



Utilisation and Maintenance of School Facilities as Correlate of Students' Academic Achievement in Senior Secondary Schools in Adamawa State, Nigeria

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Abstract: *This study investigated the utilisation and maintenance of schools facilities as correlate of students' academic achievement in senior secondary schools in Adamawa state. The purpose of this study was to determine the utilisation and maintenance of schools facilities as correlate of students' academic achievement in senior secondary schools in Adamawa state, two research questions and two hypotheses guided the study. the study adopted descriptive survey design, the area of the study was Adamawa state. The population of the study comprised 337 principals and 5128 teachers and 134,346 in all the senior secondary schools within the five education zones of Adamawa State. The sample size of 166 principals, 365 teachers and 531 senior secondary school students which were statistically determined using Taro Yamane formula for finite population. The instrument was questionnaire named "principals' management of school facilities questionnaire" (PMSFQ) designed by the researcher and pro forma to elicit students' academic achievement. The instruments were validated by 4 validators. The reliability coefficient of 0.82 was obtained using cronbach's alpha method. Descriptive statistics of mean, and standard deviation was used to answered research questions while the null hypotheses were answered using linear regression analysis. All the hypotheses tested at 0.05 level of significance were rejected. Based on the data collected and analysed statistically, all the results of the finding revealed that utilizing with the mean of 3.02 and maintenance with the mean of 3.31. In conclusion it was reveal that utilisation and maintenance of schools facilities have contributed to students' academic achievement in senior secondary schools of Adamawa state. Among the recommendations, school facilities should be provided to enable students' and teachers to concentrate on their job for effective delivery.*

Keywords: *Utilization, Maintenance and Teachers' job performance.*

INTRODUCTION

Utilisation is the duty of the school head to ensure that the school facilities is ready for use when due and that it is correctly used for the purpose for which it is meant. This is necessary in order to prevent any disruption of educational programme. Fasasi (2010) opined that using the school plant for educational purposes requires careful direction or much of its effectiveness can be lost. If the design of a facility follows function, then the type of activity specified for the facility should be taking place in that facility otherwise the facility is being incorrectly used. It has also been observed that even the few school facilities available are not properly

utilized for the better achievement of students. Storekeepers, laboratory attendants, librarians and library attendants are conspicuously absent in most secondary schools. What they have are what they call substitutes. The so-called substitutes may not be efficient because it is difficult for one to give what he or she has not. To buttress, this, many schools have teacher librarians without library assistants. The teacher librarian locks up the library when he goes to class to teach. The consequence is that the students are not allowed to make effective use of the library (Joseph and Philians, 2011).

The degree to which an item is used determines its sustainability or degenerative consequences on the expertise of the school head (Ekundayo, 2010). In managing facilities, and for them to meet the objectives, caution must be taken in the usage, that is, facilities must not be underutilized nor over-utilized, but optimally used. That is, maximum utilization occurs when facilities are put into effective use in line with the primary objectives – otherwise, it would be counter-productive.

Asiabaka (2008) also state that "the utilization of school facilities for educational purposes is still in the experimental stage. Suffice this to say that school facilities is still very vital to teaching-learning because one only attains the required goal when he is morally sound and on the other hand an adage says that all work and no play makes jack a dull boy. In essence, one needs leisure periods focused on important programmes with the television.

Maintenance of school facilities means safeguarding and regular repairs and supervision of school facilities. It implies maintaining the environment to make sure that it is clean, beautiful and safe for the activities that go on in the school. It is therefore a major and sensitive aspect of school administration. Some of these facilities according to Etuk (2007) are architecturally obsolete and therefore cannot contribute to functional education and maintaining the new buildings, renovating and modernizing the old ones require considerable expertise and commitment of human and material resources which the secondary school administrators cannot cope due to poor funding of schools by the government.

A major problem facing schools today is that facilities are not properly managed and maintained. The physical appearance of most schools proves and speaks volumes. The poorly maintained buildings, untidy walls, leaking roofs, over grown compounds may suggest that education within the buildings follow the same pattern (Isaach and Musibau, 2010). Facilities tend to depreciate, wear and tear as soon as they are put into use. Hence, there is need for maintenance through repairs and servicing of the components and sustaining their working conditions and capacity. According to Ihuoma (2008) maintenance enhances achievement and durability; prevents wastage, corrects breakdown and shutdown services. Here, the principal's responsibility is to regularly check and recheck the available facilities and take necessary measures to prevent malfunctioning or non-functioning of a particular facility. Agenyi (2012) had identified six types of maintenance of school facilities, namely preventive; corrective, routine; emergency; structural and predictive.

Preventive maintenance includes regular inspection of the buildings and immediate repair of minor damages and deterioration. This is done to avoid breakdown and to ensure optimal achievement of plants and equipment and saves cost and time. Corrective maintenance includes remodeling, renovating and updating of existing facilities, avoiding obsolescence and making the facilities adaptable to current educational needs. Routine maintenance requires periodic servicing of machines and equipments – monthly, quarterly, yearly as per the requirements provided in the manufacturer's guide (Agenyi, 2012). Emergency maintenance may take place due to unforeseen occurrences which may be as a result of lack of maintenance culture (Ihuoma, 2008). 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). Predictive maintenance is seen to be the most vital and relevant as it involves the use of modern day computer softwares to predict equipment age, manufacturing fault, user demands, quality control and achievement indices (Agenyi, 2012).

So, since, the instrument of evaluating the quality of school facilities in senior secondary schools is students' achievements in West African school certificate examinations (Lynons, 2012). The school facilities play 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 influence efficiency and high productivity. It has always been realized that school facilities is very important in the development of education in Adamawa State and Nigeria at large.

Statement of the Problem

Equally true is that poor achievement and non-grasp of practical's in science courses had been attributed to debilitated facilities or near-absence of laboratory infrastructural facilities. Nwankwo (2007) opined that in many cases the laboratories do not exist or are in advanced stages of disrepair, resulting in the poor achievement of students in West African Examinations Council (WAEC), hence the resultant poor quality output from Nigerian secondary schools, especially the public schools. Okeke (2007) maintained that the quality of educational output to a large extent depends on the scale of equipment and facilities such as laboratory, workshops, libraries, books, teaching aids and how best they are being put to use. It is therefore the purpose of this study to explore the extent to which effective management of school facilities by the school principals affect the achievement of students and the teaching-learning outcomes generally.

Purpose of Study

The specific objectives are to determine the relationship between;

1. Utilizations of schools facilities and students' academic achievement.
2. Maintenance of schools facilities and students' academic achievement.

Research Questions

The following research questions guided this study.

- 1) To what extent are school facilities utilized for students' academic achievement?
- 2) To what extent are school facilities maintained for students' academic achievement?

Research Hypotheses

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

H01: There is no significant relationship between the utilization of school facilities and students' academic achievement.

H02: There is no significant relationship between the maintenance of school facilities and students' academic achievement.

Methology

The design of this study was descriptive survey research design. The target population of this study comprises of all the 337 principals, 5128 teachers' and 134,346 students' in all the senior secondary schools within the five education zones of the State. In this study, a stratified random sampling technique was used to sample two education zones out of the five zones which are Yola zone and Mubi zone. The sample size was **166** principals and **365** teachers' in the selected zones which was determined by Taro Yamane formula

The instrument used in this study was the Principals' Management of School Facilities Questionnaire (PMSFQ). The instrument was constructed by the researcher to elicit responses relevant to the study from both the principals and teachers and a Pro forma design to collecting WASSCE students results from 2015-2017. The questionnaire was subjected to content validity. After the construction of the instrument, four validators in the field of Educational Management, Measurement and Evaluation in the Department of Science Education Modibbo Adama University of Technology, Yola validated the instrument.

In other to establish the reliability of the instrument, the items were pilot tested using 15 principals and 15 teachers' in 15 senior secondary schools in Ganye zone. These schools were chosen because they operate on the same standard and also have the same characteristics in the main study. The reliability of the instrument

was obtained using Cronbach's Alpha method. A reliability coefficient of 0.82 was obtained which shows a high reliability (See Appendix F).

The researcher and two research assistants (RAs) went to each of the selected schools and administer the questionnaire for principals and teachers'. The collection of the responses was after two weeks. In addition, the researcher went to selected senior secondary schools to collect and analyze WASSCE results of the randomly picked schools. The data collected was analyzed using mean and standard deviation to answer research questions; while the null hypotheses were tested using regression analysis.

Findings

Data Analysis and Presentation of Results

Two research questions were raised and answered using descriptive statistics of mean and standard deviation. Two hypotheses were formulated and tested at 0.05 level of significance using regression analysis.

Research Question 1

To what extent are school facilities utilized for students' academic achievement in secondary schools of Adamawa state?

Table 1: Mean and Standard Deviation for the Extent of School Facilities Utilized for Students' Academic Achievement

	N	Mean	Std. Deviation	Remark
Classrooms	531	3.57	1.267	HE
Dormitories	531	3.16	1.391	ME
Library	531	2.68	1.494	ME
Laboratory buildings	531	2.73	1.335	ME
Staff rooms	531	3.25	1.450	ME
Teachers quarters	531	3.32	1.542	ME
Exams halls	531	3.11	1.540	ME
Audio visual materials	531	2.63	1.388	LE
Workshop equipment's	531	2.80	1.337	ME
Chalk boards	531	3.38	1.399	ME
GRAND MEAN	531	3.02		

The descriptive statistics in table 1 above shows the mean and standard deviation of responses to the school facilities utilized is moderate. The table indicates the result by the grand mean of 3.02.

Research Question 2

To what extent are school facilities maintained for students' academic achievement in secondary schools of Adamawa state?

Table 2: Mean and Standard Deviation for the Extent of School Facilities Maintained for Students' Academic Achievement

	N	Mean	Std. Deviation	Remark
Classrooms	531	3.30	1.438	ME
Dormitories	531	3.05	1.484	ME

Library	531	3.66	1.450	HE
Laboratory buildings	531	3.04	1.064	ME
Staff rooms	531	3.81	1.255	HE
Teachers quarters	531	3.24	1.340	ME
Exams halls	531	3.65	1.207	HE
Audio visual materials	531	3.02	1.389	LE
Workshop equipment's	531	2.87	1.153	ME
Chalk boards	531	3.72	1.298	HE
GRAND MEAN	531	3.31		

The descriptive statistics in table 2 above shows the mean and standard deviation of responses to the school facilities maintained is moderate. The table indicates the result by the grand mean of 3.31.

Research Hypothesis 1

H01: There is no significant relationship between the utilization of school facilities and students' academic achievement.

Table 3a: Linear Regression on Utilization of School Facilities and Students Academic Achievement

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.247	1	3.247	.015	.024 ^b
	Residual	118286.169	530	223.603		
	Total	118289.416	531			
a. Dependent Variable: ACHIEVEMENT						
b. Predictors: (Constant), UTILIZATION						

Table 3b: Model Summary of Linear Regression on Utilization of School Facilities and Students Academic Achievement

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.005 ^a	.270	.219	14.953
a. Predictors: (Constant), UTILIZATION				

The linear regression tables show that there is significant difference between the various R values, $F = 0.145$ (df 1, 530), $P > 0.05$. Since the computed p-value (0.02) is less than 0.05 level of significant, therefore the null hypothesis is rejected. This means that utilization of school facilities has predictive ability on students' academic achievement in Adamawa state. Furthermore, the adjusted R-square value (0.270) indicates that, 27.0% of the students' academic achievement in this study was accounted by the utilization of school facilities.

Research Hypothesis 2

H02: There is no significant relationship between the maintenance of school facilities and students' academic achievement.

Table 4a: Linear Regression on Maintenance of School Facilities and Students Academic Achievement

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	26.640	1	26.640	.119	.030 ^b
	Residual	118262.776	530	223.559		
	Total	118289.416	531			
a. Dependent Variable: ACHIEVEMENT						
b. Predictors: (Constant), MAINTAINANCE						

Table 4b: Model Summary of Linear Regression on Maintenance of School Facilities and Students Academic Achievement

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.015 ^a	.225	.367	14.952

The linear regression tables show that there is significant difference between the various R values, $F = 0.119$ (df 1, 530), $P > 0.05$. Since the computed p-value (0.03) is less than 0.05 level of significant, therefore the null hypothesis is rejected. This means that maintenance of school facilities has predictive ability on students' academic achievement in Adamawa state. Furthermore, the adjusted R-square value (0.367) indicates that, 36.7% of the students' academic achievement in this study was accounted by the maintenance of school facilities.

Conclusion

On the basis of finding of the study it was concluded that, availability, planning, organizing, utilizing and maintenance of school facilities contribute to secondary school students' academic achievement in senior secondary schools in Adamawa state.

Recommendations

Based on the outcome of the study, the following recommendations were made.

1. Regular utilisation of school facilities should be done by principals and teachers for effective performance.
2. School principals, teachers and students should be trained on facilities maintenance culture which should be included in their curricula.

References

1. Agenyi, E. (2012). *The role of school administrators in the maintenance of school plants and national transformation. Makurdi, Nigeria association for educational administration and planning (NAEAP)*. Unpublished M.ED Thesis. Universty of Makurdi.
2. Ajayi, I. A., & Yusuf, M. A. (2010). School Plants Planning and Students' Learning Outcomes in South West Nigerian Secondary Schools. *International Journal of Educational Sciences*, 2(1), 47-53.
3. Asiabaka, I. P. (2008). The need for effective facility management in schools in Nigeria. *New York science journal*, 1(2), 10-21. <http://www.sciencepub.org>.
4. Ekundayo, H. T. (2010). Principals Leadership Behaviour as a Determinant of Effectiveness of Secondary Schools in Nigeria. *European Journal of Educational Studies*, 2(1), 25-30.
5. Fasasi, Y. A. (2004). School record keeping: A strategy for management of Nigerian secondary educational institutions. *Ilorin Journal of Education*, 23, 73-78.
6. Joseph, S. O., & Philias, O. Y. (2011). School facilities and academic achievement of secondary school in Ekiti State, Nigerian. *Asian Social Science Journal*, 7(7) 64-78. doi:10.5539/ass.v7n7p64

7. Lyons (2012). Do school facilities really impact a child's education? An introduction to the issues. Schoolfacilities.com/pdf/school
8. Nwankwo, E. (2007). *Facility acquisition and maintenance in secondary schools in Abia State*. Unpublished M.Ed. Thesis University of Port Harcourt.
9. Okeke, B. S. (2007). Politics of education: The Nigerian experience. *Awka: Doone Printing and Publishing*.