Influence of School Plant on Secondary School Students' Academic Performance in Economics in Ile-OlujiOkeigbo Local Government Area of Ondo State, Nigeria

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Abstract - *The study investigated the influence of school plant on students' academic performance in Economics in secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State. Ex-post facto research design was adopted in the study. One thousand, three hundred and forty two (1342) students offering Economics, representing 29.0% of the 4632 Senior Secondary School (SSS) students were drawn as sample. A checklist titled School Plant Availability Checklist (SPLAC) with a cronbach alpha (α) of 0.73 was used in the study. Analysis of Covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. Results showed that educational equipment, buildings and playgrounds have individual significant influence on students' academic performance in Economics (F_{cal}=140.776; 342.606; 24.932, $p<0.01$) respectively. Interaction effect among components of the school plant (educational equipment, buildings and playgrounds) contributed most to students' academic performance (F_{cal} = 82.941; $p<0.01$). This is followed by the interaction between building and playgrounds (F_{cal}=45.792; $p<0.01$), educational equipment and buildings (F_{cal} =13.767; $p<0.01$) and educational equipment and playgrounds (F_{cal} = 6.245; $p<0.01$). The R-squared coefficient (.892) showed that the components jointly predict 89.2% of any significant variation in students' academic performance in Economics. It was recommended that the state government should adequately inform and sensitize principals on the importance of school plant in school goal achievement.*

Keywords – *School Plant, Academic Performance, Educational Equipment, Buildings, Playgrounds*

INTRODUCTION

Secondary education plays a crucial role of preparing students for higher education and useful living in Nigeria. It is considered by many Nigerians as education that would enable them prepare for living a balanced socio-economic life. This accounts for why many parents work hard in providing the resources needed to send their children to 'quality schools'. To many of them, the quality of a school depends largely on the physical, technical and stock of educative resources that a school has per time. These further accounts for why successive governments at the Federal and State levels allocate a huge sum of money for education from its yearly budget to develop and manage school plants in secondary schools.

School plant is the totality of resources that define the learning environment of a school institution. School plant is defined as the physical expression of the school programmes and activities [1]. It is the consciously designed and controlled environment that helps to promote teaching and learning activities within the school. School plants are made up of the indispensable systems and structures required by any educational institution to function effectively and achieve the objectives for which it was established [2].This definitions show that school plant encompasses the totality of consumable and non-consumables, permanent and semi-permanent structures in the school environment needed for proper implementation of the curriculum.

School plant can be categorized into various sub-groups namely: (i) the school landscape comprising of trees, grasses, lawns, hedges and accompanying paths, (ii) security facilities such as walls, gates, alarm system, phones, visitors' books, (iii) utilities such as electricity, pipe-borne water/borehole and transport facilities, (iv) educational equipment such as

computers, chalkboard, chalk, chart flannel graph, beakers, burette, pipettes test tubes, thermometers, weighing balances, map, glass jars, globes, (v) office equipment such as cupboards, generator, typewriter, photocopying machines, (vi) sports facilities like football, table tennis, basketball, (vii) classroom/educational equipment such as chairs, desks, tables, chalkboards, dusters, wash-hand basin, napkins, chalk (viii) buildings like classrooms, administrative blocks, library, laboratories, health blocks, kitchen, examination hall, dining hall, assembly hall, clinics, rest rooms, toilets, hostels, store, staff rooms, workshops, and (ix) play grounds including football, volley ball, basketball and badminton, tennis court, swing slide ground [3].

Educational equipment within the classroom such as chairs and table for students, buildings and playgrounds are just as important as any other school plant. However, the two former (classroom and educational equipment and buildings) are very vital in the teaching-learning process. Although, teaching and learning do not only take place within the school, yet for proper implementation of classroom curriculum and effective delivery of class instruction, the role of classroom and educational equipment and buildings such as a spacious and well-ventilated classroom cannot be undermined in a formal school environment. In regards to the latter category of school plant (playground), this is arguably needed to support co-curricular activities of the school. Hence, one could rightly say that the relevance of educational classroom equipment, buildings and playgrounds are not mutually exclusive in the implementation of the curriculum; just as the saying goes "all work and no play, makes Jack a dull boy". Evidently, all play and no work will equally make 'Jill' a dull girl.

Several recent studies on school plant and students' academic performance in schools have been conducted in Nigeria [4], [5], [6], and [7]. Torupere investigated the extent to which aesthetic beauty of the school, infrastructural facilities, school equipment and instructional materials and school location influence students' academic performance in secondary schools in Bayelsa State and found that aesthetic beauty of the school and infrastructural facilities significantly influence students' academic performance.

Nsa, Offiong, Udo and Ikot assessed the relationship between school environmental variables and students' academic performance in Agricultural Science in Oron Educational Zone of Akwa Ibom State. Using the correlational survey design, a sample size of 300 students was randomly selected from the zone. Agricultural Academic Performance Test (AAPT) and Agricultural practical check-list were developed and used to gather data for the study. The instruments were validated by three research experts and the reliability coefficients of 0.82 and 0.78 were obtained using Pearson Product Moment Correlation (PPMC). Data were analysed and null hypotheses tested using PPMC. Results indicated that there was significant relationship between availability of laboratory facilities and students' performance in Agricultural Science. Also, a significant relationship between availability of farming facilities and academic performance of students was found. Reference [6] examined resource utilization as correlate of students' academic performance in Ohafia Education Zone of Abia State, Nigeria. They found that many of the unregistered schools in rural areas lacked adequate school plants. Studies in this wise with similar outcome have also been conducted in South-West Nigeria [8], Delta State[5], Kwara State [9], and River State [10].

In Ondo State, the impact of human resource allocation and utilization on the academic performance of students in public and private secondary was examined [11]. The study recognized the teachers' quality while the students' academic performance in the Junior Secondary School Certificate Examination (JSSCE) and Senior Secondary School Certificate Examination (SSSCE) is part of the output variables. The study made use of 900 teachers and 100 principals selected through purposive random sampling and they responded to the research instrument from both public and private secondary schools. Three research questions and two hypotheses were raised in the study. Data were gathered through a self-developed questionnaire titled Human Resource Allocation and Utilization Questionnaire (HRAUQ) which was subjected to face and content validity by colleagues. The reliability value was 0.79 which indicated that the instrument was reliable before it was administered on teachers and principals. Analysis of data revealed that no significant difference existed in the quality of teaching staff and students' academic performance between the public and private secondary schools.

Many of the aforementioned studies focused on school plants such as stock of library materials, instructional materials, school/office equipment such as typewriters, photocopiers, computers, and even the

school landscape and aesthetic beauty of the school. Very few studies as in [9] and [5] included the influence of school buildings such as school workshops, hostels, staffrooms, assembly halls and classroom equipment in their study. Furthermore, many of the aforementioned studies were conducted in the Eastern, Northern and Western part of Nigeria but not in Ondo State. Hence, the scantiness of recent literature on influence of school plant on academic performance of students in Ondo State has created a knowledge gap. It is against this backdrop that this study was undertaken to determine the influence of school plant on students' academic performance in secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State.

OBJECTIVES OF THE STUDY

This study aimed to determine the influence of educational equipment on students' academic performance in Economics in secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State; determine the influence of buildings on students' academic performance in Economics in secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State; determine the influence of play grounds on students' academic performance in Economics in secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State; and to test whether school plant (educational equipment, buildings and play grounds) has an interaction effect on students' academic performance in Economics in secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State.

Hypotheses:

The following hypotheses were tested in the study:
1. School plant (educational equipment, buildings and play grounds) has no significant individual influence on students' academic performance in Economics in senior secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State
2. School plant (educational equipment, buildings and play grounds) has no significant interaction influence on students' academic performance in Economics in senior secondary schools in Ile-

OlujiOkeigbo Local Government Area of Ondo State

METHODS

The ex-post facto research design was adopted in this study. This research design was employed because the study was not just a fact-finding survey (descriptive) or correlational (concerned with determining relationship between two or more variables) but a predictive/explanatory study. This implied that the study showed the extents to which the independent variables individually and jointly predicted changes in the dependent variable. Hence, this design was considered appropriate for the study because the researchers were not only interested in determining the relationship that existed between the independent variables (educational equipment, buildings and play grounds) and the dependent (students' academic performance in Economics) but also interested in the extent to which changes in the dependent variable was predicted by the independent variables. The population of the study covered all the 4632senior secondary school students in the 23 secondary schools in Ile-Oluji Local Government Area of Ondo State.

In a study of this nature and magnitude where many students were used as participants, it was necessary for the researchers to seek permission from and obtain the consent of the parents of the students' participants because as minors, the students might not understand the reasons for their participation in the study and the objectives of the research, hence it was expedient for the researchers to discuss this with their parents before, who would be in a better position to explain their children and wards. In addition, as a way of allaying the doubts or any fear from the parents, the researchers assured the parents of the identity of the students' participants.

The instrument used for the collection of data is a school plant availability checklist titled: School Plant Availability Checklist (SPLAC). The instrument covered only three (3) aspects of school plant namely: educational equipment, buildings and play grounds. The first aspect of school plant (educational equipment) comprised of computers, internet facilities, chalk/marker board, charts and graphs. The second (Buildings) comprised of classrooms, administrative blocks, library, assembly hall and rest rooms while the third (play grounds) covered football, volley ball, basketball, badminton and tennis court. All the items raised under each of the school plant

sub-groups were rated on a four point scale: Fully Available (FA) - 4, Available (A) - 3, Scanty (S) - 2 and Not Available (NA) -1. Students' cumulative grade point average (from first to third term) in Economics from their last promotional examination was also collected from their respective schools. The overall grade point of students as measured in percentages (%) was rated thus: 70-100% -4, 60-69% -3, 50-59% -2, 49% and below-1.

The face and content validity of the instrument was carried out by two experts in Measurement and Evaluation (Ambrose Alli University, Ekpoma). Copies of the instrument were given to them to ensure that the items were relevant and unambiguous. The reliability of the instrument was carried out using the Cronbach alpha (α) which yielded a reliability coefficient of 0.73. Hence, the instrument was adjudged fit for use. Before administering the instrument to students, the researcher sought permission from principals of the schools to notify them of the intended exercise. After due permission was granted, the instrument was administered to students and retrieved immediately. Data was collected from 1284 Senior Secondary School (SSS) students offering Economics. This represents a total of 95.7% return rate. Analysis of Covariance (ANCOVA) was used to test the hypotheses for individual and interaction effect. The hypotheses were tested at 0.05 level of significance using Statistical Package for Social Science (IBM SPSS, Version 20).

RESULTS AND DISCUSSION

The results from the survey on the test of hypotheses can be found on Table 1.

Result in Table 1 shows that the F-value for educational equipment (140.776), buildings (342.606) and playgrounds (24.932) are all statistically significant ($p < 0.01$). This implies that educational equipment, buildings and playgrounds are group of school plants that have individual significant influence on students' academic performance in Economics. Hence, each individual contributes significantly in promoting students' academic performance. Furthermore, the magnitude (size) of the F-value for the school plants shows that buildings and classrooms contribute more in promoting students' academic performance than playground does. Hence, the null hypothesis which states that school plants (educational equipment, buildings and play grounds) have no significant individual influence on students' academic performance in Economics in senior secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State is rejected while the alternate is accepted.

On the other hand, result on interaction effect from the same table (Table 1) shows that the F-value for educational equipment and buildings (13.767), educational equipment and playgrounds (6.245), building and playgrounds (45.792) and even the interaction effect of the three aspects of school plant (educational equipment, buildings and playgrounds) are all statistically significant ($p < 0.01$).

Table 1. Summary of Univariate Analysis on the Main and Interaction effect of School Plants on Students' Academic Performance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1468.248[a]	30	48.942	343.835	.000
Intercept	2283.436	1	2283.436	16042.104	.000
Edu.Equip	63.958	3	21.319	149.776	.000
Buildings	146.300	3	48.767	342.606	.000
P.grounds	10.646	3	3.549	24.932	.000
Edu.Equip * Buildings	13.717	7	1.960	13.767	.000
Edu.Equip * P.grounds	4.445	5	.889	6.245	.000
Buildings * P.grounds	32.591	5	6.518	45.792	.000
Edu.Equip * Buildings * P.grounds	11.806	1	11.806	82.941	.000
Error	178.352	1253	.142		
Total	10581.000	1284			
Corrected Total	1646.600	1283			

[a]R Squared = .892 (Adjusted R Squared = .889) Dependent Variable: Student academic performance Predictors: Educational equipment (Edu.Equip), School buildings (Buildings), Playgrounds (P.grounds)

This implies that the school plant has significant interaction effect on students' academic performance in Economics. The magnitude of the F-value shows that the interaction effect among the three aspects of school plant (educational equipment, buildings and playgrounds) contributed most to students' academic performance in Economics (F_{cal} =82.941; p<0.01). This is followed by the interaction effect of building and playgrounds (F_{cal}=45.792; p<0.01), educational equipment and buildings (F_{cal} =13.767; p<0.01) while the interaction effect between educational equipment and playgrounds (F_{cal} = 6.245; p<0.01) was least. The R-squared coefficient (.892) further shows that the school plant jointly contribute to 89.2% of any significant variation in students' academic performance in Economics. Therefore, the null hypothesis which states that school plant (educational equipment, buildings and play grounds) has no significant interaction influence on students' academic performance in Economics in senior secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State is rejected while the alternate is accepted.

DISCUSSION

Result from the test of hypothesis showed that school plant (educational equipment, buildings and play grounds) has significant individual and interaction influence on students' academic performance in Economics in senior secondary schools in Ile-Oluji Okeigbo Local Government Area of Ondo State. This corroborates findings from previous literature as in [4], [11], [7] who all found that school plant has influence on students' academic performance in various subjects.

Reference [7] investigated the extent to which aesthetic beauty of the school, infrastructural facilities, school equipment and instructional materials and school location influences students' academic performance in secondary schools in Bayelsa State and found that aesthetic beauty of the school and infrastructural facilities significantly influence students' academic performance.

Basically, schools are established to fulfil the educational goal of teaching. In order to achieve this goal, the three components of production (human, finance and material resources) must be present and harmoniously managed within the school system. However, no meaningful teaching and learning can take without school facilities. The importance of school facilities, as shown by the result of this study cannot be over emphasized. The results of the study showed that educational equipment, buildings, playgrounds and aesthetic beauty of the school have positive significant impact on secondary students' academic performance in Economics in Ile-Oluji Okeigbo Local Government Area of Ondo State, Nigeria.

CONCLUSION

The relevance of school plants cannot be put aside in the promotion of students' academic performance in Economics in secondary schools. Hence, it is important to note that any effort or resources directed towards school plant planning, development, utilization and management in secondary schools in Ondo State is not wasted, but a wise investment with accrued academic benefits for students. The availability, adequacy, quality and proper utilization of school facilities, such as the ones investigated in this study enhance effective teaching and learning, which invariably positively affect students' academic performance. School facilities are needed to develop cognitive areas of knowledge, abilities and skills that are necessary perquisites for academic achievement. Therefore, the school plant is an essential factor in the fulfilment of school educational programmes and the overall educational goals of the nation.

RECOMMENDATION

Arising from the findings are the following recommendations:

1) The state government needs to adequately inform and sensitize principals on the value of school plant to the school system. This will help to awaken them towards proper management of the school plant in their respective schools.

2) The Federal and State government should try as much as they can to ensure that classroom resources and school buildings are adequately provided in all public schools in Ile-Oluji Okeigbo Local Government Area. This they should do by employing the services of experts that have adequate knowledge of school plant planning and management in secondary schools.

3) This study is limited in content and geographical scope; therefore, its findings cannot be generalized. So it is recommended that further studies that are wider in, both geographical and content, scope be carried out in order to have result (s) that can be generalized.

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