



Perceived Influence of School Plant Management on Students' Academic Achievement in Public Senior Secondary Schools in Rivers State

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ABSTRACT

The study investigated perceived influence of schoolplant management on Students' Academic Achievement in public Senior Secondary Schools' in Rivers State. Two objectives of the study, two research questions and two hypotheses guided the study. The study adopted a descriptive survey design and the population of the study constituted of 480 principals' and vice principals (Admin & academics) in public senior secondary schools in Rivers State. The sample size consisted of 240 principals and vice principals (Admin & Academics) in public senior secondary schools in Rivers State. A total of 200 questionnaires were collated and used for data analysis with a self-structured questionnaire instrument tagged "Perceived Influence of school plant management on students' Academic Achievement Questionnaire(PISPMSAAQ)". The items on the instrument were rated on a four points rating scale of Very High Extent (VHE) 4 points, High Extent (HE) = 3 Points, Low Extent (LE) = 2 Points and Very Low Extent (VLE) = 1 Point. The instrument was subjected to face and content validity with a reliability index of 0.76. Means and Standard Deviation statistics were used to answer the research questions while z-test statistics was used to answer the hypothesis at 0.05 level of significance. The findings revealed a significant difference in the mean responses of principals and vice principals on the influence of instructional facilities management on students Academic Achievement in public secondary schools and a significant difference in the mean responses of principals and vice principals on the influence of Recreational facilities management on students academic achievement in secondary school. The study concluded that schools facilities enhances teaching and learning process and academic achievement of students. The researcher therefore recommended as follows: workshop and seminars should be organized for the principals and vice principals regularly in order for them to adopt a good maintenance culture.

Key Words: Perceived, School Plant, Academic Achievement & Educational Management

Introduction

School plant constitutes the school location, school buildings, equipment in the school and other material resources provided in the school for the purpose of enhancing teaching and learning. Odor, (1995), described school plant as the space and physical resources which the school administrator and his reference groups harness, allocate, utilize and maintain for the purpose of effective school administrations. Onwurah, (2004), observed that school plant as the school building, the playground, equipment and other material resources provided in the school to facilitate effective teaching and learning operation. It is likely that well planned school plants in terms of location, structure and facilities will facilitate effective teaching and learning and enhance better learning outcomes of students.

While emphasizing the importance of school plants management to students' learning outcome, Oyesola, (2007), stated that the main objective of school plants facilities is to satisfy educational goals which have been pre-determined by educational planners. He stressed that by providing a place for psychological and physical protection for students and teachers and improving the healthy, quality and quantity of education, better designed school plants would improve better school programs and community needs.

SimilarlyAjayi, (2007), asserted that high level of students' learning outcomes may not be guaranteed were school plants such as school site, instructional space, administrative space, space of convenience and circulation space planning are ill-sited, structurally defective, not properly ventilated and not spacious enough for use. According to Osuji (2021), school plant refers to everything within the school premises which includes the site, buildings, equipment and all essential structures, permanent and non-permanent as well as machines and laboratory equipment and others. Osuji (2021) also, buttress that school plant planning help to build good structure that enhances effective administrative functions.

According to Adebeyeje, (2000) &Emetaram, (2004), school facilities are the physical and spatial enablers of teaching and learning which will increase the production of results. School facilities serve as pillars of support for effective teaching and learning. Oyesola, (2007), saw school facilities to include permanent and semi-permanent structures such as machinery, laboratory equipment, the blackboard, teacher's tools and other equipment as well as consumables. Good quality and standard of school depend largely on the provision, adequacy, unitization and management of educational facilities. Akinsolu, (2004), asserted that educational curriculum cannot be sound and well operated with poor and badly managed school facilities. From all indication, school facilities are physical resources that facilitates effective teaching and learning. They include blocks of classrooms, laboratories, workshops, libraries, equipment, consumables, electricity, water, visual and audio-visual aids, tables, desks, chairs, play-ground, storage space and toilets.

School plant can be classified into direct teaching facilities and non-teaching facilities. Direct teaching facilities are those facilities that have direct relevance on educative process while non-teaching facilities are facilities which have indirect relevance on educative process (Ogunu, 2000). Ani, (1997) classified school plants into mobile and fixed structures and materials that are movable and immovable ones.

School plant is fundamental for the enhancement of academic activities. It helps to protect teachers and students from the sun, heat, rain, and cold. It creates comfort and safety of teachers and students thereby increasing their performances. Oyedeji, (2002), posited that the quality of education that children receive bears direct relevance to the space interpretation of the school curriculum. The programmes of the school are expressed through the school site, the buildings, playgrounds, the arrangement and design of the building. Hence, no school can function effectively without adequate school plant. In effect, school plant has to be properly managed for its continual existence and uninterrupted services. Maintenance as an on-going process is always necessary in any school well built, garnished and equipped. On this note, the researcher inferred that school plant management be utmost to sustain the potentiality and efficacy of the school system.

School plant management is the repair and upkeep of the school physical facilities and equipment in order that efficient services can be rendered. Ani, (1997), described school plant management as those tasks concerned with maintaining the school's facilities, equipment and grounds in such a state of completeness and productivity that the physical appearance can remain original by repairs and replacement. Onwurah, (2004) pointed out that school plant management is all the activities which entail repairs and replacement of school buildings and equipment in order to keep them in as near their original conditions as possible.

In other words, school plant management involves caring for the school facilities. It covers the attention given to grounds, buildings, furniture, and equipment. The activities range from daily cleaning to planned prevention and emergency repairs. In the same vein, Adebeyeje, (2000), stated that the school facilities consisted of not only the physical structure and the variety of building systems, such as mechanical, plumbing, electrical power, telecommunications, security, and fire suppression systems. It also includes furnishing, materials and supplies, equipment and information technology, as well as various aspects of the building grounds, namely, athletic fields, playgrounds, areas for outdoor learning and vehicular access and parking. School plant management therefore involves a number of on-going and related activities-determining the need for school plants, educational programme planning, school facility or building design, building construction, furnishing and equipping the school, school plant operation, utilization and maintenance and school plant, modernization or renovation if and when the need arises.

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

The need for school plant management cannot be over-emphasized. School plant maintenance is necessary to provide a satisfactory teaching and learning environment in order to achieve educational goals. Proper school plant maintenance reduces the cost on capital expenditure made in educational institutions since it reduces the cost rate of repair and breakdown of school equipment, school facilities imply substantial cost to the school system for their establishment and if not properly maintained, they dilapidate and wear out faster than their normal life span and such school will not derive optimum benefits from their use (Ogbodo,1995). This suggest that where school plants are not properly maintained, there will be need for replacement. This can result in higher cost on capital expenditure. It can as well leads to disruption of effective teaching and learning operation if not replaced.

Everyone affiliated with the school, such as principals, teachers, students and the general public, is responsible for management of school plants in secondary schools. The principals as secondary school administrators represent the key institutional authority with direct responsibility to ensure that the learning environment enhances students learning. Reasonable knowledge of planning, implementation procedures and program assessment, on the one hand, and broad-based knowledge of the maintenance manual should be necessary for the principal to establish and execute a successful maintenance program.

Adebeyeje, (1987), recognized that school plant maintenance plays a major role in school administration. He states that proper maintenance of school physical facilities and equipment constitutes an important part of school management. That means, the school facilities maintenance is an intellectually demanding job and therefore requires combined talent and activity of an educational administrator.

The researcher's experience shows that the most school plant in some secondary schools in Rivers State Education Zone are not in good working condition. Dilapidated buildings, broken chairs, desks and tables, broken windows and roofs, cracked walls, blown off roofs and bushy surroundings are some common phenomena in most secondary schools in the zone. Some imported machines are found lying waste and beaten by sun and rain where they are dumped outside for years. For instance, Ogbonnaya, (2002), also found out that most secondary schools in Abia States have dilapidated structures including broken roofs such that teachers and students do not have comfortable classrooms for effective teaching and learning. Also on a close interaction between the researcher and some of the school administrators, it is obvious that greater number of these administrators do not make adequate efforts to maintain the existing school plant due to sheer apathy while some showed concern over the deteriorating state of their school plant and the efforts they have made to maintain these school plants. A good number of the principals complained of inadequate hand as the key handicap towards proper management of school plant in secondary schools in Rivers State Education Zone. Based on this backdrop researcher, is conceived to explore on the perceived influence school plant management on academic achievement of student in secondary schools in Rivers State.

Statement of the Problem

The poor performance of students in examinations, including persistent mass failure of students in Senior School Certificate Examination (SSCE), conducted by West African Examination Council (WAEC) showed that percentage of students who obtained five credits including English and mathematics in May/June Examination were as follows - 2008-23%, 2009-26%, 2010-24%, 2011-31%, and 2012-39%. (Ajayi&Osalus, 2013). Adamolahun (2013) observed that there is increased incidence of drug abuse, cultism, examination malpractices, lateness to school, rudeness to school authority, high rate of indiscipline, absenteeism, stealing, rape are daily occurrences in secondary school and has been largely attributed to inadequate and poorly maintained learning facilities.

The current state of education in Rivers State has led to increasing demand for education. Thus, there is a big gap in the quality of education resulting from large number of students in crowded classrooms, using inadequate and obsolete equipment and untrained teachers. These factors constitute important challenges to the teaching, learning process and may prevent the system from achieving the desired secondary education goals. If educational administrators would view the school as a social system, students and the various components of school plant would be seen as inputs that need to be processed to become desired outputs that would be useful members of the society as well as inputs for tertiary education.

Public secondary schools in Nigeria are observed to be faced with combined challenges of deteriorating school plant, out-of-date design and capacity utilization pressures. The effects of these deteriorating conditions and poor maintenance of school infrastructure are threats to school management, curriculum delivery and students' academic performance. Many studies have revealed that student' academic achievement lags in shabby school buildings, poor or ill-equipped science laboratory and technical workshops, inadequate and poorly maintained instructional facilities and overcrowding poor library facilities management in our secondary schools.

Based on these facts, this study therefore intends to investigate on perceived influence of school plant management on students academic achievement in public secondary schools in Rivers State.

Purpose of the Study

The main purpose of the study was to investigate perceived influence of school plant management on student academic achievement in public secondary schools in Rivers State. Specifically, the study sought to:

1. Examine the perceived influence of instructional facilities management on students' academic achievement in public senior secondary schools in Rivers State.
2. Examine the perceived influence of recreational facilities management on students' academic achievement in public senior secondary schools in Rivers State.

Research Questions

The study was guided by the following research questions

1. To what extent does instructional facilities management influence students' academic achievement in public senior secondary schools in Rivers State?
2. To what extent does recreational facilities management influence students' academic achievement in public secondary schools in Rivers State?

Hypotheses

The following null hypotheses were formulated to guide the study;

1. **H₀₁**: There is no significant difference in the mean response of Principals and vice principals on the influence of instructional facilities management on students' academic achievement in public senior secondary schools in Rivers State.
2. **H₀₂**: There is no significant difference in the mean response of Principals and vice principals on the influence of recreational facilities management on students' academic achievement in public senior secondary schools in Rivers State.

METHODOLOGY

The study adopted a descriptive survey design with a population of 828 respondents, out of these figures, 276 are principals of senior secondary schools in Rivers State, while 552 comprises of vice principal's administration and vice principal's academics in senior secondary schools in Rivers State. The sample size of the study was 395 respondents, 163 principals and 232 vice principals academic and administration respectively. The researcher adopted an instrument titled "Perceived Influence of School Plant Management On Students Academic Achievement in Public Senior Secondary School (PISMOSAAPSSQ) Questionnaire". The instrument was divided into two sections, section A seek to elicit information of the respondents' personal data while section B sought the opinion of the respondents using the four points rating scale of very high extent (VHE), High external (HE) Low Extent (LE) and Very Low Extent (VLE). The face and content validity of the instruments was determined by three experts, two in Department of Educational Management and one in the Department of Measurement and Evaluation, Faculty of Education, Rivers State University. The Cronbach alpha statistical tool was used to determined the reliability of the instrument at 0.76 reliability index. 395 copies of the questionnaire were administered to the respondents and 335 were retrieved respecting 80% retrieval. Mean and standard deviation statistics were used to answer the research questions while z-test statistics was used to test the hypothesis at 0.05 level of significance. The mean figure of 2.50 and above indicated that the respondents to high extent agreed with a questionnaire items and the mean figure of 2.49 below indicated that the respondents to a high extent disagreed with the questionnaire items. Also, the hypothesis with a critical value of 1.96 and below was accepted while the hypothesis with a critical value of 1.96 was rejected.

Results

Research Question 1: To what extent does instructional facilities management influence academic achievement of public senior secondary school Students in Rivers State?

Mean and Standard Deviation on the Responses of Principals and Vice Principal on the Influence of Instructional Facilities Management on Students' Academic Achievement in Public Senior Secondary Schools in Rivers State.

Questionnaire Items	Principal (120)		Vice Principal (215)			Average means $\frac{x_1 + x_2}{2}$	Total Remark
	\bar{x}_1	SD ₁	Total Score	\bar{x}_2	SD ₂		
Teaching resources such manilas, duster, chalk models, charts, are adequate and should be properly managed .	2.11	1.143	702	3.27	.971	1.54	Low extent
The facilities in the home science/agriculture room are adequate for the number of students in the school	3.09	.898	711	3.31	.906	1.99	Low extent
Instructional materials helps in developing skills relevant in solving academic problems for due to poor perception of the subject	3.13	.840	514	2.39	3.36	3.24	Very high extent
Instructional materials and its proper management helps student to develop the right habit of performing all learning activities: their logical sequences	2.93	1.109	665	3.09	.912	1.33	Low extent
Inadequate of instructional materials and improper management are one of the major problems that lead to poor student academic achievement	3.00	.926	483	2.25	1.131	2.06	High extent
Grand	2.85	0.61	0.61	2.86	2.86	29.9	High extent

Source: Field Survey, 2021

Note: \bar{X} = Mean, SD = Standard Deviation

Result from Table 1 indicated that items 1-5 scored weighted mean above the criterion mean of 2.50 and were regarded as very high extent which means that instructional facilities management to a high extent influence students' academic achievement in public secondary schools in Rivers State. In summary, the aggregate mean of 2.86 is above the criterion mean of 2.50 indicating that instructional facilities management influence students' academic achievement in public senior secondary schools in Rivers State to a high extent. The teaching resources such as manilas, dusters, chalk, models, charts, are necessary; the facilities in the home science/agriculture room are also necessary for the students in the school; Instructional materials help in developing skills and solving relevant problems relating to poor perception of the subject; The instructional materials help students to develop the right habit of performing all learning activities in their logical sequences; Inadequate instructional materials are one of the major problems

that lead to poor academic performance of students.

Research Question 2: To what extent does recreational facilities management influence students' academic achievement in public senior secondary school in Rivers State?

Mean and Standard Deviation on the Responses of Principals' and Vice Principals' on the Influence of Recreational Facilities Management on Students' Academic Achievement In Public Senior Secondary Schools in Rivers State.

Questionnaire Items	Principal (120)		Vice Principal (215)				Average means $\frac{x_1 + x_2}{2}$	Total Remark
	\bar{x}_1	SD ₁	Total Score	\bar{x}_2	SD ₂			
Effective management of schools facilitates enhances students learning .	2.84	.944	64	3.0	1.037	2.93	2.88	High extent
Management of school recreational facility enable secondary school students to excel in their exam	3.30	.805	69	3.2	.824	3.26	3.29	Very high extent
Prosper/effective use of recreational facility makes students more focus in their studies	3.27	.817	74	3.4	.812	3.36	2.04	High extent
School recreational facility management reduces the risk of failure among students	3.24	1.061	71	3.3	.863	3.29	3.29	Very high extent
Efficient management of recreational facilities aid students in competing better than their peers	2.77	.941	63	2.9	1.043	2.87	2.82	High extent
Grand	3.08					3.16	3.12	Very high extent

Source: *Field Survey 2021*.

Table 2 indicated that all the items (6-10) had weighted mean score above the criterion mean of 2.50 and above, hence recreational facilities management influence students' academic achievement in public senior secondary schools in Rivers State to a high extent. In summary, the grand mean of 3.08 principals' and 3.19 for vice principals' showed that they both agreed that recreational facilities management influence students' academic achievement in public secondary schools in Rivers State. The grandmean of 3.14 which is above the criterion mean of 2.50 indicated that recreational facilities management influence students' academic achievement. In other words, effective management of school recreational facilities improves the students learning; the management of school recreational facility enable secondary school students to excel in their exam; adequate use of recreational facility makes the students focus more in their studies; school recreational facility management reduces the risk of failure among students; efficient management of recreational facilities aid the students in competing favourably with their peers in any part of the world

Hypothesis 1:

There is no significant difference in the mean responses of principals and vice principals on the influence of instructional facilities management on academic achievement of students in public senior secondary schools in Rivers State.

Table 3: Summary of Z-test Analysis of the Difference between the Mean Response Principal and Vice Principals on the Influence of Instructional Facilities Management on the Academic Achievement of Public Senior Secondary School in Rivers State.

Responses	N	\bar{x}	SD	Z _{cal}	Z _{crit} (0.05, 28)	Df	Level of significance	Decision.
Principals	120	2.85	0.61	-0.145	±1.96	333	0.05	Not significant (Accepted)
Vice Principals	215	2.86	0.51					

Result on Table 3 revealed the summaries of mean, standard deviation and z-test of difference between the mean ratings of principals' and vice principals' on the influence of instructional facilities management on students' academic achievement in public senior secondary schools in Rivers State. The principals had a mean score of 2.85 while the vice principals had a mean score of 2.86.

The calculated Z-value was -0.145, while the z-critical stood at ±1.96. At 0.05 level of significance and 334 degrees of freedom. The absolute value of the calculated Z-value $-0.145 < Z\text{-critical} = 1.96$ hence, the null hypothesis cannot be rejected. It is therefore concluded that there is no significant

difference in the mean responses of principals and vice principals on the influence of instructional facilities management on students' academic achievement in public senior secondary schools in Rivers State.

Hypothesis 2

There is no significant difference in the responses of principals and vice principals on the influence of recreational facilities management on academic achievement of public senior secondary schools in Rivers State.

Table 4: Summary of Z-test Analysis of the Difference between the Mean Response Principal and Vice Principals on the Influence of Recreational Facilities Management on the Academic Achievement of Public Senior Secondary School in Rivers State.

Responses	N	\bar{X}	SD	Z_{cal}	Z_{crit} (0.05,28)	Df	Level of significant	Decision.
Principals	120	3.08	0.56	-1.77	± 1.96	333	0.05	Not significant (Accept
Vice Principals	215	3.19	0.52					

Results on Table 4 show the summaries of mean, standard deviation and z-test on the difference between the mean ratings of principals and vice principal on the influence of recreational facilities management on the academic achievement of public senior secondary schools in Rivers State. The principals had a mean score of 3.08 while the vice principals had a mean score of 3.19. The calculated z-value was -1.77 while the z-critical stood at ± 1.96 .

The absolute value of the calculated Z-value = $-0.177 < Z_{critical} = 1.96$ hence, the null hypothesis cannot be rejected. It is thus concluded that there is no significant difference in the mean responses of principals and vice principals on the influence of recreational facilities management on academic achievement of students in public senior secondary schools in Rivers State.

Discussion of Findings

Result from Table 1 indicated that items 1-5 scored weighted mean above the criterion mean of 2.50 and are of high extent that instructional facilities management influence students' academic achievement in public senior secondary schools. In summary, the aggregate mean set of 2.86 which is above the criterion mean of 2.50 indicated that instructional facilities management influence student academic achievement in public senior secondary schools in Rivers State. In submission of the findings, Farombi (1998) opined that the wealth of a nation or society could determine the quality of education in that land; emphasizing that a society that is wealthy will establish good schools with quality teachers, learning infrastructures that with such, students may learn with ease thus bringing about good academic achievement. Writing on the role of facilities in teaching, Balogun (1982) submitted that no effective science education programme can exist without equipment for teaching.

Result from table 2 indicated that all the items (6-10) scored weighted mean above the criterion mean of 2.50 and were of high extent on the influence of recreational facilities management of students' academic achievement in public secondary schools in Rivers State. In summary, the aggregate mean set of 3.14 which is above the criterion mean of 2.50 indicated that principals' and vice principals' indicated high extent on items (6-10) that recreational facilities management influence students' academic achievement. According to Baker et al. (2008), he stated that the nearness of public recreation facilities such as playgrounds and recreational facilities has been found to affect physical activity behaviour in a positive way. This shows that the availability of recreational facilities has the potential to attract people to be more physically active. The existence of recreational facilities in a university helps to create a healthy community of students who not only excel academically but are also physically active.

This study also shows that there is no significant difference between in the mean ratings of principals' and vice principals' on the influence of instructional facilities management on students' academic achievement in public senior secondary schools in Rivers State. This agrees with the findings of Adeogun (2001) who also found out a very strong positive significant relationship between instructional resources and academic performance. According to Adeogun, schools endowed with more materials performed better than schools that are less endowed. This corroborated the study of Babayomi (1999) that private schools performed better than public schools because of the availability and adequacy of teaching and learning materials. Mwiria (1985) also supports that students performance is affected by the quality and quantity of teaching and learning materials.

This study concluded that there is no significant difference in the mean ratings of principals and vice principals 'on the influence of recreational facilities management on students' academic achievement in public senior secondary schools in Rivers State. According to Matthews (2009), people who engage in multiple recreational activities are better off physically and psychologically. This statement of Matthews is indirectly stating that one must not be too pressured while working. Leisure activities are important to bring about a positive flow of energy in a person. These activities help to

refresh the mind; thus, can bring physical and health benefits, reduced stress and depression improves the quality of life and aid positivity.

Conclusion

Based on the findings of the study, the researcher concluded that instructional facilities and recreational facilities management influences students' academic achievement in public secondary school in Rivers State if properly equipped and managed,

Recommendations

Based on the conclusion of the study, the research recommend as follows:

1. A good and well managed instructional facilities can help bring out the best in every students'. Therefore, Government through ministry of education at both federal and state level should make adequate provision and checkmate where necessary the usage of this facilities for accountability and success of the students.
2. The obsolescence of school recreational facilities hinders the students in participating in physical exercises and education. In other words, Rivers State Ministry of Education and as well sport ministry officials should visit all the secondary schools to identify school recreational facilities that need maintenance and immediately fix them for students' academic success.

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