

MANAGEMENT OF SCHOOL PLANT IN PUBLIC SECONDARY SCHOOLS IN NORTH CENTRAL, NIGERIA

AMEH, GRACE & Dr (Mrs.) ODEH, R. C.

Department of Educational Foundations and General Studies,
Federal University of Agriculture,
Makurdi, Benue State Nigeria

ABSTRACT

This study investigated the management of school plant in public secondary schools in North Central Nigeria. Two research questions were raised to guide the study and two null hypotheses were formulated and tested at a 0.05 level of significance. The related literature was reviewed. The variables of the study were preventive maintenance strategy and emergency maintenance strategy. The study employed a descriptive survey research design. The population of the study was 36,422 teachers from 1,949 public secondary schools. A sample of 381 respondents was selected for the study. A multi-stage sampling procedure was adopted for the study. The instrument for data collection was the Plant Management Questionnaire (SPMQ) with a reliability coefficient of 0.96. The findings of the study revealed that principals' use of preventive strategy and emergency maintenance strategy has a significant influence on the management of school plant in public secondary schools. Based on the findings of this study, it was recommended among others that school principals should develop the culture of preventive maintenance strategy as a high priority rather than ad-hoc maintenance, and principals of secondary schools should endeavour to imbibe the spirit of timely maintenance of school plant in secondary schools.

Keywords: Management, School Plant and Secondary School.

1.0 INTRODUCTION

The role of the principal in the management of the secondary schools is vital for the realization of educational goals since principals are involved in the implementation of educational policies, programs and for effective school plant management. Asemah (2010, p.35) asserts that the school plant or school facilities are commonly referred to as "things of education". They include school buildings (classrooms, assembly halls, laboratories, workshops, and libraries), teaching aids, and devices such as modern educational hardware and software which are actually the material things that facilitate teaching and learning in the school. They play a vital role in the actualization of educational goals and objectives by satisfying the physical and emotional needs of students and teachers of the school. Their availability, adequacy, and relevance lead to efficiency and high productivity. It has always been realized that the school plant is very important in the development of education in Nigeria. The Federal Republic of Nigeria (2004) in the National Policy on Education pays

considerable attention to the importance of the provision of the school plant. It states in the document that provision and subsequent expansion will be made for vocational equipment and other facilities. Senior secondary schools are to have properly equipped workshops. In addition, provision for health centers in all educational institutions to cater to the children be made available.

School plant constitutes important resources for the implementation of an educational program in Nigeria (Abu, 2009). Its place in the teaching process cannot be over-emphasized. For instance, a classroom constitutes a common ground for sharing learning experiences and for carrying out research works. Playgrounds are places for recreation and sports while instructional materials such as teaching aids generally are facilitators of the teaching-learning process. Emenalor (2007) argues that the construction of new buildings and additions to existing ones are not the management of the school plant, rather it involves the continuing operation and maintenance of the school plant. With the current state of infrastructural facilities in secondary schools, one wonders if school principals have been supervising the school facilities. It is, therefore, interesting to note that if the school principals adapt to these supervisory strategies, such as preventive maintenance strategy, things could change for the better.

School principals have the statutory responsibility of adopting preventive maintenance strategies to ensure the sustenance of a conducive teaching and learning environment. This is a type of strategy that the principal carries out on school facilities to avoid breakdown and ensure optimal performance of the facility. Up-to-date information about the facilities is required to serve as a guide for the maintenance team. Preventive maintenance strategy saves cost and time. It is usually an integral part of the management practice in societies where maintenance culture is well established (Asiabaka, 2008). This is a well-planned pro-active and systematic maintenance approach that constantly checks and takes preventive measures before problems will arise. The implication is that when the school principals carry out preventive maintenance strategy in the management of school plant, it will reduce the use of emergency maintenance in the school, hence faults that could lead to emergency maintenance will be detected early. However, principals' also used emergency maintenance to manage the school plant.

Emergency maintenance is a strategy that enables the school principals to effectively maintain the school plant. Abu (2009) observes that in this approach, actions regarding school plant maintenance are taken only when there is an emergency situation or disaster. Maintenance is done haphazardly without a pre-determined plan. This approach has the fundamental weakness of being retro-active as it waits for serious maintenance problems to occur before action is taken to solve the problems. It is curative rather than preventive. However, this approach is still better than not attending to the facilities at all.

The situation of public secondary schools in North Central Nigeria could be linked to school administrators' lack of necessary skills and strategies to manage school plant. The evidence seems to abound that there is ineffective maintenance of school plant in public secondary schools in North Central, Nigeria. It is against this background that the study sought to investigate the management of school plant in public secondary schools in North Central of Nigeria.

2.0 STATEMENT OF THE PROBLEM

In recent times stakeholders such as parents, teachers, students, and school supervisors seem to worry over the dilapidated state of school facilities in secondary schools in North Central Nigeria. The current state of the school plant in this area appears so disgraceful and alarming that effective teaching and learning can hardly be conducted with such facilities. Despite the huge allocations that have been budgeted for the educational sector year in year out, other research findings still tend to blame the government and Parent-Teacher Associations and school principals for not being responsive enough in taking proactive measures on the task of renewing the state of facilities in secondary schools in the area under study. One, therefore, wonders what could have been responsible for the broken and dilapidated facilities in public secondary schools in North Central, Nigeria.

This research is therefore concerned that despite strategies at the disposal of the school administrators to effectively service and manage the school plant to enhance the quality of education, it seems that some principals have not been proactive in the use of these strategies for the management of school plant in public secondary schools in the North Central, Nigeria. The problem of the study therefore is: How can school plant be managed in public secondary schools in North Central, Nigeria?

2.1 Objectives of the Study

The objective of this study is to investigate the management of school plant in public secondary schools in North Central, Nigeria. Specifically, the study sought to:

1. Find out the use of preventive maintenance strategy on the management of school plant in public secondary schools.
2. Ascertain the use of emergency maintenance strategy on the management of school plant in public secondary schools.

2.2 Research Questions

The following research questions were raised to guide the study:

1. What influence does the use of preventive maintenance strategy have on the management of school plant in public secondary schools?
2. What influence does the use of emergency maintenance strategy have on the management of school plant in public secondary schools?

2.3 Statement of Hypotheses

The following null hypotheses were formulated and tested at a 0.05 level of significance:

1. Use of preventive maintenance strategy has no significant influence on the management of school plant in public secondary schools.
2. Use of emergency maintenance strategy has no significant influence on the management of school plant in public secondary schools.

3.0 REVIEW OF LITERATURE

The duties of the school principal cover the procurement, utilization, maintenance, and safety of the school plant as to achieve the goals and objectives of educational system. At the secondary school level, the management of people through human and material resources in order to accomplish the objectives of the school rest on the school principal.

Preventive maintenance is another form of strategy that is aimed at reducing the possibility of repairs or breakdown of facilities. This is a type of maintenance carried out on school facilities to avoid breakdown and ensure optimal performance of the facility (Idoko, 2015). Up-to-date information about the facility is required to serve as a guide for the maintenance team. Preventive maintenance strategy saves cost and time. It is usually an integral part of the management practice in societies where maintenance culture is well established. Decisions on preventive maintenance are collectively made and implemented. This type of maintenance, as the name implies, is the service rendered on school buildings, equipment, and furniture in order to prevent malfunctioning of equipment or early deterioration of buildings, parts of buildings, furniture, and equipment in order to maximize their useful life. Candoli (2008) defines preventive maintenance as that type of maintenance program used for servicing machines, systems, and structures devised to prevent a breakdown of the system or one of its components.

Preventive maintenance is a type of maintenance carried out on school facilities to avoid breakdown and ensure optimal performance of the facility (Asiabaka, 2010). Up-to-date information about the facility is required to serve as a guide for the maintenance team. Preventive maintenance saves cost and time. It is usually an integral part of the management practice in societies where maintenance culture is well established. Decisions on preventive maintenance are collectively made and implemented.

Preventive maintenance protects buildings, grounds, furniture, and equipment in order to avoid expensive maintenance. As already pointed out, preventive maintenance is often carried out by custodial staff. Their performance of this task may be enhanced through principals' organization of on-the-job training for such staff to enhance their skills. Preventive maintenance is rarely practiced in Nigerian public schools most of which do not even have the custodial staff to render such services. Abu (2016) observes that the absence of any type of maintenance program and school inspection schedule in schools also hinders the rendering of such maintenance services.

This is a program for servicing machines, systems, and structures devices to prevent a breakdown of the system or one of its components. This allows equipment or building to remain in the original useful life (Asemah, 2010). In this arrangement, maintenance is carried out before there is a malfunction of the equipment. Manufacturers usually indicate parts of equipment to be replaced at intervals to avoid breakdown and give the equipment maximum useful life. Periodic maintenance on the other hand represents a deliberate effort to schedule maintenance of equipment on a periodic basis. Some equipment requires quarterly maintenance, while office equipment requires periodic maintenance. School facilities are to be maintained regularly because the best plant that is not maintained soon becomes defaced and loses its aesthetic value and worth (Ogbu, 2016).

The principal use strategy must first and foremost, gather information about each and every facility in the school through routing supervision to ascertain how such facilities could be maintained to enhance their long life. Subsequently, the guideline would help the school-head to consistently oversee the cleaning and servicing of such facilities to elongate their life. The consistency adopted by the principal in cleaning and servicing the facilities are what are referring to as preventive maintenance services.

Preventive maintenance occurs regularly by checking and rechecking the available facilities and taking necessary measures to prevent malfunctioning or non-functioning of a particular facility. Prevention is not only better; it is also cheaper than any other measures. It is proactive in nature. Corrective maintenance involves reactivation or replacement of facilities in order to normalize their performances. According to Abdulkareem and Fasasi (2010), when a facility or equipment breaks down completely, a major repair or replacement may be needed. There may be a time when the institution may need to close down in order to allow a major repair to be carried out. Flood, fire or wind disaster may warrant the closure of an institution for a major repair to be effected.

This type of maintenance, as the name implies, is the service rendered on school buildings, equipment, and furniture in order to prevent malfunctioning of equipment, or early deterioration of buildings, parts of buildings, furniture, and equipment in order to maximize their useful life. According to Lackney and Pious (2009), this type of maintenance is “that program for servicing machines, systems and structures devised to prevent a breakdown of the system or one of its components.” Preventive maintenance protects buildings, grounds, furniture, and equipment in order to avoid expensive maintenance. As already pointed out in the last unit, preventive maintenance is often carried out by custodial staff. Their performance of this task may be enhanced by on-the-job training. Preventive maintenance is rarely practiced in Nigerian public schools most of which do not even have the custodial staff to render such services. The absence of any type of maintenance program and school inspection schedule in schools also hinders the rendering of such maintenance services.

Regular supervision is a fundamental part of preventive maintenance ((Izobo-Martins, 2014). The author found that effective maintenance work to carry out an assessment of the present condition, identification of the intervention moment, and maintenance priority for maintenance planning. Preventive maintenance must have an inspection cycle until when failure becomes impossible to avoid. Preventive maintenance is the most important of all types of maintenance practice. Regular supervision is carried out for good maintenance; this must be done with sound knowledge of causes of decay and understanding of building construction. It was further explained that all building properties should be inspected at stipulated intervals to identify existing deterioration and recommend required maintenance planning work. That study concluded that deterioration should be measured within a stipulated time and that, the state and period of interval between one condition survey and the other should be stated.

No matter how well a maintenance program is planned and adhered to, there will always be some unforeseen or unexpected emergencies. This type of maintenance is the work done when a system, equipment, especially one that is frequently in use, unexpectedly breaks down (Asiabaka, 2010). It is also the type of work done when part of a building collapses because

of a natural disaster and other reasons. This type of maintenance is the most common in Nigerian schools. Some of the emergency maintenance works could, perhaps, been avoided if there were operational maintenance programs in the school systems. According to Akomalafe (2010), in cases of emergency, the first concern should be with the safety and health of the occupants of the facility involved. They need to be promptly evacuated and settled elsewhere. All school staff and students should be given adequate instruction on what to do and what not to do in emergency situations and when emergency repairs are being done in the school. According to Ihuoma (2008), emergency maintenance is very common in the management of school facilities in societies where maintenance culture is not well established. It takes place when a facility breaks down and urgent measures or steps have to be taken to remedy the situation. In this regard, collective decision-making may not be possible because there may be limited time to bring together all the necessary individuals to make decisions. It is also expensive due to lack of maintenance, the extent of the damage may demand total replacement of the facility or high cost of repair. According to Lawson and Gede (2011), emergency maintenance simply means that servicemen are called in when the equipment is out of the use or broken down e.g. the wall of a dormitory may crack, and this crack requires urgent repairs to avoid total breakdown of the building. In some cases, the breakdown may cause injury or even death to staff or students of the school. The resultant effect may be a high insurance premium or prevent the use of the facility for teaching and learning until the repair is affected. School managers should proactively develop and implement facilities management plans for addressing facility needs (Asiabaka, 2010).

Sudden breakdown of facilities is very common in the management of school facilities in societies where maintenance culture is not well established. According to Eze (2016), emergency repair takes place when a facility breaks down and urgent measures or steps had to be taken to remedy the situation. In this regard, collective decision-making may not be possible because there may be limited time to bring together all the necessary individuals to make decisions. It is also expensive because due to lack of maintenance, the extent of damage may demand total replacement of the facility or high cost of repair. The resultant effect may be a high insurance premium or prevent the use of the facility for teaching and learning until repair had been effected. School managers should proactively develop and implement facilities management plans for addressing facility needs (Agenyi, 2012). Emergency maintenance may take place due to unforeseen occurrences which may be a result of a lack of maintenance culture (Asiabaka, 2010). Structural maintenance is carried out due to the structural needs of some plants and equipment such as refurbishing, refabricating, or reshaping due to current requirements or new designs (Agenyi, 2012).

Since the accident is inevitable, no one knows when a particular facility will break down, but when they do, it is the responsibility of the school-head to respond urgently to the needs of such facilities as demanded. Agbo (2009) note that cleaning and servicing of a facility will only prolong the life span of the facility, but will not stop the facility from going bad or breaking down when the time comes. Elaborating more on emergency maintenance, Agbo (2009) stresses that when a building grows old, such building needs repair or renovation and not necessarily emergency maintenance but when the ceiling of the principal's office, staff office, library, or laboratory falls down, the principal may have to react or respond immediately. This prompt response is what makes it emergency repair. The timing and quality of work down during this period is what qualifies this maintenance strategy to be

innovative in nature. So principals' may have been responding to sudden breakdown and collapse of facilities and equipment, but what makes its strategy is the nature (timing) and quality of work carried out during this period. Any Kind of maintenance program is planned and adhered to; there will always be some unforeseen or unexpected emergencies. In a similar vein, Lackney and Pious (2009) observe that this type of maintenance is the work done when a system, equipment, especially one that is frequently in use, unexpectedly breaks down. It is also the type of work done when a part of a building collapses because of a natural disaster and other reasons. This type of maintenance is the most common in Nigerian schools. Some of the emergency maintenance works could, perhaps, be avoided if there were operational maintenance programs in the school systems. In emergency maintenance, the first concern should be with the safety and health of the occupants of the facility involved. They need to be promptly evacuated and settled elsewhere. All school staff and students should be given adequate instruction on what to do and what not to do in emergency situations and when emergency repairs are being done in the school.

4.0 METHODOLOGY

The study adopted descriptive survey research design. It is a design by which a group of people or items are studied in their natural settings by collecting, analyzing, and interpreting data from a few people or items considered to be a representative sample of the entire population. The descriptive design is one of the methods used in education to verify the knowledge that would help education managers to make valid decisions and policies (Akpakwu, 2013).

The area of the study is North Central, Nigeria. It is one of the six zones in Nigeria. It comprised six states, namely Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and the Federal Capital Territory, Abuja. Public secondary schools in the region are located in both rural and urban areas and are largely controlled by the government through its agencies. There are 34,422 teachers in 1,949 secondary schools (Federal Ministry of Education, 2018). All the states in the study area have a Ministry of Education that regulates the activities of both public and private-owned secondary schools.

The population of the study consists of all 36, 422 teachers (1, 949 principals and 34,473 teachers) from 1, 949 public secondary schools in the area of study (Federal Ministry of Education, 2018). The choice of this category of respondents is based on the assumption that they are better educated and informed to give valid information on the variables of the study. The sample size for the study is 381 respondents from a population of 36,422 (1,949 principals and 34,473 teachers) in 1,949 public secondary schools in North Central Nigeria. This sample agrees with Glenn's (2012) formula for determining sample size. The multi-stage sampling procedure was adopted for this study. This sampling is applied when different sampling techniques are used at several stages of sampling. A self-structured questionnaire Titled School Plant Management Questionnaire (SPMQ) was used to collect data from the respondents. The instrument was divided into two sections, Sections A and B. Section A contained information on the personal data of the respondents, while Section B was divided into two clusters of A and B. Each cluster had five items on the management of school plant in public secondary schools. The instrument was structured on a four-point rating scale with response modes of Strongly Agree (SA)-4, Agree (A)-3, Disagree (D)-2, and Strongly

Disagree (SD)-1. To ensure the validity of the instrument, the researcher presented the questionnaire for face and content validation to one expert in Measurement and Evaluation, two experts from Educational Administration and Planning, from the University of Agriculture, Makurdi. These experts examined each of the items of the instrument and made comments on their suitability or ambiguity, with a view to correcting any mistake.

In order to determine the reliability of the instrument for the study, the researcher administered the questionnaire to 30 respondents in three public secondary schools in Benue State. These schools were part of the population; however, they were not part of the sample for the study. These schools were purposively chosen because they have similar characteristics to the population. The essence of this was to identify or determine problems that might arise during the actual data collection process and to check the reliability of the instrument.

Cronbach Alpha was used to test the reliability and internal consistency of the questionnaire. The choice of Cronbach's alpha is to ensure that the items are consistent and how closely the items are a group. The reliability coefficient of each variable of principals' strategies and management of school plant in secondary school yielded the following results use of preventive 0.95 and the use of emergency 0.96. The overall reliability coefficient of 0.96 was considered high enough and reliable, hence it agrees with Mohsen and Dennick (2011) who assert that the reliability of 0.70 and above is considered reliable. Therefore, the researcher considered the instrument reliable.

In view of the large geographical spread of the respondents of the study, the researcher engaged six research assistants that assisted in the administration and collection of copies of the questionnaire in the sampled schools. The use of the research assistants was based on their level of education, state of origin, and availability. The research assistants were properly briefed to understand some technical terms used in the questionnaire in order to properly assist the respondents in understanding the items in the questionnaire. Each of the six research assistants was evenly attached to sampled public secondary schools. The descriptive statistics of mean and standard deviation were used to answer the research questions. The decision was based on the real limit of numbers. Hence a mean response score of 2.50 was considered Agreed and below 2.49 was considered disagreed. Chi-square test of goodness-of-fit was used to test the hypotheses at a 0.05 level of significance. In a situation whereby the probability value is equal to or greater than the alpha value of 0.05, the null hypothesis of no significant influence was rejected. On the other hand, if the probability value calculated is less than the set alpha value of 0.05, the null hypothesis was not rejected.

5.0 RESULTS

Research Question 1: What influence does the use of preventive strategy has on the management of school plant in public secondary schools?

Table 1: Mean Scores and Standard Deviation of Respondents on the Use of Preventive Strategy on the Management of School Plant in Public Secondary schools

Item No	Item Description	N	\bar{X}	SD	Remark
11	Principals who ensure that the school vehicles are regularly serviced keeps school vehicles in their state of originality.	372	2.65	1.17	Agree
12	Principals who ensure that laboratory equipment are cleaned enhances their state of originality.	372	2.72	1.08	Agree
13	Principals who ensure that desks are constantly cleaned help such facilities from going bad.	372	2.28	0.99	Agree
14	Principals who ensure that power plants are constantly serviced, prevent them from getting bad and this elongates the life span of the plants.	372	2.69	1.04	Agree
15	Principals who plant trees to prevent storm from blowing off the roof tops of their school buildings have fewer cases of destroyed roofs.	372	2.73	1.08	Agree
			2.61	1.07	Agree

N= number of respondents, \bar{X} = Mean of respondents, SD=Standard Deviation of Respondents.

Table 1 reveals the mean scores of item 11-15 as 2.65, 2.72, 2.28, 2.69 and 2.73 with corresponding 1.17, 1.08, 0.99, 1.04 and 1.08 respectively. All the items are above the cut-off point of 2.50 except item 13 which is below 2.50. This means that the respondents agreed that principals who ensure that the school vehicles are regularly serviced keep school vehicles in their state of originality and their principals ensure that laboratory equipment is cleaned enhances their state of originality. They agreed that their principles ensure that power plants are constantly serviced, prevent them from getting worse and this elongates the life span of the plant. The respondents agreed that their principal’s plant trees to prevent storm from blowing off the rooftops of their school buildings has fewer cases of destroyed roofs. However, the respondents disagreed that principals who ensure that desks are constantly cleaned help such facilities from going bad. The cluster means of 2.61 with a corresponding standard deviation of 1.07 is above the cut-off point of 2. 50. This implies that principals’ use of preventive strategy influences the management of school plant in public secondary schools.

Research Question 2: What influence does the use of emergency maintenance strategy have on the management of school plant in public secondary schools?

Table 2: Mean Scores and Standard Deviation of Respondents on the Use of Emergency Maintenance Strategy on the Management of School Plant in Public Secondary Schools

Item No	Item Description	N	Mean	SD	Remark
16	Principals' prompt response to falling ceiling enhances the quality of school buildings.	372	2.98	1.03	Agree
17	Principals' early responses to broken walls elongate the life span of the school buildings.	372	2.82	1.13	Agree
18	Principals' urgent response to broken down vehicles help such vehicles in regular use.	372	2.87	1.03	Agree
19	Principals' quick attendance to broken furniture prolongs the long use of the furniture.	372	3.10	0.98	Agree
20	Principals' prompt response to electrical faults enhances the stability of electricity in the school.	372	3.13	0.91	Agree
Cluster Mean/SD			2.98	1.06	Agree

N= number of respondents, = Mean of respondents, SD=Standard Deviation of Respondents.

Table 2 indicates the mean scores of items 19-20 as 2.98, 2.82, 2.87, 3.10, and 3.13 with corresponding standard deviations of 1.03, 1.13, 1.03, 0.98, and 0.91 respectively. All the items are above the cut-off point of 2.50. This implies that the respondents agreed that their principals' prompt response to falling ceilings enhances the quality of school buildings and broken walls elongate the life span of the school buildings. They also agreed that their principals' urgent response to broken down vehicles help such vehicles in regular use and quick attendance to broken furniture prolongs the long use of the furniture. The respondents also agreed that their principals promptly respond to electrical faults which enhances the stability of electricity in the school. The cluster mean of 2.98 with a corresponding standard deviation of 1.06 is above the cut-off point of 2.50. This implies that principals' use of emergency maintenance strategy has an influence on the management of school plant in public secondary schools.

Hypothesis 1: The use of preventive maintenance strategy has no significant influence on the management of school plant in public secondary schools.

Table 3: Chi-square test on Preventive Maintenance Strategy on the Management of School Plant in Public Secondary Schools

	SA	A	D	SD	Total	Df	χ^2	P-value	Decision
Observed	109	126	33	104					
					372	12	54.47 ^a	0.00	Rejected
Expected	93.0	93.0	93.0	93.0					

DF=degree freedom, χ^2 = Chi-square calculated, P.value: P<0.05

Table 1 indicates chi-square=54.47a, df=12; P=.00<0.05. Since the probability value of 0.00 is less than the alpha level of 0.05, the null hypothesis which states that principals' use of preventive maintenance strategy has no significant influence on the management of school plant in public secondary schools is, therefore, rejected. The implication is that the principals' use of preventive maintenance strategy has a significant influence on the management of school plant in public secondary schools.

Hypothesis 2: The use of emergency maintenance strategy has no significant influence on the management of school plant in public secondary schools.

Table 4: Chi-square test on the Use of Emergency Maintenance Strategy on the Management of School Plant in Public Secondary Schools

	SA	A	D	SD	Total	Df	χ^2	P-value	Decision
Observed	145	122	56	49					
					372	12	73.66 ^a	0.00	Rejected
Expected	93.0	93.0	93.0	93.0					

DF=degree freedom, χ^2 = Chi-square calculated, P.value: P<0.05

Table 4 reveals chi-square=73.66a, df=12; P=.00<0.05. Since the probability value of 0.00 is less than the alpha level of 0.05, the null hypothesis which states that principals' use of emergency maintenance strategy has no significant influence on the management of school

plant in public secondary schools is, therefore, rejected. This indicates that principals' use of emergency maintenance strategy has a significant influence on the management of school plant in public secondary schools.

6.0 DISCUSSION OF FINDINGS

The discussion of the findings is organized around two research questions and hypotheses of the study. The finding revealed that principals' use of preventive maintenance strategy has a significant influence on the management of school plant in public secondary schools. The result of this study also showed that principals who ensure that the school vehicles, desks, and power plants are constantly serviced and regularly serviced keep school vehicles in their state of originality expand the life span of these facilities. This result is in consonance with Oyesola (2014) who found that preventive maintenance has a significant positive effect on the life of the facilities in the school as it saves cost and time. This is usually an integral part of the management practice in societies where maintenance culture is well established. The study further found that preventive maintenance protects buildings, grounds, furniture, and equipment from expensive maintenance. Oyegun (2014) found that emergency repair is very important as it stops the facility from total collapse and going bad, hence, there is every need to take proactive measures whenever they do so. The result of this study supports Amadi and Eleonu (2018) who found that preventive, predictive, and corrective maintenance is the maintenance choice used by principals. This result disagreed with Kalagbor (2017) who found that lack of funding, lack of periodic inspection, lack of clear schedule of duties allocation, and sub-standard rules guiding the maintenance are the factors affecting maintenance of facilities in schools. However, this study indicated that when school principals' employed a preventive strategy; it enables them to ensure the total collapse of the school plant in the school.

The second finding has indicated that principals' use of emergency maintenance strategy has a significant influence on the management of school plant in public secondary schools. This result also revealed that school principals' who respond to broken vehicles, furniture such as chairs, desks, seats and electrical faults enhances the stability of electricity in the school. This study conforms to that of Agoha (2008) who reported that emergency maintenance, remedial maintenance and preventive maintenance significantly impact on the management of school plant in secondary schools. Agoha also found that some respondents disagreed that there is no significant difference between principals' emergency maintenance on the management of the school facilities in the school. This is because many school principals have depended on the payment of school fees, payment of equipment fee, and payment of damaged equipment by students. However, this study concludes that emergency maintenance enables principals to be proactive in the management of school facilities.

7.0 CONCLUSION

Based on the findings of this study, it is concluded that principals' use, preventive maintenance strategy and emergency maintenance strategy significantly influence the management of school plant in public secondary schools in North Central, Nigeria.

8.0 RECOMMENDATIONS

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

1. School principals should develop the culture of preventive maintenance strategy as a high priority rather than ad-hoc maintenance. This is to enable the school to gain the benefits of preventive maintenance of the school plant.
2. Principals of secondary schools should endeavor to imbibe the spirit of timely maintenance of school plant in secondary schools. This will prevent the collapse of school facilities such as buildings vehicles, sites, and the environment generally. This could be through the adaption of an emergency maintenance strategy by the school principals; hence it allows the school management to attend to emergency issues in school.

REFERENCES

- Abu, S.N. (2016). Teachers perception towards change and innovation in Rivers State secondary schools. *Journal of Education in Developing Areas (JEDA)*, 15 (2), 32-43.
- Abu, O.A. (2009). The contributions of community development associations in financing secondary schools in Taraba State. Extracted 27/9/15.http://www.ehow.co.uk/about-66772338_role...html.
- Agbo, O. (2009). Guide to school workshop and laboratory planning. *Technical education today. Journal of Resource Management*, 3(1 & 2), 6-7.
- Akpakwu, O. S. (2013). Influence of politics on personnel management in Federal and State Universities in the North Central States of Nigeria. Unpublished Ph.D Thesis, University of Nigeria, Nsukka.
- Amadi, N., & Eleonu, L. (2018). Maintenance of facilities in public secondary schools in Port Harcourt Metropolis *International Journal Innovative Development and Policy Studies* 6(1),27-32.
- Asemah, J. I. (2010). Perspectives in educational management and administration. Makurdi: Eagle Prints.
- Asiabaka, I. P. (2008).The Need for Effective Facility Management in Schools in Nigeria.*New York Science Journal*. <http://www..sciencepub.org> retrieved 26/2/2010.
- Candoli, U.C. (2008). Planning and designing schools. New York: McGraw – Hill.
- Castaldi, B. (2014). Educational facilities: Planning, modernization and management. Boston: Allyn and Bacon Inc.
- Emenalo, F. C. (2007). School plant maintenance: An implication for school administrators in the implementation of the UBE. *Journal of Women in Academics (JOWACS)*, 4(1), 19-29.

Eze, A. O. (2016). Management of physical facilities in secondary schools in Nsukka and Obolo-Afor Education Zones of Enugu State. Unpublished M.Ed. Project, University of Nigeria Nsukka.

Federal Ministry of Education (2017). Education digest. Abuja: Government Print.

Federal Republic of Nigeria (2004). National Policy on Education . 4th Edition, Lagos: NERDC Press.

Heystek, J. (2013). Parents as Governors and Partners in Schools; Education and Urban Society. *Journal of Education Management and Policy Studies*, 1(4) 441-445.

Idoko, A. A. (2015). Understanding school management. Makurdi: Ugo printing press.

Ihuoma, P. A. (2008). The need for effective facilities management in schools in Nigeria. *New York Science Journal*. <http://www.science.pub.org>.

Ijayi, N.Y.S. (2010). Communication in school management. New Del: Vikas Publishing House PVT Limited. 110.

Izobo-Martins O.O. (2014). Maintenance strategies and condition of public secondary school buildings in Ado-Odo/Ota Local Government Area Ogun State, Nigeria. A thesis submitted to the school of Postgraduate Studies to Covenant University, Ogun State, Nigeria

Kalagbor, D. (2017). Educational resource centre: An avenue to optimal utilization of instructional materials in the Universal Basic Education (UBE). *Imo State University Journal of Educational Studies*, 1(3) 116-125.

Lackney, J.A. & Pious, L.O. (2009). School facilities-overview, maintenance and modernisation". Retrieved from <http://education.stateu>

Lawanson, O. A., & Gede, N. T. (2011). Provision and Management of School Facilities for the Implementation of UBE Programme. Proceedings of the 2011 International Conference on Teaching, Learning and Change. Retrieved August 08, 2015 from <http://www.hrmars.com/admin/pics/157.pdf>.

Oyegun, N. (2014). Influence of maintenance strategies on management of infrastructural facilities in public secondary schools in Ogun State. *African Journal of Vocational Education*, 6(2), 94-101.

Oyesola, G. (2014). Maintenance of school plant and pupils'/students' academic performance in primary and secondary schools in Lagos State. *Journal of Environmental Research*, 24 (1), 27-34.