

## Perceived Influence of class size on Mathematics and English Teachers' Effectiveness in Secondary Schools in Education District VI, Lagos State, Nigeria

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### Abstract

*The study investigated the influence of class size on English and Mathematics teachers' effectiveness in Senior Secondary Schools in Education District VI, Lagos State. A descriptive survey design was employed. A total of two hundred English and Mathematics teachers were randomly selected from 20 schools. The instrument for data collection was a researchers' designed questionnaire. A pilot study was carried out on 20 teachers from Education District IV, Lagos State and a reliability coefficient of 0.87 was determined using Cronbach's alpha technique. The data collected were analyzed using frequency counts, mean, standard deviation and correlation. The study revealed a significant influence of class size on teachers' effectiveness. The study recommended among others that the Government should employ more English and Mathematics teachers in Senior Secondary Schools, build more classrooms and improve on the existing infrastructures in the Government-owned schools in the State.*

**Keywords:** Class size, Effectiveness, Teachers' effectiveness, Teacher-student interaction.

### Introduction

Class size can be defined as the total number of students learning together in a classroom. The size varies from school to school, place to place and country to country. What determines an ideal class size is a function of available human and material resources in relation to the learners' population. However, there is a limit to the number of students an individual teacher can effectively cope within a classroom. Ajayi, Audu, and Ajayi, (2017) define class size as the number of students per teacher in a particular class or the total number of students in a class. There is an ongoing debate among educators, policymakers, planners and parents about the impact of the larger classes on the teaching and learning process.

Researchers such as Dror (2009), Ayeni and Amanekwe (2018), Argued that teachers' stress of coping with large classes can be reduced if necessary instructional materials are available for use in the classrooms. According to Ayeni and Amanekwe (2018), managing large class size or coping with large classes enables developing/ underdeveloped parts of the world with very limited resources to give access to a majority of their citizen to be educated. On the other hand, Ikolo (2011); Mokobia and Okoye, (2011) argued that modern education focuses on student needs, interests and comfort that required a learner centred approach which is practically impossible in a large class size According to the National Council of English Teachers

(NCTE, 2014), small classes mean fewer than 20 students at the level of primary education, while for secondary students, the definition of class size is somewhat broader. This is in line with the United Nations Educational, Scientific and Cultural Organization (UNESCO) who recommended standard size of 25 students per class. The Nigerian Conference of Principals of Secondary schools (ANCOPSS, 2007) corroborated this notion by recommending a maximum of 40 students per class for effective classroom management and control. Class size is considered to be one of the major determinants of student achievement over which teachers have little or no control, as determining class size is purely controlled by educational policy-makers, planners and the ministries of education. (Aransi, 2017; Owoloye & Yara, 2011) Darling Hammond (2010) defines effective teachers as "teachers who intellectually challenge, motivate students, set high standards, and encourage spontaneous learning." The effectiveness of a teacher is greatly influenced by the level of interaction between the teacher and the students. The teacher's ability to get proper students' attention in class determines students' interest, participation, assimilation and understanding of the subject taught. Highly interactive instruction is one of the basic requirements for learning English and mathematics. An effective teacher is a teacher who is able to achieve the goals and objectives set for himself or set for him, by educational administrators, ministry

of education, education planners and other authorities (Berk,2005; Onyekuru & Ibegbunam, 2013).

Teacher effectiveness has to do with the manifestation of content knowledge, classroom presentation skills, and the creation of a desirable learning environment. The level of teacher effectiveness depends on the student's academic performance and positive changes in behavior. The National Policy on Education (2013) states that "there is no better education system than the quality of teachers." A teacher's effectiveness and overall performance are highly dependent on the teacher's workload and the numerical magnitude of the teacher's workload depends on the teacher's instructions and the number of students under supervision (Akiri, 2013; Berk, 2005)

From the above, we can see that teacher effectiveness is measured using different yardsticks. Most researchers had focused primarily on students' academic achievement or academic performance as the main tool for measuring teacher effectiveness. Stronge, Ward and Grant (2011) in Yara (2015) identified four dimensions that can be used to measure an effective teacher and they are as follows.

- Instructional effectiveness,
- Use of assessment of students' learning outcomes,
- Positive learning environment, and
- Personal qualities of the teacher.

In recent years, the average classroom in Nigeria has been overcrowded with little or no teaching materials, school facilities are in dire condition with the shortage of teachers. Teachers work in dismal conditions with little or no motivation. Classrooms are noisy, crowded, and students exhibit disorderly and disruptive behavior. All this has been demonstrated in the student's performance in external examinations such as Senior Secondary Certificate of Education(SSCE), National Council Examination (NECO), Joint Admissions and Matriculation Board(JAMB) especially in the two required subjects, English Language and Mathematics (Adeyemi, 2008; Subair & Talabi, 2015)

Studies have shown that the average Nigerian class size is between 60 – 80 with some classes having 90 – 120 students especially in densely populated urban areas like Lagos State (Subair & Talabi ,2015). Teachers are burdened with instructional and administrative duties, which have increased the incidence of work-related stress, job dissatisfaction and poor academic performance of students in subjects like English Language and Mathematics (Aransi,2017). Hence, this

study focused on the Influence of Class Size on English and Mathematics Teachers' Effectiveness in Senior Secondary Schools in Education District VI Lagos State

### Objectives of the study

The study was set out to determine:

1. the average class size of Senior Secondary Schools in Education District VI Lagos State.
2. Influence of class size on English and Mathematics teachers' effectiveness in Senior Secondary Schools in Education district VI Lagos State.
3. the coping skills, and classroom management techniques teachers use in handling large classes.

### Research questions

The following questions were provided to guide the study

1. What is the average class size in Senior Secondary Schools in Education district VI Lagos State?
2. What is the influence of class size on teachers' effectiveness in senior secondary school in Education district VI Lagos State?
3. What are the coping skills and techniques employed by teachers in handling large classes in Senior Secondary School in Education district VI Lagos State?

### Method

This study adopts the use of a descriptive survey research design. A survey is an attempt to collect data from members of a population to determine the status or opinion of the population on one or more variables. The survey design was used to determine the influence of class size on teachers' effectiveness in Secondary Schools in Education District VI, Lagos State. The instrument for data collection was a researchers' designed questionnaire formulated on a 4-point Likert scale of strongly agree, agree, disagree, and strongly disagree. A pilot study was carried out on 20 teachers from Education District IV, Lagos State and a reliability coefficient of 0.87 was obtained using Cronbach's alpha technique. The population of the study comprised of all the English and Mathematics teachers in the Senior Secondary Schools in Education District VI, Lagos State. One educational district was selected randomly out of the six educational districts in the State. 20 secondary schools were randomly selected from 104 secondary schools in the selected district. Ten teachers



were purposively selected from each of the sampled school (5English and 5 Mathematics teaches) making a total of 200 teachers who were involved in the study. The researchers personally administered copies of the questionnaire to the teachers and collected them back immediately to ensure that the instrument is properly filled and returned. The data collected were analysed

using mean and standard deviation. A mean value of 2.5 was considered as agreed by the respondents which is criterion mean value for a four-point Likert scale

## Results

**Table1: Perceived average class size and classroom interaction among Senior Secondary Schools in Education District VI of Lagos State.**

S/N	ITEMS	Mean	SD	Remark
1	I have far above 40 students in my class at every lesson.	2.83	0.96	Agreed
2	I sometimes merge two classes together at a given time.	2.85	1.01	Agreed
3	I can easily move around the classroom while lessons are going on.	2.12	1.04	Disagreed
4	I can easily identify the students who have difficulty in understanding the topics being taught.	2.54	1.12	Disagreed
5	The students can hear me clearly while I am teaching.	2.36	1.02	Disagreed
6	The number of students in the class makes effective class interaction difficult	2.83	1.03	Agreed

As observed in Table 1 many of the respondents agreed that they have far above 40 students in their class at every lesson ( $M = 2.83 > 2.50$ ;  $STD = 0.96$ ) and sometimes merge two classes together whenever such a need arises ( $M = 2.85 > 2.50$ ;  $STD = 1.01$ ). From the response of the respondent, it can be observed that effective classroom communication and students' participation in class are hindered because of the large

class size. ( $M = 2.12 > 2.50$ ;  $STD = 1.04$ ) and ( $M = 2.54 > 2.50$ ;  $STD = 1.12$ ) were obtained respectively. Teachers' ability to move round the class during lesson ( $M = 2.36 < 2.50$ ;  $STD = 1.02$ ) and identification of students by name ( $M = 2.83 < 2.50$ ;  $STD = 1.03$ ) becomes practically impossible because of the class population

**Table 2: Class size and Teachers' Effectiveness**

S/N	ITEMS	Mean	SD	Remark
1	Large classes do not give room for effective teaching and learning.	3.06	1.06	Agreed
2	Teachers who teach large classes encounter a lot of challenges in performing their duties.	3.29	0.99	Agreed
3	Large class size hinders teachers' effectiveness.	3.03	0.96	Agreed
4	Teacher-students' interactions are affected by large class size	3.26	0.99	Agreed
5	Large class size hinders class room management/control	3.06	1.06	Agreed

Table 3 revealed respondent views on class size and teachers' effectiveness. Most of the respondents agreed that large classes do not give room for effective teaching and learning ( $M = 3.06 > 2.50$ ;  $STD = 1.06$ ) and teachers teaching large classes encounter a lot of

challenges in performing their duties ( $M = 3.29 > 2.50$ ;  $STD = 0.99$ ). In addition, the respondent agreed that teacher-students interactions are affected by large class size ( $M = 3.03 > 2.50$ ;  $STD = 0.96$ ) and large class size hinders classroom management/control.

**Table 3: Coping Skills and Classroom Management Techniques used by Teachers**

S/N	ITEMS	Mean	SD	Remark
1	I prepare my lesson plans ahead of my classes.	3.02	1.01	Agreed
2	I solve adequate number of examples during the lessons.	2.81	0.89	Agreed
3	I allow the students to solve examples while lesson are going on.	3.13	0.95	Agreed



4	Students exchange books to mark class work after solving corrections on the board	3.07	0.98	Agreed
5	The students are peered in groups to solve problems together.	2.99	0.94	Agreed
6	Students are given projects to work on individually and or in group	2.69	0.88	Agreed
7	I cover all the topics stated in the syllabus and curriculum.	3.07	0.84	Agreed
8	I sometimes need to arrange extra classes for the students who have difficulty to understand	3.19	0.85	Agreed

Table 4, revealed the respondents' coping strategies for handling large classes. Many of the respondents agreed that preparing lesson plans ahead of the classes and solving adequate number of examples during the lessons can help teachers teaching large classes. The mean response of ( $M = 3.02 > 2.50$ ;  $STD = 1.01$ ) and ( $M = 2.81 > 2.50$ ;  $STD = 0.89$ ) were observed respectively. Also, teachers agreed using the following strategies; allowing students to solve examples while lesson are going on ( $M = 3.13 > 2.50$ ;  $STD = 0.95$ ), Students exchanging books to mark class work after solving corrections on the board ( $M = 3.07 > 2.50$ ;  $STD = 0.98$ ); Students are paired in groups to solve assignment together. ( $M = 2.99 > 2.50$ ;  $STD = 0.94$ ); Students are given projects to work on individually and or in groups; ( $M = 2.69 > 2.50$ ;  $STD = 0.88$ ); Covering all the topics in the syllabus ( $M = 3.07 > 2.50$ ;  $STD = 0.84$ ) and arranging extra classes for the students who have difficulties in coping with the normal class

### Discussion

The findings from the study showed that majority of Mathematics and English teachers in the sampled school have well over 60 students in their classes and this has made effective class interaction extremely difficult. The finding is in line with that of Agba (2010); Yelkpiem., Namel, Esia, and Donkoh, (2012) who opined that students' overpopulation would have effect on the tone of the school which may, in turn, dampen the morale of both teachers and students.

Also, the study showed a significant relationship between class size and the effectiveness of teachers. It also revealed that large classes do not give room for effective teaching and learning. This finding is in line with that of Owoeye and Yara (2011), Whitehurst and Chingos (2011) who argue that class size is considered to be one of the major determinants of students' academic achievements. However, the study showed some classroom management skill / coping strategies employed by teachers to cope with over populated classes. This supports the findings of Adimoyenma ,

Akachukwu and Igboabuchi (2018) who stated that effective teaching cannot take place in poorly managed classrooms.

### Conclusions

The study established that large class size has negative impact on teachers 'effectiveness, teachers' social and psychological well-being. Consequently, the smaller the class size, the more likely for a teacher to have more time for the individual student as such, the teacher's level of effectiveness is likely to increase. Therefore, coping with large class size poses more challenges to the teachers which can result to an overall diminishing effect on the teachers' performance and effectiveness.

### Recommendations

The following recommendations are based on the findings

1. The Government should employ more English and Mathematics teachers in Senior Secondary Schools in Lagos State. This will help to reduce the population of students per class which makes it easier for teachers to manage, control and assess their students effectively.
2. Student admissions should be controlled and be based on the available school plant, and facilities. There should be a positive correlation between the number of students admitted per year and the available classrooms, teachers and other facilities and infrastructure required for effective teaching and learning.
3. The agencies responsible for education at different levels of government should increase the allocation of funds allotted for building classrooms across Public secondary schools.

### References

- Adeyemi, T.O (2008). The influence of class size on the quality of output in secondary schools in Ekiti State, Nigerian. *American Eurasian Journal of scientific Research* 3(1) 7-14





- Adimoyenma, N.R, Akachukwu, E. E., & Igboabuchi, N.A (2018). Impact of class size on student's academic performance in Biology in Idemili North Local Government Area of Anambra State. *International Journal of Education and Evaluation*, 4(8). 22-32
- Agba, S.U (2010). *Students over population and its effect on academic performance in senior Secondary school certificate examination area of cross rivers state Nigeria*. (Unpublished B.Sc (Ed) project) Owerri, Imo State.
- Ajayi, V.O, Audu, C., AJayi, E. (2017). 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*. 5(5) 034-041.
- Akiri (2013). Effects of teacher effectiveness on students' academic performance in public secondary schools, Delta State Nigeria. *Journal of Educational and social research* 3(3)105-109.
- Aransi, W.O (2017). Effects of class classification, class size and gender on Academic performance among Fatima High School students in Irewole Local Government Area of Osun state, Nigeria." *European Journal of Education studies* 3(11). 756-771
- Ayeni, A.J & Amanekwe, A.P (2018). Teachers' instructional workload management and students' Academic performance in public and private secondary schools in Akoko-North-East Local Government, Ondo State, Nigeria. *American International Journal of Education and Linguistics Research*. 1(1) 9-23.
- Berk, R.A (2005). "Survey of 12 strategies to measure teaching effectiveness". *International Journal of teaching and learning in higher education* 17(1) 48-62.
- Darling-Hammond, L. (2010). Evaluating teacher effectiveness: How teacher performance assessments can measure and improve teaching, Center for American progress Pg 2-3
- Dror, Y. (2009). School locations as a function of uniqueness, autonomy, integrated and comprehensiveness: An historical model with current implications. *Journal of Educational administration and History*, 27(1): 35-50.
- Ikolo, V.E (2011). *Effect of classroom size on students' academic performance of secondary school students in Kosofo Local Government area of Lagos state, Nigeria*. (Unpublished M.Ed dissertation) Lagos state university Ojo.
- Mokobia, M.O and Okoye, N.S (2011). Effect of class size on the teaching and learning of chemistry in secondary schools on Delta state, Nigeria. *Journal of Education and policy*. 3(1) 1-7.
- National Policy on Education (2013). Federal Republic of Nigeria: Lagos *National Education Research and Development council* 2013.
- National council of teachers of English (2014). CCCC statement on second language writing and writers. Conference on college composition and communication. <http://www.ncte.org/ccc/resources/positions/seconclang>
- Onyekuru, B.V and Ibegbunam, J.O (2013). Teaching effectiveness of secondary school teachers Eanohua local government area of Rivers state Nigeria. *European Scientific Journal*. 9(28).
- Owoeye, J.S, Yara, P.O (2011). Class size and academic achievement of secondary school students in Ekiti state Nigeria. *Asian journal of social science* 7(6)184-189.
- Stronge, J.H., Ward, T.J. & Grant, L.W. (2011). What makes teachers good? A cross-case analysis of the connection between teacher effectiveness and students' achievement. *Journal of teacher Education* 62(4). 339-355
- Subair, S.T & Talabi, R.B (2015). Teacher shortages in Nigerian schools: causes effects and administrators coping strategies. *Asia pacific Journal of Education, Arts and Sciences* 2(4). 31-37.
- Whitehurst, G.J & Chingos, M.M (2011). Class size: what research says and what it means for state policy. Washington, DC Brookings institution.
- Yelkpiem, D., Namel M, Esia Donkoh, K. (2012) *Effects of Large class size on effective teaching and learning at Winneba campus of UEW* (University of Education Winneba) Ghana US-China Education Review (3). 319-332.