

Class Factors as Determinants of Secondary School Student's Academic Performance in Oyo State, Nigeria

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ABSTRACT Classroom congestion and low utilization rate of classrooms are common features of secondary schools in Nigeria. They have negative impact on both secondary school teacher productivity, student learning input, and thus secondary school students academic performance. Thus study investigated the extent to which class factors like class size, student classroom-space and class utilization rate determined the performance of secondary school students in Senior Certificate Examinations (SSCE) conducted by the West Africa Examinations Council (WAEC) in Oyo State, Nigerian between 1997 and 2002 school years. The study was conducted ex post factor under a descriptive survey research design, 200 out of the 336 secondary schools in the state were randomly selected for the study. The multiple regression analysis and one-way analysis of variance were used to analyze the data. The two research hypothesis which guided the study was tested at 0.05 minimum level of significance. Findings revealed that the three lass factors (Class size, student classroom space and class utilization rate), when taken together, determined significantly secondary school students academic performance in Oyo state between 1997 and 2002. These factors, when taken separately, also determined significantly secondary school student's academic performance in the state. These findings are of great significance for educational planners, policy makers and both federal and state governments. These factors have to be taken into consideration while planning and also providing secondary education.

INTRODUCTION

In most third world countries, enrolment exceeds provision for secondary education in terms of adequate furnished classrooms. Hence, the perennial problem of classroom congestion. The poverty level and low classroom utilization rates in these countries worsen the situation. Nigeria is a third world country where the situation is not different. Secondary education in the country is poorly funded, hence most of the secondary schools experience classroom congestion, low students-classroom-space and low classroom utilization rates. These situations may likely affect secondary school students' academic performance adversely; hence this sought to establish the extent to which the selected classroom factors determined secondary school student's academic performance in Oyo State, Nigeria.

The large number of students passing through the secondary school system in Oyo State is a serious problem, particularly with the state government's inability to provide adequate furnished classrooms. The National policy on Education prescribed a maximum of 30 students in a class, but in most secondary schools in the

state average class size exceeds 50. The situation has negative impact on the average classroom-space per student. Yet, these students need to learn in comfort.

In most of the secondary schools in the state, the classroom utilization rate in perpetually low. This is because most of the schools are not able to have the eight periods in most school days. The few secondary schools that have enough teaching staff, at times have low classroom utilization rates, perhaps because of poor supervision. This situation does not favour academic learning.

Statement of the Problem

The poor funding of education in most third world countries does not enable the school system to have manageable class sizes, adequate student classroom space and appropriate class utilization rates. In spite of the fact that these factors determine the productivity of teachers and students academic performance. Hence, this study is interested in the investigation of the extent to which class factors like class size, student-classroom space and classroom utilization rate determined secondary school

students' academic performance in Oyo State of Nigeria between 1997 and 2002 school years. The study tried to establish the relative and composite impact of these factors on students' academic performance in the state.

Research Hypotheses

1. Class factors like class size, student – classroom space and classroom utilization rate taken together do not determine significantly secondary school students academic performance in Oyo State of Nigeria.
2. Each of the class factors (Class size, student – classroom space and classroom utilization rate) does not determine significantly secondary school students academic performance in Oyo State of Nigeria.

Review of Literature

Class factors are very important in the teaching-learning activities, particularly when students' academic performance is being considered. Class size is an important factor in relation to academic performance of students. There is a consensus among various researchers and educationists that, the lower the class size or teacher-pupil ratio, since students' achievement decreases as class size increases. Many studies have pointed out the significance of teacher pupil ratio to cognitive learning in the school. (Idienumah, 1987; Ojoawo, 1989; Fabunmi 2000).

The National policy on Education (1981) recommended that the teacher-pupil ratio should be 1:35. In emphasizing the importance of class size to the learning/teaching process, the All Nigeria conference of principals of secondary schools (ANCOPSS) recommended a maximum of forty students per class for effective management and better control. Oguntoye (1983) in his own study found that class size had negative coefficient with examination performances of students.

The relationship between class size and academic performance is a major controversy. The lower teacher-pupil ratio allows for more effective communication between the learner and the teacher. The effect of class size on cognitive achievement has been debated and researched for many years and has been inconclusive. Robison (1990) opined that even with these

methodological problems, research has generally demonstrated the influence of class or teacher – students' ratio on student's performance in a variety of educational setting. In the view of this fact, it could be said that teacher-pupil ratio is one of the important factors determining good academic performance of students.

A recent study by Idienumah (1987), reported that there is positive relationship between certain variables such as class size, teacher – pupil ratio, students factors and performance in examination. They were discovered to be factors that have strong and direct influence on academic performance of schools. Schools with larger class size and high teacher-pupil ratio recorded poor performance while better academic performance is associated with schools with small size and lower teacher-pupil ratio.

Other studies like Bozzomo (1978), Bourice (1986) and Bolton (1988) confirm that there was no relationship between the size of the class and the results. Ojoawo (1989) in one of his major findings revealed that the class sizes were found to be negatively related to school academic performance.

Bolton (1988) found that "there was no significant difference in post test achievement scores between large classes and small class control groups in developmental English". According to Bolton's (1988) experience, "larger is sometimes better". Edge (1980) identified two of the problems, which large classes pose, they are (1) the provision of an opportunity for discussion or for any kind of oral input to the written work is difficult; and (2) the amount of making involved can dissuade even the not enthusiastic teacher from setting the amount of written work that he feels would benefit the students. Coleman (1987) pointed out that for enthusiastic teachers, "if classes are very large, it is important that as far as possible, the learners should be constantly busy and the tasks should function continuously without repeated intervention from the teacher".

On the other hand, most parents, teachers and students have a strong belief that small group classes are preferable to large ones. As Bolton (1988) put it "there is, after all, an orthodox tradition to the proposition that small classes are necessary for student achievement". In some of the experiments performed, Roe et al. (1987) discovers that "in reading scores on individual tests, the smallest classes were significantly

higher and the largest classes were lowest of all". As a corollary to this, Smith and Glass (1980) indicates through meta-analyses that compare to large classes, small classes lead to higher pupil achievement, more favourable teacher effects (e.g. moral, attitude towards student) greater attempts in individual instruction, a better classroom climate and more favourable student effects (e.g. self concept and participation).

Other studies have been carried out on class size and academic performance of students. Mc Daniel (1963) conducted a study on class size" the findings of the study revealed that class size whether large or small was not related to academic achievement of pupils in a standardized achievement test in mathematics, reading and language".

Johnson (2000) who used data from the 1998 National Assessment of Educational Progress (NAEP) reading test to establish the impact of smaller classes on academic achievement discovered that being in a small class does not affect reading achievement in any significant way. While Fabunmi and Okore (2000) also investigated the relationship between average class size and secondary school academic performance in Epe Local Government Area of Lagos State, in Nigeria. The researchers used both Pearson Product Moment Correlation and Spearman Rank Correlation to test the only hypothesis, which was formulated. The analysis, which was done with Pearson Product Moments correlation, revealed a negative and low relationship, but that of Spearman Rank Correlation revealed significant and positive relationship between average class size and students academic performance. The contradictory findings are products of the two different methods of analysis. The study is of great implications for both researchers and educational planners.

METHODOLOGY

The study adopted an "ex post facto" descriptive design. A random sample of 200 out of the 336 secondary schools in Oyo States was selected for the study.

Instrumentation: The questionnaire which was constructed (class factors and performance Questionnaire) consisted of five sections section A sought for background information on the secondary school. Section B solicited information on student enrolment for each of the grades and number of furnished classrooms. Section C

gathered information on number of lesson periods in the previous week and the number taught. Section D sought for information on the average area (in meters) of classrooms in the school). While section E sought for information on students performance in senior school certificate Examinations (SSCE) conducted by the West Africa Examinations Council (WAEC) for the 1997-2002 period.

Method of Analysis: The average class size which was used in place of the actual class size was obtained by dividing the total student's enrolment for each secondary school by the number of furnished classrooms in the schools. Student – classroom space was measured by dividing the average area of classrooms by the average class size. The classroom utilization rate was calculated by dividing the average number of periods taught by the eight periods expected to be taught, and then multiply the products by 100. While the percentage of passes in SSCE was taken as a measure of academic performance. Student with credits in three subjects including English Language and Mathematics were assumed to have passed. One-way Analysis of variance and the Multiple Regression Analysis were the statistical tools used to test the hypotheses at 0.05 level of significance.

DISCUSSION OF RESULTS

The discussion of results was done on the basis of the two research hypotheses, which guided the study.

Hypothesis One

Class factors like class size, student-classroom space and class utilization rate when taken together, do not determine significantly secondary school student's academic performance in Oyo State of Nigeria.

Table 1 shows that F is 3.25558, which is significant at 0.05 level. Significant F is 0.002, which is less than the 0.05 level of significance. Hence, the hypothesis is rejected. This implies that when class factors are taken together, they determine significantly students' academic performance.

Hypothesis Two

Each of the class factors (i.e. class size,

Table 1: Test of composite impact

Source of Variation	Df	Sum of squares	Mean score	F	Sig. f.	Remark
Regression	3	113.46865	37.82288	3.25538	0.0228	Significant
Residual	196	67039.78425	342.03972			

Table 2: Test of relative impact

Variable	B	SE B	Beta	T	Sig. T	Remark
Constant	36.879179	8.108160		4.548	0.0000	Significant
Class size	0.441388	0.221077	0.244011	1.997	0.0473	Significant
Classroom Space	-.005580	0.003999	-.295132	-1.396	0.1645	Not significant
Utilization Rate	0.230572	0.101768	0.578283	2.266	0.0246	significant

student-classroom space and classroom utilization rate) does not determine significantly secondary school students academic performance in Oyo State of Nigeria.

Table 2 shows that class size and classroom utilization rate determined significantly students academic performance while student-classroom space does not. The findings of this research is in agreement with those of Roe et al. (1987), Idienumah (1987) and Fabunmi and Okore (2000), but contrary to those of Bozzomo (1978), Bourice (1986), Bolton (1988), Ojoawo (1989) and Johnson (2000) which had been reviewed. Except that none of the studies reviewed considered student – classroom space in relation to students' academic performance. It should be noted that the variable did not make any significant contribution to academic performance.

CONCLUSION

This study revealed that when taken together, the class factors determined significantly secondary school students academic performance, but when taken separately, all except student - classroom space, determined significantly secondary school students academic performance in Oyo State of Nigeria.

Implications for Practice

Both federal and state governments should be conscious of these factors while allocating resources to education. Resources have to be allocated in proportion to the student population. Educational planners have to take factors into consideration while conducting school-mapping exercises. While educational administrators have to take them into consideration in the course of administering schools.

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