



(RESEARCH ARTICLE)



## Analysis of large class-size and its effects on teaching and learning process among students' secondary schools in Potiskum local government area

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### Abstract

The study was carried out on the evaluation of the effects of over-population on teaching and learning of among students in junior secondary schools in Potiskum Local Government Area. To guide the study, 3 research questions in line with purpose of the study were formulated. Descriptive Survey Research Design was adopted for the study. The target population of the study was the entire teachers in randomly selected four junior secondary schools in Potiskum Local Government Area. Stratified Random Sampling Technique was adopted to select 40 teachers from the 4 junior secondary schools to constitute the sample size of the study. Structure Questionnaire was the major instrument used to collect data for the study. The data collected was analyzed using Mean and Standard Deviation for the questionnaires. The findings of the study revealed that, inability of teachers to paid attention to individual students that need special attention, lack of classroom control and management at overcrowded classroom and teachers found it difficult in conducting effective continuous assessment in classroom are some of the problems faced by teachers and students in teaching and learning in over-populated classrooms in junior secondary schools of Potiskum Local Government Area. The findings of the study also revealed that, high numbers of the students in classroom affect academic performance and that smaller class's size lead to improvement of academic performance are some of the effects of over-population on the quality of teaching and learning in junior secondary schools in the study area. The findings of the study further revealed that, Admission of the students in junior secondary schools should be based on minimum standard as specified National Junior Secondary School Curriculum and provision of modern teaching aids such as overhead projectors, power point presentation device that each and every individual student will view the content of the lesson in the classroom are some of the ways forwards for overcoming the problems faced by teachers and students in over-populated classroom during teaching and learning in junior secondary schools in the study area. It was recommended that, a ratio of 1:40 teachers to students is hereby suggested for junior secondary schools as stated in the National Policy of Education (2013).

**Keywords:** Class-size; Teaching; Learning; Secondary Schools

### Introduction

Education as a lifelong process continues until one's death. To stop being educable is a sort of death and to be denied educational resources at any stage in one's life amounts to knowledge starvation (1). This assertion to them is not necessarily a scientific or technological one, but a discovery of what we were, what we are and where we are going. It is discovery of our rights and privileges and what we need to enable us achieve our desired goals. But how can one become

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the best that one wants to be through education? Also, how can we discover our rights and privileges through education, or how can we achieve all these when the issue of over-population/class-size as an emergent curriculum issues has remained unresolved?

(2) Made a research to get the proper provision for teacher-pupil ratio in class which is deemed appropriate for effective teaching and learning especially as it relates to classroom interaction in Nigerian schools. According to the policy, the stipulated class-size in terms of teacher-students / pupils ratio for the various levels of educations are: Primary School - 1:35, Secondary School-1:40, Technical Education-1:20, Special Education- 1:10.

What this means is that in primary school, one teacher should teach thirty-five students (1:35), 1:40 in secondary, 1:20 in Technical Education while the ratio for Special Education is 1:10. These stipulations are in recognition of the need for teaching and learning to be carried out in a classroom setting that allows adequate teacher-students relationship, this enables the teacher to give proper attention to students in both class work and in character formation.

Different researchers (3) have reported that over-populated classroom have negative effect on academic task. (4) Has included that class size ranks amongst the most important factors that have strong and direct influence on academic performance of schools. Similarly, (5) have reported that students in small classes have greater achievement level than those in large classes. (6) Established an inverse correlation between class size and student's achievement concluding that the larger the class, the lower the student's achievement.

Nevertheless, academic performance is directly a function of attitudes of the learners. It is expected that large classes reduce effective classroom control. It thus has a potential to encourage distraction and disruptive behaviours amongst the students. (7) Remarked that students in small classes display less disruptive behavior than those in large classes. (8) Asserted that class size significantly affects the level of students' cognitive skills in the classroom. According to (9), small classes improved both the students' performance and learning behavior as well as it yields fewer classroom disruptions and discipline problem. In view of the above, research has suggested that smaller classes are usually preferred by both instructors and students (Yusuf et al., 2016) advised an educational policy of class sizes less than 30 while (10) recommended the teacher-student ratio of 1:40.

The impact of overcrowded classrooms on students' learning is of interest to educators, parents and the general public. According to a research conducted by (11), 'an overcrowded classroom has more students assigned to a classroom-building than the number of students it was designed to accommodate'. When the capacity of the classrooms is exceeded, it places greater demand on the schools' existing resources and infrastructure that need to be used for effective learning. According to (11) when poor planning is done, population increases in classes can happen.

According to (12), the innovation with respect to the class population arrangements was as a result of the introduction of the Universal Primary Education (UPE) in 1976, led to the rise in population of primary school pupils. As noted by (12), the present introduction of the Universal Basic Education (UBE) will have similar effects of increasing the number of students in junior secondary schools. Those who attempt to apply them encounter a lot of difficulties because of the class size. In large classes, the distance between students and the teacher becomes wide, thus, teachers may not give the much personal attention to each student (12), the present study aimed to evaluate the effects of over-population on teaching and learning among students in junior secondary schools in Potiskum Local Government Area.

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## Statement of the Problem

Following the innovations brought about by the introduction of the Universal Basic Education (UBE), enrolment in junior secondary schools in Potiskum Local Government Area of Yobe State has increased without a corresponding increase in the number of teachers and infrastructure to match it. This invariably has dealt a blow to quality teaching and learning of in junior senior secondary schools in Potiskum local government area of Yobe state. The fact is glaring that one of the fundamental problems of our public junior secondary schools today is that of over-populated classrooms. This study therefore is to evaluate the effects of Over-population on teaching and learning of among students in junior secondary schools in Potiskum. In Potiskum Local Government Area the population of students in relation to teachers in junior secondary schools is far from the ideal. The registers for instance make provision for over one-hundred fifty (150) students per class, as against the 1:35 and 1:40 recommended by the National Policy on Education for primary and secondary schools respectively. In many of the junior secondary schools, the number of students in a class is over one hundred. This has necessitated this study to evaluate the effects of Over-population on teaching and learning of among students in junior secondary schools in Potiskum Local Government Area. For instance, in many junior secondary schools in Potiskum Local Government Area, the teacher – students' ratio is one teacher to one hundred and thirty students (1:130) per class, 1:110, 1:100, and 1:80 per class.

Few studies have been conducted to the best of my knowledge on the effects of over-population on teaching and learning among students in junior secondary schools in Potiskum Local Government Area. Hence, this is the rationale for this study.

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### **Purpose of the Study**

The main purpose of this study was to evaluate the effects of over-population on teaching and learning among students in junior secondary schools in Potiskum Local Government Area. Specifically, the study sought to:-

- Identify the problems faced by teachers and students in teaching and learning in over-populated classrooms in junior secondary schools of Potiskum Local Government Area.
- To evaluate the effects of over-population on the quality of teaching and learning in junior secondary schools in the study area.
- To suggest ways forwards for overcoming the problems faced by teachers and students in over-populated classroom during teaching and learning in junior secondary schools in the study area.

### **Research Questions**

The following research questions were formulated to guide the study;

- What are the problems faced by teachers and students in teaching and learning in over-populated classrooms in junior secondary schools of Potiskum Local Government Area?
  - What are the effects of over-population on the quality of teaching and learning in junior secondary schools in the study area?
  - What are the ways forwards for overcoming the problems faced by teachers and students in over-populated classroom during teaching and learning in junior secondary schools in the study area?
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### **Significance of the Study**

The findings of the study will be beneficial to teachers, students, school managements and the government. It will help make recommendations, which when applied could reduce the adverse effects of over-population for effective teaching and learning.

The study will be of great benefit to teachers who interact with students in such classes. This is because in most classes, teachers experience great difficulties in doing their work especially in the classroom.

The information provided in this work will help in future educational planning since it will provide coping strategies for teachers in their work. The study will also serve as a source of literature to students and other researchers wishing to carry out a similar work.

The study therefore, is a wakeup call for government, curriculum planners and other stakeholders in the education industry including teachers to live up to their social responsibilities in order to ensure that qualitative education as proposed in the National Policy on Education (FRN, 2013), is realized. Finally, the study will be of help to academic posterity if the findings are taken into consideration and implemented.

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### **Scope of the Study**

The study aimed at evaluating the Effects of Over-population on teaching and learning of among students in junior secondary schools in Potiskum Local Government Area. The study will not cover the entire junior secondary schools in Potiskum Local Government Area. Therefore, it will be restricted to only four junior secondary schools in Potiskum Metropolis due to limited time for research work and limited resources at researcher disposal. These four junior secondary schools include:

- Government Day Junior Secondary School Kara Potiskum
- Government Girl's Day Junior Secondary School Kwata Potiskum
- Government Day Junior Secondary School Arikime Potiskum

- Government Day Junior Secondary School Yerimaram Potiskum

### Area of the Study

The area of study is Potiskum Local Government Area of Yobe state of Nigeria. It is the headquarter of Local Government Area is in the town of Potiskum on the A3 highway at attitude of 11° 42' 33" N 11° 04' 10" and latitude E/11.70917°N 11.06944°E. It has an area of 559Km<sup>2</sup> and population of 205, 876 at the 2006 census with postal code of the area is 631 (National Population Commission, 2006). It is bounded by Nangere in the South and north and by Fune in East and LGA in the South.

### Population of the Study

The target population for this study was Basic Science teachers from all Junior Secondary Schools in Potiskum Local Government Area of Yobe State.

### Sample and Sampling Techniques

The sample of this study was comprises the forty (40) teachers in four (4) Junior Secondary Schools Potiskum Local Government Area of Yobe State. Random sampling technique was adopted to select 10 teachers from each of the four randomly selected junior secondary schools.

### Research Instrument

Structured questionnaire was the major instruments to collect data for this study. The researcher designed the questionnaire titled "Evaluation of the Effects of Over-population on teaching and learning of among students in junior secondary schools in Potiskum Local Government Area." for the respondents to respond to four (4) likert's types rating scales of Strongly Agreed (SA), Agreed (A), Disagreed (D), and Strongly Disagreed (SD) respectively. The items in the questionnaire were structured based on stated research questions.

### Validation of Research Instrument

The instrument to be used to collect data for this study was validated by the senior lecturers in school of Science Education, Umar Suleiman College of Education Gashua. The correction and suggestion made was strictly adhered before producing the final copy of the instrument.

### Method of Data Collection

The questionnaire design for this study was distributed to the selected teachers in junior secondary schools. The researcher was assisted by four research assistants who are the students and teachers. After respondents filled the questionnaire, the researcher was then collected the filled questionnaire on-the-spot.

### Method of Data Analysis

The data collected for this study were analyzed using mean and standard deviation as statistical tools. A four (4) of points rating scale of likert's types was used with assigned values of 4, 3, 2 and 1 as options to the items on the questionnaires.

These options are

Strongly Agreed (SA)	4 points
Agreed (A)	3 points
Disagreed (D)	2 points
Strongly Disagreed (SD)	1 point

The mean of the above was determined by calculating the average.

$$\bar{X} = \frac{\sum fx}{n}$$

Where,

$\bar{X}$ = mean

F= frequency

X= nominal value of option

$\Sigma$ = summation sign

N= number of the respondent

A cut- off point of 2.50 was used to determine the mean which is thus:

$$\frac{4 + 3 + 2 + 1}{4} = \frac{10}{4} = 2.50$$

This means that any mean score equal to or greater than was considered as agreed response and any mean score less than (<) 2.50 was considered as disagreed responses.

### Research Question 1

What are the problems faced by teachers and students in teaching and learning in over-populated classrooms in junior secondary schools of Potiskum Local Government Area?

**Table 1** Mean and Standard Deviation on the problems faced by teachers and students in teaching and learning in over-populated classrooms in junior secondary schools of Potiskum Local Government Area

S/N.	Items	SA	A	D	SD	$\bar{X}$	SD	Remarks
1.	Inability of teachers to paid attention to individual students that need special attention.	25	13	1	1	3.55	0.67	Agreed
2.	Lack of classroom control and management at overcrowded classroom.	25	10	4	1	3.47	0.78	Agreed
3.	Teachers found it difficult in conducting effective continuous assessment in classroom.	18	12	7	3	3.12	0.95	Agreed
4.	Examination malpractice became rampart in overcrowded classroom.	28	9	2	1	3.60	0.70	Agreed
5.	Lack of effective use of instructional materials to meet the requirement of individual student in the classroom.	20	7	8	5	3.05	1.10	Agreed

From table 1 above, the findings of the study revealed that , inability of teachers to paid attention to individual students that need special attention, lack of classroom control and management at overcrowded classroom, teachers found it difficult in conducting effective continuous assessment in classroom, examination malpractice became rampart in overcrowded classroom and lack of effective use of instructional materials to meet the requirement of individual student in the classroom are some of the problems faced by teachers and students in teaching and learning in over-populated classrooms in junior secondary schools of Potiskum Local Government Area.

### Research Question 2

What are the effects of over-population on the quality of teaching and learning in junior secondary schools in the study area?

From table 2 above, the findings of the study also revealed that, high numbers of the students in classroom affect academic performance, smaller classes size lead to improvement of academic performance, students with higher ability develop easily in overcrowded class than those with low ability students and that learning in overcrowded class leads to Pupils poor learning and poor performance are some of the effects of over-population on the quality of teaching and

learning in junior secondary schools in the study area while they disagreed with the statement that students did not performed better in overcrowded class than those in small class.

**Table 2** Mean and Standard Deviation on the effects of over-population on the quality of teaching and learning in junior secondary schools in the study area

S/N.	Items	SA	A	D	SD	$\bar{X}$	SD	Remarks
6.	High numbers of the students in classroom affect academic performance.	13	17	8	2	3.02	0.86	Agreed
7.	Smaller classes size lead to improvement of academic performance.	20	16	3	1	3.37	0.74	Agreed
8.	Students performed better in overcrowded class than those in small class.	1	1	$\frac{2}{3}$	15	1.70	0.64	Disagreed
9.	Students with higher ability develop easily in overcrowded class than those with low ability students.	28	3	7	2	3.42	0.95	Agreed
10.	Learning in overcrowded class leads to Pupils poor learning and poor performance.	25	8	5	2	3.40	0.90	Agreed

From table 2 above, the findings of the study also revealed that, high numbers of the students in classroom affect academic performance, smaller classes size lead to improvement of academic performance, students with higher ability develop easily in overcrowded class than those with low ability students and that learning in overcrowded class leads to Pupils poor learning and poor performance are some of the effects of over-population on the quality of teaching and learning in junior secondary schools in the study area while they disagreed with the statement that students did not performed better in overcrowded class than those in small class.

### Research Question 3

What are the ways forwards for overcoming the problems faced by teachers and students in over-populated classroom during teaching and learning in junior secondary schools in the study area?

**Table 3** Mean and Standard Deviation on the ways forwards for overcoming the problems faced by teachers and students in over-populated classroom during teaching and learning in junior secondary schools in the study area

S/N.	Items	SA	A	D	SD	$\bar{X}$	SD	Remarks
11.	Admission of the students in junior secondary schools should be based on minimum standard as specified National Junior Secondary School Curriculum.	21	9	6	4	3.17	1.03	Agreed
12.	Provision of modern teaching aids such as overhead projectors, power point presentation device that each and every individual student will view the content of the lesson in the classroom.	28	3	8	1	3.45	0.90	Agreed
13.	Teaching of practical should be based on individual class rather than combine classes.	15	17	6	3	3.07	0.91	Agreed
14.	Provision of adequate funds by the government for procurement and maintenance of teaching facilities for conducive learning by individual student.	20	13	5	2	3.27	0.87	Agreed
15.	More provision of conducive classrooms in all junior secondary school under study to reduce the overcrowding in the classroom.	25	12	2	1	3.52	0.71	Agreed

From table 3 above, the findings of the study further revealed that, Admission of the students in junior secondary schools should be based on minimum standard as specified National Junior Secondary School Curriculum, provision of modern teaching aids such as overhead projectors, power point presentation device that each and every individual student will view the content of the lesson in the classroom, teaching of practical should be based on individual class rather than combine classes, provision of adequate funds by the government for procurement and maintenance of teaching facilities for conducive learning by individual student and more provision of conducive classrooms in all junior secondary school under study to reduce the overcrowding in the classroom are some of the ways forwards for overcoming the problems faced by teachers and students in over-populated classroom during teaching and learning in junior secondary schools in the study area.

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## Summary of the Findings

- The findings of the study revealed that, inability of teachers to paid attention to individual students that need special attention, lack of classroom control and management at overcrowded classroom and teachers found it difficult in conducting effective continuous assessment in classroom are some of the problems faced by teachers and students in teaching and learning in over-populated classrooms in junior secondary schools of Potiskum Local Government Area.
- The findings of the study also revealed that, high numbers of the students in classroom affect academic performance, smaller classes size lead to improvement of academic performance and students with higher ability develop easily in overcrowded class than those with low ability students and that learning in overcrowded class leads to Pupils poor learning and poor performance are some of the effects of over-population on the quality of teaching and learning in junior secondary schools in the study area.
- The findings of the study further revealed that, Admission of the students in junior secondary schools should be based on minimum standard as specified National Junior Secondary School Curriculum and provision of modern teaching aids such as overhead projectors, power point presentation device that each and every individual student will view the content of the lesson in the classroom are some of the ways forwards for overcoming the problems faced by teachers and students in over-populated classroom during teaching and learning in junior secondary schools in the study area.

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## Discussion

The findings of the study revealed that , inability of teachers to paid attention to individual students that need special attention, lack of classroom control and management at overcrowded classroom, teachers found it difficult in conducting effective continuous assessment in classroom, examination malpractice became rampart in overcrowded classroom and lack of effective use of instructional materials to meet the requirement of individual student in the classroom are some of the problems faced by teachers and students in teaching and learning in over-populated classrooms in junior secondary schools of Potiskum Local Government Area. The findings of the study also revealed that, high numbers of the students in classroom affect academic performance, smaller classes size lead to improvement of academic performance, students with higher ability develop easily in overcrowded class than those with low ability students and that learning in overcrowded class leads to Pupils poor learning and poor performance are some of the effects of over-population on the quality of teaching and learning in junior secondary schools in the study area while they disagreed with the statement that students did not performed better in overcrowded class than those in small class. The findings of the study further revealed that, Admission of the students in junior secondary schools should be based on minimum standard as specified National Junior Secondary School Curriculum, provision of modern teaching aids such as overhead projectors, power point presentation device that each and every individual student will view the content of the lesson in the classroom, teaching of practical should be based on individual class rather than combine classes, provision of adequate funds by the government for procurement and maintenance of teaching facilities for conducive learning by individual student and more provision of conducive classrooms in all junior secondary school under study to reduce the overcrowding in the classroom are some of the ways forwards for overcoming the problems faced by teachers and students in over-populated classroom during teaching and learning in junior secondary schools in the study area.

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## Conclusion

The study aimed at analysing the effects of class-size in teaching and learning in Secondary schools. The result shows that large class size does have negative effects on the entire teaching and learning process leading to poor students'

achievement. The size of the class determined the level of effective execution of lesson by the teacher, classroom management is one of the key to effective teaching and learning process and large class-size does not provide conducive atmosphere for proper classroom management. Large class-size also affects evaluation it is difficult for the teacher to monitor individual students and take records of their performance according. The researchers made recommendations with regard to the class-size in terms of teacher-students / pupils ratio for the various levels of educations are: Primary School - 1:35, Secondary School-1:40, Technical Education-1:20, Special Education- 1:10.

## Compliance with ethical standards

### *Acknowledgments*

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### *Disclosure of conflict of interest*

The authors declared no conflict of interest throughout the project, however, there are constructive argument at some point in the research but valid agreement was cemented before publishing the result.

### *Statement of informed consent*

The consent of the participant was adequately seek, all participants were fully aware of the importance of the research and participates with ease. The researchers also seek the consent of the school authorities where the research was conducted. Approval were granted adequately.

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