STUDENT ENROLMENT, GLOBAL UTILISATION RATE AND ACADEMIC PERFORMANCE IN PUBLIC TERTIARY INSTITUTIONS IN LAGOS STATE, NIGERIA

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Abstract
The study examined student enrolment and global utilisation rate in public tertiary institutions in Lagos State and their influence on students' academic performance. The study's anchored on correlation and descriptive research designs. The population was the seven conventional public tertiary institutions and the sample of the study consisted of six institutions. The multistage sampling procedure was used to sample Departments from each sampled public tertiary institution. Four instruments were used to collect data. Their validity were ascertained. Their reliability coefficients were not sought since data collected already existed in the tertiary institutions and cannot be manipulated. Three hypotheses were tested using Pearson's Product-Moment Correlation and Regression model at 0.05 level of significance. Some of the findings were that a significant negative relationship exists between class size and students' academic performance in public tertiary institutions in Lagos State (r=-0.302); and no significant relationship exists between global utilisation rate and students' academic performance in public tertiary institutions in Lagos State (r=-0.047). The study concluded that class size (student enrolment) is a notable determinant of students' academic performance in public tertiary institutions in Lagos State while global utilisation rate (time and space utilisation rate) is not. Based on the findings the study, therefore, recommended that the management of the institutions, through the quality assurance process, should ensure that lecturers and students manage the stipulated lecture hours on the timetable for effective teaching and learning. This would eliminate or reduce instructional time loss on the part of students and lecturers.
Key words: Student Enrolment, Global Utilisation Rate, Academic Performance, Public Tertiary Institutions

Introduction

Academic performance is the outcome of education, that is, the extent to which a student, teacher and an institution have achieved their educational goals. It is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are more important. Academic performance, according to Adu, Ojelabi and Adeyanju (2009) can

simply be viewed as an outcome of all academic tasks or rigours of a person which could be poorly or successfully stated. As noted by Ijaduola cited in Akinyemi (2020), academic performance cannot be gingered in students if they are discouraged. Teachers are expected to meaningfully contribute to student's academic performance. A weighty academic performance of a student is sometimes attributed to higher teachers' efficiency.

In Nigeria, public discussions frequently focus on educational standards by virtue of the interest and concern on the annual turnout of Nigerian graduates of tertiary institutions. To the public, tertiary institution student outcomes do not seem to match the government and parental investment. This observed situation looks worsened by the notion that student enrolment increases without commensurate expansion of schools or provision of adequate facilities in schools (Asiyai, 2012).Yet, the concern for quality of higher education is on the rise in the country, just as higher education institutions have been playing the major role of acquiring and transmitting knowledge. In the same vein, the demand for higher education has risen sharply with the number of potential tertiary institution students increasing six-fold in the last 40 years (United Nations Educational Scientific and Cultural Organisation, (UNESCO), 2011).

Meanwhile, quality education is a function of the availability and utilisation of input resources including the teachers and in consonance with the axiom that no education system can rise above the quality of its teachers. Yet, the quality of education could be measured in terms of quality input, quality content, quality process and quality output (Oladipo, Adeosun & Ori, 2008). The teachers, as one of the input resources, are part of the determinants of quality in education; they constitute a major drive in the production process and in the determination of the output.

As enrolment in schools increases globally on a daily basis, the available resources become over-stretched. And, the nature, sources, availability and utilisation of both the human and physical resources determinethe efficiency of the school system (Nwankwo in Ayodele & Abiodun-Oyebanji, 2007). According to Abdul kareem (2003), lecturers inrequired quantity and quality, as well as facilities for lecturers and students in adequate number, must be made available for use to ensure school success. Moreover, infrastructure poverty has been found to culminate in progressive and consistent deterioration in performance of both lecturers and students (Bookcocks, Adeyoju & Araromi, in Ayodele & Abiodun-Oyebanji, 2007).

Still, enrolment patterns remain the most convenient indicator of educational growth. Across the globe, trends in education have reflected significant increase in students' enrolment (Ademola, Ogundipe, & Babatunde, 2014). This is evident in Nigeria with an upward trend in school enrolment at all levels of education after the civil war in 1970. However, according to Daniel(2003), Nigeria is among the countries that fall within the serious risk of not reaching the goals of

Education for All (EFA) with a net enrolment ratio of less than 80%. Nigeria, like most of the developed and developing countries across the globe, has adopted and implemented to a large extent the Education For All (EFA) policy of the United Nations (UN) which has in no small measure resulted in increased student population at all levels of education. The increased number in enrolment has, however, led to other educational challenges which piqued the interest of educational planners, particularly when this increased number is juxtaposed with students' academic performance (Ikolo, 2011).

Ikolo discovered that there is a tremendous increase in the enrolment of students and in the average size of classrooms in both secondary schools and tertiary institutions in Lagos State. Though, open enrolment in schools is laudable, the deficiency seems to be in the corresponding provision of adequate infrastructures, lecture rooms, academic staff, and befitting structures. Seats and desks which are basic classroom requirements are insufficient and in some schools, students are sitting on ransacked furniture and some even stand at the back of the class to receive lectures (Oyeniran, 2014).The size of the classes has thus become increasingly unmanageable, leaving the teachers with the impossible task of giving individual attention to the learner's needs. The lecturers' eye contact with the students in class becomes so dissipated that a number of poorly motivated students can form small committees at the back of the class to engage in non-school discussion, while the lecturer is busy teaching. Continuous assessments could therefore be dreaded by lecturers when they consider the staggering number of scripts to be marked and recorded.

Council for Educational Facility Planners (1976), UNESCO (1984; 1985) and the British Department of Education and Science (BDES, 1992) list timetabling and space allocation, educational structure, content and methods of delivery, educational programme being offered and student enrolment as major factors that influence teaching space utilisation in institutions. UNESCO (1985) report further stated that educational policies on funding, provision of infrastructure like teaching space, hiring and maintenance of human resources, norm on students to lecturer ratio and accepted ergonomic standards also influence space utilisation but classified these as non-academic factors (Quansah, 2015). Rogers as cited by Quansah (2015) argues that both academic and non-academic factors do influence time and space utilisation rates, whose product is the Global Utilisation Rate.

A keen observation by the researchers shows that public tertiary institutions, particularly in Lagos State are fast becoming institutions of preference and seem to remain largely populated. This implies that enrolment may continue rising geometrically in public tertiary institutions in the State leading to overstretching of the available teaching facilities. The situation could have a lot of implications for the students on their academic

performance, a matter that readily and regularly requires the attention of educational planners and researchers.

The purpose of the study was to find out the degree of student enrolment and global utilisation rate in public tertiary institutions in Lagos State and their influence on students' academic performance.

The specific purpose of this study is to: examine the relationship between class size and students' academic performance in public tertiary institutions in Lagos State; investigate the relationship between global utilisation rate and students' academic performance in public tertiary institutions in Lagos State; and examine the relationship between class size, global utilisation rate and students' academic performance in public tertiary institutions in Lagos State.

Hypotheses

The following hypotheses were tested at 0.05 level of significance.

H_{01}: There is no significant relationship between class size and students' academic performance in public tertiary institutions in Lagos State.

H_{02}: There is no significant relationship between global utilisation rate and students' academic performance in public tertiary institutions in Lagos State.

H_{03}: There is no significant relationship between class size, global utilisation rate and students' academic performance in public tertiary institutions in Lagos State.

Method

Two designs were used for the study namely correlational and descriptive research. This is because on one part, the study examined the nature of relationship between student enrolment, global utilisation rate and students' academic performance in public tertiary institutions in Lagos State. On the second hand, the study made a description of the existing situation regarding the state of utilisation of teaching resources in terms of time and space utilisation rates technically called global utilisation rates to engender the students' academic performance in public tertiary institutions in Lagos State. The study is also an *ex-post facto* research having made use of already existing data to determine the after-the-effect of the independent variables on the dependent variable.

The population of the study comprised all the seven conventional public tertiary institutions in Lagos State and their academic staff and students. The institutions are: University of Lagos, Akoka-Yaba, Lagos State University, Ojo, Yaba College of Technology, Akoka-Yaba, Lagos State Polytechnic, Ikorodu, Adeniran Ogunsanya College of Education, Oto-Ijanikin, Federal College of Education (Technical), Akoka-Yaba and Michael Otedola College of Primary Education, Noforija-Epe.

The sample of the study consisted of six institutions that were drawn from the seven public tertiary institutions in Lagos State. Thus, one Federal and one State Government owned tertiary institution in each category of tertiary institutions were sampled. The simple random sampling technique was used to sample one state owned College of Education. Thus, Adeniran Ogunsanya College of Education, Oto-Ijanikin was sampled. Hence, all the public tertiary institutions except Michael Otedola College of Primary Education, Noforija-Epe constituted the study sample. The multistage sampling procedure was used to sample Departments from each sampled public tertiary institution. A disproportionate stratified sampling technique was used to sample four Faculties/Colleges/Schools from each sampled institution and, in each sampled Faculty/College/School, three Departments were sampled using simple random sampling technique. This gave a total of 12 Departments for each sampled institution.

Four different Records Observation Formats labelled I, II, III and IV were used to collect data from the sampled tertiary institutions. Records Observation Format I was used to collect number of registered students for the stipulated academic years which represented class size; Format II for Students results of 2007/2008 to 2016/2017 academic session, which represented students' academic performance; Format III contain items on the Designed capacity of the teaching spaces which was also used to collect information on theoretical capacity of the room (that is, average number of seats in the classroom); and Format IV was used to collect information on theoretical number of hours (that is, the official number of hours in which a classroom is put into use).

Data collected were analysed using Pearson's Product-Moment Correlation and Regression model. Hypotheses I and II were tested using Pearson's Product-Moment Correlation (PPMC) Analysis. Regression model was used to test hypothesis III, since it is meant to measure the relationship between the dependent variable and independent variables. All the hypotheses were tested at 0.05 level of significance with the aid of Statistical Package for Social Sciences (SPSS) 20.0 version.

Results

Hypothesis One

There is no significant relationship between class size and students' academic performance in public tertiary institutions in Lagos State.

Table 1: Relationship between Class Size and Students' Academic Performance in Public Tertiary Institutions in Lagos State

		Class Size	Students' academic performance
Class Size	Pearson's Correlation	1	-0.302*
	Sig. (2-tailed)		0.019
	N	60	60
Students' academic performance	Pearson Correlation	-0.302*	1
	Sig. (2-tailed)	0.019	
	N	60	60

*. Correlation is significant at the 0.05 level (2-tailed).

The result of the test performed indicates that there is a low, negative and significant relationship between class size and students' academic performance in public tertiary institutions in Lagos State (r = -0.302, N = 60, P< 0.05). This implies that the hypothesis which state that class size has no significant relationship with the students' academic performance in public tertiary institutions in Lagos State is rejected. The implication of this is that class size has to do with academic performance of students though inversely. Hence, class size does influence academic performance of the students albeit in a reverse order.

Hypothesis Two

There is no significant relationship between global utilisation rate and students' academic performance in public tertiary institutions in Lagos State.

Table 2: Relationship between Global Utilisation Rate and Students' Academic Performance in Public Tertiary Institutions in Lagos State

		Global Utilisation Rate	Students' academic performance
Global Utilisation Rate	Pearson Correlation	1	-0.047
	Sig. (2-tailed)		0.958
	N	92	60
Students' academic performance	Pearson Correlation	-0.047	1
	Sig. (2-tailed)	0.958	
	N	60	60

Results on Table 2 show that there is a negative negligible and insignificant relationship between global utilisation rate and students' academic performance in public tertiary institutions in Lagos State. Therefore, the hypothesis is not rejected (r = -0.047, P> 0.05). This implies that global utilisation rate has little or nothing

to do with students' academic performance. Global utilisation rate does not influence academic performance of the students.

Hypothesis Three

There is no significant relationship between class size, global utilisation rate and students' academic performance in public tertiary institutions in Lagos State.

Table 3: Summary of Analysis of Variance and Multiple Regression Analysis of Combined class size, global utilisation rate, and students' academic performance in public tertiary institutions in Lagos State

Table 3.1: Model Summary of Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.302[a]	0.091	0.059	262.00378	0.091	2.863	2	57	0.065

a. Predictors: (Constant), Global Utilisation Rate, Class Size

Table 3.2: ANOVAof Regression Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	392999.204	2	196499.602	2.863	0.065[b]
	Residual	3912821.025	57	68645.983		
	Total	4305820.229	59			

a. Dependent Variable: Students Academic Performance Overall

b. Predictors: (Constant), Global Utilisation Rate, Class Size

Table 3.3: Coefficients of Regression

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	481.191	77.665		6.196	0.000		
	Class Size	-0.424	0.177	-0.302	-2.392	0.020	0.998	1.002
	Global Utilisation Rate	1.489	39.350	0.005	0.038	0.970	0.998	1.002

a. Dependent Variable: Students Academic Performance Overall

Table 3.1, 3.2, and 3.3 are the results of multiple regression that were calculated to predict students' academic performance based on class size and global utilisation rate. A non-significant regression coefficient was found ($F_{(2, 57)} = 2.863$, $R^2 = 0.091$, $P > 0.05$). This implies that 9.1% of variation in students' academic performance is a result of class size and global utilisation rate. Furthermore, from Table 3.3, the beta weight value -0.302 under the standardized coefficients shows that class size

is the highest contributor to change in the dependent variable (students' academic performance) in public tertiary institutions in Lagos State, Nigeria with (*ß* = -0.424, *P* = *0*.020< 0.05), while global utilisation rate contributes (*ß* = 1.489, *P* = 0.970 > 0.05, 1.489 which is not statistically significant). These results did not reject the null hypothesis that states there is no significant relationship between class size, global utilisation rate and students' academic performance in public tertiary institutions in Lagos State. With these results, it was concluded that class size serves as a predictor of students' academic performance than global utilisation rate in public tertiary institutions in Lagos State, Nigeria.

Discussion

The study showed that there is a significant low and negative relationship between class size and students' academic performance in public tertiary institutions in Lagos State. The result is in line with Keil and Partell (2009) who found out that increasing class size has a negative effect on students' achievement, that is, it lowers students' achievement. This finding is also in line with Oderinde (2003) who discovered that the classrooms in schools are often few for the large number of students in a class thereby affecting their achievement level. The finding also corroborates Alebiosu (2000) who found out that students in small classes consistently make significant achievement gains than their counterparts in large classes. The result is also consistent with the finding of Adeyemi (2008) who discovered that class size is significantly related with output from secondary schools in Ekiti State. Similarly, Fabunmi, BraiAbu and Adeniyi (2007) findings revealed that class size significantly determined students' academic performance. This implies that the size of the class is a predictor and has an influence on the academic performance of the students.

The study further discovered that there is no significant relationship between global utilisation rate and students' academic performance in public tertiary institutions in Lagos State. Global utilisation rate which is the product of time and space utilisation rates, is the number of places available in the classroom and theoretical number of hours of use per-week. The finding is in agreement with the opinion of Fabunmi, BraiAbu and Adeniyi (2007) who pointed out that classroom congestion and low utilization rate of classrooms are common feature of schools in Nigeria. Classroom congestion and low utilization rate have negative impact on both school teacher productivity, student learning input and thus student academic performance. The finding lends credence to that of Yusuf and Akinniranye (2011) who reported that organisational difficulties of the timetabling often make it difficult for schools to attain utilisation rate of over 75%. The rate reached varies to type of rooms and size of schools. Corroborating the result, Abadzi (2007) assessed instructional time loss in precollege schools for four countries, namely Ghana, Morocco, Tunisia, and the Brazilian state of Pernambuco, conveys that Tunisia has the most efficient time use with students

who are engaged in learning for about 78% of the allotted time. In Ghana, however, students were engaged for only 39% of the time, in Pernambuco 63% of the time, and in Morocco 71% of the learning time. Roger (1993) report stated that the size and shape of the teaching space in relation to the student flow and class size for various academic programmes determine the frequency of use of the space facility when other factors are held constant.

The study showed also that there is no significant relationship between class size, global utilisation rate and students' academic performance in public tertiary institutions in Lagos State. All the activities being performed by lecturers and students are done within the time and space, hence global utilisation rate cannot be separated from students' academic performance. The finding disagrees with Fabunmi, Brai-Abu, and Adeniji (2007) who found out that class size alongside classroom space and classroom utilisation rate determine significantly the students' academic performance in Oyo State. Mark (2002) maintained that one cannot expect high level of students' academic performance where school buildings such as classrooms, libraries, technical workshops and laboratories are substandard and over-utilised. Ajayi (2007) maintained that high level of students' academic performance may not be guaranteed where educational facilities such as classrooms, libraries, technical workshops and laboratories are structurally defective, not properly ventilated and not spacious enough for use.

Conclusion

The conclusion can be drawn from this study that class size (student enrolment) is a notable determinant of students' academic performance in public tertiary institutions in Lagos State while global utilisation rate (time and space utilisation rate) is not.

Recommendations

Based on the findings of this study, the following recommendations are hereby made.

i. Government should endeavour to build more classrooms and make more adequate provision for infrastructure especially in state owned institutions to help put overcrowding under check as this will further improve effective classroom utilisation for better teaching and learning in these schools.
ii. Policy makers such as National Universities Commission (NUC), National Board for Technical Education (NBTE) and National Commission for Colleges of Education (NCCE) should formulate and ensure implementation of the policies in relation to specific number of students in the classrooms and the required dimension of the classroom in tertiary institutions.

iii. The management of the institutions, through the quality assurance process, should ensure that lecturers and students manage the stipulated lecture hours on the timetable for effective teaching and learning. This would eliminate or reduce instructional time loss on the part of students and lecturers.

iv. Timetable committee of the institutions should prepare lecture timetable to indicate not only the courses but also the venue(s) to allow students know the venue for their lectures and ease determination of space utilisation of each of the teaching facilities.

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