RELATIONSHIP BETWEEN SCHOOL PLANT MANAGEMENT AND STUDENTS' ACADAMIC PERFORMANCE IN LOWER BASIC SCHOOLS OF GWARZO LOCAL GOVERNMENT AREA, KANO STATE, NIGERIA

BY

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I hereby declare that this work is the product of my research efforts undertaken under supervision of Professor Aliyu Dauda and has not been presented anywhere for the award of a degree or certificate. All sources have been duly acknowledged.

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DEDICATION

This dissertation is dedicated to my late parents Malam Shu'aibu Musa and Malama Aishatu Hassan may their souls rest in peace.

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ABSTRACT

This study investigated the relationship between school plant management and students' academic performance in lower basic schools of Gwarzo local Government area, Kano state. Correlation survey design was adopted for the study. Multi stage, Stratified random sampling technique was used to select 44 schools, 196 teachers and 322 students as respondents for the study. To guide the study, five research questions and five hypotheses were formulated. The instruments used for the study were researchers developed questionnaire tagged school plant management questionnaire (SPMQ) and Kano state transitional examination result for 2015 to collect data. The instrument was validated by experts in measurement and evaluation. The reliability of the instrument was established using randomly selected members of the population who did not take part in the study. The data obtained were analyzed using Spearman rank correlation coefficient and a reliability co-efficient of 0.579 was obtained. The data were analyzed using Pearson product moment correlation (PPMC). The formulated hypotheses were tested at 0.05 level of significance. This study revealed that there is an established significant relationship between school plant management in the area of school plant location, arrangement of facilities, maintenance of facilities, provision of instructional materials and students' academic performance in the school sampled for the study during the period under investigation. At the end from the findings and conclusions the study recommends that government should continue to encourage the support of parent teachers association (PTA), philanthropists, SBMC, Old Students Associations and other stakeholders in education in the society in producing and improving the state of instructional facilities in public lower Basic School and head teachers are to encourage and ensure proper utilization and maintenance of school facilities in order to enhance teaching and learning.

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OPERATIONAL DEFINITION OF TERMS

School Plant: It refers to the material provision of the school.

School Site: It is the specific geographical location that contains the buildings where school plant is located.

Lower Basic School: Nine year basic (from primary one to JSS 3)

Academic Performance: Is knowledge attained or skills developed in school subject by test scores.

School Building: These are tangible structures that serve as shelter for educational activities. They include among others; Classrooms, Laboratories, Staff Room, Library, Toilet, Offices and so on.

School Equipment: It refers to those facilities or outfits such as machines and tools, which ease the operations of academic activities.

ABBREVIATIONS

L.G.E.A “Local Government Education Authority”

P.R.S. “Planning Research and Statistics”

S.B.M.C. “School Based Management Committee”

S.A.P. Student Academic Performance

S.P.L. School Plant Location

A.O.F. Arrangement of Facilities

M.O.F. Maintenance of Facilities

P.I.M. Provision of Instructional Materials

U.I.M. Utilization of Instructional Materials

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The primary purpose of teaching and learning processes is to bring about desirable changes in the learners behavior through critical thinking. The process does not take place in vacuum but rather in an environment structured to facilitate learning. It has been observed that adequate attention is now being paid to school plant planning and management throughout the world education system including Nigeria. The quality of education delivered by teachers and academic achievement of the pupils of any school is dependent on several factors of which school plant is paramount. In Nigeria public school enrolment has continued to increase without corresponding increase in facilities for effective teaching and learning. As a result of underfunding of education in Nigeria, the government has been encouraging proper maintenance of available school facilities.

The present social conditions with rapid growth in population with vast expansion in education, with big increase in enrolment, with diversification of courses, with a demand for better schooling conditions, greater awareness for using material equipment and with more and more participation of the students in co-curricular activities necessitate adequacy of school plant in many ways. Nigeria as a nation strives to experience real growth and development. This requires a clearly defined development strategy that allows intensive utilization of resources which is endowed. These resources are the various school facilities that are indispensible in the education process. They include the sitting, the building and physical equipment, recreation places for the achievement of educational objectives (Oluchukwu, 2000).

The school plant is of great importance because of its impact on the educational processes and programmes. We must look at the plant as an integral part of the learning environment. Ideally speaking, the school plant must look like a nursery for the growth and development of young children. It should be situated in house surrounded, and its structure must be

appropriate in respect of climatic conditions. It may be possible to view it with a pride in its locality. It must look like outstanding, healthy, neat and clean and attractive building in the area concerned. It should possess a stimulating and inviting look.

Inadequate facilities in primary schools to cope with the ever increasing pupils' enrolment call for the timely and proper maintenance of the available physical resources. Inadequate physical plant and educational infrastructure is one of the features of an inadequate and faulty educational system. This has the tendency to cause failure in educational innovations and it can also hinder good teaching practices and further act as deterrent to learning. School management in recent time has been characterized by over stretching of the available resources, irregular or in adequate inspection and assessment of resources situation and outright lack of maintenance culture.

The consequences of that are grave, considering the cost of procuring new ones and the attendant losses in quality education associated with the above situation. It is therefore necessary to involve a cooperative and complementary strategies needed to effectively manage the available physical resources with a view to enhancing effective teaching and learning in school system.

The importance of provision and management of school plant/facilities in primary school cannot be over emphasized. The state of the available school plant in primary schools particularly in the first two decades has been observed to be deplorable and needs urgent attention for a meaningful and child – friendly teaching –learning environment to prevail. It is sad to note that in Nigerian schools there are no clear cut policies for the management of school plant /facilities. Due to dwindling performance in schools, there is need for a conducive teaching and learning environment as well as the need of supply of adequate facilities, keeping them in good condition and utilizing them properly which require adequate management.

Good quality and standard of school depend largely on the provision, adequacy, unitization and management of educational facilities. Akinsolu, (2000) asserted that educational curriculum cannot be sound and well operated with poor and badly managed school facilities. The school plant management involves keeping records of the facilities, supervising the facilities, planning for the facilities, motivating students and teachers to participate in facilities maintenance and evaluating the available facilities.

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 unhealthy surroundings and if the entire equipment provided to them is uncomfortable Sidhu (2012). In recent time stakeholders in Nigerian education system have been agitating as a result of persistent and alarming slide being experience in the Nigerian education system. The situation has worsened despite efforts by successive governments which have sought to revamp glory of the Nigerian education system to no avail. Mulfarious problems ranging from mismanagement of allocation resources to declining standard of education are being experienced (Ajayi, 1999).

A number of measures such as the 1976 UPE, Universal Basic Education (UBE 1999), were taken by the government with a view to salvaging lower basic education from collapsing. Such measures include provision of founds plant/facilities, personnel and establishment of school based management committee (SBMCS) and so on in order to restore and maintain the quality of education in our primary schools (Lawal, 2007).

Government whether local or otherwise, places emphasis on school plant management and maintenance with a view to maintaining quality and productivity. The Local Government Education Authority (LGEA) and state Universal Basic Education Board (SUBEB) in all cases speak about plant management and maintenance in schools. This therefore motivates the researcher that it will be of importance if a research work is conducted on the subject matter in order to find out the relationship between school plant management and students' academic performance in public lower basic schools of Gwarzo Local Government Area of

Kano State, particularly when it is believed that the student's academic performance is one of the primary objectives of the school. And also to investigate the relative contributions of school plant effectiveness on teaching and learning as well as the provision of school plant in Schools and the problems associated with their proper management system and maintenance.

1.2 Statement of the Problem

There are two factors that affect academic performance of the learner. These are environment and heredity. School exists for the purpose of teaching and learning. Human and material resources are deployed for this purpose. School and indeed all the facilities contained therein are supplied in order to effectively implement curriculum and there by transmitting the right type of values, attitudes and skills of a society. Some schools are wrongly located in areas where roads, markets or Motor parks are situated. Sometimes such busy places develop around the schools areas and occupy the location of the schools and in effect affect the good atmosphere expected of a school environment. School expansion also creates problem to proper arrangement of school facilities in that some facilities like borehole, toilets, libraries, computer laboratories, playground, additional classes etc. are added to the schools in places where they are not appropriate. Because contractors and/or consultants collaborate to minimize cost the try to site some additional school facilities wrongly thereby affecting the smooth running of the school. Administrators in this respect are sometimes showing negligence as to where such facilities should be sited. This also affects the proper plant management in schools.

It is common in the study area that most of the school compounds were bushy, have dilapidated buildings with leaking roofs and windows without louvers. In some of the schools the buildings were dirty no lightening, no ceiling fan and adequate management and maintenance is not provided on the available school facilities by school administrators. School facilities supposed to be kept in good condition in near their original state as much as

possible by school administrators. But from the casual observation it seemed that school administrators are neglecting the role of school facilities management and maintenance.

It is not overstatement to say that school plant is an important issue for consideration since it consist of the basic systems and structure which a viable school needs in order to function effectively and fulfill the purpose for which it was established. It has been observed that school plant/facilities are not been maintained by school administrators and hence their depreciation. The administrators appear to spend more time on instructional planning, curriculum development, and personal development and community relations claiming that the management and maintenance of school facilities is the sole preserves of the government (Ifeoma, 2002).

In view of the above, this study is aimed at investigating whether quality and good academic performance of lower basic school students is associated with the management and maintenance of school plant by head teachers and teachers. This study is going to find out the relationship between school plant management and the student's academic performance in public lower basic schools.

1.3 Objectives of the Study

The study was set to find out:

1. The relationship between school plant location and students' academic performance in lower basic schools of Gwarzo Local Government Area;
2. The relationship between proper arrangement of school facilities and students' academic performance in lower basic schools of Gwarzo Local Government Area;
3. The relationship between effective maintenance of school plant facilities and students' academic performance in lower basic schools of Gwarzo Local Government Area;
4. The relationship between adequate provision of instructional materials and facilities and students' academic performance in lower basic schools of Gwarzo Local Government Area; and

5. The relationship between effective utilization of instructional materials and facilities and students' academic performance in lower basic schools of Gwarzo Local Government Area.

1.4 Research Hypotheses

The following hypotheses were formulated and tested:

1. There is no significant relationship between school plant location and student' academic performance in lower basic schools of Gwarzo Local Government Area;
2. There is no significant relationship between proper arrangement of school facilities and students' academic performance in lower basic schools of Gwarzo Local Government Area;
3. There is no significant relationship between effective maintenance of school plant facilities and students' academic performance in lower basic schools of Gwarzo Local Government Area;
4. There is no significant positive relationship between adequate provision of instructional materials and students' academic performance in lower basic schools of Gwarzo Local Government Area; and
5. There is no significant relationship between effective utilization of instructional materials/facilities and students' academic performance in lower basic schools of Gwarzo Local Government Area.

1.5 Significance of the Study

It is hoped that the result of the study would highlight the importance of school plant management on the achievement of an effective educational programme. The study would be immense benefit to education planners, administrators, policy makers, basic school administrators, teachers, parents and researchers.

Firstly, the study will enable education planners, administrative and policy makers to view the school plant management to quality education especially in lower basic schools that is to

say, it would assist those involved in the business of education in giving preference to school plant management as the bedrock of sound and qualitative education.

Secondly, the research will help in drawing the attention of lower basic school teachers on the importance of proper school plant management in disseminating instruction to the students and at the same time draw the attention of the community towards school procurement and maintaining a high place in the school system there by motivating them to assist government in their purchase, maintenance and the plant security.

Thirdly, the findings of the study would also be useful to parents and guardians as it may serve as guide to them in their advisor roles in selecting schools for their children. It must be noted that where parents/guardian find out that particular school has an efficient school plant, they tend to register their children in such schools because they believed that the availability of required facilities would result in the best academic performance they want for their children.

1.6 Scope and Delimitation of the Study

The study focused on the relationship between school plant management and students' academic performance in public lower basic schools in Gwarzo Local Government, Kano State. All primary six students in public school and components of school plant such as a school site, school building, school furniture and equipment were part of the study.

However, school plant management of private lower basic schools, Islamiyya primary schools, Junior Secondary, senior secondary and tertiary institutions of learning in Gwarzo Local Government Area do not constitute part of the study.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presented the conceptual/theoretical framework that include conceptual back ground, school plant, objectives of school plant development, components of school plant, sources of supply of school facilities management, school plant management, maintenance culture etc. Other areas covered in this chapter are student academic performance, factors affecting academic performance. Finally review of empirical studies related to the study, summary of the chapter and uniqueness of the study are also presented.

2.2 Conceptual Framework

2.2.1 Concept of school plant

School plant can be defined as the entire school facilities which administrators, teachers and students harness, allocate and utilized for the smooth and efficient management of any educational institution for the main objective of bringing about effective and purposeful teaching and learning experience.

In learning environment recreational facilities such as football field, table tennis court and their equipment are components of school plant. The supply of facilities such as books, chalkboard, rulers, and tables and so on are also essential for an effective and adequate school plant. The school plant can therefore be described as the sum total of all resources and infrastructure which are required for enhancing the learning process.

Oke (1979) cited in Adeogun (2001) defined school plant as the space interpretation of the school curriculum. That is, the school curriculum finds its physical expression through the construction and inters arrangement of the school plant. Ehiametalor (2001) asserts that school facilities are operational inputs for every instructional programme. Therefore, it can be noted from these definitions that school plant comprises of infrastructural facilities required for effective running of the school system.

The school plant refers to the site of the school, buildings and provision of physical equipment. It embraces the permanent and relatively permanent possessions of the school resources such as laboratory equipment, chalk, black board, tools and so on NTI (2000). Udu, Ocho and Okeke (1997) described the school plant as: the controlled environment that facilitates the instructional process while at the same time protecting the physical well-being of the occupant. School plant/ facilities are the material resources that facilitate effective teaching /learning in the school. According Lawal (2007) school plant consists of all movable and immovable items in the school. School plant-include both permanent and semi-permanent on school site in addition to infrastructural and instructional facilities.

Camp bell (1999) defined school plant to include structural, motorized conveniences either for their aesthetic value or as a matter of social necessities of educational thought and ideas in to useful out comes. This implies that school plant comprises of materials or structures of any kind in learning environment that serve the purposes of ensuring viable learning process. Educational plant can be consumable, non-consumable or physical as identified by Madumere (1989) cited in Campbell (1999) that educational plant and facilities could be adequately categorized in to three groups. According to her, the consumable of educational plant include: chalk, note books, black board renovator, stamp pad ink, electric bulbs, electricity, water, brooms and so on. While non-consumables include furniture, dustbin, telephone box, school bus etc. the physical plant include car park, laundry, school farm, staff room, library, playground and so on.

The school plant can also be the environment where the curriculum will be implemented. In essence the school curriculum is physically expressed through school plant. The school plant is the controlled school environment that establishes the character of the school as rightly observed by Okoli (2004), the school plant is the controlled school environment that enhances and facilitate the teaching/learning process. The environment here is referred to as available educational infrastructures e.g. the physical environment of the school site, learning

space (buildings, furniture, library, laboratory, water supply personnel and so on. It refers to school system which provides stimulating and conducive atmosphere for effective learning Ezeocha (1990).

Therefore school plant refers to the material provision of the school. In other words school plants are educational inputs which enable a teacher to achieve some level of instructional efficiency and effectiveness.

Objectives of school plant development

A smooth implementation of an educational programme can only occur and the chances of actualising its goals enhanced if the school plant possesses some desirable qualities or standards. Ensuring that a school plant meets these standards should be the major concerns of all efforts directed at planning, designing and constructing school plants. In addition to facilitating the implementation of the educational programme, some of the qualities are necessary for the all-round development of children and youth and the well-being of the school staff.

Englehardt (1968) refers to these qualities as objectives of major concern in school plant planning, design and construction. He discusses six of these major objectives and offers some suggestions on how they can be accomplished. The following objectives should be put in focus when planning and constructing school plants:

1. Spatial adequacy and desirability

One very important objective of school plant planning that is directly related to the implementation of the educational programme is the provision of adequate and appropriately organized spaces to facilitate and support teaching and learning activities. There should be enough space to accommodate the present school enrolment and any possible increase in student population in foreseeable future. It is desirable that learning spaces be adequate for both individual and group work. Adequacy of space is also sought for administrative and other offices needed for rendering special services to students and staff and for storing

materials and supplies for the school. Provision of adequate spaces for outdoor learning and recreation should also feature as one of the objectives of school plant development.

2. Health and safety

Ensuring the safety, security and good health of the learner as well as other staff of the school is another objective that any school plant planner should accomplish. All buildings should be structurally adequate and enough safety features, such as fire alarm systems, firefighting equipment, and emergency exits should be provided. Learning takes place effectively in an environment in which the learner feels safe and secure. Toilet and other sanitation facilities to meet the needs of the students and staff should be provided.

3. Adaptability

School buildings are expensive to construct and are usually intended for long-term use. While in use, there may be some changes in the educational programme; new subjects may be introduced requiring new methods of teaching or equipment that may require special storage facilities; there may be unexpected increase in school enrolment and any unforeseen development that may hasten the obsolescence of the buildings. In order to cope with such unforeseen circumstances, it is a desirable objective of school plant planning and construction to make the buildings adaptable.

4. Aesthetics

Providing a school plant with beautiful surroundings is another objective of school plant planning. Attractive school environment with well-designed buildings and other structures may not only stimulate learners' interest in schooling and appreciation of creative arts, but it may also engender a sense of belonging and pride for their school. Such attractive-looking school and beautiful surroundings are also a source of pride to the members of the local community of the school.

5. Durability

Owing to the expected long life span of school buildings and high construction costs, durability is one of the objectives to be targeted when planning and constructing them. Durability in this case should not imply rigidity of the structures; this is because of some inevitable changes that often occur and call for flexible structures. Rather, it calls for the use of high quality building materials and competent workmanship so that the completed school plant can be put into good use for a long time; and at the same time, it should be easily adaptable as the need arises. The use of high quality building materials may be initially expensive but it eventually pays off in terms of relatively low cost of maintenance. It should be noted that many writers refer to these objectives as attributes or characteristics.

Importance of school plants

The school plant is undoubtedly a very important instrument in education. Below are the different ways in which the school plant is important for implementing the educational programme and in realizing some educational objectives.

1. Impact on the Implementation of Education Programme

The character of a school plant determines, to a considerable extent, the types and quality of curricular and co-curricular activities that take place in it. The nature and size of the school building determine the shape and size of the classrooms. The shape and size of the classrooms with their equipment, furniture and the types and variety of educational materials available affect the ways in which learners can be organised for instruction, the possible methods of teaching that can be adopted by teachers and the types of learning activities that the students can be engaged in. If home economics, technical education, music and fine arts, for instance, are part of the curriculum, the appropriate rooms and workshops must be provided with the relevant equipment and materials. Otherwise, the implementation of those aspects of the curriculum will be greatly impaired.

Practical lessons cannot be organized for science students in schools without science laboratories, or in schools with science laboratories but without the relevant materials and equipment. The only option for students in such schools who may wish to sit for science subjects in external examinations is the 'Alternative to Science' paper. Whether or not the school building is adequately planned to accommodate the educational programme, it affects the life and activities that go on within it. Hagman (1956) describes the life that goes on within a school building vividly:

…It may permit and encourage freedom, activity, group study habits, development of a sense of the beautiful and other aspects of a well-rounded educational programme. Within its walls and on the grounds around it, it may be developing good learning situations for all children. Or, it may by its appearance, arrangement, structure, or size inhibit fine educational experiences.

This is in agreement with Miller's (1965) observation that a school plant can either be an effective tool or a barrier to education. If a school's facilities are poorly planned and designed with inadequate number, sizes, and arrangement of learning spaces, it may hinder the operation of the educational programme. As well, poor planning and design of facilities may lead to undesirable behaviour of learners and inability of the school to achieve its educational goals. In this regard, Nwagwu (1978) observes that the quality of education that a child receives is directly related to the availability or lack thereof of physical facilities and the overall atmosphere in which learning takes place.

The location, size and nature of the school plant affect the types and number of curricular and co-curricular activities that can take place in and outside it. A school built on a small site, for instance, may not have enough space for playgrounds and recreational facilities. The same thing can be said about a school plant in a swampy place or difficult terrain.

2. Influence on Learners and Teachers

The school plant is of special significance to learners; for children who are just entering the school, for the first time in particular, "the school building needs to be interesting and inviting" (Cramer and Domian, 1960). This is necessary, according to these authors, because the impressions of those first years may have an impact on the attitude of the child towards school. Writing in the same vein, Appleton (1975) states that the school building generates its own ethos to the child by virtue of its appearance, design and general environment in which it is set. Fagbulu (1972) is of the opinion that a child's sense of belonging to a school is strengthened if its physical plant is sound, functional and pleasing to the eye.

From the foregoing, we can infer that the nature and look of a school plant, especially the buildings, seem to be some of the important factors that influence children's attitude towards attending school and, perhaps towards education as a whole. It follows then that any amount of money spent on beautifying our school buildings, especially those at the primary level of education, is money well spent.

In addition to its impact on the attitudes of, especially, the young ones towards school and its usefulness to them for formal learning, a good school plant with the necessary facilities plays a major role in fostering the development of good sanitation and healthful habits among children and staff. Such a school plant meets their physical needs for shelter without which teaching and learning activities can hardly go on smoothly. When teachers work in well-equipped and well-furnished school plants with good air quality, rich natural lighting and under suitable thermal and acoustic conditions, their levels of motivation and stability on the job increase. The physical plant is so important in education that if it does not meet certain standards or if its quality or condition deteriorates, it may have some negative consequences on the teaching and learning process, as well as on the staff and students.

3. Impact of the Physical Conditions of School Plants

There is growing evidence that the physical condition of a school is related to students' academic achievements and behaviour as well as the well-being of staff and students. A study of The District of Columbia schools in 1991, for instance, found that standardised achievement scores among students in poor condition were six per cent lower than those in fair condition and 11 per cent below schools in excellent condition. Another study of Virginia high schools in 1993 found that student scores on achievement tests, adjusted for socio-economic status, were up to five per cent lower in buildings with lower quality ratings (American Federation of Teachers, 1997).

Even some building design features have been shown to have measurable influence upon student learning. Among the influential features and components found to have negative impact upon student performance in buildings where their deficiencies exist are those impacting lighting, temperature, acoustics and age (Earthman, 2002). Results of some studies on specific quality factors have been summarized by Young, Green, and Roerich-Patrick (2003) as follows:

- Students had higher achievement scores in newer facilities. As the age of the facilities decreased, there was a corresponding increase in mathematics, reading, and composition.
- There were fewer disciplinary incidents in newer facilities.
- Attendance records were better in the new facilities.
- As the condition of the facility improved, achievement scores improved.
- Stimulating environments promoted positive attitudes in students.

Some studies have established that the physical conditions under which teachers work have direct positive and negative effects on their morale, sense of personal safety, feelings of effectiveness in the classroom and the general learning environment (American Federation of Teachers, 1997). Poor ventilation in schools, accumulation of dust and growth of mould in ceilings and walls can lead to respiratory infections, headaches, and sleepiness among

students and staff (Environmental Protection Agency, 2000). Poor air quality has been linked to student absenteeism often due to asthma and other respiratory diseases (American Lung Association, 2002).

4. The School Plant and Local Community Members

The school is also of some significance to the members of the local community. In some communities in Nigeria, especially the rural ones, the school plant may represent the costliest public investment in the neighborhood which must be protected from destruction, vandalism or theft. This is usually the case if the community members had contributed in one way or the other in setting up the school buildings or done any type of work on the school grounds or surroundings. In some communities, the school may be the only public establishment close to the people and which signifies 'government presence' in the area, and some of them may even be given employment there as teaching and non-teaching staff.

The school plant in both urban and rural areas of the country is a structure through which many parents hope to realize their dreams and educational aspirations for their children. To them, the school presents a window of opportunity to both the rich and the poor, more so with the democratization of education in the country. A well-designed and attractive school plant is often a source of pride to the local citizens and generates goodwill for public education among them. According to Young *et al*. (2003), the quality of school facilities influences citizen perception of schools, which in turn, influences their support for public education.

The school plant serves a number of important purposes for members of the community in both rural and urban areas of the country. It often serves as a venue for different social functions like civic reception of some important visitors and dignitaries, wedding receptions, community or town meetings and other occasions and functions that require the gathering of a large number of people. In fact, in many towns and cities, the school site is the only area where there may be adequate space to accommodate the crowd that show up at such

functions. Its importance as a venue to the young ones as an arena for recreation after school hours should not be underrated.

In addition to social functions, the school plant is often used as a venue some non-formal education programmes like adult or mass literacy programme, and also serve as study centres for some university and colleges of education part time programmes. In fact, without the cooperation of the school heads who allow the use of their school plants, it would have been very difficult for tertiary institutions in the country to operate their sandwich programmes.

Factors affecting the character of school plants

It is important to note that there are a number of factors that can possibly affect what a school plant or a school building looks like, its size, location, the relationships of instructional and non-instructional spaces and the state of repairs after construction etc. The ones discussed below are just indicative of the influences of the factors.

1. Social and Economic Factors

One of the reasons for establishing schools is to cater for the social and economic needs or life of the society. Educators, educational planners, architects, other relevant professionals and local citizens are expected to take note of major developments and trends in the social and economic life of the society or communities in which they operate. It is these developments that indicate what they need to do about education and the type of school plant or school buildings which they will set up or modify.

The current demand for technicians and technologists, scientists and skilled researchers in Nigeria; the tendency for almost every school leaver to aspire to enter the university; the preference of university education to polytechnic and other forms of tertiary education by school leavers; the rising unemployment rate, youth restiveness and the call or need for the street children and *almajiris* to go to school are some of the social and economic developments in the country which should guide decisions on the development of education and the appropriate school plants.

It does not suffice to design and construct facilities that address the present developments. As it is not possible to set up new school buildings or modify existing ones immediately changes occur because of financial and other constraints, there is the need to look far into the future, predict the consequences of future developments in the social and economic life of the society and draw their implication for school plant development. The anticipated future state of the economy, for instance, will determine how much money can be invested in education, the design of the school buildings including the aesthetic features and the period for the take-off of construction work.

2. Educational Programme

It may have been obvious to you by now that a primary consideration in all efforts geared towards the development of school plants is the nature of the educational programme that it is to serve and how that programme is to be organised. The aims and objectives of the programme will determine the types of teaching and learning activities that will take place, the types, sizes and relationships of learning and non-learning spaces. It is the nature of the educational programme offered at an institution that makes the difference between the characters of a technical college plant and that of a grammar school, or between a primary and a secondary school plant.

The curriculum offered in a secondary school, for instance, will determine the types of learning spaces to be included in a school plant. The internal structures of buildings in schools where lecture method of teaching prevail will be different from those in which practical work and experimentation are emphasised. If a school offers science subjects, there will be laboratories for the study of those subjects. If agricultural science is in the curriculum of a school, a place will be set aside on the school grounds for a school farm or garden. There will be an art room in a school where fine arts is offered. It is usual to see pieces of art work, clay models, sculptures, and other artifacts adorning different parts of such a school. If sports

and games are given adequate emphasis in the curriculum of a school, there will be provision for football fields, lawn tennis and for other games and a space for sporting events.

The character of a school plant is also affected by the non-instructional components of the educational programme. Schools that offer mid-day meals to their students will have relevant facilities for that service. The same thing applies to those that provide health, guidance and counselling services to their students.

3. Population and School Enrolment

Before a school plant is built or an existing one expanded, there must be a need for it. The number of children and youth to be catered for is a key factor influencing this need. This number at any point in time depends on the rate of population increase in a society. Presently, the population of Nigeria is estimated at over 150 million with a growth rate of about three per cent per annum and there are no indications that this rate will decrease in the near future. The implication is that the present pressure for additional classrooms is bound to continue or even increase in future.

Naturally, those communities that have few children of primary school age will have small primary school plants while those with large numbers will have bigger plants. Those with enough children for both primary and secondary education will, under normal circumstances, have both types of institutions. Increase in school enrolments at any level of the education system necessitates new school buildings or expansion of existing ones. The size of school enrolment in each case will reflect the numbers and sizes of the classrooms while the types and sizes of the furniture and some equipment will reflect the ages of the pupils or students.

4. Cultural Values

Educational programmes in different countries of the world are planned and implemented according to some cultural and religious values held highly in their societies. These values are reflected in various ways including curricular offerings with their attendant equipment

and materials, the teaching methods adopted and the ways in which pupils or students are grouped for learning and other purposes.

Our societal values of democracy and the attendant widening of access to education at almost every level of the educational system are likely to influence the provision and organisation of education for children and youth in future. A community's value for the education of its children and youth is often indicated by the amount of care it exercises over its school plant. Such communities often respond to the maintenance needs of their schools and always ensure that it is in a functional state. A community's values of democracy and respect for children's rights also inform the efforts at providing special institutions, equipment and materials for the education of physically and mentally challenged children. Where one of the values of a community is cooperation, for instance, group work is encouraged and this necessitates the provision of large classrooms for different types of activities.

Religious values and beliefs often inform the building of separate educational institutions especially at the secondary level for boys and girls. The provision for games, recreational and other activities differ in both types of institutions. The rigid demarcation of girls' and boys' hostel areas in some co-educational boarding schools, with very high walls and no link whatsoever between the two areas, is based on religious and moral values of a community or society.

5. Developments in the Building Materials Industry

Some developments in the building industry have some impact on the design and construction of some educational facilities. New building materials appear in the market from time to time. Some of them which may be found very useful for constructing or renovating school plants include new types of bricks, fancy blocks, floor and wall tiles of various types and sizes, plastics, electrical fittings and lighting systems, roofing sheets of various types, shapes and sizes and so on.

The use of these materials, if they are affordable, may not only change the look of especially old school plants, but may also convey certain advantages like prolonging the useful life of the school plant, reducing noise in the buildings, improving the ventilation, ensuring better control of light, reducing the cost of maintenance and improving the aesthetic beauty of the school buildings and other structures.

6. Developments in Educational Practices

Among other factors that influence the structure and appearance of school plants are the developments in the design and construction profession. No educational system is an island unto itself. Educational architects, administrators and professionals in the building industry often incorporate their ideas of what they consider attractive and affordable designs from the educational systems of other countries in their attempts at solving some of the educational problems of their own countries. In fact, it is good practice for educational planners and architects to be in constant search for the best practices in facility design and explore ways of adapting or incorporating them into their own approaches to school building design as the need arises.

Developments in the use of instructional media also have their effects on the appearance and structure of school buildings. The use of radio and television presentations for instructional purposes requires spaces for small and large groups as well as for individual learning. Some new instructional materials may require special rooms with special visual and acoustic environments for correct usage. They may also require special spaces or facilities and conditions for storage. All these have their impact on the internal structures of the buildings.

Components of school plant

1. School Site

It is not the main building alone which is important; the site itself may be regarded as of fundamental importance. The school site refers to the specific geographical location that contains the buildings where school equipment are kept for educational use the wrong

structure can be changed and improved but the wrong choice of the site once made will not be so easily changeable Sidhu, (2012). The surrounding of the school should be neat, healthy and congenial and free from disturbances and noise. The site should be spacious enough to meet all the requirement of the structures, play-ground, farm, shady trees and circle stand and there should be scope for further expansion. In support of this NTI (2000) enumerated the following as essential features of a school site. These are the location of the school, natural beauty and freedom from danger, freedom from health hazard and freedom from noise. Farrant (1980) opined that when a school is being planned the site chosen should be easily accessible for children from every part of the area from which school draw its pupils.

From the above statement accessibility is an important factor that must be taken in to consideration before choosing a site of the school, otherwise, the expected population of the school will be hampered. A house without occupants is useless, so also the school without students is meaningless. The site of a school can effect learning experience, Maduewesi, (1990) identified that a school situated in the market or factory area will experience so much noise to the extent that the students may not hear clearly what the teacher says. If the students cannot hear what the teacher says, they may not understand the topics taught to them. A school situated in a swampy area will create problems for the staff and children during the rainy season. Sometimes, some of the classrooms may be water logged. Therefore for effective teaching /learning to take place the chosen site of a school must be far away from market and swampy areas that are usually infected by mosquitoes. And in selecting site, proprietors and the board concerned should closely keep in touch with an architect for suggestions regarding site development and possible placement of buildings.

a. Selecting the Site for a School

Selecting an appropriate site for a school or for the extension of an existing school is an important consideration for school administrators and community citizens. In Nigeria, this is not usually an issue because, in many cases, the community where a new school is to be

located, or where the exiting one needs to be expanded, readily donates a piece of land. In most of such cases the question of whether or not the donated piece of land has the qualities of a good school site usually does not receive adequate consideration. It is, however, doubtful whether many communities are ready to give up their pieces of land readily nowadays especially in urban centres, the present land use policy of the federal government notwithstanding There seems to be no doubt that as time goes on, school sites will be more difficult to acquire in the country.

Whether or not school sites are readily available in any country or community, there is always the need for long-range projection of school site needs. These projections should be regularly revised and updated. If such a revision reveals the need for the acquisition of another site or if the need for a new school arises, there are two basic questions that must be addressed: (1) who will be responsible for selecting the site? (2) What criteria will be used in selecting the site?

b. Responsibility for site selection

Selecting and developing a school site should be an organised and rational process that is based on adequate and accurate information about the school programme and the local community of the school under consideration. Good practice requires that site selection be done by a committee of competent people. The task requires the coordinated effort and special skills of a team made up of school administrators, teachers, community members, public officials, architects, engineers, landscape architects, town planners, and legal consultants. All these people and their leader should be reporting directly to a local educational administrator or to an official of the Ministry of Education appointed for the purpose.

c. Criteria for site selection

After the committee has been constituted, it will be good for the members to develop some criteria on which to base the selection of the potential site. They should familiarize

themselves with the nature of the educational programme for the site. They should note the types of outdoor learning experiences and recreational activities that will take place at the potential site. Note should also be taken of the interests of the community members concerning to recreational and other social activities.

They should also prepare a list of some technical requirements or general criteria in respect of the desirable features and characteristics of good school sites. These criteria, together with the noted features of the educational programme for the site constitute a set of standards or desirable characteristics against which the potential sites will be evaluated. The general criteria on which any potential site should be evaluated should include the following- safety and security, size, accessibility, noise level, location, topography, soil conditions, shape, utilities, and, if the site is to be purchased, the cost.

It may be necessary to spell out the details regarding some of these criteria to all members of the team in order to enhance objectivity in evaluation. Some of the critical ones include but are not limited to:

i. Safety and health

Safety and health are, undoubtedly, the most important consideration in the selection process. In regard to this, the committee should be familiar with any existing health and safety codes in the state, region or country. In all, the potential site should not be near any airport, high tension transmission lines, railroads, busy motorways, high pressure natural gas and water pipe lines; also, it should not be close to noisy places like markets and industrial establishments, facilities with hazardous air emissions and places with bad odour, toxic substances and other health hazards.

ii. Size

The sufficiency of the potential site for the proposed programme and buildings, including outdoor and recreational activities, is also a critical consideration. The site should also have scope for expansion in order to accommodate future programmes and possible increases in

school enrolment. The size of a suitable site should be determined solely by the nature of the present and anticipated future programmes and this size should be met with the initial site acquisition. This is necessary in order to avoid early obsolescence of the buildings and also to ensure that expansion of the school facilities will not be obstructed by the buildings and other structures that may be constructed close to the school by members of the community.

iii. Location and accessibility

These are other important considerations in school site selection especially in regard to schools for young children. The school on a potential site should be easy to be reached by all children. Children must not descend valleys, walk through a stream or climb hills before reaching their school for obvious reasons. The site location should not be a difficult terrain like a hill, a valley or swampy place. The limitations imposed on the educational programme by such locations are obvious. The adequacy of the potential site will be enhanced if it is located where water sewers and other utilities can be provided easily. Other location considerations are equally important. The potential site should be located and developed in proper relationship with the existing and proposed physical facilities, such as libraries, parks, roads and hospitals among others in the community.

iv. Cost

In those areas where school sites are usually purchased, the cost factor is also a serious consideration. It should be borne in mind that in such places the school must compete with commercial, industrial and other establishments for land. So, the cost of land will always be on the increase. It will, therefore, pay off to purchase early before the need becomes critical. The committee should bear in mind that the cost of landscaping and developing the site adds to the cost of acquisition. Purchase of places that will attract high landscaping costs should be avoided if possible. In sum, members of the committee should understand the rationale behind why some sites should be selected or rejected based on the established criteria.

In real life, no site will have all the desirable characteristics or meet all the established criteria. If there are many sites to select from, it may be necessary to prioritize them in order of the desired attributes. This task will be facilitated by making use of a worksheet to score the alternatives sites. The use of such an instrument enhances objectivity in arriving at the final choice to be made and recommended to the appropriate ministry officials.

2. The School Building

The school building is an important determinant of the quality of teaching and learning that take place in the school. The building proper should have adequate accommodation for the various purposes. Its structures should be safe and stable. It should not look congested and should allow for free movement of the school population. It should be well protected by a boundary wall or a fence. 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 school building: head teachers office, staffroom, library, reading room, classrooms, adequate in number, stores, laboratories, dispensary, toilets etc.

Ogunsaje (1984), observed that school plant design could contribute to the advancement of good health, safety, comfort and convenience for the promotion of a pleasant, unified and aesthetic environment. He further stated that the buildings should be made flexible in order to give room for future expansion. He succinctly posits that school building represent a learning environment with a tremendous impact on the comfort, safety and performance of the child for effective teaching and learning situation, hence school building and educational goals should be viewed as being closely interwoven and inter dependent. From the foregoing, it means that good quality materials, Conducive environment and well –designed structures are required for learners to learn effectively and there is also need for flexibility so as to give room for future expansion.

Olugboji (1983), suggested that “All school buildings must be of the open air type because of ventilation. There should be latrines at least one for every twenty five students or thirty

children". From the above statement, a room allocated to a class for the purpose of academic instructions must be roofed with corrugated iron sheets or slates, ceiled with high quality asbestos materials to keep off the heat from the roof, and of course, well ventilated with sufficient number of windows and doors that also allow more light and air into the room. There is no doubt that if such conditions prevail in our learning environment, teaching and learning will be much better or easier.

3. School Furniture and Equipment

There are certain facilities needed in a classroom for meaningful learning experience to take place. Such facilities include teaching and learning materials like chalkboard, drawing paper, as well as equipment and furniture like chairs, desks ,teachers tables etc .In a school or classroom where all students do not have seats and desks or seven to ten students sit on a bench meant for four, those not comfortably seated might be in attentive to the teacher. They will either be busy trying to get seated or struggling to place their exercise books in a good position to enable them write well. If the above mentioned facilities are available, the students will be more attentive and will not be inconvenienced during writing activities. Ozigi, (1977) remarks that items of school equipment and furniture are essential aids to effective teaching and learning. They are the teacher's trade tools. An institution that is lacking in these essential items cannot reasonably expect to achieve its objectives.

Nwagwu (1978) observed that the furnishing of the classrooms is a major concern for teachers and head teachers\principals. The old type of furniture commonly found in Nigerian schools is long desk combined seat and narrow table. The long desk makes it difficult occasionally impossible for the teacher to arrange the seats according to the type of learning activity for the day or period. Adebayeje (1987) also lamented that;

Furniture was in adequate and poor, several schools had no desks, many of the desks were wrong sizes and as a result many of the students sit on the floor. This implies that most times, furniture is inadequate and where they are available they cannot meet the needs of the users

and are usually of poor quality. This condition will make the students loose interest in lesson and will not pay attentive in class. It is therefore important that schools should be adequately furnished with safe and comfortable seats, durable and suitable to the type of work in progress. They should also measure up to the number of students in the class

School plant utilization

It is the duty of the school head to ensure that the school plant is ready for use when due and that it is correctly used for the purpose for which it is meant. This is necessary in order to prevent any disruption of the educational programme. We had earlier stated that using the school buildings and equipment in the right way prolongs their life spans and prevents avoidable damage.

Kochhar (1978) is right by stating that using the school plant for educational purposes requires careful direction or much of its effectiveness can be lost. If the design of a facility follows function, then the type of activity specified for the facility should be taking place in that facility. Otherwise, that facility is being incorrectly used.

Effective use of school buildings and classrooms needs careful planning and supervision. Effective use of school buildings involves the following:

- Ascertaining that each room in the building is used to its capacity. It will amount to under-utilisation if a classroom meant for 40 pupils is occupied by 20 pupils or less for most of the school year. On the other hand assigning 50 or more children to a classroom meant for 40 of them is tantamount to overcrowding which is educationally unadvisable.
- Ensuring that assignment of space reflects the best educational use of that space. Educational effectiveness in the use of space is not ensured by holding literature or history lessons in chemistry or biology laboratories, for instance. Nor is it educationally effective to hold English or biology lessons in the fine arts room. In each of the above-cited cases, there may be much distraction of students' attention when lessons are not conducted in the appropriate learning spaces.

- Ensuring that special rooms like music rooms, the science laboratories and fine arts rooms are used only for the study of the special subjects for which they were designed.
- Making sure that all non-instructional spaces are used for their intended purposes. When stores are used for purposes other than storing equipment, materials and supplies, the items meant for the stores may be put in places where they may easily be damaged or stolen. Unless adequate care is taken, it may take some time to locate some of the items when they are needed.

By studying the allocation of students to learning spaces as reflected on the school time table and armed with a good knowledge of student enrolment in each class, the school head can have an idea of how spaces are scheduled for use in the school. He can get better results by occasionally conducting space utilisation studies in the school. Following this, he can make such necessary amendments as will ensure the optimal use of spaces in the school.

As in the case of school buildings, the school head has to make sure that the available teaching aids in the school are optimally used to facilitate students' learning. It is not uncommon to find some useful audio-visuals, some scientific equipment and other materials in some school stores that have not been put into use for years. The reason for this may be either that the teachers do not know that such materials exist in the school, or they are not skilled at using them. In some cases the teachers may be aware of the availability of the materials, they may know how to use them but they may not be willing to use them. The school head teacher can encourage effective utilisation of school materials and equipment by:

- Producing and giving to every teacher, a list of the available special teaching equipment, materials and supplies in their respective subject areas and encouraging them to sign them out and make use of them regularly.
- Making them aware of any newly purchased equipment in the school and, if necessary, organising a workshop, demonstration or talk on how to use it for the relevant teachers.

- Undertaking some classroom visits from time to time to see whether and how they use the available school equipment.
- Complementing his observation with analysis of data on how such equipment are signed out by the teachers. This presupposes that such records are kept by the stores man or whoever is in charge of the equipment and materials.

It is often the case that some equipment and materials in some schools cannot be put into any use either because they are unserviceable or because of obsolescence. In such cases it may be advisable to sell them if there are any buyers. In the absence of any buyers, it may be better to give them out or dispose of them in any way possible instead of leaving them in the school store to occupy space. All these have to be done, however, with the approval of the appropriate Ministry of Education authorities.

The school head is also to make sure that adequate and effective use is made of the school playgrounds. The chances of the playgrounds being used are increased if the grass on them is kept low and if they are neat and free of all objects that can pose some danger to the children. Effective use of such spaces can be enhanced by scheduling both non-instructional and, if appropriate, instructional activities that will take place on them and making sure that the schedule is being adhered to.

In thinking about the effective use of school facilities, the head teacher should not forget the need of some of the facilities by the members of the school's local community. You should recall that we discussed in unit one of the first module, the different uses to which members of the community can put the school. The most common use is for social gatherings. The important point is that members of the community should not be denied the use of any school facility.

When such requests are made, the school head should make the conditions for the use of the facilities known to them. If many requests are made for the use of a particular facility, such requests should be entertained on first come, first served basis. Should such requests be

regular from different groups in the community, it may be necessary for bookings for the facilities to be made with a designated school staff.

Sources of supply of school recourses/facilities

Education as a whole is an expensive enterprise; it is therefore difficult for a simple body (government, cooperators, or individuals) to simple-handed sponsor it. What this means in that sources of funding of supplies are many and various despite the type of school ownership.

The financing of education is a joint responsibility of the Federal, State and Local Government; but government welcomes and encourages the participation of local community, individuals, other corporation and non-governmental organizations.

The National Policy on Education (FRN, 2004) says that primary education is that given for children aged 6 to 11 plus. It is an education which is the birth right of the child and is squarely incumbent on government to dutifully and effectively as well as generously provide, as a matter of obligation, to all its young citizens irrespective of the socio-political and economic background of their parents. Dauda (2008). He also added that all responsible governments whether civilian or military, democratically elected or dictatorial despotic regime headed by soldiers or some monarch are under the obligation to sufficiently finance, effectively supervise and manage, as well as adequately supply the primary schools with all necessary teaching and learning resources, a positive and a conducive atmosphere for a smooth teaching and learning.

2.2.2 School plant management

When people were together for the attainment of a predetermined objective, there is a need for management that is charged with the responsibility of ensuring the realization of organization objectives. The school administrators are usually confronted with the enormous task of managing educational resources for the purpose of achieving educational goals. Educational resources are scarce and limited in supply. Therefore, the success or failure of

educational administrator in the task of achieving educational goals depends so much on his managerial ability. Ekuafeh, Ofie and Nwaugu, (2012) on the basis of the above exposition, Dare, (2002) defines management as intelligent utilization of scarce and limited resources to achieve organization goals. In others words it can simply be viewed as the art of getting a task accomplished through the efforts of other through careful utilization of human and material resources.

Similarly, Olubadewo (1992) also viewed management as a conscious effort of utilizing resources to meet the goals of an organization .This means that resources should be systematically used to achieve a purpose. Furthermore, Fagbemi (2006) conceived management as judicious utilization of resources meant for the realization of specific objectives and trying as much as possible to avoid wastages.

School plant management is an integral part of the overall management of the school. The actualization of the goals and objective of education require the provision, maximum utilization and appropriate management of the school plant/facilities. Asiabaka, (2008).Management of school plant/facilities implies keeping them in good condition and proper utilization which require adequate maintenance as well. Fenker (2004) stated that facilities management is a process that ensures that buildings and other technical systems support the operations of an organization. The international facilities management association (2002) described facilities management as the practice of coordination of the physical work place with the people and the work of the organization; it integrates the principles of business administration, architecture and the behavioral and engineering sciences.

School plant/facilities management is the application of scientific methods in the planning, organizing, decision-making, coordination and controlling of the physical environment of learning for the actualization of the educational goals and objectives. This involves among other things, collective decision making in relation to selection of site for establishment of new school design and construction of new school plants including grounds, renovation and

modernization of old plants, provision of equipment for academic and non-academic activities, maintenance of all facilities and review of management practices and processes.

Adesina (1980) contributing on school plant management asserted that, it is therefore the duty of the school administrator to supervise and monitor school buildings, furniture, equipment, and recreational facilities etc to ensure that they are in good condition. Furthermore, Olagboye (1998) stated that "the school head has to ensure proper organization of school plant development to prevent loss of time, space, and money". According to him "a well-managed and maintained school facilities provide avenue for pupils to psychologically settle down for academic work (Olagboye, 1998). Similarly school head should pay attention to prevention of fire hazards etc. As school plant/facilities constitute major quality determinant in any organization, they must be well managed. Emetorom (2004) proposed three stages in the management of school plant/facilities Vis:-

Stage I: Determine the goals, priorities, service and programs to which each facility will be directed.

Stage II: Conduct school and community needs assessment surveys. This will help to provide information on all the relevant facilities based on the needs of the schools and communities and they make an estimate of the facilities needed.

Stage III: Under-take an evaluation of the available facilities in terms of their quantitative adequacy (Emetarom, 2004, Fagbemiye, 2014).

School plant management is very vital, particularly now that the country is witnessing a tremendous decline in its economy. Ehiametalor asked what must the school head do to managed the resources, (what he called human, capital, equipment, materials and building/space) that are not abundant? In proposing an alternative solution, he emphasized planning on how to utilize plant, in managing personnel resources, he encouraged the adoption of the principles of management by objective, school head should establish well-articulated objectives to guide the actions of every-body in the school. School needs to

arrange an order to priorities and establish rules to guide users of materials and plant that preventative maintenance should be used most often for all plants in the schools (Ehiamatalor, 2001)

Fagbemi (2006) said that school plant is essential. Come what may, if it's effectively planned, it will be easier for institution to provide effective learning situation. He further stated that physical facilities, school plant and equipment are not only necessary for an individual progress but for educational growth of the society. Teachers and students could be recruited or admitted in to school just for a moment, but school plant and equipment remain in the institutions for many generations. In other words, students and teachers will come and go, but school plant and equipment remain, if properly maintained.

Maintenance culture of school plant

A lot of money is expended in the provision of school plant to enhance teaching and learning. This effort can however turn out to be futile if the physical facilities are not subjected to maintenance from time to time. Plant maintenance refers to the repair and up keep of the school plant and equipment in order that efficient services can be rendered. The general appearance of the school constitutes the basis upon which (teachers and students) within the community make their judgment about the quantity of the school and its programs. The maintenance of school plant is usually viewed as the responsibility of a particular set of people when in a practical sense; it is an issue of collective responsibility. This explained the ideas behind Nwagwu's submission (1978). He posited that children should be educated to regard these (school facilities) as their own and not merely as government property. The students should look after the furniture and equipment in the same way they handle their parents' property. Above all, they should know that in the event of any school equipment being broken, defaced or destroyed through vandalism they would all be directly affected.

The school plant maintenance entails that a good orientation should be given to people within the school system to inculcate in them respect for school property. The campaign will be

fruitful if the facilities are beautiful and the lawns are kept neat. There are some schools in various cities in Nigeria that are so worn out with dilapidated walls, and filthy surroundings. The pupils from such schools are dirty and have little respect for school properties. There are many obscene writing on the walls of the classrooms which show that the battle in plant maintenance procedure should begin. Ehiamatalor, (2001) pointed out four types of maintenance. They are: preventive maintenance, periodic maintenance, recurring maintenance and emergency maintenance.

Preventive maintenance -There are maintenance sources that are performed on a continuation basis by the maintenance personnel. The purpose of preventive maintenance is to reduce the likelihood of repairs or breakdowns of equipment. The preventive maintenance programme has been proved to be cost effective. Periodic or regular maintenance services are the maintenance services which are performed on a periodic basis on specific equipment or school facilities. They are services which are carefully designed to keep the equipment operating at an optimal level and to reduce the incidence of break down or major repairs the periodic maintenance services can be carried out at the school repair workshop or contracted out to skilled personnel.

Emergency maintenance - These are maintenance sources carried out at irregular period and basis. The services here can be provided upon notice by the cleaners. The services may be provided to enable the maintenance unit prevent the breakdown of a particular equipment. In the contribution of Ologboye (1998) on the school plant management, he identified five types/ forms of maintenance.

1. Preventive and predictive maintenance. This according to him is aimed at preventing breakdown of facilities or preventing a situation which can put part of a plant out of use.
2. Corrective maintenance: This involves repairing fault on time.

3. Running maintenance: This type of maintenance is carried out while the plant or any of its components is operating. For example normal school lesson is going on while the generating set in being repaired.
4. Breakdown maintenance which focused on rectifying breakdown in any component of the school plant.
5. Shut down maintenance: which involves suspension of activities until the maintenance or rehabilitation of plant has been completed (Olagboye 1998).

In a school, there are skillful maintenance technicians' personnel assigned to do specialized skills, maintenance such as electric gadgets, plumbing, carpentry, and metal work for proper maintenance of school plant. There are some guide lines in the development of a standard maintenance programme. Some of them include the following:

Provision of favorable environment for learning and adequate care for school facilities.

Clearly defined and job description be developed for all maintenance personnel.

The relationship of the school principles to the maintenance personnel should be clearly stated, and supervisory responsibilities also be defined and communicated appropriately to all concerned.

Adequate man power should be provided to ensure the operation of the programme.

The entire maintenance programmed should be reviewed periodically to identify methods by which efficiency can be improved.

All school personnel should be oriented towards recognition of the physical conditions of school facilities. Thus, children will learn more and work harder when facilities are adequate, the absence of inadequacy of which would bring about anxiety on the part of the teachers and pupils alike, the ultimate of which would affect productivity. The care taking of plant in the school should be a team work.

If the above basic principles are met then we can identify four plant maintenance procedures to ensure that the school plant in well maintained. The procedures of plant maintenance are:-

1) Ascertaining needs repairs for school building. In order to discover needed repairs there should be a periodic and systemic inspection of all school properties. This should be an event complete inspection is needed. Even organization needs annual report. In the same vein, the schools need situation reports on the school plant annually or periodically in order to establish the condition of the school equipment. Any equipment in poor condition discovered through this routine check should be taken for repairs.
2) Emergency repairs: many repairs of emergency nature or of a minor technical nature can be done by the cleaners. Any complex repairs that require emergency should be sent to the maintenance personnel who are skilled.
3) Establishment of repair shops: A repairs shop can be established where cases can be reported for necessary repairs. Items such as desks, tables can be repaired at the school workshop immediately. The school repair workshop is better and more cost effective than contracting out the items for repairs.
4) Maintenance of repairs records: The maintenance personnel should maintain repairs records. This has many advantages. It will show how often repairs are carried out on the school plant or on a particular equipment. It will also indicate the amount of money being spent on repairs of equipment and the school plant generally. The record can be collected periodically in order to determine the efficiency of the repairs carried out. Both the supervisor and the headmaster should check the records regularly for proper maintenance analysis.

2.2.3 Students' academic performance

Generally speaking, the objectives of education should be to arrange for the person being educated the situation which he would be able to acquire knowledge that he requires to cope with life within the environment so that he can live a good and useful life in his community. In the lower basic school, the foundation of the process is laid, and the teacher tries to provide the child with the sort of environment and stimulus to help him to learn.

In many situations judgment has to be made to determine the effectiveness of a particular programme. In school situation, teachers do not spread all their time in class talking, assuming that students understand the mass of information and complex ideas being presented to them, good teachers stop at intervals to question the pupils in order to ascertain how much they have understood either through written text/examination to evaluate how much the student have learnt.

Students' academic performance/achievement refers to the measurement of what the students know or actually achieve often learning experiences. Simply put student's academic performance in mainly concerned with the outcome of student's achievement in school learning. Ozigi, (1977) observed that students performance in tests and examination can also serve as a basis of evaluation. The examination results, in spite of the inherent weaknesses of the system, certainly give a fair indication of student's academic progress and that such reports can be relied upon as indications of student's academic attainment (Ozigi, 1977).

Academic performance/achievement usually receives the greatest attention of the teacher and consequently is most frequently assessed. For that reason, Edem (1987) said "evaluation is a value judgment about a given situation in accordance with either qualitative or quantitative and acceptable criteria and which should not compromise students' academic performance measured in terms of test scores". Parents, teachers and students need to see that student progress well academically Edem (1987)

In his contribution, performance/achievement, Harzberg, Muusner, and Snyderman, (1959) uphold that the definition of achievement also included its apposite - failure and the absence of achievement. Method of measuring performance include that of individual skills observation, manual skills which could be measured by inspecting students work and the ordinary classroom lesson which could be measured by setting and making some kind or test/examination. For that reason, Otu (1998) in her contribution said "the measurement/assessment of performance is not only in the area of knowledge, it is an all-

embracing exercise; assessment is not a shot exercise of limited duration, it is done throughout the period the pupils in the school, and assessment intends to measure as much as possible the benefits the pupil has gained from the learning experience to which he has been exposed while in school (Otu, 1998).

For such reason as that of importance of students' academic performance or achievement, Blair and Razza, (2007) counseled that the modern teacher must to know much about test and instrument of appraisal if he/she is to succeed in his/her work. He/she must understand how test can contribute to effective learning and how they can point the way to satisfactory individuals and group guidance Blair and Razza, (2007).

Factors affecting students' academic performance

Several factors are associated with students' academic performance in schools some of such factors according to Adeyemi (2005) include poorly constructed, unattractive school building (plant), school lacking in essential amenities or essential facilities, out – dated or poor instructional materials among others.

In a survey conducted by Folayijo (1997) 0n the factors affecting pupils/students' academic performance/achievement, they identified four main issues as follows.

1) Students related factors: motivation, gender, interest etc.
2) Teacher related factors: qualification, instructional methods, personality etc.
3) School related factors: as available (instructional) facilities. Opportunity to learn, location and ownership
4) Home related factors: as socio-economic status of parents; opportunity to learn, neighborhood and peer influence.

2.3 Theoretical Framework

2.3.1 Management Theories

The schools of management thought are theoretical frame work for the study of management. Each of the schools of management thought is based on somewhat different assumptions

about human beings and the organizations for which they work. Since the formal study of management began late in the 19thcentury, the study of management has progressed through several stages as scholars and practitioners working in different eras focused on what they believed to be important aspects of good management practices. Over time, management thinkers have sought ways to organize and classify the voluminous information about management that has been collected and disseminated.

Management generally has several theories which represent different concepts and principles on how to manage a business enterprise or an organization effectively. These principles, according to Okoli (2002) were grouped in to three schools of thought.

Vis:

1. Scientific management school
2. Human relations school
3. Behavioral sciences movement.

For the purpose of this study we are going to focus our discussion on the classical school.

The classical school is the oldest formal school of management thought. Its roots pre-date the twentieth century. The classical school of thought generally concerns ways to manage work and organizations more efficiently. Three areas of study that can be grouped under the classical school are scientific management, administrative management, and bureaucratic management.

2.3.1.1 Administrative management theory

The primary purpose of the administrative management theory is to find a good balance between the structure of the administration and the mission of the organization. It emphasizes the important of organizational effectiveness. According to this theory, administrative efficiency is improved when defined lines of authority are present and thus at the top of administration have the most responsibility for the organization. Administrative efficiency is

correlated with departments being divided by clear separation of labour and administrators with the most responsibilities saving as organizational figures (Tompkins, 2005).

Henri Fayol is the major contributor to this school of management thought. Fayol was a management practitioner who brought his experience to bear on the subject of management functions and principles. He argued that management was a universal process consisting of functions which he termed planning, organizing, commending, coordinating, and controlling.

1. Planning: this attempts to study or forecast the future and assists in the decision making process and in the direction of the organization, it involves collection of the data on the past, using same to analyze the present and forecast or predict future plan of action.
2. Organizing: this involves the establishment of the organizational structure in terms of authority, responsibility, tasks and building up of both human and materials resources.
4. Commanding: this implies directing of subordinates and making the staff to do their work.
5. Coordinating: this is establishing links of interactions and interrelatedness among component parts of the organization. In other words it refers to all efforts needed to unite, harmonize and correlate all activities of the organization in order to achieve a common goal.
6. Controlling: this means ensuring that everything is done in accordance with established rules and expressed command. This focus is on security conformity and compliance from the employees.

Fayol believed that all managers performed these functions and that the functions distinguished management as a separate discipline of study apart from accounting, finance and production. Fayol also presented fourteen principles of management which include:- division of labor, unity of purpose, unity of command, single executive, delegation of authority and responsibility, disciple, remuneration, scalar chain, initiative and so on.

The knowledge of administration and management theories will help and equip school manager on how to motivate both staff and students/ pupils to perform their duties according to laid down policies. The knowledge of these principles will also help the school manager in organization and maintenance of facilities such as school buildings, supplies and equipment, school records, transactions and school library. School Administrator who have adequate knowledge of administrative theories will not be administrating a school on trial and error basis but on a solid administrative foundation, rooted on theoretical facts and empirical procedures.

2.4 Review of Empirical Studies

Review of relevant and related empirical studies done in this area help us understand how far researchers have gone concerning the area of study. Thus, the researcher made extensive review.

Lawal (2007) conducted a study titled school plant management and its influence on pupils academic performance in Daura Local Government Area Katsina State. The study investigated the influence of school plant on pupils' academic performance in Daura Local Government. Two hundred and seventeen (217) respondents participated in the study. The research was survey design and the instrument used for data collection was questionnaire. The result of this research work revealed the following:

- ⇨ Providing school with school plant/facilities and their proper management and maintenance produces good pupils' academic performance.
- ⇨ School plant/facilities and their used in class teaching make lesson content clearer and simplified.
- ⇨ Inadequate supply of school plant/facilities their lack of proper management and maintenance in primary school are some of the problems associated with primary education in Daura Local Government Education Authority.

At the end, the study recommended that schools should be provided with all the necessary plant in order to enhance learning, the head teachers are also to ensure proper utilization and maintenance in order to prevent damage or loss. This study relates to the current study as it investigated the influence of school plant management on pupils' academic performance. By this, some of the issues in the literature and methodology can be applied to enhance the conduct of this study.

In another related study by Adesina (2011) carried out on school plant planning as correlate of students' academic performance in South West Nigerian Secondary schools. The population of this work comprised all secondary schools in South West Nigeria. The sample of the study consisted of 1650 respondents comprising 150 school Principals and 1500 students, and the techniques used were multi stage, stratified and simple random sampling to select the sample of the study. Self-developed instruments tagged school plant planning questionnaire (SPPQ) and students' academic performance inventory (SAPI) were used to collect data for the study. The finding of the study has revealed that the levels of school plant planning and students' academic performance were relatively close and as such students' academic performance was significantly related to instructional space planning, administrative space, planning, circulation space planning, planning for accessories and space for convenience planning. This study also recommended that authorities concerned should implement architectural design of building and space for education to ensure students' academic performance. The correlation of school plant planning with students' academic performance as carried out by Adesina (2011) also relates to the current study in that the issue of school plant planning falls within the context of this study.

Ajayi and Yusuf (2010) conducted a study titled school plant planning and students' learning out comes in South West Nigerian secondary schools. Descriptive survey design was used in the study and the population of the study comprised all secondary schools in South West Nigeria. A total of 1650 respondents, consisting of 150 school principals and 1500 teachers

formed the samples of the study using multi stage, stratified and simple random sampling techniques to select the sample of the study. Self-designed instruments tagged school plant, planning questionnaire (SPPQ) and affective and psychomotor domain questionnaire (APDQ) were used to collect the data for the study. Data collected were analyzed using frequency counts, percentages, means, Pearson product moment correlation, and multiple regressions. The two null hypotheses formulated were tested at 0.05 level of significance. The study revealed that the school plant planning and its components such as school or site planning, instructional space planning and circulation space planning were significantly related to students' learning out comes.

Moreover administrative space planning and space of convenience planning were not significantly related to students' learning outcomes. Based on the findings, the study recommended that government should continue to lay more emphasis on school plants planning particularly in the area of school site planning circulation space planning and instructional space planning in order to improve students' learning out comes.

Oleforo and Maxwell (2015) investigated the relationship between principals' school plant management and academic performance of Biology students' in public secondary schools in Uyo Senatorial District of Akwa Ibom State. The population of the study comprises all principals and 18, 573 SS 2 students. However, teachers in study area were involved in the study as they were used to rate principals' ability to manage school plant. Stratified random sampling technique was used to select 281teachers and 371 SS 2 Biology students as respondents for the study correlational study was adopted. Two researchers developed instruments tagged school plant management questionnaire (SPMQ) and students' achievement test in Biology (SATB) were used to collect data need for the study. The data were analyzed using simple and multiple regression of the study revealed that there is significant relationship between management of instructional facilities, circulation space, and academic performance of Biology students. The result also shows that, there is no significant

relationship between management of recreational facilities and academic performance of Biology students. The finding also suggested that educational board, ministry of education, institutional planners and all stakeholders in secondary education should adopt effective and sustainable strategies to ensure adequate provision, utilization, maintenance and management of school plant in the secondary suggestion. Although Oleforo and Maxwell (2015) conducted their study on secondary schools but their assessment of the principals' ability to manage school plant is related to the current study as such it is worthy of reviewing.

2.5 Summary and Uniqueness of the Study

This chapter presented and defined the concepts of school plant, importance of school plant, component of school plant, school plant management, maintenance culture, objective of school plant, school plant utilization, source of supply of school resources/facilities, concepts of student academic performance and factors affective students' academic performance. The administrative theory of management was also examined. Reviews of empirical studies were looked into from the previous studies it is evident from most of the literatures reviewed that school plant management plays and important role and achievement of effective educational programmes.

It is evident from most of the literature reviewed that school plant management plays an important role in the achievement of effective educational programme. As noted by Udu *et al.,* (1990) the school plant can be described as the controlled environment that facilitate the instructional process, while at the same time protecting the physical well-being of the occupants. Management is the coordinating of all resource (personnel, equipment, finances) by planning, organizing and controlling to achieve some goals, Ohiani, (1987). Besides Ozigi (1977) remarked that items of school equipment and furniture are essential aids to effective teaching and learning. They are teachers' trade tools.

An institution that is lacking in these essential items cannot reasonably achieve its main objectives. Ozigi further observed that the success or failure of an organization like schools

depend on ability of the head teacher or teachers to judiciously utilize the resources for the accomplishment of educational goals, objectives, which could lead to efficiency of teaching or learning. Furthermore, the site of a school can affect learning experience. This view is expressed by Maduewesi, (1990) when he says that a school situated in the market area, will experience so much noise to the extent that the students may not hear clearly what the teacher says. If the students cannot hear what the teacher says, they may find it difficult to understand what is being taught. Also the appearance of physical facilities available in a school is a useful instrument for measuring the quality of a school.

This is supported by Nwagwu (1978) and Adesina (1980) who remarked that the quality of education has a bearing with the availability or otherwise of physical facilities and overall atmosphere in which learning takes place. Dopemu (1983) noted that a well-planned school physical plant management will enhance good teaching practices and also facilitates learning. On the contrary, a badly planned physical plant management has the tendency to hinder good teaching practices and as such act as a deterrent to learning with far reaching implications on pupils' performance.

Students' academic performance on the other hand is the scholastic achievement or performance of pupils in schools (Ozigi, 1977; Edem, 1987 and Herzberg et all, 1959). Provision of adequate facilities in any educational system be it at primary, secondary or tertiary level enhances learning and improves productivity which helps in achieving the laudable objectives of education. To the best of the researcher's knowledge, the study is unique in the sense that it has never been conducted in the area using the same research design, instruments and population.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter describes the procedure used in conducting the research work. Specifically, it deals with the research design adopted, population of the study, sample size and sampling techniques, instrument for data collection and methods of data analysis.

3.2 Research Design

According to Bichi (2004) “a research design is a general plan of conducting the research. It is the conceptual frame work within which the research is conducted. The research design used for this study was the correlational design. It was correlation in the sense that it was a form planned collection of data from a large population for the purpose of analyzing the relationships between variables, Oppenheim (1992). The use of this design helped the researcher to gather information on the relationship between schools plant management and students’ academic performance in lower basic schools of Gwarzo Local Government Area of Kano state.

3.3 Population and Sample

3.3.1 Population of the Study

The population of this study comprised 61 primary school s in Gwarzo local Government, excluding primary Islamiyya and junior secondary schools, 541 teachers and 3404 students in such schools who sat for the Kano state transitional examination were collected from Gwarzo Local Education Authority (2015).

3.3.2 Sample Size

Selecting subjects as a study involves selecting sample from population. A sample is that portion of the population being drawn through definite procedure, Bichi (2004). According to Gwarzo Local Education report of 2015, there were 61 public primary schools with the estimated number of 541 teachers and 3404 primary six students in those schools

Gwarzo L.G.E.A Report (2015). Therefore, according to researcher adviser (2006) 44 schools were selected as a sample and 196 teachers and 322 students were selected as a sample as shown in table 3.1.

Table 3.1: Summary of population and sample

S/No.	**Subjects**	**Population**	**Sample**
1	Schools	61	44
2	Teachers	541	196
3	Students	3404	322

From the table above, it is evident that there are 61 schools out of which 44 were selected. Teachers' population was 541 out of which 196 were selected and 322 students were selected out of 3404. All were done based on the Research Advisor's (2006) table for selecting sample.

3.3.3 Sampling Techniques

Multi stage, stratified and simple random sampling techniques were used. The schools were divided into clusters where 44 schools were randomly selected within the clusters. The random sampling was used in selecting schools, since it is the process of selecting a sample in such a way that all individuals in the defined population have equal and independent chance of being selected. In the case of selecting the sample from schools a stratified sampling method was used. The reason why this sampling technique was used is that it ensures greater representativeness of the sample relative to the population is represented in the sample. There is better approximation of the population characteristics and sampling error is reduced.

3.4 Data Collection Instruments

Two main instruments were used to collect data for this study. The instruments were Questionnaire and Kano State Transitional Examination Results (2015).

Questionnaire was designed by the researcher to collect relevant data on school plant management (SPMQ) in the selected schools. The questionnaire is divided into two sections .Section A. Personal Information of the respondents; these include qualification, post held and years of teaching experience. Section B. contained five sub- sections; such as school plant location, arrangement of school plants (facilities), maintenance of school facilities, and provision of instructional materials and effective utilization of instructional materials. The questions are in the form of a four Likert scale (strongly agree, agree, disagree, strongly disagree). The respondents that supplied the information via the questionnaire are school heads and teachers of sampled schools.

Other instrument used is state transitional examination result 2015 in the ascertaining achievement of each school and students. Being an examination prepared and conducted by state ministry of education made it to be more valid and reliable.

3.4.1 Scoring Procedure

The items of the questionnaire were in positive statement and four point Likeart scale would be used as a scoring procedure in order to rate the responses level of agreements or otherwise to a giving statement for the study as it is shown in the key below.

Key for scoring procedure

Strongly Agree	4
Agree	3
Disagree	2
Strongly Disagree	1

3.5 Validation of the Instruments

Validation refers to how well or the degree of which an instrument measures what is purports to measure (Kurpias and Stafford, 2006).

3.5.1 Validity of the Instrument

The relevance of the instrument to present study was face validated (face and content validity). In the process the instrument was given to the experts and the research supervisor in the department of education Bayero University Kano (BUK). The mainly requested to ascertain the appropriateness of the items in relation to the objectives for the study, and relevance and adequacy or otherwise of language used in the construction of the items in the instruments.

3.5.2 Reliability of the Instrument

To determine the reliability of the instruments, test-retest method was used on the similar subjects. (Gult, 1965 cited in Sambo 2005:282) "Test-Retest form of reliability used the same test but administered at two (2) different times. The scores of the two administrations are correlated as an estimate of the reliability of the instrument. In this study the instrument was administered to ten (10) pilot samples on two different occasions (interval of two weeks). Spearman rank correlation coefficient was used in computing the correlation co-efficient of the instrument. A reliability co-efficient of 0.579 was obtained; this showed that the instrument is consistent and reliable for the study.

3.6 Procedure for Data Collection

The researcher obtained a letter of introduction from the Department of Education, Bayero University Kano, which enable him to receive approval for the data collection from the management of the selected school. The items in the questionnaire were based on the issues raised in the objectives of the study. Copies of the questionnaire were purposely meant for the teachers and head teachers. The questionnaire were taken to the sampled schools and given to the sampled teachers. They were completed and returned. For the academic performance of the student the result in the Kano State transitional examination 2015 were collected from Gwarzo Zonal Office, KSSSMB and Ministry of Education Kano State. Average raw scores

of the students in the four (4) papers were collected and used as students' academic performance.

3.7 Procedure for Data Analysis

This study was correlation type as such the data collected were analyzed using Pearson Product Moment Correlation (PPMC) because the study aimed to find the relationship between school plant management and pupils' academic achievement. The formulated hypotheses were tested and inferences were made in line with the findings.

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

This chapter presents the analysis of the data obtained by the researcher. The obtained data is correlated and presented based on the result of the analysis by virtue of the hypothesis. Summary of the finding of the research is also included in the chapter. Discussion of the result is made as deduced from the result

4.2 Summary of Data

This present statistical analysis of data which forms the basis of result and the findings of the study for the purpose of clarity. The data presentation is organized around the following statistical packages;

1. PPMC correlation of relationship between school plant location and student academic performance in lower basic school in Gwarzo Local Government Area, Kano State.
2. PPMC Correlation of relationship between proper arrangement of school facilities and student academic performance in lower basic school in Gwarzo Local Government Area, Kano State.
3. PPMC Correlation of relationship between effective maintenance of school plant/facilities and student academic performance of lower basic school in Gwarzo Local Government Area, Kano State.
4. PPMC Correlation of relationship between adequate provision of instructional material and facilities and students' academic performance in lower basic school of Gwarzo Local Government Area, Kano State.
5. PPMC Correlation of relationship between effective utilization of instructional material and facilities and students' academic performance in lower basic school of Gwarzo Local Government Area, Kano State.

4.3 Hypotheses Testing

Ho 1: There is no significant relationship between school plant location and student academic performance in lower basic schools of Gwarzo Local Government Area.

To test the hypothesis that there is no significant relationship between school plant location and student academic performance the scores of the students' academic performance and school plant location scores were correlated and the details were given in table 4.3.

Table 4.1: Correlation between school plant location and students' academic performance

		Student Academic Performance	**School Plant Location**
Student Academic Performance.	Pearson Correlation	1	.877**
	Sig. (2-tailed)		.000
	N	44	44
School Plant Location	Pearson Correlation	.877**	1
	Sig. (2-tailed)	.000	
	N	44	44

The result from the table above table (4.3) shows that the p-value (0.000) is less than the α (0.05) level of significant and therefore the null hypothesis is rejected is favour of the alternative hypothesis. Meaning there is significant positive correlation between students' academic performance and school plant.

($r = 0.877$, $n = 44$, $p = 0.000 > \alpha\ 0.05$)

Ho 2: There is no significant relationship between proper arrangement of school facilities and students' academic performance is lower basic schools of Gwarzo local government area.

To test hypothesis that there is no significant relationship between proper arrangement of school facilities and students' academic performance in lower basic schools the co.

official correlation (PPMC) of the respective scores have been analyzed and computed. Details are given in the table 4.4.

Table 4.2: Correlation between arrangement of school plant (facilities) and students academic performance

		Student Academic Performance	Arrangement of Facilities
Student Academic Performance	Pearson Correlation	1	.637**
	Sig. (2-tailed)		.000
	N	44	44
Arrangement of Facilities	Pearson Correlation	.637**	1
	Sig. (2-tailed)	.000	
	N	44	44

According the table above the (PPMC) correlation has resulted to 0.637 which shows that there is significant relationship as P value is 0.000 (0.05 at 5% level of significant. It can therefore be indicated that the null hypothesis is rejected. Meaning there is significant relationship between students' academic performance and proper arrangement of school facilities.

($r = 0.637$, $n = 44$, p value $0.000 > \alpha\ 0.05$)

Ho 3: There is no significant relationship between effective maintenance of school plant facilities and student academic performance of Gwarzo local government area.

To test the hypothesis that there is no significant relationship between effective maintenance school plant facilities and students' academic performance in lower basic schools, the correlation co-efficient (PPMC) of the respective scores have been analyzed and computed. Details are given in the table 4.5.

Table 4.3: Correlation between maintenance of school plant (facilities) and students' academic performance

		Student Academic Performance	Maintenance of Facilities
Student Academic Performance	Pearson Correlation	1	.809**
	Sig. (2-tailed)		.000
	N	44	44
Maintenance of Facilities	Pearson Correlation	.809**	1
	Sig. (2-tailed)	.000	
	N	44	44

Result from table 4.5 above shows that the P- value (0.000) is less than the (0.05) at 5% level of significance, and therefore the null hypothesis is rejected that is there is significant relationship between effective maintenance of school plant facilities and student academic performance (r=0.809, n=44, p 0.000 >α0.05)

Ho 4: There is no significant positive relationship between adequate provision of instruction materials and students' academic performance in lower basic schools of Gwarzo local government area.

To answer this hypothesis, that there is no significant positive relationship between adequate provision of instructional materials and students' academic performance, the respective scores have been subjected to (PPMC) correlation and the table below was obtained.

Table 4.4: Correlation between adequate provision of instructional materials and students' academic performance

		Student Academic Performance	Provision of Instructional Material
Student Academic Performance	Pearson Correlation	1	.824**
	Sig. (2-tailed)		.000
	N	44	44
Provision of Instructional Material	Pearson Correlation	.824**	1
	Sig. (2-tailed)	.000	
	N	44	44

The PPMC result (r=0.824, n=44, p value 0.000> α 0.05) from the table 4.6 above indicates that there is strong positive linear correlation between adequate provision of instructional materials and student academic performance therefore the null hypothesis is rejected.

Ho 5; Moreover to test the hypothesis that there is no significant relationship between effective utilization of instructional materials facilities and students' academic performance is lower basic schools of Gwarzo Local Government Area, the obtained scores have been correlated as shown in table 4.7.

Table 4.5: Correlation between effective utilization of instructional materials and students' academic performance.

		Student Academic Performance	Utilization of Instructional Materials
Student Academic Performance	Pearson Correlation	1	.634**
	Sig. (2-tailed)		.000
	N	44	44
Utilization of Instructional Materials	Pearson Correlation	.634**	1
	Sig. (2-tailed)	.000	
	N	44	44

The correlation above has shown that there is significant positive relationship between effective utilization of instructional materials and student academic performance in lower basic schools of Gwarzo the P-value 0.000 is less than the ((0.05) level of significance hence the null hypothesis is here by rejected

($r = 0.634$, $n=44$, P value $0.000 > \alpha\ 0.05$)

4.4 Summary of Findings

The study revealed that there is significant relationship between:

i. School plant location and students' academic performance;
ii. Proper arrangement of school facilities and student academic performance;
iii. Effective maintenance of school plant facilities and students' academic performance;
iv. Adequate provision of instructional materials and students' academic performance; and
v. Effective utilization of instructional materials and students' academic performance.

4.5 Discussion of the findings

The study revealed that there is significant relationship between school plant management and students' academic performance. The reason for these outcomes might be due to the fact that the society at large was interested in educational system of the areas, thereby contributing to the development of school plants. It could be inferred from the finding that better school plants management would enhance better teaching and learning process which would in turn lead to better students' academic performance .Where the school plants are poorly maintained, there would be poor teaching and learning process which in turn lead to poor students' academic performance .This study supports that of Lawal (2007).

The study revealed that there was significant relationship between school plant location and students' academic performance .It could be inferred from the finding that better school plant management would enhance better student's academic performance. Where there is better job commitment, better motivation of teachers and students without better school location (site)

better learning outcomes may not be guaranteed. If schools are sited in wrong places like the market places and very close to cinema houses, it is not unlikely that the learning outcomes of the students would be affected negatively.

The study has shown that there was a significant relationship between school arrangement of facilities and students' academic performance. This may be is as a result of the fact that a school building should be planned speciously, functionally and with pleasing architectural features. School must be housed in attractive buildings of which community and the students may be proud. The buildings, farm, grounds, space should be properly harmonized. All the sections of the school buildings must be inter-connected so that it is easy to supervise and coordinate all activities going on in it. They should be located that they do not interfere with each other's work, instead they promote it. For example, a noisy workshop will be away from the classrooms, and office and staffroom very near the head teacher's office. It should translate into good academic performance.

It was revealed that in the study that there was significant relationship between maintenance of school facilities and student's academic performance. This decision reached is in accordance with the work of Olagboye (1998) who reported that, the school head has to ensure proper organization of school plant development to prevent loss of time, space, and money. According to him a well-managed and maintained school facilities provide avenue for pupils to psychologically settle down for academic work. The general appearance of the school constitutes the basis upon which teachers and students with the community make their judgments about the quality of the school and its programmes. The maintenance of school plant is usually viewed as the collective responsibility .This explained the ideas behind Nwagwu's submission (1978). He posited that children should educated to regard these facilities as their own not merely government property. And unless schools are well sited, buildings adequately utilized and maintained much teaching and learning may not takes place.

The study revealed that there was significant relationship between adequate provision of instructional materials and students' academic performance in lower basic schools .This may be as a result of the fact that instructional materials is directly linked with teaching and learning activity in the school system . This means that instructional materials serve as the media or means, through which the message desired in teaching reaches the pupils and consequently the desired goals and objectives of instruction. This means that adequacy of instructional materials would enhance effective teaching and learning .Whereas, its inadequacy culminates inevitably in failure of teachers and students alike to attain pre-specified aims and objectives of education. The result of this study supports that of Lawal (2007) in his study conducted in Daura Local Government of Katsina state, showed that "the pupils will learn more and work harder, when facilities are adequate and suitable, but in the absence of the essential facilities, the teachers and the learners will always be anxious not feeling at ease to carry on with teaching learning process which may lead to poor academic performance".

While it contradicts that of Hanushek (1981) who studied funding of schools and achievement and reach conclusion that there is little connection between expenditures and achievement by students. He acknowledged variation in per pupils expenditure in difference places , however no conclusive evidence was discovered by him to suggest that higher expenditures yield better students achievement, in addition he was specific that increased educational spending would not necessarily yield desirable result where students fails to make prudent use of available resources. He opines that such factors like teacher-pupils ratio, teacher education, teacher salary and teacher experience account for academic achievement by students.

The study also revealed that there is significant relationship between effective utilization of instructional materials and student academic performance. This means that instruction materials are the major determining variables that control the space of learning. It has to do

with the creation of an environment in which student can develop their potentialities and lead productive lives. Effective utilization of instruction materials makes teaching and learning interesting, easy, and amusing. It makes learning more effective. Clark (1997)

This finding supported that by Lawal (2007) as mentioned earlier and that of Igwe *et al*., (2014) which showed that the students taught with instructional materials performed better than those taught without instructional materials. The finding is equally leads credence to the view of Mathew (2012) who had stated that the use of instructional materials makes teaching effective as it enables the learners to participate actively in classroom instruction, which subsequently leads to improved achievement.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discussed the summary of the work conducted, conclusion and recommendations and recommendation for further studies

5.2 Summary

The study was carried out to find the relationship between school plant management and students' academic performance in lower basic schools of Gwarzo Local Government Area of Kano State. In order to achieve this, the study was structured into five chapters. The researcher employed logical approach towards obtaining and manipulating the data.

Chapter one presented the background of the study and the statement of the problem that prompted the study. Five specific objectives were raised and five null hypotheses were posited. The subjects and schools were highlighted. The significance of the study was also discussed. At the end of the chapter the scope and delimitation of the study was developed.

The review of related literature was extensively discussed in chapter two, where the concepts of school plant and students' academic performance were discussed. Administrative theory of management was examined as the theoretical framework of the study of school plant management and students' academic performance was critically discussed. Reviews of empirical studies were also looked into from the various studies. The chapter then looked at the areas where the study was unique from all other studies reviewed in the empirical review.

The subsequent chapter is three, where the methodology adopted to carry out research was discussed. The research design used was correlational survey design. Multi stage, stratified sampling techniques were used and later random sampling technic to predetermined population. A questionnaire and Kano State transitional examination result of 2015 were used to collect information from the field among the subjects. Data collected were analyzed by Pearson product moment correlation co-efficient (PPMC) of the values.

In chapter four, the researcher presented the demography of the sampled respondents. The data was then coded and interpreted in accordance with the research hypotheses. Furthermore the findings of the research were summarized and the discussed in comparison with other research findings.

5.3 Conclusions

Based on the findings of the study, the following conclusions are drawn.

There is an established significant relationship between school plant management in the area of school plant location, arrangement of facilities, maintenance of facilities, provision of instructional materials, utilization of instructional materials and students' academic performance in lower basic schools for Gwarzo Local Government Area of Kano state These aspects of school plant management that is plant location, arrangement of facilities, maintenance of facilities, provision of instructional materials, and utilization of instructional materials were important factors in students' academic performance, but there were other factors that contributed to students' academic performance. In Gwarzo Local Government of Kano State school plant/ facilities in most of the sampled schools for the study during the period under investigation are moderately maintained while the students' academic performance was good. These conditions of school plants affect the effectiveness and efficiency of the educational system since they are essential tools for the teaching learning process. Therefore systems approach should be instituted by school heads in the management of school plant to improve academic performance of students.

5.4 Recommendations

Two sets of recommendations were made:

5.4.1 Recommendations from the Study

Based on the findings of the study, the following recommendations are made:

1. The state and local governments should continue to encourage the support of Parent Teacher Association (PTA), philanthropists and lovers of education in the society in providing and improving the state of instructional facilities in public lower basis schools.
2. The school heads with the support of Parents Teachers Association, Old Students Association, community based organizations etc should ensure there is adequate provision of spaces for convenience for both teachers and students in the school to enhance their comfort.
3. The school heads should ensure adequate provision and maintenance of school plants/ facilities in the school. The teachers and students should be encouraged to utilize and maintain these facilities considering their contributions and the enhancement of the teaching learning process.
4. Condition of school plant affects the effectiveness and efficiency of the educational system since they are essential tools for the teaching and learning process. Therefore, to provide stabilizing force for students and staff both emotionally and academically. The school heads should motivate staff as well as students to imbibe and internalize maintenance culture with respect to the school plant.
5. Since the school plant management is significantly is related to student academic performance, government should continue to lay more emphasis on the management of school plant in order to improve the student academic performance.

5.4.2 Recommendation for Further Studies

Basically, from the analysis, the research work is on the school plant management and students‟ academic performance in lower basic schools of Gwarzo Local Government Area of Kano State. The study of this kind cannot cover every area. Hence, there is need for more research work to be carried out on some areas overlooked or not adequately discussed in this study.

These other areas include:

1. Impact of school plant planning on students' academic performance in lower basic schools so as to provide a complete picture of the issue in the choosing area.
2. The effect of class-size on students' academic performance in lower basic schools of Kano State. This will provide data on what is actually needed in terms school plant facilities.
3. Correlate the study among instructional space, administrative space and students' academic performance in Kano State secondary schools. In closing, the world is considered to be dynamic; the dynamism makes it not to be static. However, the researcher suggests the continuity of this research work or findings as a result of the changes in academic, technology, political, socio-economic and the society at large.

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APPENDIX 1

Department of Education
P.M.B. 3011
Kano State
Head Prof. Talatu M. Garba
Email: talatufm24@gmail.com
Date : _____

B.U.K.
Bayero University, Kano

Dear Sir,

LETTER OF INTRODUCTION

This is to certify that: SALMANU MUSA SAFIYANU with Registration Number: SPS/13/MED/00039 is our student in the Department of Education. Bayero University, Kano.

Kindly render any assistance he/she may require from you.

Prof Talatu Musa Garba
Head of Department

APPENDIX 2

S/N	NAME OF SCHOOL	TEACHERS	STUDENTS
1	YAGWAMAWA P.S.	7	19
2	UNGUWAR MARKE P.S.	4	4
3	KARKARI PRI SCH.	7	12
4	MADADI P.S.	3	3
5	KOGON KURA	4	5
6	DOGAMI	4	11
7	MAINIKA CENTRAL	4	5
8	GARUN MADADI	3	3
9	KARKARI M. TSANGAYA	7	12
10	MODA P.S.	2	3
11	DANNAFADA P.S.	4	6
12	KANYAR GURGU P.S.	4	4
13	JAN BARDE P.S.	4	6
14	SABUWAR UNGUWA P.S.	9	9
15	DAN KYANDI P.S.	3	6
16	YUSUF CHIROMA P.S.	4	3
17	MALAMAWA P.S.	3	6
18	MARORI P.S.	4	3
19	MUHD TUKUR S.P.S.	10	31
20	NASARAWA P.S.	3	3
21	UNGUWAR NA'IBI	3	4
22	TUNFAFI P.S.	3	2
23	DAN KADO P.S.	3	3

24	MAINIKA CIKIN GARI P.S.	3	5
25	SABON BIRNI P.S.	3	4
26	KWAMI P.S.	3	3
27	KWAMI GABASHIYA N.P.S.	1	2
28	KARAR KWARI P.S.	3	9
29	TSOHON GARU S.P.S.	9	18
30	RIJI TSAUNI P.S.	4	8
31	UNGUWAR TUDUP.S.	4	8
32	DUHUN BAKE P.S.	4	3
33	GWARZO MODEL P.S.	8	12
34	SHEHU ABDULWAHAB P.S.	10	29
35	ZANGON DAKWARA S.P.S.	4	4
36	LAKWAYA P.S.	5	6
37	FAKON BERA P.S.	2	2
38	RAFAWA P.S.	5	5
39	DADARAU P.S.	2	5
40	DUGUMAWA P.S.	3	3
41	KOYA P.S.	6	6
42	AHMADU GETSO M.P.S.	7	20
43	RIJI GANGARE P.S.	3	6
44	YAN GURUZA P.S.	5	4

APPENDIX 3

SCHOOL PLANT MANAGEMENT QUESTIONNAIRE (SPMQ)

Dear respondent,

This instrument has been developed by M. Ed. student of the department of education, Bayero University, Kano to find out the level of school plant management in Lower Basic Schools. It is part of a research work to be conducted in the fulfillment of the requirements for the award of the Master's Degree in Educational Administration and Planning. Every information given will be treated confidentially and will be used for the purpose of this research only.

Your honest and true opinion is therefore required please.

Section "A" (personal data)

Please tick (√) to indicate your choice of the options to the various answers.

1-Current position:

a) Head teacher [ ]

b) Teacher [ ]

Section "B"

Keys:

SD – Strongly Disagree

D – Disagree

A – Agree

SA – Strongly Agree

Questionnaire Item

1- Plant Location

S/N	Question Statement	SD	D	A	SA
1	My school is located in conducive environment.				
2	My school is easily accessed by students, teachers and officials.				
3	There is adequate space in my school.				
4	My school is located where there is little danger due to roads, fire, noise etc.				
5	My school is close to the source of water, electricity etc.				

2- Arrangement of Facilities

6	The arrangement of classroom in my school is conducive.				
7	The arrangement of offices and equipments in my school is proper.				
8	The classrooms in my school are well ventilated based on approved classroom size.				
9	Libraries, laboratories etc are in appropriate places.				
10	My school field, well/borehole, flowers etc are in suitable places.				

3- Maintenance of facilities

11	School plant/ facilities are regularly maintained in my school.				
12	School buildings are repaired annually in my school.				
13	There is constant water/electric power supply in my school.				
14	Head teachers, teachers and students participate in maintenance of school plant in my school.				
15	My school is surrounded by a fence wall.				

4- Provision of instructional materials

16	The library is well stocked with all types of relevant books in my school.				
17	There are adequate sitting materials for both teachers and students in my school.				
18	Instructional materials are adequately provided in my school.				
19	The head teacher organizes workshops for the production of locally made instructional materials in my school.				
20	Adequate funds are adequately provided in my school.				

5- Utilization of instructional material

21	There is effective utilization of instructional materials in my school.				
22	Instructional materials are used in facilitating teaching and learning.				
23	Laboratory equipments are used effectively in teaching students during practical.				
24	Teachers make good use of text books available in my school.				
25	There is proper utilization of chalkboard in my school.				

APPENDIX 4

SCORES

S/N	NAME OF SCHOOL	SAP	SPL	AOF	MOF	PIM	UIM
1	YAGWAMAWA P.S.	68.2	68	73	55	67.1	46
2	UNGUWAR MARKE P.S.	47	60	65	43	37	54.3
3	KARKARI PRI SCH.	57.1	68	51	48	54.3	62.1
4	MADADI P.S.	43	59	39	47	55	55.9
5	KOGON KURA	45.1	55.4	65	46	55	39
6	DOGAMI	42.45	41	45	55	43.5	49
7	MAINIKA CENTRAL	55.3	65	45	57	53	42
8	GARUN MADADI	49	48	52	50	38	56.1
9	KARKARI M. TSANGAYA	73	72	74	62	65.7	62
10	MODA P.S.	35.7	38	48	40.3	40	47.1
11	DANNAFADA P.S.	51.24	65	68	43	49.64	57.5
12	KANYAR GURGU P.S.	60	54.3	61	50	53.75	45
13	JAN BARDE P.S.	62	70	69	58	67.5	51
14	SABUWAR UNGUWA P.S.	75	68	69	64	65	70
15	DAN KYANDI P.S.	54.3	55	67	59	66.3	60.8
16	YUSUF CHIROMA P.S.	65	60	69	68	58	69
17	MALAMAWA P.S.	47.1	50.16	44	51.7	53.3	38
18	MARORI P.S.	45.16	48.3	50	52.1	40	55.6
19	MUHD TUKUR S.P.S.	73	70	68	64	64	53
20	NASARAWA P.S.	55	52	63	50	50	56.7
21	UNGUWAR NA'IBI	48.3	56.1	70	47	43.3	53.3
22	TUNFAFI P.S.	37	40.7	49	43.1	46	35

23	DAN KADO P.S.	46	52	58	58.3	48.3	57
24	MAINIKA CIKIN GARI P.S.	46.3	55	63	45	39.7	42
25	SABON BIRNI P.S.	51.93	58	50	56.7	55	60
26	KWAMI P.S.	45.04	50	59	47.3	50	48
27	KWAMI GABASHIYA N.P.S.	37	35	43	34	34.5	40.3
28	KARAR KWARI P.S.	50.4	60.4	57.3	58	55	41
29	TSOHON GARU S.P.S.	75	78	64	66	64	65
30	RIJI TSAUNI P.S.	72	79.4	65	69	70	70
31	UNGUWAR TUDUP.S.	52.3	56.4	67	53.75	47.2	51
32	DUHUN BAKE P.S.	36.2	43.4	50	45	42.8	41.05
33	GWARZO MODEL P.S.	76	77	59	67	66	62
34	SHEHU ABDULWAHAB P.S.	67.5	73	64	68.86	59.5	64
35	ZANGON DAKWARA S.P.S.	57	54	50	56.25	52.3	47.7
36	LAKWAYA P.S.	56.1	60	53.1	52	53.2	62
7	FAKON BERA P.S.	35	30	39	40	40	44
38	RAFAWA P.S.	55.5	65.2	69	50	64	51
39	DADARAU P.S.	48.6	45.7	43	55.53	41	55.6
40	DUGUMAWA P.S.	55	52.3	57	64.5	52.5	60.3
41	KOYA P.S.	63.67	69	58	58.75	54	53
42	AHMADU GETSO M.P.S.	72	71	69.43	69	70	63
43	RIJI GANGARE P.S.	57.4	63.6	65	45	54.9	56
44	YAN GURUZA P.S.	54.18	66	51	48	58.18	67.1

APPENDIX 5