

Availability of School Plant as a Tool for Effective Teaching and Learning in Public Secondary Schools in Adamawa State, Nigeria

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ABSTRACT: *The purpose of the study was to investigate the availability of school plant in public secondary school in Adamawa state, Nigeria. Descriptive survey research design was used for the study. Three research questions and three hypotheses were used to guide the study. Data were collected using structured questionnaire, which was based on four point rating scale. The instrument used for the study was validated by the experts and the professionals. The reliability coefficient of the instrument was computed to be 0.92 using Cronbach Alpha formula for determining internal consistency. The data collected were analyzed using arithmetic mean, standard deviation and t-test to test the hypotheses. The finding revealed among others that non availability of school buildings and poor maintenance of school building. All the null hypotheses were accepted. Recommendations were made which includes the following among others that: all state holders should contribute in improving school buildings; refresher courses like training the trainer programme, seminars and workshops for teachers of technical/technology should be organized periodically to ensure effective teaching of the trade and pay visit to industries and well equipped organizations a very important way that could enable the students to pick up interest in the study of trade.*

Key Words: *School Plant, Effective, Teaching, Learning, Public Secondary schools.*

Introduction

Teaching and learning is a form of activities geared towards acquisition of needed competences for gainful living in the society. For balanced education, such competences should spread through the cognitive, affective and psychomotor domains. According to Effiong (2016) the drawback of teaching and learning have been connected with bad School site, inadequate buildings (classroom blocks, administrative offices, libraries, workshop, laboratories, staff residential quarters, toilets etc). Uwaifo (2018) added that over the years, teaching and learning in public secondary schools have been met with challenges as evidenced WASC and NECO examination failure and low quality of secondary school products.

School plant constitute a major educational concern because of their impact on the effectiveness of the activities that goes on in the school. It is generally believed that school plant bears a lot of the influence on the teaching and learning. That goes on in the school as the objectives of secondary schools education.

Effective teaching and learning is essentially hinged on the availability and maintenance on the of school plant which facilitate students skills acquisition.

School plant therefore could be referred to as that which includes all structures put on the school ground. Isaac & Musibau (2010) sees school plant as a process which a suitable site is selected and instructional space, administrative space, circulation space, and spaces of convenience are designed to facilitate teaching and learning process in the school system. Similarly, Ajayi (2010) explained further that school plant includes the site, the building and the equipment's, that embraces permanent and semi-permanent structures as well as items such as machines, laboratory equipment's, the black board and the cleaners tools. Ojedele (2009) also defined school plant as school site and all the structures that have been put in place to and effective teaching and learning in the school. Therefore, school plant is the space interpretation of the school curriculum; the school curriculum cannot be implemented if the physical facilities required are not available. Without school plant, the school cannot exist. It therefore becomes necessary to ensure that school plant is properly planned and maintained to facilitate the effectiveness of the secondary school system. Therefore, school plant does not implies maize or tree of but implies the components aggregate they made the school as a system.

Adepoju (2014) stated that usefulness of School plant in the accomplishment of the educational goals cannot be over-emphasized, he therefore studies the following as some of the importance of school plant:

- i. It aids the achievement of the goals and objecting of education.

- ii. It facilitates teaching and learning.
- iii. School buildings protect students and teacher from the sun, the rain, heat and cold.
- iv. School physical facilities are useful for the community in terms of extra mural classes, adult education programs, meeting place, sport activities and public ceremonies.
- v. School plant aids the academic performance of the students.

A School administrator must ensure proper maintenance of school plant in order to facilitate effective teaching-learning process. School plant maintenance refers to the keeping of the school site, the buildings and the equipment in as near their original state of utility as possible (Olutola, 2007). School plant maintenance is concerned with keeping grounds, buildings and equipment's in their original condition of completeness and efficiency (Adeboyeje, 2004). Also, Olagboye (2009) defined school plant maintenance as any work such as repairs, servicing, painting etc. carried out on any component of the plant with a view to keeping it in, or restoring it to optimum working condition. He farther stated the importance of school plant maintenance as:

- i. It enhances effective teaching and learning.
- ii. It promotes the beauty of the school environment.
- iii. It ensures the safety of staff and students who occupy school building.
- iv. It in indicates the habit of cleanliness in the students.
- v. It saves cost because the cost replacing some the school items is higher than the cost of maintenance.
- vi. It prolongs the life span of the plant.

School plant constitute a major factor in effective teaching and learning in public secondary school. No matter how rich a school plant might be, with experts, sophisticated equipment and tools, they do it serve the purpose until they are properly available and well maintained. Teaching and learning cannot properly take place in reality until school plants are provided, available and properly maintained.

Idika (2008) and Okeke (2010) observed that the school plant is a major constraint in the teaching and learning in public secondary schools. The Federal Ministry of Education (FME, 2018) has also stated that presently, public secondary schools suffer from gross infrastructural dilapidation, inadequate facilities, books, instructional materials resulting in lack of proper maintenance of these facilities. Inspite of the efforts of the government in providing the school plants, there are still setbacks are still plaguing the school plants in teaching and learning situation in our secondary schools.

The objective of school plants is to improves student's performance, improve students' school attendance, improves students' attitude to learning, increase teacher retention in schools and implementation of school programme. This will in turn prepare the student for better performance and achievement (Aminu, 2011). Fagbulu (2015) observed that public secondary school are to some extent equipped with good school (site, buildings, equipment, machinery, furniture, vehicles, books and accessories for various functions to promote teaching and learning situation, yet the students' performance was not up to expectation with all these school plant put in place. The interest of this study therefore, is to investigate the availability and maintenance of schools plant in public secondary schools in Adamawa state.

The main purpose of the study is to investigate the availability of school plant in public secondary schools in Adamawa state. Specifically the study wishes to:

- i. Determine the level of availability school buildings (classroom blocks, administrative offices, libraries, toilets).
- ii. Determine the extent to which the availability of school building are maintained.
- iii. Determine the attitude of students towards the school buildings.

Research Questions

The study answered the following research question. These are as follows:

1. How availability are school buildings facilities in public secondary school in Adamawa state?
2. How effective are the maintenance of school buildings in promoting learning and teaching in public secondly schools in Adamawa state?
3. What are the general attitude of the students towards the school buildings in public secondary schools in Adamawa state?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance to guide the study:

1. There is no significant difference between the mean responses of the students and teachers on the availability of school buildings in public secondary schools in Adamawa state.
2. There is no significant difference between the mean responses of students and teachers on the school buildings in public secondary schools in Adamawa state.
3. There is no significant difference between the mean responses of students and the teachers on general attitude of students toward school buildings in public secondary schools in Adamawa state.

Methodology

A descriptive survey research design was used for this study. This design has been considered for the study because it deals with the investigation of opinion/experience of students and teachers based on series of questions administered. The population comprised of 920 students and 93 teachers making the total of 1013 in the six selected public secondary schools in Adamawa state.

The sample size of the study was 260 Students and 27 teachers which give the total of 287 respondents, determined statistically using Yaro Yamane formula for finite population. A structured questionnaire containing twenty one (21) items statements designed using four point rating scale ranging from strongly agreed (SA) to strongly disagree (SD) was used for data collection. The instrument was validated by three expert from the department of Physical Science Education, Modibbo Adama University of Technology, Yola, Adamawa state. All comments, suggestions and recommendations were considered the final drafting of the questionnaires. The reliability coefficient of the instrument was computed using Cronbach Alpha formula for determining internal consistence. It was pilot tested on respondents that did not form part the study. Three research assistants were trained by the researcher in administering and collection the instrument. The arithmetic mean ($\bar{x}$) and Standard Deviation (SD) was used to answer the research questions (using real limits of numbers) and t-test was used to test the hypotheses formulated.

Research Question 1

How available are school buildings facilities in public secondary schools in Adamawa state

Table 1: Mean responses of the respondents on availability of school building facilities in the school.

S/N	Items	X_1	SD_1	X_2	SD_2	Remark
1.	There are enough space for classroom in your class for teaching and learning	3.54	0.79	3.63	0.73	A
2.	There are auxiliary areas such as store, toilet in your school	1.89	0.73	1.93	0.90	D
3.	There are enough laboratories in your school	1.95	0.74	2.00	0.98	D
4.	There are enough administrative offices in your school	2.11	0.77	2.41	1.13	D
5.	There are enough laboratories in your school	1.87	0.85	1.74	0.97	D
6.	There are enough workshop in your school	1.91	1.03	1.78	0.92	D
7.	There are enough students hostels in your school	2.35	1.06	2.44	1.16	D
8.	There are enough staff resident in your school	2.24	0.97	2.26	1.04	D
9.	There are assembly hall in your school	2.43	1.00	2.41	1.10	D
Grand Mean		2.25	0.88	2.29	0.99	D

Table 1, shows items on availability of school buildings facilities in public secondary schools in Adamawa state. The responses indicates that majority of the respondents have disagreed with the items statement presented. The is because, their, grand mean responses range, from 2.25 to 2.29, which falls below the cutoff point of 2.5 with a corresponding standard deviation of 0.88 to 0.99. However, item 1 has been agreed upon by the respondents.

Research Question 2:

How effective are the maintenance of school buildings in promoting teaching and learning in public primary schools in Adamawa state?

Table 2: Mean responses of the respondents on effective maintenance of school buildings in your school.

S/N	Items	X ₁	SD ₁	X ₂	SD ₂	Remark
10.	Your school has enough cleaner that sweeps the floor and school surrounding	2.95	1.10	2.74	1.04	A
11.	Your school has proper maintenance of School plant	2.27	1.12	2.33	1.02	D
12.	Your school carried out repairs of school facilities yearly	2.03	0.79	2.33	1.09	D
13.	Your school practice preventing maintenance culture	2.27	1.01	2.37	1.13	D
14.	Your school practice predictive maintenance culture	2.32	1.14	2.15	1.01	D
15.	Your school principal carry out periodic inspection of school	2.39	1.06	2.37	1.02	D
16.	Your school practice shutdown Maintenance	2.85	1.12	2.52	0.92	D
Grand Mean		2.44	1.08	2.40	1.03	D

The analyses presented in table 2 indicated that the respondents agreed with item 10 and 16 since it falls with the limit of agreement, while on the other hand they disagreed with items 11, 12, 13, 14 & 15, since the grand mean 2.40 - 2.44 fall within the limit of disagreement, with a corresponding standard deviation of 1.03 - 1.05.

Research Question 3:

What are the general attitude of the students towards the school buildings in public secondary schools in Adamawa state?

Table 3: Mean responses of the respondents on the general attitude of students towards the school buildings in public secondary schools in Adamawa state.

S/N	Items	X ₁	SD ₁	X ₂	SD ₂	Remark
17.	Student exhibit the habit cleanliness In the school	1.97	1.01	2.26	0.80	D
18.	Students are actively involved in school plant maintenance	1.68	0.82	2.07	0.60	D
19.	Students are involve in sweeping of the school environment	2.94	1.03	2.67	1.16	A
20.	The school authority encourage students to cultivate the maintenance culture	1.96	0.98	1.89	0.83	D
21.	Student protect the schools properties	2.13	1.03	1.93	0.66	D
Grand Mean		2.14	0.97	2.16	0.81	D

Table 3 shows the items on the general attitudes of student towards the school buildings. From the table, it can be seen that the respondents have agreed with item 19, since it falls within the limit of agreement, while on the other hand, they disagreed with all other items (17, 18, 20 and 21). Since the grand mean is (2.14 - 2.16) falls within the limit of disagreement, with a corresponding standard deviation of 0.97 - 0.81.

Hypothesis 1: There is no significant difference between the mean ($\bar{x}$) response of students and teachers on the availability of school buildings in public secondary schools in Adamawa state.

Table 4: T-test of significant difference between the mean responses of the students and teachers on the availability of school buildings in public secondary schools in Adamawa state.

	X	SD	N	t-cal	t-critical
Students	2.25	0.88	260	-0.2	1.96
Teachers	2.29	1.03	27		

Hypothesis 2: There is no significant difference between the mean responses of students and teachers on the maintenance of school buildings in Adamawa state public secondary schools.

Table 5: T-test of significant difference between the mean responses of the students and teachers on the maintenance of school buildings

	X	SD	N	t-cal	t-critical
Students	2.44	1.05	260	0.19	1.96
Teachers	2.40	1.03	27		

This implies that no significant difference exist between the students and the teachers.

Hypothesis 3: There is no significant difference between the mean responses of students and teachers on the general attitude of students towards the school buildings in public secondary schools in Adamawa state.

Table 6: T-test of significant difference between the mean responses of the students and teachers on the general attitudes of students towards school buildings

	X	SD	N	t-cal	t-critical
Students	2.14	0.97	260	-0.12	1.96
Teachers	2.16	0.81	27		

Table 6, show that t-cal (-0.12) is less than the t-Critical (1.96).

Therefore, the null hypotheses (H_{03}) is accepted. This implies that no significant difference exist among the mean scores of students and teachers on the general attitudes of students towards school buildings.

Discussion of Findings

The data in table I showed that the respondents disagreed to eight (8) item statements out of the nine (9) item statements on the availability of school buildings in public secondary schools in Adamawa state. This is because the individual mean point of the item is below the cut-off point of the study, which is at 2.5. This finding is in line with the view of Aminu (2011), who stated that most of the public secondary school in Nigeria have been forced to perform below standard due to purported non availability and utter neglect of the required facilities in the schools for effective teaching and learning. Adeboye (2004) opined that most of the laboratory the public secondary schools suffer from non-availability supply of modern safety equipment and materials, and lack of giving priority to safety first. Idika (2008) stated that the extent of the deterioration of educational structures such as physical plants, and infrastructural facilities, where these educational structures are available, is amazing and that many schools, the non-availability of facilities is more striking than their condition. Hence, these support the previously mentioned result.

The data presented in the table 2 indicated that the respondents agreed with only 2 item statement(11 and 16) and disagreed with others of the other five (5) item statements presented on the effective maintenance of school buildings in public secondary schools in Adamawa state. This is perhaps why Aminu (2011) observed that student lack the knowledge to know how to take good care of the school buildings.

The data presented in table three (3) indicated that the respondents agree with only one item statement (19) and disagreed with others of the five items statement presented on the general attitudes of students toward school buildings in public secondary schools in Adamawa state. This is in line with the submission of Ajayi (2010) who outlined that nonchalant attitude; lack of seriousness on the part of some students in school building.

Because of this problem, it will not be easy to bring about any required change in the learner. The society does not accord respect or recognition to the secondary school students. The impression is that this type of education is meant for those who are preparing to further education to higher institution and to be able to be an employer labor.

School building availability and maintenance is therefore, an integral part of the school to give meaning to the teaching and learning process.

Recommendations

In view of these findings, the following recommendations were made:

1. To address the non-availability of school buildings (classroom, administrative offices, libraries, laboratories and toilet etc.) for effective teaching and learning in primary schools in Adamawa state. All stakeholders (Ministry of Education, Parents and Teachers Association, immediate community etc.) should contribute in providing school building facilities.

2. The school authority should liaise with stakeholders to develop means of training and educating students, so that students will have the interest effective maintenance of their school buildings.
3. Ministry of Education should, as a matter of urgency, organize periodic refreshed course like train the trainer programme, seminars and workshops for teacher and student to develop their positive attitude towards school buildings.

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