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School Plants Planning and Students' Learning Outcomes in South West Nigerian Secondary Schools

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ABSTRACT The study examined the relationship between school plants planning and secondary school students' learning outcomes in south-west Nigeria. A descriptive research of the survey design was used in the study. The sample consisted of 1650 respondents comprising 150 school principals and 1500 teachers. Multistage, stratified and simple random sampling techniques were used to select the sample. Data collected were analyzed using frequency counts, percentages, means, pearson product moment correlation, multiple regression and F-ratio. The two null hypotheses formulated were tested at 0.05 level of significance. The study revealed that the levels of school plants planning and students' learning outcomes were relatively high during the period under investigation. The study also revealed that school plants planning and its components such as school site planning, instructional space planning and circulation space planning were significantly related to students' learning outcomes. Moreover administrative space planning and space of convenience planning were not significantly related to students' learning outcomes. Based on the findings, it was recommended that government should continue to lay more emphasis on school plants planning particularly in the areas of school site planning, circulation space planning and instructional space planning in order to improve students' learning outcomes.

INTRODUCTION

School plants planning such as school site planning, instructional space planning, administrative space planning, space of convenience planning and circulation space planning are essential in teaching and learning process in the school system. The extent to which, these spaces may enhance better teaching and learning depends on their location, structure and facilities within the school premises. It is likely that well-planned school plants in terms of location, structure and facilities will facilitate effective teaching and learning process and enhance better learning outcomes of the students.

While emphasizing the importance of school plants planning to students' learning outcome, Oyesola (2007) stated that the main objective of school plants planning is to satisfy educational goals which have been pre-determined by educational planners. He emphasized that better planned school plants will enhance better school programmes and the community needs by providing a place for psychological and physical safety for students and teachers and enhancing the good, quality and quantity of instruction. Similarly Ajayi (2007) maintained that high level of students' learning outcomes may not be guaranteed were school plants such as school site planning, instructional space planning, administrative space planning, space of convenience and circulation space planning are ill-sited, structurally defective, not properly ventilated and not spacious enough for use.

Students' learning outcomes in the context of this study refer to the achievement of students after completion of secondary school system in cognitive, affective and psychomotor domains. It appears the secondary school students' learning outcomes in Nigeria is poor. The poor learning outcomes appear to manifest in poor students' academic performance in both internal and external examinations. Dada (1987), Enaesator (1995), Ajayi (1999) and Akubuiro and Joshua (2004) reported that there was persistent mass failure of students in the Senior School Certificate Examination (SSCE) conducted by the West African Examination Council (WAEC). High rate of indiscipline was also noticed in some of the secondary schools. It has been observed that lateness to school, absent from school, rudeness to school authority, stealing, rape, drug abuse,

cultism, examination mal-practices and host of others are daily occurrence in some secondary schools. According to Oladele (2003), the evidence of students' moral paucity is more conspicuously seen in the high rate of crime in the society and that of educational institutions. Secondary school students seem to be deficient in manipulative skills. Nwangwu (2005) maintained that poor mastery of English language, lack of requisite technical skills, oral and written communication and applied technical skills are the order of the day in Nigerian secondary schools. All these are pointer to poor students' learning outcomes in secondary schools.

In the context of this study, school plants planning refers to a process in which a suitable site is selected and instructional space, administrative space, circulation space, and spaces of convenience are designed to facilitate the teaching and learning process in the school system. The place of school plants planning in the development of effective educational programme of the school system could not be under estimated. The school plants which refer to the physical facilities available in the school system should be well planned to enhance better learning outcomes of the students.

The topography and soil condition of some of the secondary schools sites are bad. Experience has also shown that some of the secondary schools were ill-sited. Some of the schools were sited near market place, rail line, cinema houses, close to the highway and air space of airport whereby external noise of the environment may distract the attention of the students which in turn may lead to poor students' learning outcomes. Lemaster (1998) reported that higher students' academic achievement is associated with schools that have less external noise and outside noise causes increased student dissatisfaction with their classroom and excessive noise causes stress in students and staff. Bankole (2003) and Osiki (2004) in their different studies found out that there was no significant relationship between school site and students' learning outcomes. Rogoft (1961) noted that students learning outcomes was closely related to the type of area in which the school were sited. In some cases, the instructional space which has direct link with the teaching and learning process in the school system are not properly planned.

It is likely that poor instructional space planning may lead to poor teaching and learning situation which in turn may lead to poor students' learning outcomes. Stricherz (2000) in his study showed that students' achievement lags in shabby school buildings, those with poor or no science laboratory, library, technical workshop, inadequate ventilation and faulty heating system. Kennedy (1999) argued that school classroom design affect learning outcome and advocates that planners should look at students developmental needs and curriculum in order to make proper planning and re-designing and expanding classroom to fit those needs and requirements. People have been complaining about poor administrative space planning in some secondary schools. Experience has also shown that spaces of convenience such as toilets, corridors and so on in some of the schools are not properly planned. However, where administrative space planning and space of convenience are poorly planned, it is likely that the teaching and learning process may be affected negatively which in turn may affect the students' learning outcomes negatively.

Observation has shown that some of the secondary schools have poor circulation space planning. *PEB Exchange* (1998) remarked that direct relationship exist between school playground (circulation space) and the behavior and attitudes of the students (learning outcomes). Some of the schools have no good playing ground and building for both outdoor and indoor games. It must be stressed that all work without play makes Jack a dull boy and all play without work also makes Jack a dull boy. This situation may adversely affect the teaching and learning process as well as the students' learning outcome.

Purpose of the Study

The purpose of this study was to examine the relationship between the school plants planning and secondary school students' learning outcomes in south-west Nigeria. The study also found out the levels of school plants planning and learning outcomes of students' in secondary schools. The study also investigated the relative contributions of school plants planning components to students' learning outcomes. The study also investigated the relationship between students' learning outcomes and instructional space planning, administrative space planning, school site planning, circulation space planning and spaces of convenience planning. Recommendations were made on how to improve students'

learning outcomes in the schools based on the findings.

Research Questions

1. What is the level of school plants planning?
2. What is the level of students' learning outcomes?

Research Hypotheses

In order to achieve the objectives of this study, these null hypotheses were raised:

1. There is no significant relationship between school plants planning components and students' learning outcomes
2. School plants planning components will not significantly contribute to students' learning outcomes

METHODOLOGY

A descriptive research of the survey design was used in the study. The population of the study comprised all secondary schools in south-west Nigeria. A total of 1650 respondents consisting of 150 school principals and 1500 teachers formed the sample of the study. The data was analyzed on the basis of schools, each of which had 101 respondents (100 teachers and 1 principal). Multistage, stratified and simple random sampling techniques were used to select the sample. Self designed instruments tagged School Plants Planning Questionnaire (SPPQ) and Affective and Psychomotor Domain Questionnaire (APDQ) were used to collect data for the study. The data collected were analyzed using frequency counts, percentages, pearson product moment correlation, multiple regression and F-ratio. The hypotheses formulated were tested at 0.05 level of significance.

RESULTS

The results of the study are presented as follows:

Question 1: What is the level of school plants planning?

Level of School Plants Planning

Table 1 shows the levels of school plants planning in the secondary schools. The mean and standard deviation scores of the responses to items in section C to H of the SPPQ were used to determine the levels. The table shows that out of 150 schools sampled, 26 representing 17.3 percent had low level of school plants planning while 51 schools representing 34 percent had moderate level of school plants planning and 73 schools representing 48.7 percent had high level of school plants planning. These results indicate that the level of school plants planning was relatively high in the schools sampled for the study.

Table 1: Level of school plants planning in south west Nigeria secondary schools

School plants planning	*Frequency counts*	*Relative percentage*
Low (0-38.71)	26	17.3
Moderate (38.72-49.63)	51	34.0
High (49.64-100)	73	48.7
Total	150	100.0

Question 2: What is the level of students' learning outcomes?

Level of Students' Learning Outcomes

Table 2 reveals the level of students' learning outcomes in the secondary schools. The mean and standard deviation scores of the responses to items of section B of APDQ and section B of SPPQ were used to determine the levels. The result indicates that out of the 150 schools sampled, 31 schools representing 20.7 percent had low level of students learning outcomes while 43 schools representing 28.7 percent had moderate level of students' learning outcomes and 76 schools representing 50.7 percent had high level of students' learning outcomes. These results show that the level of students' learning outcomes was relatively high in the schools sampled for the study.

Table 2: Level of students' learning outcomes in south west Nigeria secondary schools

Students' learning outcomes	*Frequency counts*	*Relative percentage*
Low (0-76.22)	31	20.7
Moderate (76.23-82.61)	43	28.7
High (82.62-100)	76	50.7
Total	150	100.0

Testing of Hypotheses

The two null hypotheses raised in the study were tested as shown in tables 3 and 4.

Hypothesis 1: There is no significant relationship between school plants planning components and students' learning outcomes

This hypothesis was tested using the responses to school plants planning question-naire and students' learning outcomes question-naire. The results was presented in table 3

Table 3 shows that school plants planning and its components such as school site planning, instructional space planning, and circulation space planning have positive and significant relationship with students' learning outcomes. The table also shows that administrative space planning, spaces of convenience planning are not significantly related to students' learning outcomes.

Hypothesis 2: School plants planning components will not significantly contribute to students' learning outcomes.

This hypothesis was tested using the responses to school plants planning questionnaire and students' learning outcomes questionnaire. The result was presented in table 4.

Table 4 shows that the combination of the school plants planning components had a multiple correlation of 0.494. The table also reveals that 24.4 percent of the variation in students' learning outcomes is accounted for by joint action of school plants planning components. This implied that other factors other than school plants planning components accounted for 75.6 percent of the variation in students' learning outcomes. The table also reveals that F calculated value of 9.22 is greater than the F table at 0.05 level of significance. Hence the null hypothesis is rejected. This implies that there is a significant contribution of school plants planning components to students' learning outcomes.

Table 4 further shows that instructional space planning is the best predictor of students' learning outcomes with a beta weight of 0.456. Next to this is circulation space planning with beta weight of 0.449, followed by school site planning (0.134) and spaces of convenience planning with beta weight of 0.049. The worst predictor of students' learning outcomes is administrative space planning with beta weight of 0.020.

DISCUSSION

The study revealed that the level of school plants planning in south-west Nigeria secondary schools was relatively high during the period under study. This might be connected with supervision, control, direction and monitor of school plants planning by the ministry of education. It is likely that the relatively high level of school plants planning would enhance better

Table 3: Test of relationships between school plants planning components of school plants planning and students' learning outcomes

S. No.	*Variable*	r_{cal}	r_{crit}
1.	School plants planning students' learning outcomes	0.263 *	0.195
2.	School site planning students' learning outcomes	0.218*	0.195
3.	Instructional space planning students' learning outcomes	0.273*	0.195
4.	Administrative space planning students' learning outcomes	0.037	0.195
5.	Space of convenience planning students' learning outcomes	0.085	0.195
6.	Circulation space planning students' learning outcomes	0.292*	0.195

N= 150 * P<0.05(significant)

Table 4: Multiple regression showing the relative contributions of school plants planning components to students' learning outcomes

Variables	*Beta weight*	*R*	R^2	*F*
School site	0.134	1.419*	0.000	
Instructional space	0.456	5.304*	0.000	
Administrative space	0.020	0.245	0.806	
Space of convenience	0.049	0.610	0.543	
Circulation space	0.449	5.153*	0.000	
School plants planning		0.494	0.244	9.22
Constant		20.81	0.000	

df(5,148) * P< 0.05(significant)

LO = 0.134SS + 0.456IS + 0.020AS + 0.610SC + 0.449CS

teaching and learning process and facilitate better students' learning outcomes. It must be emphasized that the aim of school plants planning is to lay solid foundation for educational structure in order to achieve educational goals and satisfy the physical and emotional needs of the learners and to provide for future expansion of the school system.

The study revealed that the level of students' learning outcomes in south-west Nigeria secondary school was relatively high during the period under investigation. The relatively high level of students' learning outcomes might be as a result of the relatively high level of school plants planning and other factors such as provision of facilities, motivation of teachers and students' commitment to their studies among others. The finding of this study contradicts that of Oyekanmi (1996) and Ayodele (2000) while it supports that of Adebayo (2004) and Yusuf ((2001).

It was found that there was significant relationship between school plants planning and students' learning outcomes. The reason for this outcome might be due to the fact that the society at large was interested in education system of the areas, thereby contributing to the development of school plants. It could be inferred from the finding that better school plants would enhance better teaching and learning process which would in turn lead to better students' learning outcomes. Where the school plants are poorly planned, there would be poor teaching and learning process which in turn may lead to poor students' learning outcomes. The study contradicts that of School Facilities Board (2000) while it supports that of Durosaro (1998), Akinwumiju and Orimoloye (1987) and Oyesola (2007).

The study revealed that there was significant relationship between school site planning and students' learning outcomes. It could be inferred from the finding that better school site planning would enhance better students' learning outcomes. Where there are better job commitment, administrative effectiveness, better motivation of teachers and students without better school site planning, better students' learning outcomes may not be guaranteed. If schools are sited in wrong places like the market places and very close to cinema houses, it is not unlikely that the learning outcomes of the students would be affected negatively. The result of this study supports that of Lemaster (1998), Crandel, Smaldino and Flexer (1995), Nabelek and Nabelek (1994) and Rogoft (1961).

The study has shown that there was a significant relationship between instructional space planning and students' learning outcomes. This may be as a result of the fact that instructional space planning is directly linked with teaching and learning activities in the school system. This means that better instructional space planning would enhance better students' learning outcomes. However, poor classroom planning, laboratories planning, technical workshop planning and library planning may have negative effect on students' learning outcomes while a school with better classroom planning, laboratories planning, technical workshop planning and library planning may enhance better students' learning outcomes. The study supports that of Kennedy (1999) and Stricherz (2000) that instructional space planning such as classroom, laboratory, library and technical workshop design affect students' learning outcomes.

It was revealed in the study that there was no significant relationship between administrative space planning and students' learning outcomes. It could be expected that better administrative space planning would enhance better teaching and learning process in the school system, but the study has proved otherwise. This implies that better administrative space planning may not guarantee better students' learning outcomes. This may be as a result of the fact that administrative spaces are not directly linked with teaching and learning activities. The finding of this study contradicts that of Stevenson (2002) while the finding of the study supports that of School Facilities Board (2000).

The study revealed that there was significant relationship between circulation space planning and students' learning outcomes. This means that better circulation space planning would enhance better students' leaning outcomes. However, a well developed circulation space in a school setting may greatly enhance students overall development. Working in an open environment may encourage discussion, cooperation and experimentation among the students. The circulation space planning may influence the students' social and physical skill development which in turn may affect the learning outcomes of students positively. The finding of this study supports that of PEB Exchange (1998) that school playground (circulation space) and the behavior and attitude of students (learning outcomes).

It was found out that there was no significant

relationship between space of convenience planning and students' learning outcomes. It could be expected that better space of convenience planning would enhance better students' learning outcomes, but the study has proved otherwise. However, better spaces of convenience planning are only a necessary but not sufficient condition for better students' learning outcomes. Where the spaces of convenience are well planned without good school site, good instructional space planning, good circulation space planning and teachers job commitment, good students' learning outcomes may not be guaranteed.

The study further revealed that school plants planning components contributed significantly to students' learning outcomes. The study implies that better school plants planning components such as school site planning, circulation space planning and instructional space planning would enhance better students' learning outcomes. If the school plants are not properly planned, students' learning outcomes may be affected negatively. The result of this study supports that of Sullivan (2007), Knapp, Noschis, Pasalar (2007) Flutter (2006) and Oyesola (2007) while it contradicts that of Glenn et al. (2006).

CONCLUSION

School plants were well-planned while the students' learning outcomes was good in the schools sampled for the study during the period under investigation. Aspects of school plants planning such as instructional space planning, school site planning and circulation space planning were important factors in students' learning outcomes but there were other factors that contributed largely to students' learning outcomes.

RECOMMENDATIONS

Based on the findings, that the levels of school plants planning and students' learning outcomes were relatively high, the government should not relent in their effort in sustaining good school plants planning and students' learning outcomes. The government should continue to encourage the support of parent teacher association, philanthropists and the society in improving the school plants planning and students' learning outcomes. Since the school plants planning, instructional space planning, school site planning were significantly related to students' learning outcomes, government should continue to lay more emphasis on these aspects of school plants planning in order to improve the students' learning outcomes.

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