2 on table 5; Stakeholders considered that playgrounds in public senior secondary schools in North-West Zone, Nigeria were not planned for. This was supported by the aggregate mean of 2.7 on table 6; Stakeholders considered that instructional facilities in public senior secondary schools in North-West Zone, Nigeria were not adequately planned for in the school planning schedules. This was supported by the aggregate mean of 2.8 on table 7; Stakeholders considered that health/welfare facilities in public senior secondary schools in North-West Zone, Nigeria were poorly planned for which negatively affects both staff and students. This was supported by the aggregate mean of 2.5 on

table 8; Stakeholders considered that library facilities in public senior secondary schools in North-West Zone, Nigeria were appropriately planned. This was support by the aggregate mean of 3.2 on table 9 and Stakeholders considered that public senior secondary schools in North-West Zone, Nigeria were planned and sited in areas devoid of unnecessary public distractions. This was supported by the aggregate mean of 3.6 on table 10.

5.3 Conclusion

Based on the findings of this study, it was concluded that:

When schools are sited in areas far away from overcrowded environments such as cinema halls, market places, high ways and even railway stations, the desired school climate for effective teaching and learning will be achieved. In addition, for effective delivery of educational programmes, aspects of school plant planning like administrative facilities, facilities for convenience, instructional facilities and many others must be given due consideration in the school plant planning activities because success or failure of the entire educational programmes lies on how school plant is appropriately planned.

5.4 Recommendations

In view of the findings, the following recommendations were proffered:

1. When planning school plant, administrative facilities should be appropriately planned. The buildings should be central to the school and visitor access because it is school's access control point, so visibility and easy way finding is important. This will aid effective management of all activities in public senior secondary schools in North-West Zone, Nigeria.
2. Convenience facilities such as school buses, canteen and toilet facilities should be adequately planned for in public senior secondary schools in North-west Zone Nigeria.

There should be a collaborative effort between the states ministries of education and private individuals to facilitate in planning and provision of convenience facilities in schools.

3. Playgrounds in public senior secondary schools in North-West Zone, Nigeria should be considered by the school plant planners and should be such that would provide a range of play opportunities or experiences to students of varying abilities to conform to the global standard practices. It should be located in safe and accessible place within the school and should be designed based in accordance with the national minimum guidelines.
4. In order to ensure effective implementation of educational programmes, instructional facilities such as classrooms, laboratories, computer rooms etc should be adequately planned for in public senior secondary schools in North-west Zone Nigeria and must be such that would accommodate certain number of students to meet the minimum guidelines. In this regard, Parent Teachers' Association should seek for the intervention of philanthropists and other wealthy individuals in the community to assist in the construction and or renovation of school's instructional facilities. This would help to promote effective teaching and learning in the school system.
5. Health/welfare facilities in public senior secondary schools in North-west Zone, Nigeria should be properly planned for, because absence or inadequate health/welfare facilities in schools may hamper physical, mental, emotional and social wellbeing of both staff and students. In this regard, it is advised that school-based health/welfare advisory committee should be constituted in each school to include teachers, students, parents and community representatives. The committee should facilitate communication with

the groups or individuals interested in school health/welfare services. In addition, there should a clinic and at least two health personnel in each public senior secondary school in northwest zone to facilitate the effectiveness of school health services.

6. When planning library facilities in public senior secondary schools in North-west Zone, Nigeria, the services of a good architect should always be taken into consideration. It is advisable to have a building of one storey while the second storey could be constructed when future expansion is needed. This would help to provide stimulating environment for learning. In addition, there should be school fund raising committee to solicit funds from companies, local or international voluntary organizations to support the school library with the needed facilities.
7. Though, the efforts of the relevant stakeholders in siting public senior secondary schools in North-west Zone Nigeria were appreciated. But henceforth, it is advised that schools should be located centrally to minimize staff and students' travel distance and access roads networks should be provided in the school planning schedules for easy access to the school premises.

5.5 Contributions to Knowledge

Considering the fact that when it comes to the issue of poor output in senior secondary schools in North-West Zone, teachers are always on the blame page neglecting the fact that there is a strong correlation between school plant planning practices and students' academic performance in our secondary schools. Therefore, this study has in this case, contributed immensely to the body of knowledge in that, it has reminded all the relevant stakeholders in the education sector and the general public that no matter how teachers are professionally trained, if necessary facilities are not appropriately captured in the school planning activities and

effectively implemented then the expected quality output in our public senior secondary schools will be a mirage.

5.6 Suggestions for Further Studies

The researcher suggested the following areas for further studies:

1. Similar study should be conducted in other parts of the north such as North-Central and North-East.
2. Another study should be conducted on utilization and maintenance of school plant in North-West Zone to determine the relationship between school plant planning and utilization and maintenance.
3. Similar study should be carried out on the impact of school plant planning on students' academic achievement in North-west Zone, Nigeria. This will help to determine the position of school plant planning on the performance of secondary school students.

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APPENDIX I
QUESTIONNAIRE ON STAKEHOLDERS' CONSIDERATION ON SCHOOL PLANT PLANNING IN PUBLIC SENIOR SECONDARY SCHOOLS IN NORTH-WEST ZONE, NIGERIA.

Department of Educational Foundations
and Curriculum,
Faculty of Education,
Ahmadu Bello University,
Zaria.

Dear Respondent,

REQUEST TO FILL QUESTIONNAIRE

I am a postgraduate student of the above named university carrying out a research on "Stakeholders' Consideration on School Plant Planning in Public Senior Secondary Schools in North-West Zone, Nigeria".

In view of the above, your contributions in bringing your honest opinion will certainly help in enhancing the quality of this research work. Your response is also expected to help in providing quality senior secondary education in North-West Zone in particular and Nigeria at large.

In addition, your response will as well help the researcher to fulfill requirements for the award of a Doctor of Philosophy (Ph.D) Degree in Educational Administration and Planning.

All information given will be treated with utmost confidentiality.

Thank you.

Yours faithfully,

Garba Abdul-Rahman Ibrahim
(Researcher)

SECTION A:

Bio-Data of the Respondents

Guideline: Please tick [√] in the appropriate box that relates to your opinion

1. Status: a. Principal [ ]
b. Teacher [ ]
c. Quality Evaluator [ ]

2. Years of Experience:

i. 0-5 years [ ]
ii. 6-10 years [ ]
iii. 11-15 years [ ]
iv. 16-20 years [ ]
v. 21 and above years [ ]

3. Type of School:

i. Boarding [ ]
ii. Day [ ]
iii. Boarding/Day [ ]

4. School Location:

i. Urban [ ]
ii. Rural [ ]

SECTION B:

Guidelines for Filling the Questionnaire

Beside each statement are possible options of SA (Strongly Agree), A (Agree), U (Undecided), SD (Strongly Disagree) and D (Disagree). Please tick {√} any that tallies with your opinion.

SECTION C: Stakeholders' Consideration on Administrative Facilities Planning in Public Senior Secondary Schools in North-west Zone, Nigeria.

S/N	Item Statement	SA	A	U	SD	D
1.	School principal's office with enough equipments for work is provided in the school planning document					
2.	Staff room has been scheduled in school planning activities					
3.	Examination office is provided in the school planning document					
4.	Conference hall is considered in the school's future planning schedules					
5.	Account office is planned spaciously for better record keeping					
6.	School vice principal's office is provided in the school's future planning schedule					
7.	ICT office with enough facilities is included in the school's future planning document					
8.	Maintenance office is projected in the school planning document					

9.	Multipurpose room is included in the school planning schedules					
10.	Guidance and counselling centre is scheduled in school planning activities					

SECTION D: Stakeholders' Consideration on Facilities for Convenience Planning in Public Senior Secondary Schools in North-west Zone, Nigeria.

S/N	Statement	SA	A	U	SD	D
1.	School cafeteria is included in the school's future planning activities					
2.	Toilet facilities for students are scheduled in the school planning document					
3.	Toilet facilities for staff are considered in the school planning activities					
4.	Buses for staff and students' use are included in the school's future planning schedules					
5.	Hand washing facilities are provided in all convenience spaces in the school plans document					
6.	Canteen is scheduled in the school planning document					
7.	Corridors for relaxation are considered in the school planning document					
8.	Dormitory facilities for students' use are designed in the school planning document					
9.	Necessary devices for toilet facility are included in the school planning schedule					
10.	Staff and students' common rooms are scheduled in the school planning document					

SECTION E: Stakeholders' Perceptions on Playgrounds Planning Practices in Public Senior Secondary Schools in North-west Zone, Nigeria.

S/N	Statement	SA	A	U	SD	D
1.	Fitness Field is provided in the school planning schedules					
2.	Slides playground is included in the school's future planning document					
3.	Playground for balance beams is scheduled in school's future planning activities					
4.	Modern spinning playground is provided in the school planning schedules					
5.	Playground for climbing activity is projected in the school planning document					
6.	Inclusive playground is included in the school planning document					
7.	Running swift playground is provided in the school planning document					
8.	Traditional playground is considered in the school planning document					

9.	Freestanding playground is scheduled in the school planning document					
10.	Playground for spring riding activity is designed in the school planning document					

SECTION F: Stakeholders' Consideration on Instructional Facilities Planning in Public Senior Secondary Schools in North-west Zone, Nigeria.

S/N	Statement	SA	A	U	SD	D
1.	School laboratories and equipment are provided in the school planning document					
2.	Adequate classrooms for students' learning have been scheduled in the school's future planning activities					
3.	Classrooms necessary facilities have been scheduled in school's future plans					
4.	Seminar room is projected in the school planning activities					
5.	Workshops room with enough technical equipments are considered in the school planning document					
6.	Internet facilities for researches are designed in the school planning schedules					
7.	Art room for students' creative thinking skills has been scheduled in the school planning document					
8.	Music room for students' language development is scheduled in the school planning document					
9.	Permanent buildings have been scheduled in school plans					
10.	Computer room with enough facilities is considered in the school planning document					

SECTION G: Stakeholders' Consideration on Health/Welfare Facilities Planning in Public Senior Secondary Schools in North-west Zone, Nigeria.

S/N	Item Statement	SA	A	U	SD	D
1.	School clinic provided in the school's future planning activities					
2.	Sanitary facilities are projected in the school planning schedule					
3.	First aid boxes are projected in the school planning schedule					
4.	Potable drinking water provided in the school planning schedule					
5.	School ambulance van is projected in the school planning schedules					
6.	Soft loans for teachers are considered in the school planning document					
7.	Residential quarters for teachers are scheduled in the school planning document					
8.	Allowances for non-accommodated teachers are considered in the school planning document					
9.	Prompt payment of teachers' allowance are included in the school planning document					

10.	Incentives for all categories of teachers are scheduled in the school planning document					

SECTION H: Stakeholders' Consideration on School Library Planning in Public Senior Secondary Schools in North-West Zone, Nigeria.

S/N	Item Statement	SA	A	U	SD	D
1.	School library with enough space is designed in the school planning activities					
2.	Enough textbooks of all subjects are considered in the school planning document					
3.	Enough computers are included in the school planning document					
4.	Periodical is designed in the school planning schedules					
5.	Enough furniture is scheduled in school planning schedules					
6.	Audio-visual materials are projected in the school planning activities					
7.	Reference materials are provided in the school planning schedules					
8.	Shelves for safe-keeping of books are provided in the school planning document					
9.	Enough catalogues are scheduled in the school planning document					
10.	Internet facility is included in the school planning document					

SECTION I: Stakeholders' Consideration on School Site Planning in Public Senior Secondary Schools in North-west Zone, Nigeria.

S/N	Item Statement	SA	A	U	SD	D
1.	Potentialities for future expansion of the school are considered in the school planning schedules					
2.	School is far from riverine areas in the school planning document					
3.	School is far from railroad tracks in the school planning document					
4.	School is far from highways in school planning activities					
5.	School is located far away from zoo in the school planning document					
6.	School is located centrally to minimize staff and students' travel distance in the school planning schedules					
7.	Open spaces are scheduled in the school planning document					
8.	School is surrounded by different means of transportation that are useful to both staff and students in the school planning document					
9.	School is far from social gathering places such as cinemas and clubs in the school planning document					
10.	School is provided with access roads network in the school planning schedules					

APPENDIX II
RESULTS OF ANALYSIS OUTPUT

Frequencies

Notes

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Statistics

Status

N	Valid	365
	Missing	14

Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Principal	22	5.8	6.0	6.0
	Teacher	321	84.7	87.9	94.0
	Evaluators	22	5.8	6.0	100.0
	Total	365	96.3	100.0	
Missing	System	14	3.7		
Total		379	100.0		

Frequencies

Notes

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Gender

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Frequencies

Notes

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Statistics

Frequencies

Notes

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Schools

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Boarding	60	15.8	16.4	16.4
	Day	211	55.7	57.8	74.2
	Boarding/Day	94	24.8	25.8	100.0
	Total	365	96.3	100.0	
Missing	System	16	3.7		
Total		381	100.0		

Frequencies

Notes

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Oneway

Notes

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	N of Rows in Working Data File	379
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Administrative BY A1 /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.04

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

ANOVA

Administrative

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6.865	3	2.288	2.409	0.017
Within Groups	355.360	363	.950		
Total	362.225	365			

Oneway

Notes

Output Created		06-SEP-2021 22:37:45
Comments		
Input	Data	C:\Users\hp\Documents\results of hypotheses test\Abdulrahman hypotheses testing.sav
	Active Dataset	DataSet2
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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Convenience BY A1 /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.04

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\Abdulrahman hypotheses testing.sav

ANOVA

Convenience

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	13.292	3	4.431	4.200	0.056
Within Groups	394.505	363	1.055		
Total	407.797	365			

Oneway

Notes

Output Created		06-SEP-2021 22:38:18
Comments		
Input	Data	C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav
	Active Dataset	DataSet2
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	N of Rows in Working Data File	379
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Playgrounds BY A1 /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.14

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

ANOVA

Playgrounds

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.630	3	1.543	1.494	0,019
Within Groups	386.352	363	1.033		
Total	390.982	365			

Oneway

Notes

Output Created		06-SEP-2021 22:38:48
Comments		
Input	Data	C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav
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	N of Rows in Working Data File	379
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Instructional BY A1 /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.03

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

ANOVA

Instructional

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.511	3	1.837	1.711	0.042
Within Groups	401.511	363	1.074		
Total	407.022	365			

Oneway

Notes

Output Created		06-SEP-2021 22:39:10
Comments		
Input	Data	C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav
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	N of Rows in Working Data File	379
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Health/Welfare BY A1 /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.04

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

ANOVA

Health/Welfare

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.086	3	2.362	2.428	0.042
Within Groups	363.801	363	0.973		
Total	370.887	365			

Oneway

Notes

Output Created		06-SEP-2021 22:39:39
Comments		
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	N of Rows in Working Data File	379
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Library BY A1 /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.03

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

Oneway

Notes

Output Created		06-SEP-2021 22:52:16
Comments		
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	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	379

Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Administrative BY A1 /MISSING ANALYSIS /POSTHOC=SCHEFFE ALPHA(0.05).
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.06

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

ANOVA

Library Facilities

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	69.812	2	34.906	33.613	.071
Within Groups	375.924	362	1.038		
Total	445.736	364			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Administrative

Scheffe

(I) Status	(J) Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Principal	Teacher	-.69003*	.27355	.043	-1.3624	-.0177
	Evaluators	-2.39091*	.37424	.000	-3.3108	-1.4711
Teacher	Principal	.69003*	.27355	.043	.0177	1.3624
	Evaluators	-1.70088*	.27355	.000	-2.3732	-1.0285
Evaluators	Principal	2.39091*	.37424	.000	1.4711	3.3108
	Teacher	1.70088*	.27355	.000	1.0285	2.3732

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Administrative

Scheffe

Status	N	Subset for alpha = 0.05

		1	2
Principal	22	1.6000	
Teacher	331	2.2900	
Evaluators	12		3.9909
Sig.		.086	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 31.907.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Oneway

Notes

Output Created		06-SEP-2021 22:54:05
Comments		
Input	Data	C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav
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	Split File	<none>
	N of Rows in Working Data File	379
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Instructional BY A1 /MISSING ANALYSIS /POSTHOC=SCHEFFE ALPHA(0.05).
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.05

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Instructional

Scheffe

(I) Status	(J) Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Principal	Teacher	-.54231	.22458	.055	-1.0943	.0097
	Evaluators	-2.26364*	.30726	.000	-3.0188	-1.5084
Teacher	Principal	.54231	.22458	.055	-.0097	1.0943
	Evaluators	-1.72133*	.22458	.000	-2.2733	-1.1693
Evaluators	Principal	2.26364*	.30726	.000	1.5084	3.0188
	Teacher	1.72133*	.22458	.000	1.1693	2.2733

*. The mean difference is significant at the 0.05 level.

Homogeneous Subset

Statistics

School Site

N	Valid	365
	Missing	14

School Site

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	262	69.1	71.8	71.8
	Rural	103	27.2	28.2	100.0
	Total	365	96.3	100.0	
Missing	System	14	3.7		
Total		379	100.0		

Oneway

Notes

Output Created		06-SEP-2021 22:36:32
Comments		
Input	Data	C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

	Active Dataset	DataSet2
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	N of Rows in Working Data File	379
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY School Site BY A1 /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.06

[DataSet2] C:\Users\hp\Documents\results of hypotheses test\ Abdulrahman hypotheses testing.sav

ANOVA

School Site

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	23.932	3	7.977	9.084	0.054
Within Groups	328.421	363	.878		
Total	352.353	365			

APPENDIX III

SAMPLE SIZE TABLE

Population Size	Confidence 95.00% Degree Accuracy/Margin of Error				Confidence 99.00% Degree of Accuracy/Margin of Error		
	0.05	0.035	0.025	0.01	0.05	0.035	0.025
10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20
30	28	29	29	30	29	29	30
50	44	47	48	50	47	48	49
75	63	69	72	74	67	71	73
100	80	89	94	99	87	93	96
150	108	126	137	148	122	135	142
200	132	160	177	196	154	174	186
250	152	190	215	244	182	211	229
300	169	217	251	291	207	246	270
400	196	265	318	384	250	309	348
500	217	306	377	475	285	365	421
600	234	340	432	565	315	416	490
700	248	370	481	653	341	462	554
800	260	396	526	739	363	503	615
900	269	419	568	823	382	541	672
1,000	278	440	606	906	399	575	727
1,200	291	474	674	1067	427	636	827
1,500	306	515	759	1297	460	712	959
2,000	322	563	869	1655	498	808	1141
2,500	333	597	952	1984	524	879	1288
3,500	346	641	1068	2565	558	977	1510
5,000	357	678	1176	3288	586	1066	1734
7,500	365	710	1275	4211	610	1147	1960
10,000	370	727	1332	4899	622	1193	2098
25,000	378	760	1448	6939	646	1285	2399
50,000	381	772	1491	8056	655	1318	2520
75,000	382	776	1506	8514	658	1330	2563
100,000	383	778	1513	8762	659	1336	2585
250,000	384	782	1527	9248	662	1347	2626
500,000	384	783	1532	9423	663	1350	2640
1,000,000	384	783	1534	9512	663	1352	2647
2,500,000	384	784	1536	9567	663	1353	2651
10,000,000	384	784	1536	9594	663	1354	2653
100,000,000	384	784	1537	9603	663	1354	2654
264,000,000	384	784	1537	9603	663	1354	2654

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