

## **Effects of Overcrowded Classroom on Academic Achievement of Student in Public Secondary Schools: Implication for Sustainable Development**

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### **Abstract**

This study examined the effects of overcrowded classroom on academic achievement of student in public secondary schools: Implication for sustainable development. The population for this study consisted of all the teachers and students in public secondary schools in Obio Akpor Local Government Area of Rivers State. A total of three hundred and thirty-seven (337) students were randomly selected from four selected schools. Three research questions and one null hypothesis guided the study. The simple random sampling technique was drawn from the sample used for the study. An instrument titled Effects of Overcrowded Classroom Test (EOCT) was used in collecting data for the study and was developed by the researcher. The instrument used for this study was subjected to face and content validation. Test –retest was used to establish the reliability of the instrument using Pearson Product Moment Correlation coefficient was used to obtain the reliability index of 0.85. Both primary and secondary sources of data were used to gather information for the study. The information obtained was then analyzed using descriptive and inferential statistics. The analysis indicated that overcrowded classroom significantly influenced behavioral attitude of students towards their studies. It also showed that overcrowding of classrooms significantly affected effective teaching and learning. The analysis further indicated that overcrowding of classroom negatively affected academic performance of students, being the major factor responsible for poor performance of students in public schools. It was concluded that overcrowding of classroom had significantly affected students' behavioral attitude of students towards their studies. Based on the results and conclusion, the study also recommended among others that Government should fund our education and provide more facilities that will commensurate the access/enrolment.

**Keywords:** Overcrowding, classroom, distractions, achievement.

### **Introduction**

Overcrowding in schools is a major factor in admitting students into secondary education and also, for many education policy researchers. It has become a subject that is often reported in local newspapers and also discussed in teacher's lounges across the country. Teachers are bothered about meeting the needs of many students and with fewer resources. Students and parents complain about classroom conditions and insufficient books and lockers for students. Over the years, researchers have looked at reasons many urban schools are overcrowded and proposed solutions to the overcrowding, such as private schooling and opening new facilities. Overcrowding has not received the same research attention as other topics in education, such as income and education levels of parents, students, and early childhood education and teacher effects on student performance. Class size is related to the issue of overcrowding, and this problem has been studied in -depth via the

famous experimental Tennessee STAR study (Nye, Barbara, Larry, Hedges & Konstantopoulos in Shirley, 2017). However, the problem of overcrowding has many different causes and implications. Growing class size is just one symptom of school overcrowding. Overcrowding occurs when a school facility enrolls more student than it was designed to accommodate (Hornick –Lockard, 2015). Most schools identified as overcrowded are in areas where the school- age populations are growing fast and most of them in Nigeria are found in Port Harcourt city. It has been agreed that overcrowding involves a class of over 100 or more. In 2012, at the secondary level, 43.1% percent of all the students that sat for Certificate of Secondary Education Examination (CSEE) passed the examinations, Basic Educational statistic in Tanzania (BEST 2009-2014). Both the National Examinations and independent assessments show poor learning outcomes. Meador (2019) says that one of the biggest issues facing schools and teachers today is overcrowding. A blend of an increasing population and a decrease in funding has caused class sizes to soar. In an ideal world, class sizes would be capped at 15 to 20 students. Unfortunately, many classrooms now regularly exceed 30 students, and it is not uncommon for them to be more than 40 students in a single class. Classroom overcrowding has despondently become the new normal. The issue is unlikely to go away anytime shortly, so schools and teachers must create workable solutions to make the best out of a bad situation. Batiz, R. et al in Akech (2016) in their study conducted in US in New York City found out that “students in such schools scored significantly lower in both mathematics and reading exams than did similar students in addition, when asked, students and teachers in over- crowded schools agreed that over -crowding negatively affected both classroom activities and instructional techniques”. Khan and Iqbal in Akech (2016) on overcrowded classroom, the study conducted in Pakistan found out that effective teaching was not possible in overcrowded classes and majority of teachers were facing instructional, discipline, physical and evaluation problems.

Overcrowded is a place where learners exceeded that then the recommended facility for which the class is designed. The National center for education statics (NCES, 2000). “Overcrowded” is a classroom that has more students than a teacher can effectively teach and/or a classroom that is so crowded with desks and bodies in desks one cannot easily move around the room. Add that to trying to figure out how to work individually with 36 kids in a fifty-minute class period and still have presentations and activities and that is overcrowded. Moore in Quora, 2023. Meador (2019) suggests that Overcrowded classrooms create a number of problems for modern school systems such as:

**There is not enough of the teacher to go around.** Students perform better when the teacher is able to give one-on-one or small-group instruction on a regular basis. As classroom size increases, this becomes increasingly difficult to do.

**Overcrowding increases classroom discipline issues.** Large classes packed with students provide more opportunities for personality conflicts, tension, and general disruptive behavior. Even the best teachers find it difficult to handle an overcrowded classroom successfully and can find themselves spending more time managing their classroom than they do teaching.

**Struggling students fall further behind.** Average and below-average students will struggle to progress in an overcrowded classroom. These students need more direct instruction, one-on-one instructional time and least distractions to maximize their learning potential.

**Standardized test scores suffer.** While many teachers would disagree that there is an overemphasis placed on test scores especially in America's public schools, the chance of successfully improving proficiency on a standardized test decreases as the number of students in the classroom increases.

**The overall noise level is increased.** This is an expected result when you increase the number of students in the classroom. Louder classrooms translate to distractions making it more difficult for students to learn and for teachers to teach.

**Teacher stress is increased often leading to teacher burnout.** More students decipher to more stress. Many excellent teachers are opting to leave the profession because it is not worth the stresses they deal with on a daily basis.

**Overcrowding leads to less access to equipment and technology.** Space is already at a premium for many schools and there often is not enough room to accommodate specialties such as science or a computer lab.

### **Greater noise and distractions**

Having more of anything can lead to chaos. An ideal classroom would be limited to 15 to 20 students, but many classrooms today have over 30 or even 40 students.<sup>3</sup> Naturally, the more students there are, the noisier it gets—even in classrooms that are effectively managed. The increased noise level can make it harder for kids to concentrate, affecting learning outcomes, and more difficult for teachers to focus, leading to more stress and possible burnout.<sup>3</sup>

### **Less Personalized Instruction**

The greater the number of students in a classroom, the less attention each student can receive from the teacher. This particularly affects students who are struggling and need the extra attention. This impacts learning outcomes, as these students are more likely to have lower test scores and grades as a result.<sup>3</sup>

### **Increase in Disciplinary Problems**

Overcrowding can lead to a chaotic classroom environment that is more difficult for the teacher to manage. The increased number of students leads to a greater likelihood of disruptive behavior and conflicts among students, especially with fewer resources to accommodate the extra students. Teachers in overcrowded classrooms often devote more time to dealing with behavioral issues and less time to teaching—something no teacher desires.

## **Poor Building or Environmental Conditions**

Schools with overcrowded classrooms are also more likely to have poor building or environmental conditions, as noted by the NCES, which cited a study claiming that overcrowded schools “were more likely than schools that were either under enrolled or within 5% of their capacity to have at least one building feature in less than adequate condition.”<sup>2</sup> This could include poor air conditioning and heating systems, lighting, ventilation, indoor air quality, acoustics or noise control, and physical security.<sup>2</sup>

## **Increase in Illness Risk**

The poor building conditions found in overcrowded schools also pose health risks for students and teachers. Poor ventilation, lighting, acoustics, and classroom temperatures can expose students to allergens, pollutants, and even chemicals that affect health, attendance, and performance of course, in terms of the ongoing fight against COVID-19; overcrowded classrooms do not lend themselves to social distancing and therefore make it easier for germs to spread. This has become a major concern for parents, teachers, and students.

## **Meador (2019) mentioned Ways Teachers Can Succeed with Overcrowded Classes**

Teachers in an overcrowded classroom must be exceptionally organized. They have to be well ready every day. They must develop a fluid system through trial and error to maximize the time they have with their students. Teachers can generate solutions for overcrowded classrooms by:

**Creating energetic and engaging lessons:** Every lesson must be enticing, energetic and fun. It is easy for students in any class to be distracted and lose interest, but this is especially true in a large classroom. Lessons must be fast-paced, unique and full of attention grabbers.

**Tutoring struggling students who need more time after school:** There simply is not enough time to provide struggling students with the one-on-one time that they need. Tutoring these students two to three times a week after school gives them a better shot at being successful.

**Assigning seats and rotating when necessary:** With a large class, teachers must be structured, and this starts with strategically placed assigned seats. Students who are low academically and/or are behavior issues should be assigned seats toward the front. Students who are high academically and/or are well behaved should be provided seats toward the back.

**Understanding that the dynamics in an overcrowded classroom will be different:** It is essential that teachers understand that there are significant differences in a classroom of 20 students compared to a classroom of 30 or 40. Teachers have no control over how many students are in their classes, so they cannot allow themselves to become stressed due to things that are out of their control. Teachers should understand that they are not going to be able to spend time with each student every day. They should comprehend that they will not get to know each student on a personal level. That is simply the reality in an overcrowded classroom. Furthermore, structure is very important in any

classroom but especially so in a classroom with lots of students. Teachers require establishing clear rules and expectations on day one, and then following through as the year progresses. Clear rules and expectations will help create a much more convenient class-where students know what they are required to do and when, especially an overcrowded one. Another way to deal with overcrowded classroom problems is to make groups of students in the classroom. This provides the students an opportunity to learn more effectively from each other and from the teachers' meaningful feedback. With the help of students grouping, the students' class participation, their deviant behavior, individual differences and availability of instructional materials can easily be observed. Work management could be eased by employing group work, for instance, limited resources are shared. While grouping, desks are arranged in such a way to support group work atmosphere, this strategy helped the teachers in moving, monitoring, controlling and supervising the children in the classrooms. Group work in a well-arranged way enables the students to engage in tasks, discuss and share views, have a chance to learn from one another (NCES 2000).

**Classroom** or schoolroom is a learning room in which both children and adults learn. Classrooms are found in educational institutions of all kinds, ranging from preschools to universities, and may also be found in other places where education or training is provided, such as corporations and religious and humanitarian organizations. The classroom provides a space where learning can take place unremitted by outside distractions (Wikipedia, 2021). Classrooms can have a whole group of 18 to 30 students (in some cases these numbers may differ) and one, two, or even three teachers. When there are two teachers in a classroom, one is the lead teacher and the other one is the associate. Or the second teacher might be a special education teacher. There may be a third teacher in the back watching and taking notes. Classroom refers to a specially planned space to teach the students without any interruption (Teachmint, 2023). Classroom means a physical classroom environment in which teachers and participants are physically present for the teaching of a course. Courses taught through Internet, mail, or correspondence classes shall not be considered to be courses taught in a classroom (Lawinsider, 2022).

**Academic performance** is the measurement of student achievement across diverse academic subjects. Teachers and education officials typically measure achievement using classroom performance, graduation rates, and results from standardized tests (Ballotpedia, 2022). It is also the extent to which a student, teacher or institution has attained their short or long-term educational goals. Completion of educational benchmarks such as secondary school diplomas and bachelor's degrees signify academic achievement. Academic achievement is commonly measured through examinations or continuous assessments but there is no general agreement on how it is best evaluated or which aspects are most important—procedural knowledge such as skills or declarative knowledge such as facts (Annie Ward; Howard. Stoker; Murray-Ward in Wikipedia, 2023). Furthermore, there are questionable results over which individual factors successfully predict academic performance, elements such as test anxiety, environment, motivation, and emotions require consideration when developing models of school achievement. Now, schools are receiving money

based on its student's academic achievements. A school with more academic achievements would receive more money than a school with less achievement (Ziedner & Mosche in Wikipedia, 2023).

### **Statement of the Problem**

The issue of poor academic achievement of student in Nigeria is worrisome to the stakeholders and teachers. The challenge is so enormous that it has led to the decline in the standard of education. Moreover, the introduction of free education by Universal Basic Education (UBE) through the government of Rivers State has sporadically increased enrolment in primary and secondary schools. It has been observed that school management enrollment of student increases from week to week and term to term without considering available resources that will accommodate their students such as spacious classroom, laboratories and libraries and even staffroom. Some of these students sit on the floor and those that are sitting down squeezed themselves because there are no enough seats that can accommodate everybody in the classroom. Moreover, teachers found it difficult to move around the classroom while teaching because there is no space to put her/his leg, as a result of these, failure rate has increased dramatically.

### **Purpose of the Study**

The purpose of the study is to determine the effects of overcrowded classroom on academic achievement of student in public secondary schools: implication for sustainable development. Specifically, the study is designed to:

1. Examine the factors responsible for overcrowded classroom on student academic achievement in public secondary school.
2. Determine the effects of overcrowded classroom on students academic achievement in public secondary school.
3. Ascertain the strategies to eliminate the challenges of overcrowded on student academic achievement in public secondary school.

### **Research Questions**

This research attempt to address the following questions.

1. What are the factors responsible for overcrowded classroom on student academic achievement in public secondary school?
2. What are the effects of overcrowded classroom on students' academic achievement in public secondary school?
3. What are strategies to eliminate the challenges of overcrowded classroom on student academic achievement in public secondary school?

### **Hypothesis**

One null hypothesis was formulated and tested at 0.05 level of significance

1. There is no mean score of male and female students in the strategies to eliminate overcrowded classroom.



## Methodology

The population for this study consisted of all the teachers and students in public secondary schools in Obio Akpor Local Government Area of Rivers State. A total of three hundred and thirty-seven (337) students were randomly selected from four selected schools. Three research questions and one null hypothesis guided the study. The simple random sampling technique was drawn from the sample used for the study. An instrument titled Effects of Overcrowded Classroom Test (EOCT) was used in collecting data for the study and was developed by the researcher. The instrument used for this study was subjected to face and content validation. Test –retest was used to establish the reliability of the instrument using Pearson Product Moment Correlation coefficient was used to obtain the reliability index of 0.85. Both primary and secondary sources of data were used to gather information for the study. The information obtained was then analyzed using descriptive and inferential statistics. **Results**

**Research 1:** What are the factors responsible for overcrowded classroom on student academic achievement in public secondary school?

**Table 1: Mean and Standard deviation Analysis of the factors responsible for Overcrowded Classroom on Academic Achievement**

S/N	Items	Male Students		Female Students	
		Mean	SD	Mean	
1	Increase in Examination malpractices	2.88	0.99	2.45	0.92
2	Increase in School enrolment	2.47	0.59	3.78	0.82
3	Free education	2.85	0.79	2.91	0.96
4	Teachers efficiency	2.66	0.92	2.85	0.82
5	The size of the classroom and how it is fitted	2.99	0.80	3.59	0.95
6	Shortage of classroom	2.55	0.78	2.95	0.74
7	Having one school serving big community	3.01	0.80	2.82	0.60
8	Shortage of teaching staff	2.25	0.73	2.38	0.72
9	Poor building or environmental condition	2.32	0.95	2.21	0.88
10	Greater noise and distractions	1.12	0.83	1.01	0.71
Cluster mean		25.1	9.17	26.95	8.12

Table 1 shows the responses of male and female students on the factors of overcrowded. The results shows that average mean score of the male students range between 2.25-3.01 while those of female range between 2.21 – 3.59. Judging by the result, the table reveals that item 8 and 9 had a mean below the criterion mean of 2.5. This shows that the students disagreed with the statement on the

questionnaire as far as factors of overcrowded classroom on student's academic achievement is concerned.

**Research Question 2:** What are the effects of overcrowded classroom on students' academic achievement of students in public school?

**Table 2:** Mean and Standard deviation Analysis of the effects of Overcrowded Classroom on Academic Achievement

S/N	Items	Male Students		Female Students	
		Mean	SD	Mean	SD
11.	Frustrating, overwhelming and stress	2.51	0.34	2.97	0.87
12.	Distraction and lost of interest	2.64	0.75	3.18	0.92
13.	Teacher burnout	2.81	0.71	3.76	0.88
14.	General disruptive behavior	3.14	0.95	2.83	0.92
15.	Overcrowding leads to less access to equipment and technology e.g science or a computer lab.	2.53	0.74	2.65	0.76
16.	Tension	3.32	0.83	2.63	0.87
17.	Struggling students fall further behind.	3.01	0.99	2.50	0.76
18.	Average and below-average students will struggle to advance	2.82	0.78	3.19	0.81
19.	Standardized test scores suffer	2.62	0.89	2.89	0.94
20.	The overall noise level is increased	3.16	0.82	3.51	0.78
Cluster mean		28.56	8.3	30.11	8.51

Table 2 shows the responses of male and female students on the factors of overcrowded. The results shows that average mean score of the male students range between 2.51-3.32 while those of female range between 2.50 – 3.76. Judging by the result, the table reveals that all the items had mean above the criterion mean of 2.5, thus they were all accepted. This shows that the students agreed with the statement on the questionnaire as far as effects of overcrowded classroom on student's academic achievement is concerned.

**Research Question 3:** What are strategies to eliminate overcrowded classroom in public secondary school?



**Table 2: Mean and Standard deviation Analysis on the Strategies to eliminate or solve challenges of overcrowded classroom.**

S/N	Items	Male Students		Female Students	
		Mean	SD	Mean	SD
21.	Take benefit of ability grouping	3.06	0.4	3.63	0.64
22.	Every lesson must be appealing, energetic and fun.	2.57	1.01	2.83	1.35
23.	Lessons must be fast-paced, unique and full of attention grabbers.	2.51	1.09	2.69	0.90
24.	Schools should use benchmark assessments to determine student placement.	2.97	0.92	3.08	0.92
25.	Students who are low academically and/or are behavior issues should be assigned seats toward the front.	3.47	0.7	3.51	0.50
26.	Clear rules and expectations will help create a much more manageable class.	3.83	1.11	3.88	1.11
27.	Provision of spacious classroom	3.43	0.12	3.75	0.40
28.	Reduction of class sizes to 15 to 20	3.88	1.01	3.73	1.12
29.	Provision of facilities such as fans and instructional materials	2.08	1.36	2.69	1.08
30.	Creating an conducive atmosphere	3.51	0.49	3.66	0.41
Cluster mean		31.31	8.21	37.08	8.43

Table 3 shows the responses of male and female students on the factors of overcrowded. The results shows that average mean score of the male students range between 2.08-3.83 while those of female range between 2.69 – 3.88. Judging by the result, the table reveals that all the items had mean above the criterion mean of 2.5, thus they were all accepted. This shows that the students agreed with the statement on the questionnaire as far as strategies to eliminate overcrowded classroom on student's academic achievement is concerned.

**Table 4: T-test of mean responses of male and female students in the strategies to eliminate overcrowded classroom.**

Group	n	Mean	SD	Df	t-cal	t-crit	Inference
Male	39	28.56	8.30	335	-1.06	1.96	Not significant
Female`	301	30.11	8.51				

The t-calculated was  $-1.06$  against t-critical of  $1.96$ . The t-calculated was less than the t-critical therefore the null hypothesis of no significant difference was not rejected. This implies that both male and female students agreed on the strategies to eliminate overcrowded classroom.

### **Discussion of Findings**

The result of data analysis on table 1 revealed factors responsible for overcrowded classroom on student academic achievement in public secondary school. This finding agrees with Meador (2019) who says that teaching in an overcrowded classroom can be frustrating, overwhelming and stressful. An overcrowded classroom presents challenges that can feel nearly impossible to overcome, even to the most effective teachers. Increasing class sizes is a sacrifice many schools have to make in order to keep their doors open in an era where schools are underfunded. The result of data on table 2 reveals the effects of overcrowded classroom on student academic achievement in public secondary school. This finding agrees with Matshipi et al (2017) who reveals that overcrowded classes are caused by lack of infrastructure such as classrooms, having one school serving big community. Also, Rivers state government through Universal basic education (UBE) takes long to build classrooms or to repair those that are damaged, the shortages of teaching staff and principal who are looking to increase the enrollment of their school so they can have extra money.

### **Conclusion**

The study addressed the effects of overcrowded classroom on academic achievement of student in public secondary school: implication for sustainable development. The researcher identified three factors responsible for overcrowded classroom and proffer solution to the problems identified. It was also concluded that overcrowded classroom had significant effects on student academic performance.

### **Recommendations**

1. Government should fund our education and provide more facilities that will commensurate the access/enrolment.
2. Government should ensure that teachers are adequately remunerated and paid as and when due to avoid absent of teachers in the school.
3. Teachers and principals are encouraged to attend workshop, seminars, and conferences in order to obtain their knowledge and skills that will help combat overcrowded classroom.

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