# International Journal of Multidisciplinary Research and Growth Evaluation.

# Class size and academic performance of students in public and private secondary schools in Port Harcourt and Obio-Akpor Lga, Rivers State

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## Article Info

## Abstract

This paper examined class size and academic performance of students in public and private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. A correlational research design was adopted for the study. The population of this study was made up of all the 2,042 academic staff and 12,727 SS2 students of 37 public senior secondary schools in Port Harcourt and Obio-Akpor LGA of Rivers State, totaling 14,769. A sample size of 389 respondents were drawn from the entire population using Taro Yamane. The sampling technique was a proportionate stratified random sampling. Questionnaire and Teacher Made Test were used as the instrument to generate data. The test was designed to measure students' academic performance. The research instruments were titled: Class Size Scale (CSS) and Teacher Made Test Scale (TMTS). The instruments items were designed and validated by the researcher. Kuder Richardson reliability method was used to test the reliability of the instruments. The reliability coefficients of Class Size Scale and Teacher Made Test Scale are 0.85 and 0.83 respectively. The findings revealed that that there is weak and negative significant relationship between large class and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State, this is linked to several challenges associated with it. Also, there is strong and positive significant relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. Based on the findings, it was recommended among others that there should be government mandate on large class size reduction in public schools for effective teaching and learning in order for students to achieve good performance in their studies. Consequently, more classroom should be built, teachers should be recruited to replace retired and resigned teachers to meet National Policy on Education (NPE) stipulation on student-teacher ratio.

**Keywords:** Class Size, Large and Small Class Size, Academic Performance

## Introduction

Nigeria has been grappling with poor performance of students in English Language as a subjects in secondary school final examinations such as West African Examination Council (WAEC), National Examination Council (NECO), and National Business and Technical Examination Board (NABTEB) since the 1980s. This has led the Federal and State governments adopting different strategies and policies to deal with this situation. A survey by the Federal Ministry of Education on the performance of the educational sector in the different geo-political zones and states of the country revealed that there were gaps in the performances with the North West Zone recording the least performance (Federal Ministry of Education, 2015) [9]. Another Educational survey which was conducted in 2019 indicated a widening gap between other subjects and English Language. Kaduna State being one of the North West zone recorded the lowest performance; worse than those of Jigawa, Kano and Katsina States in the same zone. This could be connected to the fact that Kaduna state has a larger population of students compared to the other states in the zone, hence the possibility of having larger class sizes.

The Nigerian educational system has continuously experienced an upward trend in school enrolment at all levels since the introduction of the Universal Primary Education (UPE) in the 1970s and the Universal Basic Education (UBE) in 1994. This may have in turn impacted on the class size in terms of the population of the individual classrooms with more enrolment in the urban than in the rural areas. As the world population continues to increase, the class sizes are also affected. Class size have been identified by scholars and stakeholders in the educational sector as having effect on student's feelings and their academic performance, quality of school budgets and as well the administration of the school. It is considered as one of the significant determinants of academic performance of students over which classroom 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, Audu & Ajayi, 2019).

Educators universally have recognized class size as important and desirable attribute of effective educational system. Consequently, debate has continued in the educational literature stakeholders such as academics, policy makers and parents over the educational consequences of large class size. Some researchers have maintained that the size of the class is a factor which contribute to the level of performance of students in the educational system (Kedney, 2013) [12]. In fact, with the exception of a few, many studies have reported that under ideal situation, class size in itself appears to be an important factor. The first issue that calls for immediate clarification is what number of students constitute a large class size and what number is described as a small class size? Murphy (2000) [18] defines large classes as those which contain 30-45 students or more. However, large classes cannot be defined numerically rather it is probably thought of as a size that requires a conscious and suitable attention to approach. Dudley and John (2018) [6] and Ming and Qiang (2011) [16] state that large class is one with more students than the teacher can manage and available resources cannot support. Ur (2016) believed that regardless of the number of students in a class, it is teachers' perceptions towards the class size in a certain context with particular tools and facilities that are provided that make classes either small or large. Hence, we can say that large classes are those with a specific number of students that teachers cannot handle and resources are not enough to facilitate the teaching and learning process and that pose insurmountable problems for both teachers and students. Mulryan-Kyne (2010) [17] also shares that large class is a class that is too large for effective teaching to occur. Brown (2001) [5], on the other hand, believed that an ideal class should not exceed 12 students. In another word, a class should be big enough to offer variation and allow interaction and small enough to provide students with opportunities for participating and receiving individual attention.

In defining or describing a small class size Bray (2019) observed that they have few teachers with small pool of students; offer limited range of subjects and characteristically finding it hard to justify costly investment on libraries. The students lack competition and interest with relatively few peers as they get stocked with same teacher for an entire school career. The description appears to be an anti-type of what obtains in large class size. Large class size on the other hand are often impersonal, having broader curricula with teachers being given wider support, while students may suffer

indiscipline problems as teachers cannot get to know their students very easily. They find it easy to stream students according to ability while commitment to work may stand a test of time. In terms of numerical strength, the Federal Republic of Nigeria (FRN, 2014) specified 20 in pre-primary, 30 in primary and maximum of 40 in secondary schools. These directives appear unrealistic especially in urban areas as a result of high population and somewhat has affected the academic performance of students.

Academic performance is described as the behaviour exhibited by a student, which is noticeable after undergoing a programme in an institution or a school, that is; demonstration of the knowledge acquired after one has undergone a stipulated programme in the school. In relation to educational research, academic performance of a student can be regarded as the observable and measurable behaviour of a student in a particular situation. For example, the academic performance of a student in social studies includes observable and measurable behaviour of a student at any point in time during a course. In social studies, students' academic performance consists of his scores at any particular time obtained from a teacher- made test. Therefore, we can equate academic performance with the observed behaviour or expectation of achieving a specific statement of or statement of educational intention in a research. Academic performance of students consists of scores obtained from teacher-made test, first term examination, mid-semester test and so on.

Academic achievement or (academic) performance is the outcome of education-the extent to which a student, teacher or institution has achieved their educational goals. Academic performance is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are most important-procedural knowledge such as skills or declarative knowledge such as facts, (Annie, Howard & Mildred, 2016) [3]. Low academic performance has been a problem faced by many secondary school students in Nigeria (Ajayi, Audu & Ajayi, 2019). Scholars have lamented that performers of students in Nigerian schools have continued to depreciate due large classroom size with several distraction they found themselves, which has made the teaching and learning process unattractive and difficult. In many public secondary schools across, the class size is becoming increasingly unmanageable, putting teachers in an impossible position of giving individual student required attention. In public schools, the teachers' eye contact with the students in class has become so reduced that some of the poorly motivated students can form 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 (Ajayi, Audu & Ajayi, 2019).

A research by Bosworth (2014) [4] revealed that, the correlation between class size and student achievement is complex with many disagreeing results. The study concluded that class size has tiny negative effect on student achievement. The findings were inconsistent with the results of Rubin (2012) in that the later indicated that as the class size increases, student achievement declines. Contributing to exiting studies, conclusion from a study by Allen, Gregory, Mikami, Lun, Hamre and Pianta (2013) [2] was that 62 students per teacher was a threshold number and once class size went beyond 62, learning effectively stopped. Thus, as the number of students in a class was more than 62, teachers

find it difficult to teach effectively and efficiently leading to students not being able to also learn effectively since low participation of class activities were possible.

Despite this finding, Allen *et al.* (2013) [2] indicated that large class sizes do have moderate adverse effect on teaching and learning. The finding however contradicts the earlier studies and conclusions by Bosworth (2014) [4]. The foregoing differing findings, opinions and observations call for further investigation into the impact of class size on student academic performance, it is based on this premise that this study is aimed at examining the impact of class size on the academic performance of students in Public and Private Secondary Schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

## Statement of Problem
The system of education in Nigeria is subjugated by examination-oriented coaching, in which the only benchmark for performance is passing examinations because there lacks internal systems of monitoring the achievements in learning at other levels within an education cycle. There is a general agreement that quality education is manifested through literacy, cognitive abilities, performance and progression to higher levels of learning. There have been a great reliance on classroom activities for students performance. But parents, stakeholders and well-meaning Nigerians have expressed so much concern regarding the poor performance of students in their internal and external examination, which one factor that have seem to have led to this is the increasing number of students in the classroom. This have generated a lot of controversy due to the difficulty of teachers to work with large class size. These controversies may serve as thorns that crumble the performance of students in their subjects at their internal and external examinations.

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, as well as lack of individual attention and difficult to set effective group activities. Hence, the quality of teaching, assessment of students and quality of learning may be affected. Therefore, the present study seeks revisit the issue of class size implications on students academic performance.

## Aim and Objectives of the Study
The aim of this study was to examine the impact of class size on academic performance of students in public and private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

Specifically, the objectives of the study seek to:
1. Determine the relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.
2. Ascertain the relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

## Research Questions
The following research questions will guide the study
1. What is the relationship between large class size and academic performance of students in public secondary

schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State?
2. What is the relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State?

## Research Hypotheses
1. There is no significant relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.?
2. There is no significant relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State?

## Methodology
This study adopted a correlational research design to ascertain the relationship between class size and academic performance of students in public and private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. The population of this study was made up of all the 2,042 academic staff and 12,727 SS2 students of 37 public senior secondary schools in Port Harcourt and Obio-Akpor LGA of Rivers State, totaling 14,769. (Source: Planning, Research and Statistics Department, Rivers State, 2022). The sample size of 389 respondents, drawn from the entire population using Taro Yamane. The sampling technique was a proportionate stratified random sampling. This ensured that all members of the population are given equal opportunity of being selected. Questionnaire and Teacher Made Test were used as the instrument to generate data. The test was designed to measure students' academic performance. The instrument are two, with two sections (A and B). Section A elicited demographic information from the respondents, while section B elicited information on Class Size Scale (CSS) and Teacher Made Test Scale (TMTS). Kuder Richardson reliability method was used to test the reliability of the instruments. The reliability coefficients of Class Size Scale and Students' Academic Performance Scale are 0.85 and 0.83. The data collected for the study were analyzed using Pearson Product Moment Correlation Coefficient (PPMC) statistics. Research questions were answered based on the value and direction of the correlation coefficient. Same correlation statistics was used to test the corresponding hypotheses at 0.05 significance level.

## Results and Discussion
The results of the analysed data for the research questions and its corresponding hypothesis are presented on tables.

As part of data collection, 389 copies of the questionnaire were administered to the respondents, 371 copies were retrieved and found suitable for data analysis, resulting in 95% retrieval rate.

**Table 1:** Distribution of Respondents by their School

| S/No | School | Frequency | Percentage (%) |
|------|--------|-----------|----------------|
| 1 | Public | 197 | 53.1 |
| 2 | Private | 174 | 46.9 |
| | **Total** | **371** | **100** |

From the above Table 1, public teachers and students were

197 representing 53.1% of the respondents, while the remaining 174 were private teachers and students representing 46.9% of the total respondents.

**Research Question 1:** What is the relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State?

**Hypothesis (Ho1):** There is no significant relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

**Table 2:** Pearson Product Moment Correlation (PPMC) showing the relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State

| Variables | N | Df | R | P (Sig.) | Decision |
|---|---|---|---|---|---|
| Large Class Size | 197 | 195 | 0.25 | 0.691 | Fail to Reject Ho1 |
| Academic Performance | 197 | | | | (Not Significant) |
| | | | | | P > 0.05 |

Decision Rule: 0.00 – 0.19 = Very Weak, 0.20 – 0.39 = Weak, 0.40 – 0.59 = Moderate, 0.60 – 0.79 = Strong, 0.80 – 1.00 Very Strong

To answer the research question one, data on Table 2 reveal a correlation coefficient = 0.25. This value is low and negative, indicating that there is weak and negative relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. This implies that large class size above the recommended number as stipulated in the national policy of education brings about low or poor academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

For hypothesis tested, it is revealed from Table 2 that r of 0.25 is not significant with $P > 0.05$ because the calculated probability value of 0.691 is greater than the critical probability value of 0.05. Therefore, the null hypothesis was not rejected. By implication, there is no significant relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

**Research Question 2:** What is the relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State?

**Hypothesis (Ho2):** There is no significant relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

**Table 3:** Pearson Product Moment Correlation (PPMC) showing the relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State

| Variables | N | Df | R | P (Sig.) | Decision |
|---|---|---|---|---|---|
| Small Class Size | 174 | 172 | 0.672 | 0.000 | Fail to Accept Ho2 |
| Academic Performance | 174 | | | | (Significant) |
| | | | | | P < 0.05 |

Decision Rule: 0.00 – 0.19 = Very Weak, 0.20 – 0.39 = Weak, 0.40 – 0.59 = Moderate, 0.60 – 0.79 = Strong, 0.80 – 1.00 Very Strong

To answer the research question one, data on Table 3 reveal a correlation coefficient = 0.67. This value is high and positive, indicating that there is a strong and positive relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. This implies that small class size bring about good academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

For hypothesis tested, it is revealed from Table 3 that r of 0.67 is significant with $P < 0.05$ because the calculated probability value of 0.000 is lesser than the critical probability value of 0.05. Therefore, the null hypothesis is rejected. By implication, there is a significant relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

**Discussion of Finding**
The first finding of this study revealed that there is weak and negative relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. This implies that large class size above the recommended number as stipulated in the national policy of education brings about low or poor academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. This finding is in line with Krafter (2019) who revealed that class size above 40 which are commonly witnessed in public schools have negative effect on students' academic performance. In larger classes according to the scholar, more time is needed for non-academic activities related to administrative and organizational procedures and to the management and control of discipline. Reductions in the quantity of learning opportunities constrain teachers from achieving the necessary pace, depth and breadth of curriculum coverage as class size increases. Krafter (2019) buttressed that some commonly comments heard by public school teachers of large classes are: there is no communication, the class is out of control, lack of individual attention and difficulty to set effective group activities. Other teachers always emphasize that it is impossible to concentrate on all students and therefore not enough reinforcement will be made to encourage all to participate in different activities.

Also in line with the finding, Fafunwa (2004) postulated that there is a big gap in quality, resulting from large number of students in a crowded classroom, using inadequate and obsolete equipment and with disillusion teachers. Egim (2013), Owoeye and Yara (2016) revealed that large class size seen in most public schools across the country has a whole lot of negative impact on students' academic performance which include; poor language skills which can impede students' achievement, lack of individualized instruction hindering substantial faster gains in reading, disciplinary issues resulting to lack of concentration of students, poor grades in external and internal examination, unintelligible pronunciation of words, jerky and hesitant speech from students, poor grammatical structure, and wrong use of gestures for expressing ideas. Hence, there is no significant relationship between large class size and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

Lastly, the second finding of this study revealed that that there is a strong and positive relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. This implies that small class size bring about good academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. The finding is in agreement with Miller-Whitehead (2013) who noted that small classes which are usually witnessed in private schools assist in raising teachers' spirit and decrease most of the discipline issues. The scholar elaborates by stating those small classes allow teachers to identify problems quickly and then apply immediate remedial solution and that will eliminate or at least minimize any future disruption. Concurring to the above, Finn, Gina and Charles (2018) revealed that class size has great effect on students' social and academic involvement in the class and on the teacher personality as well. That is to say that students undertaking instructions from their teachers in small classes as seen in private schools, on contrary to their peers in large ones in public schools, are always under pressure to participate in class activities as "they are on the frying line, by being more visible to the teacher and may be called upon at any time to answer questions or to participate in a class activity.

The finding is also in agreement with Resnick (2019) who claimed that the effect of smaller classes is that it elevates students' achievement as teachers in such context pay greater attention to each and every student leaving students with no time to either be destructive or distracted by any means during teaching and learning. Consequently, Resnick (2019) asserted that students in small classes encounter continuous pressure to engage in various activities and become active class members, which causes the attention to learning increase and off-task actions as well as any disruptive behaviours to reduce or diminish. On a similar view, Normore and Ilon (2016) conclude that the effects of classes of a small size majorly seen in private schools is that it positively influences the teaching process as they encourage students and teacher engagement, allow students to be more cognitively engaged, offer ample time for teachers to cover the whole materials and provide safe school environment with fewer misbehaved students. Thus, there is a significant relationship between small class size and academic performance of students in private secondary schools in Port

Harcourt and Obio-Akpor Local Government Area of Rivers State.

## Conclusion
From the findings, it was concluded that there is weak and negative significant relationship between large class and academic performance of students in public secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State. This is linked to several challenges associated with it. Also, there is strong and positive significant relationship between small class size and academic performance of students in private secondary schools in Port Harcourt and Obio-Akpor Local Government Area of Rivers State.

## Recommendations
Based on the findings and conclusions of the study, the following recommendations were made:
1.  There should be government mandate on large class size reduction in public schools for effective teaching and learning in order for students to achieve good performance in their studies. In other words, more classroom should be built, teachers should be recruited to replace retired and resigned teachers to meet National Policy on Education (NPE) stipulations on student-teacher ratio.
2.  Government should take into consideration of the special needs of the private school programme by funding the schools in order to maintain small class size and rather than thinking on ways to increase students' enrolment so as to generate funds.
3.  Teachers should focus on the notion of student engagement and adapting teaching and assessment strategies, it will help to overcome the challenges posed by large class size and improve students' performance.
4.  School principals should adopt possible ways to help the teachers and students improve on teaching and learning in a large class size for better academic performance.

## References
1.  Ajayi OV, Audu CT, Ajayi EE. Influence of class size on students' classroom discipline, engagement and communication: a case study of senior secondary schools in Ekiti state, Nigeria. Sky Journal of Educational Research. 2017; 5(5):60-67.
2.  Allen J, Gregory A, Mikami A, Lun J, Hamre B, Pianta R. Observations of effective teacher–student interactions in secondary school classrooms: Predicting student achievement with the classroom assessment scoring system-secondary. School Psychology Review. 2013; 42(1):76.
3.  Annie W, Howard WS, Mildred MW. Achievement and Ability Tests - Definition of the Domain. Educational Measurement. 2016; 2(1):24-32.
4.  Bosworth R. Class size, class composition, and the distribution of student achievement. Education Economics. 2014; 22(2):141-165.
5.  Brown D. Principles of language learning and teaching (4th Eds.).Pearson Education, 2001.
6.  Dudley-Evans T, St John MJ. Developments in English for Specific Purposes: A Multi-disciplinary Approach. University Press, 2018.
7.  Egim S. Importance of science laboratory in primary schools. Journal of Research Information and Education.

2013; 291:27-33.

8. Fafunwa AB. History of education in Nigeria. NPS Educational Publishers Limited, 2004.

9. Federal Ministry of Education. A new institutional landscape for higher education in South Africa. Pretoria: Department of Education, 2015.

10. Federal Republic of Nigeria. National Policy of Education. NERC Press, 2014.

11. Finn JD, Gina MP, Charles MA. The why's of small class size: student behavior in small classes. Journal of Educational Psychology. 2018; 97(2):214-223.

12. Kedney RJ. Performance measurement in non-advanced further education: The use of statistics. Unpublished PhD. Thesis, University of Lancaster, United Kingdom, 2013.

13. Kpee GG. Research methods in education. A made easy approach. Uzopietro Publishers, 2015.

14. Krafter AB. Economic considerations and class size. National Bureau of Educational Research, 2019.

15. Miller-Whitehead M. Compilation of class size findings: Grade level, school and district. Paper presented at the Annual Meeting of the Mid-south Educational Research Association, 2013.

16. Ming C, Qiang S. Class size reduction and student achievement: The potential tradeoff between teacher quality and class size. Journal of Human Resources. 2011; 44(1):223-250.

17. Mulryan-Kyne W. Why standardized tests don't measure educational quality. Educational Leadership. 2010; 56(6):8-15.

18. Murphy KJ. Performance Standards in Incentive Contracts. Journal of Accounting and Economics. 2000; 30(3):245-278.

19. Normore A, Ilon L. Cost-effective school inputs: Is class size reduction the best educational expenditure for Florida? Educational Policy. 2016; 20:429-454.

20. Owoeye JS, Yara OP. Class size and academic achievement of secondary school in Ekiti State, Nigeria. Asian Social Science. 2016; 7(6):184-189.

21. Resnick L. (Ed.) Class size: Counting kids can count. American Educational Research Association. 2019; 1(2):1-4.

22. Ur PA. Course in Language Teaching: Practice and Theory. Cambridge: University Press, 2016.