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Full Length Research Paper

Impact of Class Size on Student's Academic Performance in Course 101 (Introduction to Computer Science) in Alvan Ikoku Federal College of Education, Owerri Imo State

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Abstract:

This research work investigated the impact of class size on student's academic performance in course 101(introduction to computer science) in Alvan Ikoku Federal College of Education Owerri, Imo State. The analysis was concentrated on the effect of Class size on student's performance; instructional strategies on student's academic performance, and Psychological effect of class size on student's performance. 100 level Students of English and Economics department were used for the study. The researcher used Post NCE English and Economics as a sample. Hence one hundred and forty (140) questionnaires were distributed correctly filled and collected, ten (10) questionnaires were not collected or wrongly filled, thereby rendered invalid by the respondent. The analysis was done suing descriptive statistics, percentages. It was found that large class sizes had a negative effect on a student's academic performance in COS 101 (introduction to computer science). It was also observed that class size has a psychological and social effect on a student's academic performance. Where the class size cannot be reduced in a given time due to challenges beyond the control of the school authorities, it is recommended that teachers and management of the school should employ rotational students' group formation and study. These groups could identify common challenges and present them to teachers for support. As a long term measure, the Government should increase budget allocation to improve schools' infrastructural facilities.

Key words: Class size, Academic performance, and Computer Science

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INTRODUCTION

As the word population continues to increase, the class size is also affected. Class size is often mentioned by experts in the educational literature as having an effect on student's feelings and performance, quality of school budgets and administration as well (Owoeye and Yara, 2011). It is considered as one of the important determinates of academic performance over which teachers in schools have little or no control. Class size may be defined as the number of students per teacher in a given class or the population of a class (Ajayi et al., 2017). Mokobia and Okoye (2011) explained that educators universally have identified class size as an important and desirable attribute of an effective educational system. According to Doyle (2014), in modern day education, the focus is on the needs, interest, and comfort of the students. Thus, managing class size allows students to learn effectively without disturbing one another (Garret, 2008). In Nigeria however, the class size is becoming increasingly unmanageable, putting teachers in an impossible position of giving individual students the required attention. In Nigeria public schools, the teachers' eye contact with the students in the class has become so reduced that some of the poorly motivated students can form a number of committees at the back of the class while teaching is going on to engage in non-school discussion. Regular assignments and home works are dreaded by teachers considering the staggering number of books to mark and to record. In a related study, Evans and Popova, (2015) established that there is a negative non-linear relationship between class size and student evaluations stronger than the relationship to student achievement, and with less concavity. This supports findings including an analysis of studies that revealed a similar negative relationship between class size and student evaluation, particularly in regards to instructor interactions with students as demonstrated by Altinok and Kingdon (2012).

According to Amadahe (2016), one of the most essential parts of the teaching and learning process is the assessment and

evaluation of students. Large classes call for large volumes of marking to be done and feedback given to students. This is a major challenge, especially in Nigeria public senior secondary schools. In the face of large classes, instructors are upset with the workload and resort to traditional teaching and assessment methods. Teachers are unable to finish marking assignments, exercises, and examinations on time, and this delays the feedback given to students.

Azigwe et al, (2016) revealed that students' engagement, behavior, and retention are affected in so many ways by the size of the class. This conclusion was drawn when reviewing studies on the link between student engagement and class size conceptualized student engagement in two forms, namely, social engagement (how a student interacts socially with other students and teachers in either pro-social or ant-social ways) and academic engagement (students' attitude towards schooling and the learning process). The study indicated that when students are placed in smaller classes, they become more engaged, both academically and socially, and argue that with strong academic engagement, academic achievement improves.

In spite of all these benefits, large class sizes may generate a lot of controversy due to the difficulty of teachers to work with large class sizes. These controversies may serve as thorns that crumble the performance of students in the computer at the senior secondary school level. Some of these problems may be; teachers may find it difficult to use varied teaching methodology in teaching, students may find it difficult to concentrate in the class, teachers may find it difficult to control the students in class and there may be insufficient teaching and learning resources. Hence the quality of teaching, assessment of students and quality of learning may be affected. Basically, earlier one of the subjects in the Nigerian public senior secondary schools which requires demonstrations and much student attention is computer. Therefore, the present study seeks to use computer as baseline to revisit the issue of class size implications on the quality

of teaching and learning. The study focuses on three effects of class size: instructional impact of class size on students' performance; the psychological impact of class size on students' performance and social impact of class size on students' performance in computer at Alvan Ikoku Federal College of Education, Owerri, Imo State.

PURPOSE OF THE STUDY

The study specifically sought to investigate the following objectives:

1. To identify the impact of class size on student's academic performance
2. To observe the impact of class size on instructional strategies on student's academic performance.
3. To identify the impact of class size on student's academic performance on psychological readiness.

RESEARCH QUESTION

The following questions provided a guide in the process of data collection to help find answers to the problems:

1. Does class size affect a student's academic performance?
2. Does class size affect instructional strategies on student's academic performance?
3. Does class size affect student's academic performance on psychological readiness?

METHODOLOGY

The descriptive survey design was used in this study, because it aims at primarily describing, observing and documenting a situation as they occur rather than explaining them..

POPULATION OF STUDY

The accessible population of the study was made up of all lecturers in the computer science department, teaching Cos 101, and 100 level students from English and Economics departments that took Cos 101 from 2016/2017 and 2017/2018 section at A.I.F.C.E. The target population was made up

of 2139 students and 10 lecturers totaling 2139 participants.

Table 1, Students record on course 101, from 2016/2017 and 2017/2018

	2016/2017	2017/2018	
Department	**Cos 101**	**Cos 101**	
English	**454**	**675**	
Economics	**435**	**565**	
Total	**889**	**1240**	**2129 + 10 = 2139**

Source: Department Exam Records

Sample and Sampling Technique: The sample size for the study was 220. This was made up of 10 lecturers (8 male and 2 female) and 210 students randomly selected. However, they answered the questions based on their previous experiences.

The stratified random sampling technique was used in selecting student respondents because they were at various departments. In using a stratified sampling technique, it is "advisable to subdivide the population into smaller homogeneous groups" in order to "get more accurate representation" (Best & Kahn, 1995).

The questions required the respondents to answer thus; strongly agree (SA), Agree (A), undecided (U), disagree (D), and strongly disagree (SD) respectively. The questionnaires were administered personally. Subsequent to the data collection, the data were analyzed using frequency and percentage.

RESULTS AND DISCUSSIONS

The tables below report the results from the study and discuss the findings in line with the focus of the study.

Table 2: Impact of Class Size on Students' Academic Performance

QUESTIONS	SA	A	UD	D	SD
Students have the opportunity to cheat during class exercises, tests, and examinations in a large class.	**65(30%)**	**60(27%)**	**24(11%)**	**41(19%)**	**30(14%)**
Do smaller class sizes allow more time for teachers to help students with practical in computers and develop their skills which can increase student's achievement?	**66(30%)**	**70(32%)**	**37(17%)**	**30(14%)**	**17(8%)**
Students are very active in large class sizes than in a small class?	**27(12%)**	**49(22%)**	**17(8%)**	**51(23%)**	**76(35%)**

Table 2 presents detailed results on how class size affects the academic performance of the students in computer. The result above shows that a good number of the students agree that there is a high possibility of cheating during examination in a large class; this was confirmed by 57 percent of the respondents. This means that the true performance of the students cannot be ascertained since poor students stand to benefit from the act of cheating. Furthermore, 136 percent of the total respondents agreed that smaller class sizes allow more time for teachers to help students develop appropriate practical skills which can increase student's to develop skills to increase their performance.

Table 3: Impact of Class Size on Instructional Strategies

QUESTIONS	SA	A	UD	D	SD
The teaching of computer practical skills is neglected in large class size?	**30(14%)**	**50(23%)**	**14(6%)**	**89(40%)**	**37(17%)**
Teachers are likely to give more class exercises to students in smaller class sizes than larger class sizes?	**60(43%)**	**40(29%)**	**4(2%)**	**14(10%)**	**22(16%)**
The use of audio-visual aids in large classes would make lessons more interesting?	**36(16%)**	**48(22%)**	**10(5%)**	**59(27%)**	**67(30%)**
The atmosphere in large class sizes is always teacher-centered with passive students?	**69(31%)**	**59(27%)**	**21(10%)**	**45(20%)**	**26(12%)**

From table 3, 57 percent disagreed that the teacher does not neglect the practical aspect of computer due to the large class size. This is consistent with the findings by Aturupane et al, (2013) which revealed that teachers are able to use teaching strategies that fit the large class size such as group work and working on projects. The students revealed further that the use of audio-visual aids in large class sizes would not be appropriate and could not make lessons interesting and 57 percent of the students held this view. The findings further showed that 72 percent of respondents held the opinion that teachers are more likely to the teacher with very little or no class exercise in large class sizes. Regular exercise is an important instructional strategy that helps increase the academic performance of students (Hattie, 2009). Also, 58 percent of the total respondents accepted that in large classes, the atmosphere is teacher-centered with passive students. This is evidence that class size has implications on instructional strategy and students' academic performance but Stephens et al, (2014) stated that there is no guarantee that smaller classes will automatically lead to more productive works.

Table 4: Impact of Class Size on Students' Psychological Readiness

QUESTIONS	SA	A	UD	D	SD
Students feel more relaxed in large class sizes since it's difficult to know themselves by name?	**42(19%)**	**73(33%)**	**31(14%)**	**46(21%)**	**28(13%)**
Most students feel shy to speak in large class sizes?	**40(18%)**	**71(32%)**	**20(9%)**	**40(18%)**	**49(22%)**
Do students seldom have the opportunity to express their self in large class size?	**55(25%)**	**69(31%)**	**29(13%)**	**46(21%)**	**21(10%)**
Do students like sitting at the back of the class to hide from the attention of the teacher in large class sizes?	**29(13%)**	**61(28%)**	**12(5%)**	**69(31%)**	**49(22%)**
Student finds it difficult to concentrate due to the noisy and stressful atmosphere in large class size?	**55(25%)**	**69(31%)**	**20(9%)**	**31(14%)**	**45(20%)**

The results reported in Table 4 provide evidence to show that there are psychological impacts of class size on the performance of the students. 52 percent agreed that students feel more relaxed in large class sizes since it is difficult to know them by name, 50 percent of the respondents indicated that most students feel shy to talk in the classroom. This seems to affirm the conclusion reached by Rubin (2012) which revealed that most of the students in a large class may not understand the concept of what is taught as

the size deters them from voicing out to ask questions. 56 percent of the respondents indicated that students seldom have the opportunity to express themselves in large class sizes and, 53 percent of the respondents disagreed that students like sitting at the back of the class to hide from the attention of the teacher in large class size.. In another development, 56 percent of the students indicate that students find it difficult to concentrate due to the noisy and stressful atmosphere in large class size hence this adversely affect their academic progress.

CONCLUSION AND RECOMMENDATIONS

1. This study was carried out to investigate the impact of class size on students' academic performance in COS 101 (introduction to computer science) in Alvan Ikoku Federal College of Education, Owerri. Imo State. Three areas of possible impacts were investigated: the impact of class size on students' performance; the psychological impact of class size on student's performance and on instructional strategies on student's academic performance.

The study revealed that there is an opportunity for students to cheat during class exercises, test, and examinations in large class sizes. This translates that the actual performance of the students could not be seen or reflected in their class score and this could subsequently affect them adversely in any external examination. Large sized classes have a negative impact on the academic performance of students. It is also concluded that class size has a significant impact on the appropriateness of teachers' instructional strategies.

As a long term measure, the Government should increase budget allocation to improve schools' infrastructural facilities. The Ministry of Education, policy makers, parent-teachers association, old boys/students association and other non-governmental organizations, corporate bodies and religious organizations should contribute respectively to renovate dilapidated classrooms, build more classrooms to contain the growing enrolments in the schools and provide schools with the

facilities they need to make teaching and learning easier and effective.

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