



# SCHOOL PLANT PLANNING AND MAINTENANCE STRATEGIES FOR ENHANCED STUDENTS ACADEMIC PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN RIVERS STATE

**Baribor Abarile GIMAH**

Department of Educational Management  
Faculty of Education.

Ignatius Ajuru University of Education, Nigeria  
bariborgimah@gmail.com

---

## ABSTRACT

School plant planning is an important aspect of educational planning. Students' academic performance is attainable through effective school plant planning. This paper examines school plant planning and maintenance strategies in secondary schools in Rivers State. School plant is very essential in the school system because it facilitates teaching and learning process. The various types of school plant were discussed in this paper, and the needs for school plant planning were raised. School plant play a major role in effective teaching and learning therefore it should be properly planned, maintain and make repairs and replacement where necessary. The paper also looked at planning conducive classroom facilities for enhanced students' academic performance and challenges of planning school plant, which include the inadequate funding, political problem, inaccurate data and manpower issues. The paper recommends among others that government at all levels should embark on more sensitization on the importance of registering children at birth. By so doing the educational planners will have accurate data to work with, and the problem of over estimation and under estimation will be solved. And also government should increase the funding of secondary education. In conclusion the paper posit that government should pay more attention to her school plant, since the academic performance of student largely depend on them.

**Keywords:** School Plant, Planning, Academic, Performance, Maintenance, Teaching, Learning.

Reference to this paper should be made as follows:

Gima, B. A. (2020). School plant planning and maintenance strategies for enhanced students academic performance in public secondary schools in Rivers State. *International Journal of Institutional Leadership, Policy and Management*, 2(4), 802-813.

## INTRODUCTION

Education is a key to the development of every nation. The development of any nation depends largely on their level of educational interest or involvement. The increasing awareness of education role to human, political, socio cultural and economic development of a nation has made most nations of the world including Nigeria to invest much on the education of their citizens. This huge investment will be a waste if there is no goal achievement. This is why there is need for effective school plant to facilitate teaching and learning of the students. It will interest you to know that even as these huge investments on education, School plant is inadequate in public schools. Currently in the educational system, school plants are insufficient due to over population of students. The school buildings that were erected in decades ago are no longer containing the contemporary students due to increasing awareness of education role, which has made parents and guardians to send their children and wards to schools. The existing school building are dilapidating and in bad shape, causing hazard to the users. Even some school buildings that were recently constructed and added to the existing once are still not able to contain these populations.

Other schools facilities are also in short supply to accommodate these increases, such as desk, chairs, tables, books, equipment etc. it is worrisome seen students sitting on a bare floor to learn and some teachers having no seat and tables to used. The libraries condition is nothing to write home about, there are no books and desk in it. It has turn from it original purpose of reading place to meeting and gathering Centre. In some schools, there are no existing libraries and laboratories especially in the village schools. Therefore school plants are to be properly planned for. School plant plays an important role in enhancing the academic performance of students in any institution of learning. It is importance that schools administrators pay adequate attention to school plant, make repairs and replacement where necessary. The types of school plant that exist in a school affect the behavior and attitude of students towards learning and school attendance. O' Neil (2000) observed that the attitude of students are often driven by how they perceived the surroundings including their physical environment.

The extent to which school plant is properly located in the school premises may determine its level of enhancement in teaching and learning process. A well planned school plant will gear up expected learning outcome of education which in turn will facilitate good social political and economic emancipation, effective teaching and learning and impressive academic performance of students. School plant is an essential aspect of educational planning. Oluchukwu, (2000) posit that unless schools are well suited, building adequately constructed and equipment adequately utilized and maintained, much teaching and learning may not take place. Mark (2002) and Ajayi (2007) assert that high level of students academic performance may not be guaranteed where instructional space as classrooms, libraries, technical workshops and laboratories are structural effectiveness, proper ventilation and well sited instructional space lead to successful teaching and learning process in school. School plant is therefore a sine qua non for the establishment of a school and for the achievement of educational goals. It means that school plant and educational goals are closely related and interwoven. The planning of school plant in Rivers State has experience some challenges. These include inaccurate data, inadequate funding, political problem, and lack of skilled manpower etc.

## CONCEPTUAL CLARIFICATION

School plant refers to the school building, classroom, hostels, libraries, furniture, blackboards, playgrounds, apparatus and equipment, laboratory, school offices, etc. (Nnokam, 2018). School plant according to Kpee (2013) refers to all facilities needed for the takeoff and sustenance of a school. It comprises the school site and all the structures that have been put in place to aid effective teaching and learning in the school system (Ojelede, 1998). This includes immovable property, physical structures, assets and facilities belonging or allocated to an educational institution used primarily for educational purpose and activities. These include the land occupied by the institution, the walls or fences enclosing the premises and other land based facilities located in or owned by the institution (Amirinze, 2010). This implies that school plants are moveable and immovable properties of the school ranging from building to every pin of the school. In my own perspective school plant is every physical property own by a school, be it moveable and immoveable that helps in facilitating teaching and learning in the school such as school building, laboratory, library, pen, chalk, duster, desk, cabinet, chair, generator set, white board, van, playground, land, field, and to every pin own by the school.

School plant is refers as the sum of total of building equipment, textbook including the surrounding where teaching and learning takes place (Udosen, 2012). In defining school plant Meandry, (2016) Posit that it is one of the major aspects of school administration. It refers to the material provisions of the school. The school campus, building, playground, libraries, laboratories, classrooms, furniture, equipment, hostels common room, canteen etc.

### Planning

Planning simply means deciding in advance or before time what to do in future by outlining a set of activities to be achieve. According to Akpan (2011), planning is the process of examining the future and drawing up or mapping out a course of action for achieving specific goals and objective. UNESCO (2003) described planning as a process that makes it possible to work out a systematic outline of activities to be undertaken in order to meet the development objectives of a country within that countries possibilities and aspirations, thus, these definition means that planning is both futuristic and goal oriented.

### Types of School Plants

Classifying this has caused a great problem to educationist over the years. Some educationist classified it based on location while some also classified them based on their functions. Ukaigwe (2018) classified school plant into two namely Movable or Roaming school plants and Immovable or Stationary school plants.

Roaming school plants are all the educational facilities that can be moved, carried about or relocated from one place to another (Kpee, 2013). Examples of this type of school plant are chairs, laboratory equipment, audio visual, tables, mobile markers board, books, etc. stationary school plants are all educational facilities that are permanently built at the school site. They are not movable and cannot be relocated. Examples are the school buildings, playgrounds, fields, workshops, libraries, trees, gardens, lawns and all land property of the school. Agabi (2004) also identified other type of school plant based on their functions. They are—Instructional facilities, Recreational facilities, and general facilities.

- **Instructional facilities:** These are those school plant or facilities that facilitate teaching and learning directly. Examples are—chalks, makers board, seats, laboratories, classrooms, libraries, books, etc.
- **Recreational facilities:** These are the facilities used for sports, games, relaxation, pleasure, and past-times such as lawns, fields, tracks, balls, gymnasium, swimming pools, etc.
- **Residential facilities:** These are the facilities that provide shelter for staff and students. Examples are staff quarters, students' hostels.
- **General Purpose Facilities:** This type of facilities have flexible usage. They can be converted to other use beyond their original usage. They are developed under space facilities.

### **The Functions of School Plant in Effective Teaching and Learning**

The role played by school plant as a vehicle for effective teaching and learning cannot be over emphasized. Nwaogu (1985) asserts that no matter the strength of manpower resources in the system, educational process must require a conducive physical accommodation, libraries, furniture and playgrounds. If these facilities are lacking teaching and learning will hardly be effective. Udo and Akpa (1987) posited that the right type of atmosphere required for effective learning is that consisting of teaching facilities. Mgbodile (1986) opined that the physical facilities, their appearance and general condition are the major things which attract many parents and friends of any educational institution. The students, parents and guardians take their decisions on whether to associate themselves with a particular school after careful assessment of the quality of the school plant.

The high quality and quantity of school facilities convinces the parent the parent and guardian to believe that the quality and quantity of the teachers and instructions will be high in standard. Obi (2001) opined that the general landscaping of the school speaks succinctly of the tone of the school and the disposition of the management for the school to attract the attention and the admiration of the public, there is the need of well a planned school plant by our educational planners. Onwurah (2004) explained that the school plant plays a major role in the development of the cognitive, affective and psychomotor domains of learning objectives. Educational facilities are needed for the development of cognitive and psychomotor domains of learning objectives. Adesina and Ogunsaji (1984) are of the opinion that effective performance of educational programmes can be achieved because the school plant and educational goals are closely interwoven and interdependent. The school plant protects the students from the sun, the rain, heat and cold. The school plant represents a learning environment which has a tremendous impact on the comfort, safety and performance of the students.

### **Steps in School Plant Planning**

This involved the acquisition of land, designing of the building by experts, using the right personnel for the building proper and acquiring of the right equipment's. Onwurah 2004, suggested steps to be adopted in school plant planning as follows:

- Determine the goals, priorities and services to which the facilities are directed in realizing the needs of the community.

- Establishment the adequacy of the school site some important questions need to be asked there. Is the average distance of the school from the students and staff homes too long close or moderate. Is the environment conducive for learning? It is a noisy area, near the markets or industrial areas? Is it secured or near brothels? Can the size of the school take all the school structures, buildings, plants, lawns, paths etc.? Availability of utilities like water, electricity, health institutions hedges, lawns, etc. should be considered.
- Considerable time should be given to planning of the school curriculum before actual planning or design of building by the architects begins. The architect should not only know the subject targeted but should know what equipment's is needed and how much the student's space and the teachers will need.
- Creative schools are products of good planning. In supporting this view, Eresimadu (1996) and Ani (1997) stressed that creative schools do not just happen, therefore, there is the need to involve individuals of different talents to make for healthy safe and comfortable school environment which can promote high standard of academic work in the school. To achieve this, there is the need to involve an educator and economist an architect a health worker and Engineer and an artist, etc.

The functions to be performed by these groups of professionals to make for the uniqueness of the school plant cannot be over emphasized. The educators possess the capacity to determine the building and materials needs of the school, the architect will help to translate these building needs into practical terms through design and specification. The health worker will help in choosing a healthy and safe environment which will form the school site; the artist will help in the location of the trees and choice of colors for the buildings while the economist will ensure that financial resources are judiciously utilized to avoid wastage.

### **Need For School Plant Planning**

School plant planning is needed in the school system to facilitate teaching and learning process. It is an essential aspect of the school system that needs to be properly planned to enhance students' academic performance. According to Ogunajai (1982), school plant planning is the process of acquiring and designing a building which would satisfy the educational needs of students. The physical plant of the school should have a high aesthetic value, and the environment, generally, should be such that stimulates learning. The school plant planning starts and ends with children physical and environmental needs (Udoh & Akpan, 1987).The teachers and their students need a conducive environment to be able to teach and learn adequately and effectively. The main purpose of school plant planning is therefore to acquire a conducive site, designing and construction of building to meet the required standards and the procurements of the right quality and quantity of facilities and equipment. (Erasimadu, 1996) asserted the following as the reasons for school plant planning:

- School plant planning improves the aesthetic appearance of a school.
- Proper planning is necessary since land area does not always increase except where reclamation is done at very heavy expenses.
- The types, level and program of a school determines the types of building, equipment's and facilities therein. Primary school buildings and secondary school buildings are

difference from buildings in tertiary institutions because of differences in programmes, school type and level. It is only during planning that these design are accommodated;

- Proper planning and implementation of school plant would save a lot of money, which would otherwise be wasted by inadequate plant development and poor maintenance,
- Good school plant planning will help to avoid catastrophic loss of the lives of the occupants when building are re-planned, reinforced or replaced;
- School plant planning improves the quality and quantity of programmes offered in a school;
- School plant protects school occupants from rain, sunshine, and cold weather conditions.
- School plant planning reduces the chances of school building collapse which could lead to court cases. It may lead to serious embarrassment when students desert such a school with collapsed building in large numbers. According to Ezewu (1983), a properly planned and utilized school building with a wide array of teaching aids provides effective delivery of school curriculum and is positively related to academic achievement. The importance of school plant cannot be over emphasized as it serves numerous purposes to individual and to the society. (Nnokam, 2018) posited the following as the important of school plant:

- It is an instrument or channel used to effect the implementation of education goals, activities and programs;
- It is the pillar that supports all teaching and learning activities in educational institution;
- It serves as a venue for different social activities for members of the school community. Ranging from community meeting weddings receptionist and civic reception of important dignitaries' competition and other function that required large spaces;
- It also serves as a recreational venue to the school members, with the presence of sports facilities such as football pitches and tennis courts, etc. (Nnokam, 2018).

### **Planning for Conducive Classroom Facilities for Enhanced Students' Academic Performance**

A conducive classroom is an important anchor for effective teaching and learning. So it is necessary to be properly planned for. It is observed that students' performance is enhanced in a positive classroom atmosphere and in an environment in which they feel safe, secured, cared for and involved. This means the classroom environment should be well equipped and planned. Physical facilities are important because they enhance the overall performance of the students. Physical classroom environment should have light, proper ventilation, classroom size, condition of the classroom floor, walls, desks, chairs, chalk/white board, etc. the classroom should be spacious, desks should be properly arranged in a way that there will be easy movement within the class. Those seated at the back should be able to access the board and other instructional aid. Classroom should not be over populated so that the teacher can carry everybody along. According to Suleman and Hassan (2014), favourable physical environment has a significant positive effect on the efficiency of the school organization and acts as a catalyzing agent to provide a straight way for achieving predetermine goals. Unfortunately, our physical classroom environment is not conducive for smooth teaching and learning process.

Halstead (1974) posit that a student sitting in an insufferable hot, airless room listening to lecture would not learn as much as he would in a cool comfortable space. Poor maintenance and ineffective ventilation system lead to poor health among students as well as teachers, which lead to poor performance and higher absentees rates (Fraser 1985) (Lyon 2001). These factors can adversely affect students' behavior and lead to higher levels of frustration among teachers and poor learning attitude among students.

Previous studies have investigated the relationship of poor school environment including problems with students teachers ratio, school location, should population, classroom ventilation, poor lighting in classroom and inconsistent temperature in the classroom with students health problems, students behavior and students achievement (Crandell & Smaldino 2000; Stricherz, 2000). Nitsaisook and Anderson (1989) asserted that desk arrangement can affect students achievement and attention. A student in the classroom is said to be well seated if he has a clear view of the teacher, has suitable writing surface, and a place for book storage and the students going to and fro adjacent seats do not disturb him. This is quite different from the case in our secondary schools today. The contemporary secondary schools are overpopulated with students, you can imagine a class of 150 students and above in a small room, no ventilation, no easy movement within the class, no desk, students are hanging on the windows to learn.

## **SCHOOL PLANT MAINTENANCE FOR EFFECTIVE ACADEMIC PERFORMANCE OF STUDENTS**

### **School Plant Maintenance**

School plant maintenance is the act of returning or keeping of school plant to its original form after usage. This involves repainting of school building, repairs and replacement of faulty equipment to its original state. It is advisable all types of school plant are properly maintained for them to function and last longer. School heads need to make some repairs and replacement of damage school plant since they enhance effective teaching and learning process. Maintenance is the keeping of school building and equipment in as near their original condition as possible (Onwurah, 2004). According to Peretomade (2001), maintenance involves maintaining of items, buildings, furniture and equipment as far as possible in their original conditions. To Idoko (2005) maintenance is the repair and up keep of the school plant and equipment in order that efficiency service can be rendered.

### **School Plant Maintenance Strategies**

These are those activities that are necessary for keeping the building, equipment and grounds in its original state; either by repairs or replacements. The repair and replacement are done to ensure that the school plants are in a useable condition. School plant maintenance strategies include all the services and activities that will be done to keep the school plant in a functional state. This includes cleaning, washing, dusting, clearing, sweeping, changing of bulbs, repairs and replacement. The school administrators are charged with the responsibility to make sure that all the activities that are needed to be done every day for the facilities to be in order are performed.

## APPROACHES TO BE ADOPTED FOR EFFECTIVE MAINTENANCE OF SCHOOL PLANT ARE AS FOLLOWS

- **Facility Manager Strategy:** This approach involves delegating someone to be in charge of the school plant. The school facility manager is being charged with the responsibility of making sure that school plant are checked daily to ensure they are in good shape and secured. The school facility manager makes recommendations for repairs and replacement where necessary to the school head. In the case of faulty ones, he makes sure that the students make proper use of the school plant.
- **Formation of Committee Maintenance Strategy:** This is the forming of committee by the school head, involving some teachers and selected students and saddles them with the task of caring for the school plant. The committee is being charged with the responsibility of ensuring that the school premises are clean and students are not manhandling the school facilities. The committee uses the students to actualize their responsibility by engaging them to sweep the school premises, clean, cut grasses, wash the toilets, mop the floors, cleaning of equipment etc. the committee ensures that maintenance tools are made available and that the maintenance task are executed. This strategy can only be effective if the committee is dedicated to their duties, any negligence to duty disrupts the whole process. The committee services the equipment every three months to enable them to last longer and report to the school head in case of any faulty ones for them to make repairs and replacement.
- **Staff and Students Orientation Strategy:** This involves the school head introducing all individuals in the school system to know the importance of taking care of the school plant. Encourage them to take serious care of school plant for it to last longer.
- **Corrective Maintenance:** This type of maintenance is concerned with repairing faults on time to avoid total breakdown. This involves repairs and replacement of faulty facilities such as repairs of electrical faults in the school building and mechanical faults in generating sets and vehicle etc.
- **Shutdown Maintenance:** This is the turning off of the whole school plant or a component of school plant in order to carry out maintenance work.
- **Recurring Maintenance:** This is the frequent check on school facility on a daily basis or weekly basis to keep the equipment in its operational state.
- **Deferred Maintenance:** This is the delayed or postponement of maintenance activities due to lack of finance or professional.
- **Preventive and predictive Maintenance:** This is the regular check on school plant to avoid a total breakdown or a situation where by a part will be out of use. During this regular maintenance, faulty or damaged equipment will be detected and repairs or replacement will be done.
- **Overhauled Strategy:** This involves general check on the school plant and major repairs on the school plant. After discovering where there is fault in the school plant the management make repairs and replacement where necessary to enable the school plant be in good workable condition and last longer.
- **Periodic Inspection:** In this type of maintenance strategy, the school head should at every interval, monthly, bi-monthly, quarterly, and yearly or once in two years or three years depending on the equipment take an inventory to ascertain the ones that needs replacement and repairs on the faulty ones.

- **Annual Comprehensive Repairs Strategy:** This method involves yearly repairs of all the school facilities. In this method, the school management would conduct a broadly repairs on school plant yearly. During this period, the school management is going to make repairs and replacement of the faulty school plants. The school management will do a general check on all the school plant, clean and make necessary repairs and replacement to ensure they are all in good shape.
- **Involving every Stakeholders:** Getting everybody involved in the maintenance strategy, involving the students, the staff, the management, the ministry of education and the government. The students will do the cleaning sweeping, mop and do little repairs on the school plant. The staffs go round to check the condition of the school plant ensure the students are using it properly. The ministry of education and the Government from time to time go round to school to do a check on the school plant to ascertain its position.
- **Running Maintenance:** This type of maintenance is done while the plant or a component of it is in operation.
- **Routing Maintenance:** This involves maintenance of school facilities at interval as requested by the producers of such facility. This could be done monthly, quarterly, or otherwise as specified by the producer's guide. The facilities that require such maintenance are computers, generators, machines, typewriters, cars etc. In maintaining this kind of facilities, oil, grease, plugs are regularly changed and general servicing is conducted. This type of maintenance help in detecting other areas that damage can occur.
- **Breakdown Maintenance:** This kind of maintenance is basically on rectifying breakdowns in any part of the school plant.
- **Structural Maintenance:** This is a seasonal maintenance on the school plant. The facilities are checked upon to ascertain the ones that need revamping to meet the contemporary demands. Such repairs are done on school furniture, cars and generating plants.
- **Emergency Maintenance:** This is the urgent or immediate attention given to school plant when it is faulty. It can also be referred to as making an immediate repairs or replacement of a damaged school plant without any delay. For instance an urgent replacement of leaking zinc on a school building.

## CHALLENGES OF SCHOOL PLANT PLANNING

### Inadequate funding

The Nigeria Government has been underfunding the education sector; they have never met with the 25% annual allocation to education as specified by UNESCO, which is now affecting the educational planning. Funding is the biggest challenge facing the school plant planning today. The fund made available to education sector for educational planning is insufficient for proper planning. Education planners after doing a thorough work presented their blue print to the Government for their financial obligation. No matter how excellent a proposal is and how well planned its execution is, the implementation can be stopped, abandoned or slow down due to lack of fund.

### **Political problem**

This is another challenge facing the school plant planning in Nigeria today. The instability in Governance which does not go well for the smooth implementation of school plant planning. Since independence till date there has been exchange of power from one political party to the other. Each of these political leaders comes up with their own policies that will suit their administration and sometimes abandon the good policies of the previous Government which in turn affects the school plant planning. For instance, the modern secondary schools in the State that was built by the previous Government is nowhere to be found today due to the emergence of another Government who didn't buy the same idea with them. This is the major challenge in school plant planning, after the planners have done a thorough work and submit the blue print to Government for implementation and eventually another Government comes on board and the work is been abandoned.

### **Inaccurate data**

This is one of the most difficult challenge been face by the educational planners, the issues of inaccurate statistical data. The quality of technical planning is in most cases inhibited by statistical deficiencies and inaccurate data (Ololube, 2013). Insufficient and inaccurate data have affected effectiveness of education planning in Nigeria. This is as a result of the fact that most parents are ignorant or don't deem it necessary to register their children at birth which is now hindering the effort of educational planners and making them to depend on a guess work. This has resulted to a lot of wastage in our educational system, due to the fact that the figures available for planning are either over estimated or under estimated.

### **Manpower problem**

The planning of school plant or facilities requires the services of experts, from the foundation of the building of the school to supply of infrastructural materials. In most cases, Government officials (politicians) influences over whom to be appointed as the school planner without considering their capability and experience. They based their recommendation on nepotism and partisan.

## **ISSUES OF MAINTENANCE STRATEGIES**

### **Administrative Issues**

Most of the school management doesn't have the requisite knowledge to maintain the school plant for it to last longer. There by not given a prompt attention to school plant by making repairs and replacements of damaged components and allow for total breakdown.

### **Negligence by the Facilities Managers**

Most facilities managers neglect their duties some of them don't come to school regularly and lack maintenance culture. This occurs because there is no regulatory body formed to check mate the activities of this managers to ensure maintenance culture is carried out.

## **Data Information on School Plant**

This is a big challenge in maintenance strategies as most schools don't have a comprehensive record of their school plant. There by over utilize school facilities until it is completely damaged.

## **Issues of Maintenance Policy**

There is no law put in place for sanction of misusers of school facilities there by making the users to manhandle the school plant because is a Government property with the notion that nothing will happen to them.

## **Suggestions**

The paper suggests that:

- Government at all levels should embark on more sensitization on the importance of registering children at birth. By so doing the educational planners will have accurate data to work with, and the problem of over estimation and under estimation will be solved.
- Government should increase the funding of secondary education and endeavor to complete a good project initiated by another government.
- Government should avoid nepotism and partisanship in choosing whom to be appointed as the school planner. They should involve experts in the planning and construction of the school building.

## **CONCLUSION**

School plant is an essential aspect of educational planning that government need to pay more attention to. Since the academic performance of students largely depend on the quality of their school plant. Government be it state or federal need to properly plan school plant in public schools in order to achieve a set goals. Government should endeavor to employ or seek the help of professionals (experts) to tackle the issues of school plant planning in the secondary school system in Nigeria.

## **REFERENCE**

- Adesina, S., & Ogunsaji, (1984). *Secondary education in Nigeria*. University of Ife Press.
- Agabi, O. G. (2004). Educational planning: An Overview. In V. F. Peretomode (ed.). *Introduction to educational administration, planning and supervision*. Joja Educational Research and Publishers.
- Ajayi, I. A. (2007). *Issues in school management*. Bolabay Publishers.
- Akpan, C. P. (2011). *Fundamental of school business management*. Prime choice consult
- Amirize, B. (2000). *contemporary issues in school operations*. Springfield Publishers.
- Ani, C.I. (1997). Procurement, management, and maintenance of the school plant. In A.N. Ndu, L. O. Ocho, & B. S. Okeke (Eds). *Dynamic of educational administration and management: the Nigeria perspective*. Meks Publishers.

- Ere Simadu, F. N. I. (1996). School plant planning and maintenance. In H.O. N. O. Bossah & G.O. Eneasato (Eds). *Dimension of educational planning and economics of education*. Solid Foundation Publishers.
- Ezewu, E. E. (1983). *Sociology of education*. Longman.
- Halsted, D. K. (1974). *State wide planning higher education*. Government Printing Office.
- Kpee, G. G. (2013). The school plant planning. In J. D. Asodike, J. M. Ebong, S. O. Oluwuo, & N. M. Abraham (Eds.). *Contemporary administrative and teaching issues in Nigerian schools*. Alhabet Publishers.
- Meandry, U. O. (2016). What is school plant and importance of school plant management. <http://notesread.com/whatisschoolplant/>.
- Mgbodile, T. O. (1996). *Educational administrative and supervision*. Heinemann Educational Books.
- Nnokam, N. C. (2018). Meaning and nature of school plant planning. In N. P. Ololube (Ed.), *handbook of research on educational planning and policy analysis* (pp. 87-100). Pearl Publishers.
- Mitstaisook, M., & Anderson, W. I. (1999). *An experimental investigation of the effectiveness of in Service*. Teacher education in Thailand. Department of Teacher Education, Ministry of Education, Bangkok.
- Nwogwu, B. G. (1991). *Educational research: basic issue and methodology*. Wisdom Publishers.
- Obi, E. (2001). *Practicum in school organization*. Computer Edge Publishers.
- Ojelede, P. K. (1998). *Maintaining school plant for educational effectiveness and efficiency in a depressed economy*. In A.A. Olagboye & J.O Fadipe (Eds), *Management of Nigeria education*. NIEPA.
- O'Neil, D. (2000). *The impact of school facilities on students achievement at select taxes schools doctoral dissertation*. [www.sciendu.com](http://www.sciendu.com).
- Onwurah, C. (2004). School plant management. In T.O. Mgbodile (Ed), *Fundamental in administration and planning*. Magnet Computer Services.
- Udoh, S. U., & Akpa, G.O. (1987). *Theory and practice of educational administration in Nigeria*. University of Jos Press.
- Udosen, N. P. (2012). *Importance of school plant to the teaching learning process*. <http://natse.wordpress.com/2012/08/01>
- UNESCO (2003). *Educational for All: The leap to equality*. IPE.