IMPACT OF SCHOOL FACILITIES ON TEACHING AND LEARNING IN NIGERIAN AIRFORCE SECONDARY SCHOOLS

BY

AUTA RISIKAT IBIJOKE
MED/EDUC/19981/07-08

DEPARTMENT OF EDUCATIONAL FOUNDATIONS AND CURRICULUM

EDUCATIONAL ADMINISTRATION AND PLANNING SECTION
AHMADU BELLO UNIVERSITY
ZARIA – NIGERIA

NOVEMBER, 2012

DECLARATION

I hereby declare that the study entitled "Impact of School Facilities on Teaching and Learning in Nigerian Airforce Secondary Schools" was conducted by me. The topic researched upon has not been presented for any higher degree. All sources have been duely acknowledged.

_____ _____

Auta R. Ibijoke Date

CERTIFICATION

This research entitled "Impact of School Facilities on Teaching and Learning in Nigerian Airforce Secondary Schools" meets the regulation governing the award of the degree of Master of Educational Administration and Planning in Ahmadu Bello University, Zaria and approved for its contribution to knowledge.

_____	_____
Dr. B. A. Maina Chairman, Supervisory Committee	Date
_____	_____
Dr. M. O. Dare Member, Supervisory Committee	Date
_____	_____
Dr. M. Maina Head of Department	Date
_____	_____
Professor A. A. Joshua Dean, School of Postgraduate Studies	Date

DEDICATION

This work is dedicated to Almighty God and my dearest husband and my immediate family, who endured my busy schedule during the course of study.

ACKNOWLEDGEMENT

My appreciation goes to Almighty God who in His infinite mercy saw me through the course.

I wish to express my profound gratitude to my supervisors; Dr. B. A. Maina and Dr. M. O. Dare for their untiring efforts and encouragement.

I appreciate the moral, financial and spiritual support of the followings: my husband, Chief B. M. Auta, Mr. Benjamin Ameh, Mr. Olufemi Omoniwa, Mrs. A. Adewumi (typist), Prof. Funke Suleiman, Mrs. Funke Awujola, Mrs. Omowumi Alimi, Mr. and Mrs. Alabi Robert.

I also wish to thank my colleagues; Mrs. Alawode, Mrs. Akintayo, Mrs. Ayinla and Mrs. Okoyeocha, who contributed immensely in taking my class in Airforce Secondary School, Kaduna during my absence. May God reward them all.

LIST OF TABLE

Table 4.2.1: Opinions of respondents on the impact of supply of electricity on teaching-learning process - 57

Table 4.2.2: Opinions of respondents on the impact of supply of pipe-borne water on teaching and learning process - - - - - 59

Table 4.2.3: Opinions of respondents on the impact of provision on classrooms to teaching and learning process in schools - - - - 62

Table 4.2.4: Opinions of respondents on the impact of laboratory facilities on teaching and learning process - - - - - 66

Table 4.3.1: Summary of One Way Analysis of Variance (ANOVA) on the impact of supply of electricity on teaching and learning process - - - 68

Table 4.3.2: Summary of One Way Analysis of Variance (ANOVA) on the impact of supply of pipe borne water on teaching and learning process - - 69

Table 4.3.3: Summary of One Way Analysis of Variance (ANOVA) on the impact of utilization of facilities teaching and learning in schools - - 70

Table 4.3.4: Summary of One Way Analysis of Variance (ANOVA) on the impact of various school facilities on teaching and learning process - - 71

ABSTRACT

This study examined "Impact of School Facilities on Teaching and Learning in Nigerian Airforce Secondary Schools". The purpose of this study was to find out how electricity, pipe-borne water, classroom and laboratory have impact on teaching and learning in Nigerian Airforce Schools. Four research questions were asked and four null hypotheses formulated and tested using ANOVA at 0.05 level of significant. The research design adopted in the study was descriptive survey. Structured questionnaire was designed by the researcher and administered in Airforce Secondary Schools Kaduna, Jos and Portharcourt. The major findings of this study revealed that hypotheses one and two retained while the third and fourth hypotheses were rejected. Based on the findings, it was recommended that Nigeria Airforce directorate should make effort to supply electricity at all times in schools, provide enough classrooms and other facilities in all the Nigerian Aaiforce Schools.

OPERATIONAL DEFINITIONS OF TERMS

The following terms were defined within the context of this study:

Impact - The likely effect of activities of a particular concept on the other which could be positively or negatively. This involves two variables of school plant and teaching and learning process.
school.

Teaching - It is an activity performed by a professionally trained person to impart knowledge on the younger generation.

Learning - The ability of one to recall what has been learnt over a period of time (shortest duration) after been taught.

School Facilities - These are the buildings, furnitures, equipment and others which help to translate any educational programme into a productive result on the learners.

Stakeholders - They are individuals or groups directly or indirectly involved in educational practices through their various contributions to the development of the educational system.

TABLE OF CONTENTS

Title Page - - - - - - - - - i

Declaration - - - - - - - - - ii

Certification - - - - - - - - - iii

Dedication - - - - - - - - - - iv

Acknowledgment- - - - - - - - - v

List of Tables - - - - - - - - - vi

Abstract - - - - - - - - - - vii

Operational Definitions of Terms - - - - - viii

Table of Contents - - - - - - - - - ix

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study - - - - - 1

1.2 Statement of the Problem - - - - - 6

1.3 Objectives of the Study - - - - - 9

1.4 Research Questions - - - - - - 10

1.5 Research Hypotheses - - - - - - 10

1.6 Significance of the Study - - - - - 11

1.7 Basic Assumptions - - - - - - 12

1.8 Scope and Delimitation of the Study - - - 13

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction - - - - - - - 14

2.2 Conceptual Framework - - - - - - 14

2.3 Evolution of Educational Facilities - - - 15

2.4 Concept of School Plant - - - - - 18

2.5 Components of School Plants - - - - 21

2.6 Importance of School Plant - - - - - 23

2.7 Concept of Maintenance - - - - - 25

2.8 Benefits of Maintenance of School Facilities - - 32

2.9 Roles of Education Stakeholders in the Maintenance of School Facilities - - - - - - 35

2.10 Impact of Components of School Plants on Teaching and Learning - - - - - 37

2.11 Impact of supply of School Facilities on Teaching and Learning Process - - - - 39

2.12 Impact of Utilization of Education Facilities on Effective Teaching and Learning Process - - 41

2.13 Leadership - - - - - - - 43

2.14 Management of School Facilities - - - - 45

2.15 Planners of maintenance of School Facilities - - 46

2.16 Empirical Studies - - - - - - 48

2.17 Summary - - - - - - - - 49

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction - - - - - - - 50

3.2 Research Design - - - - - - - 50

3.3 Population - - - - - - - - 50

3.4 Sample and Sampling Technique - - - - 51

3.5 Instrumentation - - - - - - 51

3.6 Validity of the Instrument - - - - - 52

3.7 Reliability of the Instrument - - - - - 53

3.8 Pilot Study - - - - - - - - 54

3.9 Administration of Research Instrument - - - 54

3.10 Procedure for Data Analysis - - - - - 55

CHAPTER FOUR: PRESENTATION, DISCUSSION AND DATA ANALYSIS

4.1 Introductions - - - - - - - 56

4.2 Analysis of Respondents' Opinions on the Impact of school facilities on teaching and Learning in Nigerian Airforce Schools - - - - 56

4.3 Hypotheses Testing - - - - - - 68

4.4 Discussions of the Findings - - - - - 71

4.5 Summary of Major Findings - - - - - 74

4.6 Summary of Hypotheses Testings - - - - 75

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction - - - - - - - 76

5.2 Summary - - - - - - - - 76

5.3 Conclusions - - - - - - - - 77

5.4 Recommendations - - - - - - 78

5.5 Suggestions for Further Studies - - - - 79

References - - - - - - - - 80

Questionnaire - - - - - - - 84

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The existence of any educational system at whatever level cannot be in isolation of the school facilities. As this had constituted one of the essential variables instrumental to effective teaching and learning processes. Education is noted to be an effective instrument par excellence for effecting national and global development irrespective of the economic sector. It plays a veritable role in the communication process of its norms and values from one generation to another.

Education, whether formal or traditional exists in every society. However, the history of school facilities could be traced to the era of formal system of education. It equally changes with the system of education, even though, such other facilities like money and human resources are required. Over the years, enrolment into the secondary education has been on the increase, following series of educational programmes being introduced. One of such is the Universal Basic Education (UBE) scheme. Also, successive governments have and are still allocating an appreciable percentage

of their annual budgets to the provision and maintenance of school facilities meant to improve the sector.

It was reported by Balderstenb (1974) and Comb (1985) that, education in Nigeria began to expand first gradually, then dramatically. The consequences in the demand for education in general and school facilities in particular can be enormous. This is supported by the fact that, the quality of education can be greatly affected if schools are deficient in essential facilities in the teaching/learning process.

The subject of school facilities had received great attention from the public as well as educators in recent times. According to Building Educational Success Together (BEST, 2005), it was reported that the responsibility of every administrator is to ensure that every child had access to quality education in school facilities that provide an educational setting that was suited for teaching and learning. Also, implementing educational policies that resulted in high quality, high-performing, well-designed and maintained school facilities had a direct and indirect impact on the teaching and learning process (BEST, 2005). Effective facilities management therefore contributes to the success of every student in any school. In a study carried out by Hale (2002) revealed that students in

classrooms with large windows, natural lighting and well designed skylights were found to perform well from 19 to 25% better than their peers in classrooms without these feature. Not only environmental conditions in schools affect the students but also the staff as observed by (Hunter, 2006) which include the inoperative heating system, inadequate ventilation and poor lighting system. The overall building condition, the age of the building, and the windows in the instructional areas were positively related to students' achievement in learning (Bullock, 2007).

It is evident in their contributions (Broome, 2005; Hughes, 2005; Lyons, 2001) that students achievement depended upon the physical school facility, its age, the design and the condition of the school). School facilities played a significant role in directing the task of teaching and that of shaping students' learning process in and out-of-school. No doubt, school buildings as a tool for instituting an effective teaching and learning process constituted sizeable investment of public funds over its development and maintenance by the administrators.

Today, most of the school facilities which are supposed to promote an enhanced teaching and learning in secondary

education are absolute in form and thereby, creating a serious challenges to the 21st century educational needs of the learners.

Others are dilapidated and not-suitable to motivate secondary students to learn. School/Educational facilities are otherwise referred to as school plant. The school plants are the physical facilities provided for in the school, such as the school site, the buildings and equipment. These facilities are likened to capital in any industrial settings. In understanding the national goal of developing the educational system so as to provide a satisfactory flow of men and women, capable of acquiring the skills necessary to exploit to the fullest, the natural resources of the country makes it imperative for facilities to be abundantly available in schools. Buildings are needed to shelter staff and students, laboratories are needed to generate manipulative skills in students', sports/games facilities are needed to develop the mental, social and physical aspects of the students.

Dare (2010) defined school facilities as all the available assets of a school that can be used to foster and facilitate effective teaching and learning as well as to protect the physical well-being of the occupants. The school facilities are the physical expression of the school curriculum. That is, the school curriculum determines

to a large extent the nature of school facilities to be erected and the purpose it will serve. School facilities are expected to be adequately and carefully planned, developed and maintained in order to ensure their relevance to the school curriculum and towards effective teaching and learning in educational institutions. A well designed and functional school buildings with a wide array of teaching aids therefore, provide effective delivery of the school's curriculum and are positively related to student's' academic performance.

Aside the fact that, school facilities are the material things that facilitate teaching and learning processes in school, the duo concepts of teaching and learning are opposite sides of a coin, for a lesson is not taught until it has been learned. This is in addition to the fact that the importance of teaching and learning on the provision of adequate instructional facilities for education cannot be over-emphasized. The dictum had been "teaching is inseparable from learning while learning is separable from teaching". Teachers do the teaching to make the students learn, but students can learn without the teachers. But be that as it maybe, school facilities are sine qua non to teaching and learning process.

Teaching, therefore, can be thought of as a process that facilitates learning. In this process, the teacher or any other school administrator has an important role to play because he acts like a catalyst, actively stimulating learning. The teaching process is such a task that had proved to be difficult in the light of the present scenario, where learning takes place in an unconducive environment. Most public secondary schools in Nigerian are found in this mess, arising the query over what measure of quality control are put in place. A means of evaluating the standard of education at any level of education is on the basis of physical infrastructures provided, which compliment others. This present research work was conceived following the anomalies experienced on the obsolete or dilapidated nature of school facilities and its impact on teaching and learning in Nigerian Airforce secondary schools.

1.2 Statement of the Problem

There is no gainsaying that, educational system in Nigeria has contributed in no small measure to support the nation's economy through the provision of qualitative manpower and acquisition of knowledge, skills and values. In achieving this, in the 21st century, it has been a nightmare due to the poor state of

school facilities which are poorly managed, out of use, aged and not conducive for teaching and learning process.

There are specific problems identified that could affect teaching and learning in secondary schools.

One, lack of basic social amenities in most schools such as electricity, water supply, laboratories, classrooms etc. Effective and efficient operation of any school is in doubt with the absence of these facilities, affecting teaching and learning activities. This adversely create a discomfort to the teachers, students and adequate operators of the schools' administrative system. Fabunmi (1997) in support of this, asserted that school facilities when provided will aid teaching and learning programme and consequently improve academic achievement of students. Indeed, supply of electricity and pipe borne water in any school building will help for the maximum use of such facilities and vice versa.

Two, unequal allocation of facilities to schools coupled with inadequate funding has compounded the myriads of problem linked to this study. Facilities form one of the potent factors that contribute to academic achievement in the school system (Hallak, 1990). If therefore, such facilities as school buildings, classroom, libraries, laboratories, furniture, recreational equipment and other

instructional materials are not evenly distributed to schools due to political reasons, lack of funds or for any other reasons. Then, academic performance of students in such schools should not be queried because of the obvious reason(s) created. In his contribution, Ojoawo (1990) observed that certain schools are favoured in the allocation of facilities at the expense of others. In Airforce Military School Jos allocation of social amenities are more than any other Airforce schools e.g provision of generator, laboratory equipment.

Also, the issue of funding to the sector has continued to receive public criticism in view of its contribution to other sectors of the economy. It is not too surprising with the United Nations recommendation of a country's national; budget of 26% to the entire education sector. This perhaps, is to keep the system running ways from its perennial instability [problem caused by poor infrastructure, industrial action and so on.

Lastly, failure of the concerned authorities to provide adequate facilities and teaching aid in schools could worsen the situation already created. Scholars like (Wilcockson, 1994; Lawal, 1995; Ajayi, 1996; Suleiman, 1996) have variously identified that poor facilities affects teaching and learning spheres. They

concluded that absence or poor (and or deteriorating) quality of educational facilities can affect teaching-learning activities and invariably, academic performance of the students. Most public schools exist in vacuum with virtually no facility to promote effective teaching and learning process. These facilities include libraries, textbooks, tables and chairs, classrooms, and laboratories or even test equipment. In a related study, Mwamwneda and Mwamwenda (1987) cited by World Bank publication (1990) linked performance of students to the provision of adequate facilities such as classrooms, desks and books.

Fagamiye (1979) in Owoeye and Yara (2011) shares a similar view on this assertion when he argued that good quality schools interms of facilities and younger intakes perform better in WASSCE.

1.3 Objectives of the Study

The study was set out to achieve the following objectives:

(1) Assess the impact of supply of electricity on teaching and learning in Nigerian Airforce secondary schools.

(2) Find out the impact of supply of pipe borne water on teaching and learning in Nigerian Airforce secondary schools.

(3) Identify the impact of provision of classrooms on teaching and learning in Nigerian Airforce secondary schools.

(4) Determine the impact of provision of laboratory facilities on teaching and learning in Nigerian Airforce secondary schools.

1.4 Research Questions

The following research questions have been formulated in the study:

(1) What is impact supply of electricity on teaching and learning in Nigerian Airforce secondary schools?

(2) What is the impact of supply of pipe-borne water on teaching and learning process in Nigerian Airforce secondary schools?

(3) Does provision of classrooms have any impact on teaching and learning process in Nigerian Airforce secondary schools?

(4) Does the provision of laboratory facilities have any impact on teaching and learning in Nigerian Airforce secondary schools?

1.5 Research Hypotheses

Based on the formulated research questions, the following hypotheses had guided the study:

H_{01}: There is no significant difference in the respondents' opinions on the impact of supply of electricity on teaching and learning process.

H_{02}: There is no significant difference in the respondents' opinions on supply of pipe-borne water on teaching and learning process.

H_{03}: There is no significant difference in the respondents' opinions on the impact of provision of classrooms on teaching and learning process.

H_{04}: There is no significant difference in the respondents' opinions on the impact of provision of labouratory facilities on teaching and learning in school.

1.6 Significance of the Study

It is believed that the life-wire of any educational system is the extent of availability of school facilities (interms of quality and quantity) which occupies a crucial place in the realization of its goals. However, the result of the findings of this research work shall assist every stakeholders (policy makers, school administrators', teachers', government and the students') in playing a sensitive role aimed at improving the standard of education through the provision of a conducive learning environment.

First, policy makers' will be well equipped with a reliable and factual information which serves as an input for effective law

making on issues relating to allocation of funds, timely released period and the legal framework guiding its activities.

Secondly, it will provide an extensive knowledge of schools facilities to the school administrators to initiate, sustain and put to use.

Thirdly, it will afford other researchers to look into grey areas not covered in the present study and seek ways of improving over it.

Fourthly, teachers as major stakeholders in the school system, who play an intermediate role seek to work harmoniously with the school in encouraging the students to use the facilities. This could be to solve assignments, observe practical knowledge and in the acquisition of essential skills.

Lastly, it will place a great burden on the government to provide adequate funding to the school system, equipped the inspectorate unit to carry out its functions effectively.

1.7 Basic Assumptions

The study was assumed on the assumption that:

(1) If conducive and required educational facilities are provided in school, teaching and learning could improve greatly.

(2) Academic output of students' can be encouraging if only an appropriate teaching facilities are put in place.

(3) Short supply of educational facilities in schools drastically affects the implementation of secondary school curricula.

(4) Equal numbers of educational facilities are provided in all schools irrespective of size, purpose or objectives.

(5) There is no justification for providing facilities and are not being utilized or mismanaged by the school leadership.

1.8 Scope and Delimitation of the Study

The study was to cover the school administrators, teachers and students of all the Nigerian Airforce secondary schools located in Kaduna, Lagos, Ibadan, Jos, Port-harcort, Makurdi, Yola, and Kano. The students involved in this study are mainly those in SS2 classes because, it is believed that they would have learnt a lot of things before getting to this level. It is in view of this, that such variables like supply of electricity, pipe borne water, classroom and laboratory school facilities, its utilization, roles of stakeholders among others were looked into.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

In this chapter, a review of related works or contributions of some notable authors were undertaken. This is basically to understand, identify, criticize and analyse the critical variables that are related to the present study. This is to establish the theoretical base of the study. In view of this, the following areas were looked into: Evolution of educational facilities; concept of maintenance; importance of maintaining school facilities; concept of school facilities; components of school facilities; and its importance to the academic performance of students; utilization of school facilities, and the roles of stakeholders on school plant, planning and maintenance.

2.2 Conceptual Framework

- Evolution of educational facilities.
- Concept of maintenance
- Benefits of maintenance of school facilities
- Concept of school facilities
- Components of school facilities such as electricity, pipe borne water, classroom and laboratory

- Importance of school facilities
- Utilization of school facilities
- Managing of the school facilities
- Planners of maintenance of school facilities
- Contribution of PTA.

2.3 Evolution of Educational Facilities

The development of school plant has its own history traced to the western countries. This ranges from ancient Greece to Rome and India. In ancient India, the 'gurus' imparted education to their pupils' in ideal settings. They used to set up their shramas on the sites known for it scenic beauty. This underscores the importance attached to site location and purpose for which the facilities are meant for. The Ashramas were situated far away from the towns, in the national surroundings of greenery, rivers, streams, hills, and trees. There was no need for buildings and furnitures. The Ashramas were the embodiments of simple living and high thinking, with every small population of pupils.

In the buddist age, 'maths' were erected for elementary education, and for higher learning, big buildings were constructed. The main schooling continued to be imparted in temples and

maths. Muslims also housed their “maktabs” in the mosques. The prayer halls of the temples and mosques served as the classrooms. School buildings seldom enjoyed independent and separate existence. Following the wood’s dispatch during the British period, the government undertook the responsibility of opening up schools most especially in the urban areas, and a modest beginning was made in setting up school plants. In ancient Greece, temples were the seats of learning, while wayside constructions used to serve the purpose of schools in the ancient Rome.

Castaldi (1977:7] observes that during the Hellenistic 500BC-200BC, there were no school buildings as we have today. He noted that instructions were generally conducted in the open air, sometimes in the shadow of the temple or in an enclosure that hardly protect the students from harsh weather. The meeting place was thus incidental to the learning process.

Before the introduction of formal western education in Nigeria, traditional system of education existed in every society in one form or the other. Anywhere the child could stay and learn from thus considered as a classroom and any person capable of passing useful knowledge – be regarded as a teacher,

Castaldi (1977:3) affirms that recent advances in the field of educational psychology and electronic programming have stimulated the development of wide variety of effective teaching aids which had and still have profound effect on modern educational thinking.

He also emphasized that excellent school facilities and dedicated teachers are the basic ingredients of a good educational program. Similarly, Nwagu (1978:63) states that classrooms constitute the most basic facilities that every school must have. He pointed to the Nigerian situation where many school buildings and facilities have been constructed without enough consideration for the comfort of students' and teachers' who use them.

Castaldi (1977:9) states that one of the first forms of teaching aids appeared at the turn of the 20th century in the form of an arch pattern and the next generation of teaching aids marked the beginning of a wide spread use of supplementary instructional devices. Cushen (1966) maintains that educational aids have been used for centuries, sand, tray and slates preceded the blackboard specimen to illustrate lessons from the earliest days of schooling. Alcorn says equipment and materials are necessary to efficient learning. Moreover, Ozigi (1977) pointed out that every school

needs a wide range of educational equipment such as textbooks, laboratory, workshop and workshop equipment, audio-visual materials and items of furniture among others to aid the performance of its operation.

2.4 Concept of School Plant

The concept herein referred to these are things of education that includes school buildings (classrooms, assembly halls, labouratories and workshops, libraries e.t.c) teaching aids and devices such as modern educational hardwares and their softwares in the form of magnetic tapes, films and transparencies (Ogbodo, 1995). They are therefore, materials things that facilitate teaching and learning processes in the school.

In his own contributions, Castaldi (1977) was of the opinion that school plants are those things which enable a skillful teacher to achieve a level of instructional effectiveness that far exceeds what is possible when they are not provided. These facilities are therefore related directly to school curriculum. The programmes of the school are expressed as they were through the school site, the buildings, play grounds, the arrangement and design of the building e.t.c. A well designed functional school building with a wide array of teaching aids thereby provide effective delivery of the

schools' curriculum and are positively related to academic performance (Bloom, 1978).

According to the Cutis (1999), school plants are the treasurable assets of the school through which effective teaching and learning can take place and be promoted. Emphasizing on the importance of curriculum drawn to the school plant type, it helps to determine to a large extent the nature of school plant needed. School plant according to Dare (2010) should be properly planned, developed and maintained in order to ensure its relevance to the school curriculum and its effective teaching and learning in any educational institutions. Educational facilities are indispensable as far as the industry is concerned. They are essential for the well being and comfort of teachers' and the students' in the teaching-learning process.

According to Kochler; (1978:294) "there are no two opinions on the idea that a school building must be spaciously planned, functional and with pleasing architectural features". He further stated that buildings are to education as the body is to the mind. This is to say that a fine building makes a fine school and poor buildings, a poor school. From the above assertion, we can agree that a school should be housed in beautiful buildings which are not

only stimulating centres of education for children but also vital centres of community life. This can only be achieved through excellent planning of school facilities. School facilities embrace both temporary and permanent structures of school sites. School facilities consist of basic systems and structures which a viable school needs in order to function effectively and to fulfill the purpose for which it was established.

At times, students and teachers find themselves in a physical environment that adversely affects their morale and in some cases, their health. For example, if the science laboratory is dilapidated, it will create fear for both students' and teachers' to conduct practical inside. Also, if the toilet is bad, the odour will convey sickness to both students and teachers. When a school building is in disrepair, students' achievement suffers, e,g. a swinging door classroom with broken glass windows is a source of danger to students when they run up and down in the class.

People are affected and influenced by their environment. Children exposed to environment condition in the school facilities are no exception.

2.5 Components of School Plants

There are three major components. These are:

i. Infra structural facilities

ii. Instructional facilities

iii. School physical environment.

Infrastructural facilities include buildings such as administrative block, (which comprises the principals' office, vice principal and staff rooms, classroom) laboratory, stores, sick-bay, records office, school shop, library, music room, cafeteria, Intro-technology laboratory, security post, staff quarters' and school farm as well as storage house, electricity, water supply, sport field.

Instructional facilities are teaching materials and equipment, that comprises labouratory equipments, introductory technological equipment, wall clock, puzzles, television, radio V.CD plates and players, piano, flute, chalkboard, cardboards, duster, apparatus for science practical, models, picture charts, e.t.c.

Some of the materials used to effect teaching and learning are listed below with their uses:

	Equipment	Uses
a	Science equipment such as: (i) burettes (ii) weighing balance	 For measuring acids For measuring the quantity of sale for experiment.
b	Technical equipment such as: (i) Jigsaw (ii) Hammer (iii) Screw driver	 For cutting wood For nailing substance For testing electricity
c	Wall clock	For timing information
d	Television	To provide information
e	Flute, piano	For teaching music
f	Picture charts e.g digestive system charts	Used as teaching aids
g	Sick-bay	Serve as first aid treatment for students that are sick in the school.
h	Record office	To keep staff and students' record
i	Staff quarters	Houses to accommodate teachers
j	Farm storage house	To keep farm produce harvested from school farm.

Government policy on school facilities vary. While in some schools, parents buy the textbooks needed for studies, and in some schools, government buys or provides the textbooks and give them free to students. Library books are bought from public funds (taxes). Whatever the government policies maybe, it is the responsibility of the school head (principal or headmaster as the case may be) to put the furniture, equipment, buildings and playing grounds in good condition.

The constituents of school physical environment include building and scrape parking lot, play ground, sport field, agricultural farm, fire extinguisher, school bus, car park and sand bath. Also, school facilities include mechanical material like technological machines, generator, photocopier machines, computer machines, plumbing materials like water taps, bore hole - electrical telecommunication like speakers, radios, network system, security and fire suppression systems.

2.6 Importance of School Plant to Teaching and Learning

According to Saiyidain in Sidhu (1999), the importance of school plant was quoted thus:

> *"A school or a college is a vital and life-giving environment to the extent that it brings into the life of its students' an abiding love and appreciation for all that I best and most significant in national and human life".*

School plant is so important in the life of any educational institutions because the children cannot get desired benefit from the school, if they are not housed properly, if they have no playgrounds, if they are taught in an unhealthy surroundings or if the entire equipment provided them are uncomfortable (Sidhu, 1999).

Taking into considerations that, schools cannot just be set up everywhere and anywhere. This is because it is not all

environments that educate, and the character of school buildings and grounds remain an important elements in the child's education.

Kochler (1978) asserts that as school heads and their academic staff plan and think together about the present and future needs of school facilities as vital factor that can contribute to the enrolment of students in the school. He further observes that through adequate planning of school facilities, they can determine the type of instructional materials teachers' would need for effective instructions and whether the available classroom are adequate for the anticipated number of students'.

Momoh (1950:175) is of the view that facilities can limit educational programmes, but when properly planned, it can only enhance the day-to-day learning process, at the sametime, pave the way for launching a new educational programmes in any school, Therefore, it promotes effective school climate and management. It enhances quality teaching and learning and boosts teachers' and pupils' morale.

Adesina (1980:224) reports that planning of school facilities helps the government and the individual school to avoid wasteful imbalance that arises out of projection based on unreliable data.

He adds on that a situation may arise where there are pupils' but no teachers' or pupils' without books, desk and classrooms. This, perhaps, was the case in the few first years following the launching of U.P.E in 1976 and the repackaged U.B.E which is presently on. It influenced school community relationship through the use of facilities as cultural, civic, recreational and youth centres. Also, it promotes child friendliness and effective schooling due to the provision of sanitary facilities, clean spaces, safe drinking water, school shops to buy snacks and drinks.

2.7 Concept of Maintenance

Importance should be given to the management of school facilities not only through planning or construction of new buildings/schools but also with the maintenance of existing facilities. Maintenance therefore involves maintaining items – buildings, furniture and equipment as far as is possible in their original condition (UNESCO, 1984).

Maintenance of school plan is very crucial ascertaining its lifespan and efficiency. Knezevich (1975) in Dare (2010) stated that the time it takes for a building to become physically obsolete depends on the quality of the original construction and materials as well as the quality of facility keeping and maintenance.

Literarily, maintenance is the act of keeping something in good condition by checking or repairing it regularly. It could also be the act of making a state or situation continues as far as the usage of a particular school facilities are concerned. This involves an act of taking proper care of equipment by strictly being guided by specific regulations governing the use of such equipment.

Maintenance of facilities implies activities put in place to restore the physical conditions of facilities. Maintenance is therefore, defined as any action or group of actions taken to keep a facility in good working condition for as long as possible without failing to restore it to its operational state after a failure occurrence.

Cho (1991) defines maintenance as a programmed set of actions, activities or processes undertaken to keep any thing (equipment, material or facility) in "as new" a condition as possible to sustain maximum functionality, guarantee safety, usability and lifespan for intended services.

The history of the maintenance of education in Nigeria according to Adesina (1981), could be traced to the arrival period of the missionaries who were the pioneers of education in Nigeria. According to Fafunwa (1974), the missionaries achieved this through gifts from their home missions, friends and later from the local contributions.

In Lagos colony, the work for education begin since 1840's while the idea of grants-in-aids to voluntary agencies begun by 1877 (Fafunwa, 1974), but the grant only totaled €200 to each of the three missionary bodies; the Anglican Church Missionary Society, the Wesley Methodist and the Roman Catholic Missions. In the year 1882, the financial assistance was increased to €600 per annum. At the same time, the Educational new approach that schools established by government became the responsibility of government for maintenance and funding of such schools. Therefore, a central board of education that was to recommend the reception of grant-in-aid by schools was also set up. The condition of buildings and teachers' certificates was to be certified by the board, and the examination affairs.

The education plan of 1914 brought a remarkable difference in the maintenance of education in Nigeria (Adesina, 1981), as increased subventions were made available to the missions and other voluntary educational bodies from the colonial government. It also increased financial aid to the native administrators' to assist them to expand education in their areas.

Researchers define maintenance as a culture cultivated to keep the environment and all facilities in school safe, serve the beneficiaries for a long period and be conducive for learning.

Activities involved in the maintenance of school facilities are;

1. Sweeping the floor or grounds.
2. Cleaning of the doors, windows, cobwebs on the ceiling roof and walls e.t.c
3. Cutting of grass in the surrounding; and in the field for games.
4. Cleaning of drainage system to allow free flow of water during rainy season.
5. Repairs of broken furniture, leaking roofs or blown off roofs for teaching-learning efficiency.
6. Renovation of dilapidated buildings and construction of new classrooms (http//www.dilapi.build.com).

These tasks can be carried out by;

(a) Students

(b) Labor masters

(c) Staff in-charge of works

(d) Teachers

(e) Principal

(f) State governments

(g) The SUBEB (State Universal Basic Education Board)

(h) The LGEA (Local Government Education Authority]

(i) The PTA (Parents Teachers Association)

Maintenance of school facilities are done for the following reasons:

- As a result of wear and tear of usage;
- Physical decay;
- Obsolesce - growing out of use;
- Accident or natural disasters e.g. rain, storms, fire, acid, splash on the walls and tiles e.t.c.

Vickery (1984) in Ogbodo (1995] suggested four policy options; they are

(a) No maintenance at all

(b) Emergency maintenance

(c) Adhoc maintenance

(d) Planned or preventive maintenance

No maintenance at all policy: - It suggests that there is no need to charge maintenance against public fund. Government intervenes only when there is a disaster. This policy is adopted in a situation where schools are in the hands of private organizations and are assumed that the owner of the schools will ensure that their facilities are in good condition.

Emergency maintenance:- Money is hardly budgeted for emergency maintenance of school facilities. Therefore, funds set aside for other purposes are diverted for the repairs of facilities

damaged by natural events e.g. disaster caused by rain storm or a fire disaster.

Adhoc Maintenance:- Certain amount of money is planned for unplanned maintenance to be used at the discretion of the school administrator. If it is centrally reserved or disbursed to the school administrator, it is given to the officer in charge of works, who determine what maintenance to effect. However, the money is always too small in relation to the work to be done and the funds are disbursed according to priority. In this case, it is difficult to completely execute any major item of maintenance.

Planned or preventive maintenance policy:- The planning is based on the design, cost and some of the analysis of regularly conducted surveys and the work would involve not only occasional repairs but maintenance undertaken at regular intervals with a view to reducing or preventing future deterioration of items. For this policy to work, the information Pool Officer must collate the total stock facilities adequately.

Corrective maintenance:- Maintenance, which is directed at repairing faults, is known as corrective maintenance. For example, the timely rectification of electrical faults in school building prevents the possibility of any fire outbreak.

Breakdown maintenance:- This is the type of maintenance that is aimed at rectifying breakdowns in any of the educational resources that is human or material. For instance, purchase of spare parts for material resources, provision of well-equipped hospital to take care of human resources.

Running maintenance:- This is the type of maintenance that is carried out while the resources are still operating. For example, lessons can continue in the classrooms during the day while the generating set is being repaired or serviced. Regular payment of teachers' salaries and allowances will come under this maintenance also.

Shutdown maintenance:- This is the type of maintenance that is carried out while parts of the resources are shutdown for a specific purpose. For instance, the close-down of Ahmadu Bello University, Zaria by the Sole Administrator in 1995 for the purpose of rehabilitation of the institution. Olagboye (1998:68) is of the view that the best and most effective approach to the maintenance of educational resources is to integrate all the different types of maintenance practices into a planned programme for both human and material resources. This should include a hazard insurance scheme for the resources.

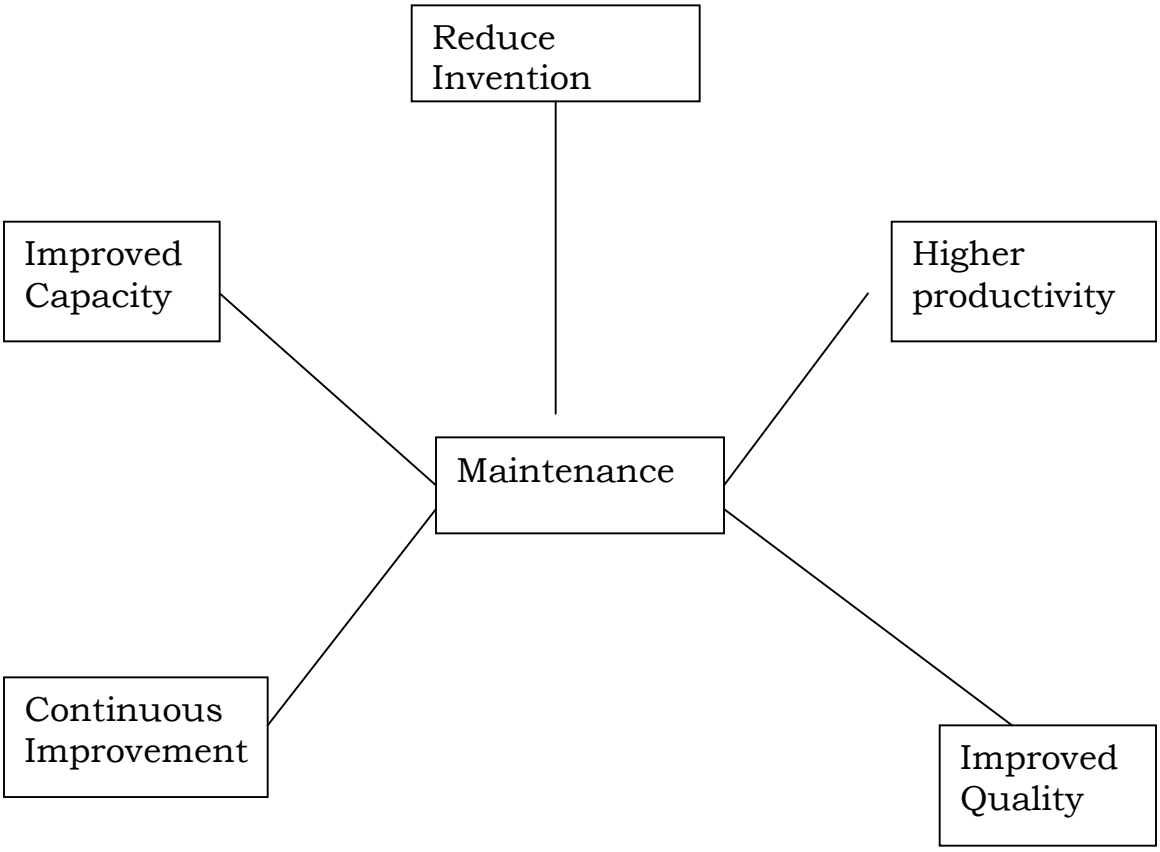
2.8 Benefits of Maintenance of School Facilities

The need to consider the national goal of education could not have arisen if there is no equal benefit maintaining the new or existing facilities in the school. Developing the educational system in such a way as to provide a satisfactory flow of men and women capable, of acquiring the skills necessary to exploit to the fullest, the natural resources of the country makes it imperative for facilities to be abundantly available in schools. Buildings are needed to provide shelter to staff and students, labouratory facilities to generate manipulate skills in students, sports/games facilities to develop the mental, social and physical aspects of the students only if well maintained.

According to Ogbodo (1995:44), school facilities imply substantial cost to the school system for their establishment, if not properly managed and maintained. They dilapidate and wear out faster than their "life span" and also if not properly utilized, the school system will not derive maximum benefit from their use. Ideally, safety takes priority over cleanliness, orderliness, cost-effectiveness and even instructional support. Other benefits are highlighted as follow:

1. It prevents buildings from deterioration.
2. It encourages future public investment in the education system
3. It provides clean and safe environments for children or students' to learn and understand.
4. It creates a physical setting that is appropriate and conducive for learning.
5. It updates old school buildings.
6. It ensures facilities are available to yield maximum benefits to students' and Staff.
7. It protects operating personnel and service facilities.
8. It extends the life of the facilities for maximum benefits.

Benefits of proper maintenance



Whereas, Ajayi (2001) and Ijaduola (2008a) clipped in that school plant need to be adequately managed in order to ensure both effectiveness and efficiency of the system. Above all, the common goal of operation and maintenance as remarked by Ojedele (2008) is to keep physical plants in the best possible condition at all time.

Olagboye (2008) from a different perspective identified the underlisted importance of school plant maintenance as follows:

> Proper maintenance of school plant ensures safety for those occupying the school building.
> It facilitates effective teaching and learning process.
> It saves cost. This is because reactivating a collapsed building may cost more than to make early repairs on the building.
> It ensures the suitability of school plant for continued use because repairs and replacement of various equipment make such to be in good shape.
> It educes students unrest and demonstration because students' can protest or demonstrate when school plants are not well maintained e.g toilet facilities, poor electricity e.t.c.

In view of the aforementioned points, Anderson (2004), Abe (2007) and Ijaduola (2008b) advised that professionals in the area of architecture and engineering should be involved in its planning, right from the initial stage as each professional has unique expertise to contribute toward effective and efficient school plant.

2.9 Roles of Education Stakeholders in the Maintenance of School Facilities

Educational services are provided at one level of education or another depending on the angle which one falls into – either those who render the services such as teachers, administrators or even those who acquired it – students. The parents', policy makers and the communities are not left in isolation from exercising their individual roles aimed at the betterment of the system.

In any case, roles performed by every stakeholders have not been specified in a clear terms since not all of them are involved in the school plant planning process. Ogbodo (1995) pointed out that rarely does a school head or teachers (through their union) made as a consultant in the school establishment from the scratch, thereby posing a difficulty in handling the maintenance of school facilities when the need arises. The actual role of school administrators' in the area of plant management is maintenance.

Whoever is appointed as a school head is expected to examine the various maintenance options available to him/her and opt for the best – planning and preventive type. Having selected the best, the school head should realize that he/she has the responsibility to preserve and prolong the useful life of the stock of facilities in his/her school. He/she should use wisely the available resources

within his/her purview to maintain the items, buildings, furniture and equipment as far as is possible in their original condition. There is no gainsaying that resources are inadequate, every school head are endeavour to preserve educational facilities in his/her care. He/she is expected to report promptly to any other higher authorities when sudden damage occurs as could be the case during natural disaster or man-made accident.

Both teachers and students are expected to imbibe the virtues of good house-keeping. No waste-papers, pieces of chalks should be lying about. The co-operation of the duo (school heads' and teachers') are essential in building up attitudes on the part of the students' against careless dropping of waste papers e.t.c in the halls or in the classroom/ground floors.

On the part of the government, it is to provide funds and implement laws made in respect of school plant maintenance and possibly set up committee to audit and promote accountability in the use of monies allocated for such purpose.

The ministry officials exercise their powers through the inspection of facilities assisted by the school principals' and forward the report of their activities to the government for further actions. Maintenance is an on-going process and is always

necessary in any school however well built, furnished and equipped especially where finances are budgeted for.

2.10 Impact of Components of School Plants' on Teaching and Learning

As earlier on mentioned, school plants are categorized into five (5) different components which shall be examined below. These components are Buildings, Equipment, Machinery, Furnitures and Virtual Library.

(i) **Buildings:** Should provide adequate accommodation for the various purposes. Its structure should be safe and stable for effective teaching and learning process. The rooms should be provided with proper ventilation and lighting arrangements. In order to meet various requirements, there should be the provision of the following rooms in the designated school building: (a) Administrative offices (b) Library and Reading room (c) Assembly hall (d) Science Labouratories (e) Vocational workshops (f) Audio-visual Rooms (g) Stores (h) Dispensary (i) Sports Room) (j) Classrooms and (k) Subject rooms for special subject among others. It is needles to add that there should be adequate and safe drinking water facilities in each of these school buildings alongside proper sanitary arrangements. The number of availability of these facilities determine the physical standard of such schools to cope

with the implementation of the curricula. It however, becomes a setback for any school that is not adequately capable to provide most of these facilities, as against achieving the three domains of learning at the expense of the other. Important to note in the selection of building (school) site are the surroundings, scope for future expansion, shape and purpose of the building type, and service conditions.

"Buildings are to education as body is to the mind". A sound mind can only be there in a sound body. "This could be a better phrase to qualify the essence of any type of building in the school settings. School should be housed in beautiful buildings, which are not only stimulating centre of education for children but also vital centres of community life.

(ii) **Equipment**: The classrooms, labouratories, and subject rooms should be equipped with adequate furniture. It should be convenient for work and suitable for the correct postures of young students. The libraries should be well stocked with all types of relevant books, labouratories with well-equipped scientific apparatuses to meet the laid down specifications and the audio-visual aids filled the language lab. The equipment makes a great

impact only when they stimulate and facilitate self-study on the part of the students.

(iii) **Machinery**: Such as workshop machines and tools, duplicating and other secretariat machines e.t.c.

(iv) **Furniture**: If the school plant is to function effectively suitable furniture and equipment has to be provided. It plays an extremely important part in the physical, moral and mental welfare of the scholars. Proper furniture and equipment are essentials for the successful working of a school. Improper seating arrangements lead to physical deformities and thus, endanger the health of the learners. The fact that furniture may need to be shifted frequently in today's secondary classroom implies that it may be movable besides being flexible, adaptable and durable. It is true that sufficient furniture, good apparatus and useful appliances in the hands of a first class teacher can produce results which cannot be obtained under any other circumstances.

2.11 Impact of Supply variables on Teaching and Learning Process

The development and expansion of the nation's educational system have led to a tremendous increase in the government expenditure at the secondary education. This expansion and increase in students' enrolment as a result of government policies

and intervention have actually affected the management of the different tiers of education from the 1980's to date (Eisemon and David, 1990). The resources available have not been able to merge the increase in students' enrolment and as such, the inadequate funding of the system, no doubts, had calamitous effect on teaching and learning processes.

According to Aminu (1986) and Ade-Ajayi (2003), funding has a crucial role to play on qualitative teaching and learning process. Desired facilities would be difficult to procure, nor from being supplied into the various schools. This adversely affect the implementation of school curriculum. In the same vein, Hallak (1977), Aghenta (1993), Adeyemi and Igbineweka (2000) emphasize the significance of different categories of school facilities on the quality of academic programmes. As according to these scholars, inadequacy of any category of these facilities could lead to overcrowding, stress, unruly behaviour, distractions and gradual decay of symbolic things that help pattern human behaviour.

When instructional aids are in short supply teaching and learning is impaired. In support of this, Okebukola (2002) and Ajayi (2007) stated that effective teaching-learning process cannot be guaranteed with inadequate educational materials. The worst hit is

the rate of discrimination between urban schools to their rural counterparts, same with public schools away from private ones. Ogbodo (1999) speaking in this direction claimed that with regards to every social amenities, urban areas are far better than the rural areas, this disparity especially apparent in the area of educational facilities. The situation transcends beyond the developing countries but feasibly noticed in this part of the world.

It is not surprising, therefore, to find that the schools in urban areas are better constructed, maintained and furnished, especially the private ones. Far from this, many public schools in the urban areas are in a terrible state of disrepair and lacking even in basic facilities. The main reasons for this act may be due to high concentrations of population which often seem politically more articulated than their rural counterparts. Equally important to note is that, the children of senior government officials attend schools in urban areas and so these officials are likely to be more ultimately acquainted with the physical state of these schools than the rural schools (Mgbodile, 1986).

2.12 Impact of Utilization of Variables on Effective Teaching and Learning Process

Despite the inadequacy of educational facilities, the fact remains that even those that are available are not properly utilized

and maintained. For example, the New Nigerian of 27th April 1974 in an article titled "teachers' transfer and supervision" reports that constant transfer and lack of supervision causes under-utilization of teachers in Nigeria. Provision and acquisition of facilities is one thing, effective utilization of such facilities is another thing. Utilization is the degree or extent to which the facilities have been put to effective use.

However, facilities can also be under utilized or over utilized. If over utilized, the facilities will be over stretched which may lead to breakdown, thereby defeating the objectives which they were meant to achieve. For example, a printing machine used for a long time without adequate service and oiling will after sometime breakdown totally. Some equipment in vocational training were bought without training the staff on how to use them accordingly. They were dumped for years. Therefore, they are under utilized.

When facilities are under utilized, it leads to wastage of resources. For example, the biological microscope kept for long in the store, not used and cleaned properly are under utilized, therefore, it leads to wastage of resources. Conventionally, school facilities are used by the pupils' and teachers' for effective teaching and learning.

Electricity supply from PHCN sometimes adequate in Airforce secondary schools, some of them have generator especially the boarding schools. But where the generator is not available and Power Holding Company of Nigeria (PHCN) refuse to give light, this invariably affects teaching and learning. For example, electricity is used to pump water from bore-hole to the reservoir tanks. Light is used in chemical balance to measure salts for experiment in science practical.

The Airfoce schools authority provide bole-holes in support of pipe-borne water from water resources corporation. This enable the school to have constant supply of water except when electricity supply fails.

As at the beginning of establishing Aiforce secondary schools, few classrooms were built to start off then later more classrooms were provided by P.T.A (Parents Teachers Association) or the directorate of Nigerian Airforce Education (NAF).

2.13 Leadership and the Management of Resources

For any good plan to be successful there must be a good leadership in place. Leadership is the process of influencing the activities and behavior of an individual or a group in effort towards goal achievement in a given situation. A leader is a product of his/her functional relations to specific individuals in a specific

situation. A leader can be described as one who knows the way, shows the way and goes the way. Therefore to be a good leader, one must learn to be a good follower.

Stodgill (1950) saw leadership as "the process of influencing the activities of an organized group towards goal setting and goal achievement. Thus, it is clearly known that when the individual acts, he necessarily interact or transacts with elements of his environment.

There are different types of leadership styles, such as authoritarian, democratic and laissez- faire. Authoritarian leadership is a dictatorship. The holder exercises arbitrary power, he determines all policies, techniques, activities and functions without consultation. He/she always evaluates performance according to his/her standard. He creates a social distance between his students/staff and himself.

A democratic leader is liberal and open to all. He/she welcomes suggestions as well as group discussions in which he plays an active role. The leadership is objective or 'fact' minded in his praise and criticism. Laissez- faire does not exercise influence positively on the followers. He grants total freedom to group and individuals to make whatever decision without his participation,

The ideal leaders for a school is democratic leader. He welcomes suggestions and he does not find it difficult to change opinions. In a similar vein, such leadership adopt situational approach in determining the type of leadership he/she exhibit.

2.14 Management of School Facilities for Teaching and Learning

Maintenance and accurate record keeping are two important aspects of effective management of school facilities.

School facilities management refers to all the efforts put in place by school administrators to ensure that all available facilities in the school system are available in required number and are properly maintained against destruction or dilapidation. School management is the process of planning to meet the needs of the school physical facilities, constructing the facilities, maintaining and keeping such facilities always in good condition so that they can be put into operation when required for teaching and learning.

According to Nwachukwu (1988:4), management is defined as "getting things done through others". It can be more scientifically defined as the coordination of all the resources of the organization through the process of planning organizing, directing and controlling in order to attain organizational objectives.

To Robert Kneetner (1995) ,management is the process of working with and through others to achieve organizational objective in a changing environment. Resser (1973) cited in Peretomocfe (1991) gives an insight into the question when he suggested that managers are the people who;

- Set objectives for using available resources.
- Formulate plan for achieving the objectives.
- Identify the activities to be performed.
- Organize the activities into group.
- Define the task to be performed in each group
- Groups the task into jobs or programmes
- Initiate work activities. Supply incentives to stimulate productivity.
- Sets up controls to measure achievement of objectives.
- Take remedial action if objectives are not being met.

2.15 Planners of Maintenance of School Facilities.

Ovwigho (1989:2} defines planning as the identification of goals and working objectives of an organization and working out ways and means of achieving them. Educational planning involves the process of identifying educational needs, the direction which education should take and how to implement the decisions taken.

Kochlar (1978:204) defines facilities planning as the means and methods of anticipating enrolment, future developments, requirements and other policies regarding future growth and changes in the school. Planning school facilities should be designed to serve educational and other school purposes and the government needs to evaluate regularly the degree to which such facilities are effectively used to meet the purposes. It is viewed that, if facilities are to truly enhance opportunities for new educational programme and serve the rapidly changing needs of today and tomorrow, their proper planning must be given attention. Developing facilities maintenance plan requires;

- Involving stakeholders in the planning process,
- Identifying needs (e.g. improving cleanliness and safety].
- Establishing priorities and targets.
- Collecting and using supporting data to inform decision making.
- Training staff to implement planned activities.
- Implementing the plan.
- Evaluating the plan systematically.
- Refining and revising the plan periodically (e.g. every three years).
- Empirical studies on school facilities maintenance.
- Provision of school facilities.

- The role of the government.
- The role of the teachers.
- The role of the students.
- The role of supervisors and inspectors.

2.16 Empirical Studies

In a study by Nkemakolam (1988) on the Nigeria graduating system. It reveals the significant factors associated with the falling standard of education; and that when they occur in any nation, the educational system is said to be unstable as is the case with Nigeria.

(a) Vehicles, stationary, textbooks.
(b) High pupils/students ratio
(c) Personnel management problems.
(d) Lack of reliable statistics about teaching staff strength
(e) poor funding by the government
(f) administrative problems
(g) corruption.

Adesina (1981:87) observes that one potent index for evaluating educational standards and quality is an examination of the physical facilities of learning exercises.

Anderson (1975) considers instructional materials as an integral part of the educational process and as vehicles used by teachers' along with instructional techniques to convey the contents of instruction to the students'.

Ezeocha (1985) asserts that at all levels, here is failure in educational innovations due to inadequate planning and management.

UNESCO (1984) asserts that maintenance involves maintaining items, building, furniture and equipment as far as possible in their original condition.

In line with few points highlighted above, the researcher has decided to find out and confirm these points.

2.17 Summary

The deductions arrived at are hoped to be paramount importance in an attempt to put forward suggestions to the appropriate educational authorities that might help bring a reconciliation between policies and practice. The idea is thus directed towards moving education forward in a more meaningful and purposeful.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter has undertaken a detailed activities or roadmap of how the research was conducted. It therefore, explained the research design, population, sample and sampling techniques, research instrument, validity and reliability of the instrument. Others were pilot study, procedure for data collection and procedure for data analysis respectively.

3.2 Research Design

The research design adopted for this study was descriptive survey type. The choice of this particular design was based on the premise that data were collected from a representative sample upon which inferences and generalizations can be made on the entire population. The argument put forward by Akuezilo (1993) supported this view, but added that, research instrument(s) would facilitate this intention to achieve its goals.

3.3 Population

The population for this study is made up of school heads (commandants), teachers and students of Airforce secondary schools in the country strategically located in Kaduna, Jos and

Portharcourt respectively. The students' population was put at Eight Hundred and Fifty (850) in Kaduna Airforce secondary School, four Hundred (400) in Jos Airforce secondary School and Seven Hundred and Fifty (750) in Portharcourt Airforce secondary School respectively.

3.4 Sample and Sampling Technique

A sample size of Three Hundred and Thirty-Five (335) respondents were selected at random representing thirteen percent (13%) of the entire population for the study. These were both comprised of male and female teachers' and students' of S.S 2 classes of the selected schools, using a hat and drawn method of picking the respondents. A simple random sampling technique was adopted for this study because the researcher selected her sample in such a way that each member of the population has equal chance of being included in the sample representation (Alam and Olukosi, 2009).

3.5 Instrumentation

Research instrument was questionnaire, collect data from respondents', the selected instruments were self-developed by the researcher purposely to elicit respondents' opinion on certain issues.

Questionnaire: It is a form of research instrument which presented a set of question items to elicit the responses of a particular subject on a certain issues in a research work. In this case, questionnaire was selected singularly because it is relatively effective to administer and score; and when carefully designed it gives an objective and reliable information. The adopted researcher-made questionnaire was tagged "Questionnaire on impact of school facilities on teaching and learning in secondary schools" – QISTL, which were sub-divided into two parts i.e sections A and B Section A seeks to elicit information of the respondents' on personal data while section B sought the opinion of respondents' on the following variables. Supply of electricity, pipe borne water, classrooms and laboratory, benefits of maintenance, uses of various components, utilization of variables and roles of stakeholders in school plant. It was scored using Likert four point even though likert scale is five but the rating scale of Strongly Agreed (SA) and Agreed (A), are merged together to be one. Strongly disagreed (SD) and Disagreed (D) was merged and undecided is a notable score.

3.6 Validity of the Instrument

The instrument used for this study was self-designed by the researcher. It was validated by the supervisors and two other

experts in the field of Education Administration and Planning, Ahmadu Bello University, Zaria. This is to ascertain that the fact and content validity of the instrument corresponds with the objectives and hypotheses of the study.

This can be substantiated by the research work conducted by Bodunde (2004) that validation of instruments by experts is an effective method of content validity of research instrument. The study had considered the corrections made by the experts and appropriate modifications made. Comments made by experts were satisfactory with regards to the instruments. Corrections were effected and items reconstructed.

3.7 Pilot Study

A pilot study was carried out in Command Day Secondary School, Kaduna. It involved the administration of twenty (20) copies of questionnaire on the respondents'. At the completion of the exercise which took place within four (4) days, fourteen (14) copies of questionnaire were returned fully filled. This is because the researcher wanted to use respondents' that would not be involved in the actual research study so that they would not be conversant with the questionnaire before hand.

The purpose of the pilot study was to determine the reliability of the instruments. It was personally undertaken by the researcher and inputs obtained guided the final draft of the questionnaire, for the start of field operations.

3.8 Reliability of the Instrument

The reliability of the instrument was calculated in the study using split-half method of Guttman. This method allows for the division of the scores of respondents' in the test items during the pilot study into two equal halves (even and odd numbers) separately and correlated (Wimmer and Dominic, 1989). A correlation co-efficient (r) was obtained using the application of Pearson product moment co-efficient or correlation formular (PPMC).

The obtained reliability score for the questionnaire was 0.84. This indicates that the items are reliable within the acceptable limits because Murkherjee (2000) states that "the requirements' for internal consistency is an average value of the correlation co-efficient which must be pretty high above 0.80.

3.9 Administration of Research Instrument

The researcher obtained a letter of introduction from her institution's Department of Educational Administration and

Curriculum Studies to the respective formations. This was to enable her, carry out her research work bearing in mind, the need to get the approval of the school headship (Commandants) and the cordial attention of staff.

The study carried out involving the administration of Three Hundred and Thirty-Five (335) copies of questionnaire on the respondents. The use of research assistants quickens the distributions and collection of filled questionnaire. The researcher before this time trained the research assistants on the modality of carrying out the exercise.

3.10 Procedure for Data Analysis

Two statistical procedures were employed in the data analysis task. One, the descriptive statistics was employed to find the mean of the responses of the respondents, using One-Way-Analysis of Variance (ANOVA) in the analysis of the four formulated null-hypotheses. ANOVA was considered as the most suitable statistical tool because of the involvement of two or more variables in the study. However, the use of computer aided software in the form of statistical package for social sciences (SPSS) was used at 0.05 level of significance.

CHAPTER FOUR

PRESENTATION, DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the report of data analysis undertook in the study, involving the four (4) formulated null-hypotheses. It is with a view to determine the acceptability or otherwise of each of the hypothesis which guided the research study. A summary of the findings was later on presented in this chapter for easy understanding and towards drawing a valid conclusion. The chapter ended with a discussion of each research questions and hypothesis.

4.2 Analysis of Respondents' Opinions on the Impact of School Facilities on Teaching and Learning in Nigerian Airforce Secondary schools

This section seeks to analyse the opinion of respondents' on the four formulated research questions spelt out to guide the study. By this calculations using a simple frequency counts and percentages, one would be able to judge the result of its analysis to either be in favour or against. The summary of each of the analysis held in respect of the four research questions were presented below.

Table 4.2.1: Opinions of Respondents on the Impact of Supply of Electricity on Teaching-Learning Process

No	Item Statement	Categories of Respondents'	Agreed		Disagreed		Undecided	
			Freq	%	Freq	%	Freq	%
1	School facilities are indispensable to effective teaching-learning process.	Principals	21	67.7	6	19.4	4	12.9
		Teachers	136	57.7	72	30.1	29	12.2
		Students	19	39.6	15	31.2	14	29.2
2	Technology has helped for prompt production and supply of school facilities.	Principals	6	19.4	23	74.1	2	6.5
		Teachers	184	77.6	31	13.1	22	9.3
		Students	42	87.5	5	10.4	1	2.1
3	Academic performance enhancing facilities are not only to be acquired but, are also to be maintained.	Principals	6	19.4	23	74.1	2	6.5
		Teachers	208	87.8	18	7.6	11	4.6
		Students	7	14.6	36	75.0	5	10.4
4	Effective of academic performance enhancing facilities increases its efficiency and productivity	Principals	24	77.4	1	3.2	6	19.4
		Teachers	114	48.1	82	34.6	41	17.3
		Students	3	6.3	36	75.0	9	18.8
5	It improve the performance of teachers and students in school learning system	Principals	20	64.5	6	19.4	5	16.1
		Teachers	166	70.0	53	22.4	18	7.6
		Students	37	77.1	8	16.7	3	6.3
6	School facilities that enhance academic performance also include liquid and floating capital	Principals	15	38.7	4	12.9	34	10.7
		Teachers	24	10.1	138	58.2	75	31.6
		Students	1	2.1	31	66.7	13	31.3
7	School facilities are indispensable on academic performance enhancement in the educational system	Principals	9	29.0	6	19.4	16	51.6
		Teachers	29	12.2	62	26.2	146	61.6
		Students	4	8.3	9	18.8	35	72.9

8	School facilities that enhance academic performance differs in type and complexity	Principals Teachers Students	23 12 6	74.2 5.1 12.5	2 174 39	6.5 73.4 81.3	6 51 3	19.4 21.5 6.3
9	Wrongful use of school facilities jeopardizes a factor affecting its supply.	Principals Teachers Students	22 17 0	74 7.2 0.0	3 164 28	6.3 69.2 58.3	6 56 20	19.6 23.6 41.7

From above table 4.2.1, reports of respondents' opinion comprising of school principals, teachers' and students' were solicited for, on the impact of supply of facilities for teaching and learning process in Nigerian Airforce secondary schools. It was collectively agreed upon by all respondents' that school facilities are indispensable to effective teaching and learning process. This is based on the responses of the respondents' as reflected in the table 67.7% of the principals, 57.7% and 39.6% of both teachers' and students agreed to item No. 1. Equally, a similar responses were obtained in items 4,5,6,7,8 and 9 as reflected in the percentages of respondents' opinion obtained. This is a confirmation therefore, that the supply of school facilities to the study areas and by extension other schools are helpful for delivery of effective teaching and learning process. Such facilities like school buildings, furnitures, equipment and others are sine qua non to achieving the goals for which the schools were set up.

A look at item 2 reported that 19.4% of principals, 77.6% of teachers' and 87.5% of students' were in support that technology has helped in the prompt production and supply of school facilities. This will give room for the local production of school facilities at an affordable costs. Item 3 of the analysis reported the consensus agreement of the teachers that school facilities are not to be supplied alone but on the need to maintain such. The statistical analysis of their responses show that 87.8% of teachers supported this idea as against 19.4% and 14.6% of principals and students result. It invariably indicates that teachers' as the major implementer of the curriculum are in full support in the supply of facilities to enhance teaching and learning process.

Table 4.2.2: Opinions of Respondents on the Impact of Supply of Pipe-borne Water on Teaching and Learning Process

S/N	Item Statement	Category of Respondents	Agreed		Disagreed		Undecided	
			Freq	%	Freq	%	Freq	%
10	When facilities are maintained, it improves the quality of teaching and learning process.	Principals	11	35.5	17	54.8	3	9.7
		Teachers	121	51.1	52	21.9	64	27.0
		Students	5	10.4	35	72.9	8	16.7
11	Adequate maintenance of facilities encourages conducive environment for learning.	Principals	0	0.0	31	100.0	0	0
		Teachers	135	57.0	45	19.0	57	24.0
		Students	4	8.3	18	37.5	26	54.0

12	Cost of education increases when they are maintained.	Principals Teachers Students	24 98 6	77.4 41.4 12.5	0 86 35	0.0 36.3 77.1	7 53 7	22.6 23.4 10.4
13	Effective maintenance of educational facilities ensure greater saving and greater acquisition of superior facilities for the educational system	Principals Teachers Students	4 31 34	12.9 13.1 70.8	25 132 9	80.6 55.7 18.8	2 74 5	6.5 31.2 10.4
14	School facilities maintenance prevent monotonous environment to students and teachers	Principals Teachers Students	7 55 36	22.6 23.2 75.0	22 73 3	71.0 30.8 6.3	2 109 9	6.5 46.0 18.8
15	School facilities that enhance academic performance diminish while others remain relatively permanent or durable.	Principals Teachers Students	20 13 3	64.5 5.5 6.3	1 139 27	2.1 58.6 56.2	10 85 18	32.3 25.9 37.5
16	School facilities are repairable when damage	Principals Teachers Students	16 30 3	51.6 12.7 6.3	6 113 23	19.4 47.6 47.9	9 94 22	29.0 39.7 45.8
17	Adequate school facilities save time, fatigue and ensures progress in learning	Principals Teachers Students	23 15 2	74.2 6.3 4.2	2 178 37	6.5 75.1 77.0	6 44 9	19.3 18.6 18.8

18	Academic enhancing school facilities increase classroom control, expansion and students performance	Principals Teachers Students	12 50 13	38.7 21.1 27.1	10 77 14	32.3 32.5 29.2	9 110 21	29.0 46.4 43.8
19	School facilities are simulative to all sense of the learners	Principals Teachers Students	12 26 7	38.7 11.0 14.6	10 85 17	32.3 35.1 35.4	9 126 24	29.0 53.2 50.0
20	School facilities are transferable	Principals Teachers Students	7 29 0	22.6 12.2 0.0	7 48 7	22.6 20.3 14.6	17 160 41	54.8 67.5 85.4

Analysis of the above table shows opinion of respondents' on a number of item statements as contained in the questionnaire. Item 10 clearly indicates that 35.5% was responded to by the principals, 51.1% for teachers' and 10.4% for students. This shows that all the respondents' are in agreement that facilities be maintained so as to improve the quality of teaching and learning process.

In item 11, the obtained results clearly state that respondents' objected to adequate maintenance of facilities as a distortion to conducive academic environment. Those in support were 135% of teachers and 4% of students' as against 100% of principals', 37.5% of students' who disagreed.

Indication from item 12 reveals 77.4% of principals', 41.4% of teachers' and 12.5% of students in support that cost of

education increases when maintenance activities are carried out. A study of reports in items 13,14,15,16,17,18,19,20 presents a situation whereby all respondents' collectively agreed that maintenance of facilities can impact greatly on effective teaching and learning process if only they are implemented to the latter.

Table 4.2.3: Opinions of Respondents on the Impact of Provision of Classrooms on Teaching and Learning Process in Schools

No	Statement	Categories of Respondents	Agreed		Disagreed		Undecided	
			Freq	%	Freq	%	Freq	%
21	Adequate preparation by teachers' can promote effective use of classrooms	Principals	26	83.9	0	0.0	5	16.1
		Teachers	178	75.1	39	16.5	20	8.4
		Students	11	22.9	28	58.3	9	18.8
22	Most teachers' do have the required knowledge and consciousness to use the provided classrooms	Principals	1	3.2	27	87.1	3	9.7
		Teachers	131	55.3	66	27.8	40	16.9
		Students	28	58.3	11	22.9	9	18.8
23	Use of facilities do not assist the span in knowledge learnt by students.	Principals	0	0.0	30	96.8	1	3.2
		Teachers	218	92.0	6	2.5	13	5.5
		Students	48	100.0	0	0	0	0.0
24	Students' have always applied knowledge learnt where classrooms are put to effective use by the teacher.	Principals	7	22.6	12	38.7	12	38.7
		Teachers	86	36.3	45	19.0	106	44.7
		Students	9	18.8	110	22.9	28	58.3

25	Electricity supply to schools have always distort the use of educational facilities.	Principals Teachers Students	5 126 13	16.1 53.2 27.0	14 27 8	45.2 11.4 16.7	12 84 27	38.7 35.4 56.3
26	School facilities that enhance academic performance can not be quantified in human and natural resources	Principals Teachers Students	8 42 11	25.8 17.7 22.9	6 55 6	19.4 23.2 12.5	17 140 31	54.8 59.1 64.6
27	Human materials include, messengers, cleaners and informed men	Principals Teachers Students	6 40 7	19.4 16.9 14.6	5 60 17	16.1 25.3 35.4	20 137 24	64.5 57.8 50.0
28	Material resources include: classroom, chalkboard, desk, and school e.t.c	Principals Teachers Students	22 21 4	70.0 8.9 8.3	3 126 26	9.7 53.2 54.2	6 90 18	19.4 38.0 37.5
29	Academic enhance school facilities include special teaching and learning in the school system	Principals Teachers Students	13 41 10	41.9 21.5 20.8	12 106 20	38.7 44.7 31.3	6 80 28	14.4 33.8 47.9
30	Academic performance enhancing school facilities measure, growth and development in the school system.	Principals Teachers Students	15 34 5	48.4 14.3 10.4	3 101 21	9.7 42.6 43.8	13 102 22	41.9 43.1 45.8
31	School facilities ensures greater academic standard in the	Principals Teachers	10 57	32.3 24.1	11 71	35.4 30.0	10 109	32.3 46.0

	school system and adds values to the school grade	Students	13	27.1	14	29.2	21	43.8
32	School facilities improve level of discipline and ensure greater school climate and tone	Principals	14	45.2	9	29.0	8	25.8
		Teachers	30	12.7	130	54.8	77	32.5
		Students	4	8.3	26	54.2	18	37.5
33	School facilities are capable of helping school advancement.	Principals	18	58.1	2	6.5	11	35.5
		Teachers	17	7.2	147	62.0	73	30.8
		Students	7	14.6	24	50.0	17	35.4
34	Management of the school facilities ensures that they are in a safe place with the security	Principals	12	38.7	5	16.1	14	45.2
		Teachers	31	13.1	69	29.1	137	57.8
		Students	4	8.3	10	28.3	34	63.4
35	School facilities are usually not managed by a single but it takes a collaboration of number of relevant staff of the school system.	Principals	12	38.7	6	19.4	13	41.9
		Teachers	31	13.0	62	26.2	144	60.8
		Students	6	12.5	11	22.9	31	64.6
36	Confidence of students' are builded if educational facilities in schools are used judiciously.	Principals	12	38.7	9	29.0	10	32.3
		Teachers	32	13.5	108	45.6	97	40.9
		Students	4	8.5	27	56.3	17	35.2

Looking at the above table depicting the result of analysis of respondents' opinion on the impact of utilization of facilities towards effective teaching and learning process. 83.9% by the principals, 75.1% by the teachers' and 22.9% for the students'

agreed that adequate preparation by teachers can enhance effective use of school facilities. Item 22 on inability of teachers' to possess the right type of knowledge as to put the facilities into adequate use was collectively supported by the principals (3.2%), teachers' (55.3%) and students' (58.3%) respectively. On the opinion that use of facilities do not offer longitivity in knowledge learnt by the students. 96.8%, 92.0% and 100% of principals', teachers' and students' all signified disagreement in view of this item statement. Similarly, it was agreed upon by principals' (22.6%), teachers (36.3%), and students (18.8%) that students' does not only apply knowledge learnt when they provided facilities are put to use. It is believed that not in all cases that facilities will be available for use. Hence, the suggestions that knowledge can equally be put to use when they are not learnt with the facilities. A survey of item 25 shows that the operation of any of the school facilities can be distorted without electricity outrage. This was reflected in the result of its analysis where 53.2% of the teachers' willingly supported this viewpoints as against 16.1% of the principals' responses and 27.1% expressed by the students'. Equally responded to in a similar direction was items 26-36 of the research questionnaire. Meanwhile, item 37 saw a negative

response put forward by principals, teachers' and students (29.0%, 45.6% and 56.3%) on the believe that where facilities are put to adequate use, lose of confidence is often recorded on the part of the students' when called upon to perform a similar task.

Table 4.2.4: Opinions of Respondents on the Impact of Laboratory Facilities on Teaching and Learning Process.

No	Item discrimination and Number	Subjects	Agreed		Disagreed		Undecided	
			Freq	%	Freq	%	Freq	%
37	School facilities whether human or materials complement one another and are essential to effective teaching and learning	Principal	15	48.4	5	16.1	11	35.5
		Teachers	43	18.1	90	40.0	104	41.9
		Students	2	4.2	19	39.5	27	56.3
38	The school facilities requires a lot of fund.	Principals	14	45.2	5	16.1	12	38.7
		Teachers	29	12.4	124	52.2	84	35.4
		Students	1	2.0	26	54.2	21	43.8
39	School facilities are better sorted out and kept in accordance to their type and value.	Principals	7	22.6	8	25.8	16	51.6
		Teachers	40	16.9	68	28.7	129	54.4
		Students	5	10.4	18	37.5	25	52.1
40	School facilities are usually renovated to avoid dilapidation and complete exigencies	Principals	11	35.5	7	36.6	13	27.9
		Teachers	28	11.8	100	42.2	109	46.0
		Students	4	8.3	21	43.8	23	47.9
41	Management of school facilities increase the quality and quantities of the facilities	Principals	10	32.3	9	29.0	12	38.7
		Teachers	38	16.1	52	21.9	147	62.0
		Students	4	8.4	10	20.8	34	70.8

42	Management of the school families increase the life-span of the facilities	Principals	11	35.5	6	19.4	14	45.1
		Teachers	34	14.3	77	32.5	126	53.2
		Students	2	4.2	18	37.5	28	58.3
43	Management of school facilities determine the efficiency of the school administration	Principals	10	32.3	4	12.9	17	54.8
		Teachers	24	10.2	66	27.8	147	62.0
		Students	4	8.3	14	29.2	30	62.5

A study of the above table reveals the support offered by the respective subjects that the various school facilities complement the effort of one another as indicated in their responses. 48.7% compliance was suggested by principals, 18.1% by teachers' and 4.2% of the students respectively. By this, it entails that physical facilities are indispensable of the human counterparts. The planning, design and development of any school facilities can solely be performed by the human facilities. A look at item 39 indicate that depending on the type of facilities desired or selected, it requires a lot of funding even the maintenance of human effort away from malfunctioning. The statistics of support shows 45.2% of principals, 12.2% of teachers and 2.1% for the students' respectively. A review of item 40 reveals a general support offered by the principals (22.6%), teachers (16.9%) and students (10.4%) that facilities be better sorted out and kept according to its type

and value. Items 41-43 shares a common idea on the feelings of principals', teachers' and students on the impact of the various school facilities targeted at improving teaching and learning process. Whereas, item 44 were wholly agreed upon that efficiency of school administration determines the extent of managing the available school facilities. This is reflected in their statistics which shows 32.3% of the principals, suggesting this idea against those of 27.8% of teachers' and 29.2% of students'.

4.3 Test of Hypotheses

This sub-section presents the result of the analysis of hypotheses. Altogether, there are four (4) null-hypotheses being tested using One Way Analysis of Variance (ANOVA).

4.3.1 Null-hypothesis One: There is no significant difference in the opinion of respondents' on the impact of supply of electricity on teaching-learning process. The results of the data analysis are presented below in table 4.3.1.

Table 4.3.1: Summary of One Way Analysis of Variance (ANOVA) on the Impact of Supply of Electricity on Teaching and Learning Process N=316.

Variable	**N**	**X**	**S.D**	**Signf. Errors**	**S.S**	**F-value**	**F-crit.**	**Prob**
Between groups	237	3.89	0.61	0.04	1.99	1.74	1.96	0.177
Within groups	79	3.99	1.28	0.18	1.79			
Total	**316**	**3.66**	**0.72**	**0.13**	**181.2**			

P>0.05

The analysis in the table 4.3.1 shows the mean scores for sum of squares between groups equal to 1.99 and within groups stood at 1.79 at the degree of freedom of 315. A look at the information provided further shows a F-value of 1.74 at an F-critical of 1.96. Therefore, there is no significant difference in the opinions of stakeholders on the impact of supply of electricity on teaching and learning process.

4.3.2 Null-hypothesis Two: There is no significant difference in the opinion of respondents' on the impact of maintenance of facilities on teaching-learning process. Table 4.3.2 presents the statistical analysis of the work done on this null-hypothesis.

Table 4.3.2: Summary of One Way Analysis of Variance (ANOVA) on the Impact of Supply of Pipe-borne Water on Teaching and Learning Process

Variable	**N**	**X**	**S.D**	**Signf. Errors**	**S.S**	**F-value**	**F-crit.**	**Prob**
Between groups	237	3.90	0.73	0.47	0.88	0.61	1.96	0.55
Within groups	79	3.93	1.30	0.19	228.5			
Total	**316**	**3.74**	**0.89**	**0.16**	**2.29**			

In the above table, the sum of squares between groups are 0.88 and within groups are 228.5 at a degree of freedom of 315. The F-value is 0.61 at 0.55 level of significance. With this respect, the hypothesis is hereby accepted. That is, there is no significant difference in the opinion of respondents' on the impact of maintenance of facilities on teaching-learning process.

4.3.3 Null-hypothesis Three: There is no significant difference in the opinions of respondents' on the impact of utilization of facilities on teaching and learning in schools. The summary of the statistical calculations involving this hypothesis using ANOVA is presented in table 4.3.3.

Table 4.3.3: Summary of One Way Analysis of Variance (ANOVA) on the Impact of Utilization of Facilities on Teaching and Learning in Schools

Variable	N	X	S.D	Signf. Errors	S.S	F-value	F-crit.	Prob
Between groups	237	3.85	0.70	0.05	5.39	4.49	1.96	0.012
Within groups	79	3.91	1.27	0.18	223.02			
Total	**316**	**3.39**	**1.03**	**0.19**	**229.42**			

P>0.05

Information obtained from table 4.3.3 indicate 5.39 and 223.02, respectively as the sum of squares for between groups and within groups at a degree of freedom of 315. However, the F-value obtained in the analysis was 4.49. A figure said to be higher than the F-critical of 1.96 at a 0.05 level of significance. The interpretation is that the null-hypothesis is rejected. Therefore, a significant difference exists in the utilization of facilities for effective teaching and learning process.

4.3.14 Null-hypothesis Four: There is no significant difference in the opinion of respondents' on the impact of various school facilities on teaching and learning process. A tabular description of the result of analysis is presented in table 4.3.4 for better understanding.

Table 4.3.4: Summary of One Way Analysis of Variance (ANOVA) on the Impact of Various School Facilities on Teaching and Learning Process. N=316.

Variable	N	X	S.D	Signf. Errors	S.S	F-value	F-crit.	Prob
Between groups	237	3.77	0.79	0.05	3.16	2.08	1.96	0.126
Within groups	79	3.79	1.23	0.18	237.2			
Total	316	3.44	0.80	0.14	240.4			

P>0.05

A careful look at table 4.3.4 shows that the sum of squares for between groups are 3.16 and within groups are 237.2 at 315 degree of freedom. The obtained F-value was 2.08 at 0.05 level of significant, with a probability of 0.126. The null hypothesis raised in view of this study here, is therefore rejected. It means significant difference exists in the opinion of respondents' on the impact of various school facilities on teaching and learning process.

4.4 Discussions of the Findings

This section discusses the findings of the study in respect of the four (4) null-hypotheses analyzed in the section.

4.4.1 Hypothesis One

As indicated in the result of the study, supply of school facilities has a great impact on teaching and learning process. However, the ability to provide these facilities is hampered by a lot of factors. One, provision of funds determine the facilities needed

in the school. Two, issue of political will on the part of those responsible to plan and execute educational policy. Also, in the absence of the cankerworm of corruption and that of accountability, supply of these facilities would receive a boost and thus enhance effective teaching and learning process. This perhaps, was the reason why Okebukola (2002) and Ajayi (2007) stated that effective teaching-learning process cannot be guaranteed with inadequate supply of educational materials. It is foreseen that inadequate of physical structures in any educational system could set the tone of what the school is made up of. At least, conducive environment can be enjoyed while students' learning can be exposed to a wide range of opportunities in which one can tap from.

4.4.2 Hypothesis Two

The result here, shows that majority of the respondents' supported the importance role maintenance played for effective teaching and learning process. No doubt, any of the provided facilities will either wear out or in need of servicing to enable them perform the much anticipated activities. In view of this, constant maintenance would be expected to be carried out regularly to put the facilities in a proper place. The timing is another thing to look

into and the type of maintenance to be carried out. In as much as maintenance of facilities is to keep the physical and mechanical parts of the best possible condition, then, it is essential this be carried out before fault sets in (Ojedele, 2008).

4.4.3 Hypothesis Three

One of the findings of this study indicates that, there is significant difference in the opinion of respondents' on the impact of utilization of facilities for effective teaching and learning process. The response from this analysis would not have suggested a different facilities. The classroom assists in the theoretical teaching, labouratory in the conduct of experiment, libraries in the capacity of reading and stock piling of books and other materials, equipment for carrying out a task among others. Looking at this, the construction/procurement of any school facilities borders on the purpose of its usage and specification attached. It is believed that while some respondents' would agree that uses of this facilities has greatly influenced teaching and learning process, others are adamant that the situation remains the same. The opinion by latter, suggest that expertise had not been allowed to play in the use of this facilities thus, the need for a re-occurring result in the academic performance of students'.

4.4.4 Hypothesis Four

It has revealed that significant difference exists in the opinion of respondents' on the impact of various school facilities on teaching and learning. There are as many as facilities in the secondary schools which are put to different uses. They complement the role of one another in the teaching-learning process but being co-ordinated by human resources. Since the school cannot be separated from the society, the operations expected to be carried out in the school using the various facilities are to address the needs and aspiration of individuals and that of the society.

4.5 Summary of Major Findings

From the data collected, analysed and interpreted, the following findings emanated from the study:

1) It was revealed that supply of electricity has a great impact on teaching and learning process in understudy schools;
2) It identified no significant difference on the impact of supply of pipe-borne water to teaching and learning process. That is, one will anticipate a direct relationship with the supply of pipe-borne water to delivering effective teaching-learning process in the under schools;
3) It was reported that significant difference exists between the impact of the provision of classrooms on teaching-learning process. What this suggests was that, effective teaching and learning can only take place in a conducive environment designated as classrooms; and
4) There exists significant difference in the provision of laboratory facilities and its impact on teaching and learning process in the study area.

Section 4.6 Summary of Hypotheses Testing

H.	Statement	Statistics	Significance	Results	Restate
1	There is no significant difference in the opinion of respondents' on the impact of supply of faculties on teaching and learning process.	ANOVA	0.05	Accepted	There is no significant difference in the opinion of respondents' on the impact of supply of faculties on teaching and learning process
2	There is no significant difference in the opinion of respondents' on the impact of maintenance of facilities on teaching and learning process.	ANOVA	0.05	Accepted	There is no significant difference in the opinion of respondents' on the impact of maintenance of facilities on teaching and learning process.
3	There is no significant difference in the opinion of respondents' on the impact of utilization of school facilities on teaching and learning process.	ANOVA	0.05	Rejected	There is no significant difference in the opinion of respondents' on the impact of utilization of school facilities on teaching and learning process.
4	There is no significant difference in the opinion of respondents' on the impact of various facilities on teaching and learning process.	ANOVA	0.05	Rejected	There is no significant difference in the opinion of respondents' on the impact of various facilities on teaching and learning process.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND COMMENDATIONS

5.1 Introduction

This chapter presents a general summary of the present research work carried out by the researcher. The outlines of areas discussed were the conclusions, recommendations and suggestions for further studies.

5.2 Summary

This study has empirically examined the impact of school facilities on teaching and learning in Nigerian Airforce secondary schools. The study is keen at identifying, determining and ascertaining the extent by which the various school facilities provided or not had enhanced effective teaching and learning in the understudy area. The various school facilities mentioned in the study are categorized under four (4) components. These are Buildings, Furnitures, Utilities and Instructional materials. Four research questions and hypotheses each were formulated as guide for the study. Some literatures considered related to the present study were reviewed in the second chapter.

The third chapter of this study examined the methodology used in carrying out the research work. However, descriptive

survey method was adopted, involving a total population of over two thousand students' and teachers. The research instrument employed in the study was Questionnaire using a random sample of four hundred students', three school principals' and one hundred and fifty teachers' from the three (3) annexes of the school Airforce Secondary Schools in Kaduna, Port-harcourt and Jos.

One way analysis of variance (ANOVA) was suitably considered as the statistical procedure in analyzing the hypotheses at 0.05 level of significance, while descriptive statistics was employed in the analysis of respondents' bio-data.

5.3 Conclusions

In view of the outcome of the study, it was concluded that school facilities remained one essential factor in the realization of the goals of secondary education in Nigeria. This is because of its great role on teaching and learning process cut across the provision of essential services such as electricity, pipe borne water, laboratory and classrooms. They play a different roles in the promotion of teaching and learning.

The national policy on education recognized the impact of this essential services to the successful running of schools in its blueprint. Though, it has not been ascertained if this facilities are

adequately provided for in the studied schools, important to note was that they are viable tools for productive teaching and learning process. Based on these assertions, schools and educational system by extension should entrench endeavour to provide all these facilities since they are goal-oriented.

5.4 Recommendations

The study has arrived at the following recommendations based on its findings and conclusions:

1. Bearing in mind that the provision of these facilities are capital intensive project, the study recommended that Government should intensified her effort to increase funding of the system and ensure it is timely done.
2. Effort should be put in by the schools to examine and report to the Government as at when due cases of such existing facilities that needed urgent attention. The PTAs should be carried along in the developmental stride of any school and should be given a functional role to play.
3. On the need to put the facilities into functional use, it recommends that Government should; map-out strategies to train and retrain every teachers on the use and importance of these facilities.
4. School heads, teachers' and students' should be re-oriented to tap on how these facilities can improve considerably teaching and learning within their vicinity.

5.5 Suggestions for Further Studies

This will enable other researches emanating from this present study to address other critical areas of interest in this research work. It has therefore suggested that the followings be looked into:

1. Appraise the roles played by every stakeholders aimed at putting the facilities into functional use to enhance teaching and learning process.
2. Investigate the effect of bureaucratic problems involved in the smooth operation of military secondary schools from the viewpoint of its leadership style and the secrecy nature of information in the organization.

References

Adesina, S (1988). The Development of Modern Education in Nigeria, Ibadan; Heinemann educational books Nig. Ltd.

Adesina, S. (1981) introduction to educational planning. Ile Ife; University of Ife press Ltd.

Aghenta, J. (1993). "Principles and Practices of Educational Planning" Focus on the Developing Country Published by Nigerian Society for Educational Planning (NSEP) University of Benin-City, Nigeria.

Ajayi, A. O. (1996). Quality Improvement of Teaching, Supervision and Administration in Primary Schools in A. O. & Akinwunmi, J. A. (Eds). *Personnel Performance and Capacity Building*, Ibadan, Nigeria.

Anderson, R.M. (1978) Individualizing educational materials for Special Children in the Mainstream. Baltnoire; University Park press.

Asiedu – Aktpgo. K (1981), A Living Classroom, London George Aven & union Ltd.

Bloom, B. (1978). Environments for Learning in Britain (NFER Publishing) Company Ltd.

Broorde, C. A. (2003). *The Relationship Between Design of School Facilities and Student Behaviour and Academic Achievement.* (Doctoral Dissertation, University of Mississippi). Retrieved May 2, 2008, from ProQuest Digital; Dissertations Database. (AAT 3089830).

Building Educational Success Together. (BEST, 2005). *Recommended Policies for Public School Facilities.* Retrieved May 26, 2008, fromhttp://www.21csf.org/esf-home/publications/modelpolicies/PlanningSectionMay2005.pdf.

Bullock, C. (2007). *The Relationship Between School Building Conditions and student Achievement at the Middle School Level in Commonwealth of Virgina.*Retrieved July 4, 2008 from http://scholar.lib.vt.ed/theses/available/etd-08212007-163313.

Castaldi, B. (1977): Educational Facilities Planning, Remodeling and Management. London: Allyn and Bacon Ltd.

Cho, D. I. (1991). "SA Survey of Maintenance Models for Multi-Unit Systems:. European Journal of Operational Research 51 pp. 1-23.

Combs, P. & Hallak, J. (1987). Cost Analysis in Education, Washington IBRD The World Bank.

Cushen, M. E. (1966): Educational aids in the infant schools: London: Mathews, Drew and Shelboum Ltd.

Darang-Hammond, L. (2000). Teacher quality and student Achievement: A Review of State Policy Evidence. *Education Policy Analysis,* 8(1). Retrieved February 20, 2009, from http://epaa.asu.edu/epaa/v8nl.

Edem D.A (1982), Introduction to Educational Administration in Nigeria Ibadan: Spectrum Book Ltd.

Fabunmi, M. (1997). Differential; Allocation of Educational Resources and secondary school Academic Performance in Edo State, Nigeria. An Unpublished Ph.D Thesis, University of Ibadan.

Fagbamiye, E. O. (1979). Contextual Effects on Learner Characteristics: Determinant of Students Achievement.

Fagbulu, A.M. (1972), Administration Practice for Teachers, London: Evans Brothers Ltd.

Hallack, J. (1990). *Investing in the Future. Setting Educational Priorities in the Developing world.* Paris 1 TEPPerganion Press.

Kochler, S.K. (1978). Secondary school Administration, London: Sterling Publishers Ltd.

Lawal, A. (1995). The Role of Supervisors and Inspectors in Improving Educational Students Language Arts. Institute Journal of Studies in Education, Ilorin, 1(3), 14-15.

Momoh D. G. (1980), Management of Non-human Resources on Schools and Universities. Paper presented at Kaduna Polytechnic, Kaduna.

Nwagu, N. A. (1978). Primary School Administration Ibadan; Macmillan Publishing Company.

Ogbodo, C. M. (1995-44) "Managing Educational facilities" in Peretomode V. GF. (ed) Introduction to Educational Planning and Supervision. Lagos, Joja Educational Resources and Publishing Limited.

Ojoawo, A. O. (1990). An Empirical Study of Factors Responsible for Poor Academic Performance in Secondary Schools in Oyo State. AJEM, 4(1&2), 140-148.

Ovwigho, U. M. (1989). A Text Book of Educational Planning, Faculty of Education A.B.U., Zaria.

Owoeye, J. S. & Yara, P. O. (2011). School Facilities and Academic Achievement of Secondary School Agricultural Science in Ekiti State, Nigeria. Journal of Asian Social Science Vol. 7 (7) July.

Ozigi, A. O. (1977). A Handbook on School Administration and Management Lagos Macmillan.

Sidhu, K. S. (1999). 3rd Ed. School Organization and Administration. New Delhi: Sterling Publishers Private Ltd.

Uche, U. (1982), A Sociology of Education for NCE Students, London, George Allen and Unwin Ltd.

Ukeje, B. O. (1966). Education for Social Reconstruction London; Macmillan Education Ltd.

UNESCO (1984). Management and Maintenance in the use of Educational Buildings and Equipment, (Division of Educational Policy and Planning), in Journal of Educational Management and Planning (JEMP), Vol., No. 1 April 2006.

Wilcockson, D. (1994). Teachers Perspective on Under-Achievement. *Education Today Journal of the College of Preceptors* 44(4), U.K. Longman.

AHMADU BELLO UNIVERSITY, ZARIA
DEPARTMENT OF EDUCATION, FOUNDATIONS AND CURRICULUM

QUESTIONNAIRE ON THE IMPACT OF SCHOOL FACILITIES ON AND LEARNING IN NIGERIAN AIRFORCE SECONDARY SCHOOLS

TEACHERS' QUESTIONNAIRE QISTL

Dear Respondents,

My name is Mrs Auta Risikat Ibijoke (Mrs), a Postgraduate student of the above institution who is currently undergoing a research thesis. The research thesis is titled "Impact of Maintenance of School Facilities in Nigerian Airforce Secondary schools". Kindly assists to fill the questionnaire as quick as possible despite your tight schedule. It is purely an academic exercise, as such all informations provided shall be kept confidential from any other ulterior motive. It shall be grateful for your kind consideration.

Thank you

Auta risikat Ibijoke

QUESTIONNAIRE:

ON MAINTENANCE OF SCHOOL FACILITIES ON ACADEMIC PERFORMANCE OF STUDENTS IN NIGERIAN AIRFORCE SCHOOLS

Section A: Respondents' Bio-data

1. How long have you been teaching?
   (a) 1-4 yrs ( ) (b) 5-8 yrs ( ) (c) 9-12 yrs ( )
   (d) 13yrs and above ( )
2. What is the level of your educational qualification?
   (a) NCE ( ) (b) B.Ed/B.Sc ( ) (c) Grade II ( )
   (d) M.Ed/M.Sc ( )
3. How old are you?
   (a) 18-22yrs ( ) (b) 23-27yrs ( ) (c) 28-32 yrs ( )
   (d) 33 yrs and above ( )
4. Sex: (a) Male ( ) (b) Female ( )
5. Marital status: (a) Married ( ) (b) single ( )
   (c) Divorced ( ) (d) Separated ( )
6. What is your educational position in the school?
   (a) Principal ( ) (b) Teacher ( ) (c) Senior Masters ( ) (d) Vice-Principal ( )
7. Have you attended any workshops, seminars or conferences to upgrade your skills?
   (a) Yes ( ) (b) No ( )
8. Who do you think should be responsible for the maintenance of school facilities as a stakeholders in the system
   (a) School ( ) (b) Government ( ) (c) PTA ( )
   (d) All the above ( )

Section B:

S/No	Impact of Supply of Electricity on Teaching-Learning Process.	SA	A	UD	D	SD
1	Constant supply of electricity into my school has helped to hence effective teaching and learning activities.					
2	The library in my school is functioning adequately as expected and stock with current educational ,materials.					
3	Students' free access to the library facilities in my school have greatly encouraged their learning process.					
4	There is lack of orientation on the part of my students' on the use of library resources to aid their private learning activities.					
5	High cost of electricity bills have render my school from constant supply of light, hence the under-utilization of teaching facilities.					
6	Even with the constant of electricity into my school, it is yet to improve upon its teaching-learning activities.					
7	In my opinion, the provision of library services have not improve teaching-learning activities due to poor power supply into the centre.					
	Impact of supply of pipe-borne water on teaching-learning process in schools					
8	Poor supply of pipe-borne water had stall most teaching activists in my school especially those which required daily use of water.					
9	Constant supply of water to my school is not requited in any way since it is used for only few purposes. Such as cleaning of offices, toilets and washing of practical apparatus.					

10	From my observation, there is need for little worry on the supply of sports facilities if they are available or not. Since sports activities only takes place frequently.					
11	Most of the sporting facilities provided and supplied in my school are carried out by the school authorities.					
12	We cannot do without sporting facilities in my school due to it structure form or nature.					
13	The provision of sporting facilities have always receive a boost yearly in the school budget but there is nothing to show for it.					
14	When pipe-borne water are provided in a school, it helps to free the school environment of communicable diseases.					
	Impact of the provision classrooms on Teaching-Learning process.					
15	There are short provision of classrooms in my school which do not correspond with the yearly increasing rate of students' enrolment.					
16	Textbooks in different subject-areas are readily provided for use in my school at any time.					
17	In an effort to improve teaching and learning activities in my school, the management have always shown concern in the students' learning environment.					
18	I am of the opinion that classrooms in my school are not adequately conducive for teaching and learning activities. This is because students' are exposed to unhealthy atmosphere.					
19	Students' are encouraged to buy their own textbooks when coming to school due to its availability in the school library.					
20	Classrooms are inadequately constructed					

	in my school with poor fittings due to the manner in which the contracts are awarded.					
21	Adequate preparation by teachers' can promote effective use of classrooms					
	Impact of the provision of labouratory facilities on teaching and learning process in school					
22	Most teachers' do have the required knowledge and consciousness to use the provided classrooms					
23	Use of facilities do not assist the span in knowledge learnt by students.					
24	Students' have always applied knowledge learnt where classrooms are put to effective use by the teacher.					
25	Electricity supply to schools have always distort the use of educational facilities.					
26	School facilities that enhance academic performance can not be quantified in human and natural resources					
27	Human materials include, messengers, cleaners and informed men					
28	Material resources include: classroom, chalkboard, desk, and school e.t.c					
29	Academic enhance school facilities include special teaching and learning in the school system					
30	Academic performance enhancing school facilities measure, growth and development in the school system.					
31	School facilities ensures greater academic standard in the school system and adds values to the school grade					
32	School facilities improve level of discipline and ensure greater school climate and tone					
33	School facilities are capable of helping school advancement.					

34	Management of the school facilities ensures that they are in a safe place with the security					
35	School facilities are usually not managed by a single but it takes a collaboration of number of relevant staff of the school system.					
36	Confidence of students' are builded if educational facilities in schools are used judiciously.					
37	School facilities whether human or materials complement one another and are essential to effective teaching and learning					
38	The school facilities requires a lot of fund.					
39	School facilities are better sorted out and kept in accordance to their type and value.					
40	School facilities are usually renovated to avoid dilapidation and complete exigencies					
41	Management of school facilities increase the quality and quantities of the facilities					
42	Management of the school families increase the life-span of the facilities					
43	Management of school facilities determine the efficiency of the school administration					