# INFLUENCE OF CLASS SIZE, TEACHER VARIABLES AND SCHOOL LOCATION ON ACADEMIC PERFORMANCE AMONG SENIOR SECONDARY SCHOOL STUDENTS IN KADUNA STATE, NIGERIA

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## DECLARATION

I hereby declare that this thesis titled *Influence of class size, teacher variables and school location on the academic performance among senior secondary school students in Kaduna State Nigeria* is a record of my research work. It has not been presented partially or wholly anywhere in my previous application for a higher degree. All quotations are indicated and the sources of information are specifically acknowledged by means of reference.

_____ _____

Babatunde Aderonke Modupe Date

## CERTIFICATION

This thesis entitled *Influence of Class Size, Teacher Variables and School Location on the Academic Performance among Senior Secondary School Students in Kaduna State Nigeria* by Babatunde Aderonke Modupe meets the regulations governing the award of degree of Masters of Education in Psychology of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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## DEDICATION

This research work is dedicated to my Creator who through His grace I am who I am today, and to the development of humanity.

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## ABSTRACT

This study investigates the influence of class size, teacher variables and school location on the academic performance among senior secondary school students in Kaduna State. The study was guided by four research questions and four null hypotheses that were tested on 0.05 level of significance. Ex post facto research design was used in the study, and population of the study consists of 1060 students and 30 teachers of selected senior secondary schools located in two educational zones in Kaduna State. The instrument used for data collection was Teacher Variables and School Location Question Items {TVSLQI} and results of the 2014 State Qualifying Examinations designed by the Kaduna State Ministry of Education. Descriptive statistics of frequency counts, simple percentage, mean and standard deviation were used to analyse the research questions while the null hypotheses were tested using t-test and Analysis of variance (ANOVA). Result indicates that there is a significant difference in the academic performance of secondary school students based on class size with students in large classes performing better than their counterparts in smaller classes.($t = 2.56$, $p=0.01$),The result also indicate significant difference with students taught by teachers with higher teaching qualification performing better. ($f=3.39$, $p=0.03$) There is also significant difference in the academic performance of students taught by more experienced teacher and those taught by inexperienced teacher. (*$t=4.69$, $p=0.00$*). Result also indicates that students located in the urban areas perform better than their counterparts in rural area of Kaduna State. ($t = 3.89$, $p=0.00$). In spite of the amazing results of the influence of class size on the academic performance of secondary school students, and the facts that large classes has some advantages it is still recommended that schools should stick to the 40:1 student – teacher ratio as stipulated by the National Policy on education.

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## OPERATIONAL DEFINITION OF TERMS

**Class Size:** This was used in this study as the number of students in a class room at the secondary school. Up to 40 students is considered as normal class size, above 40 students per class is considered as large class size.

**Students' Academic Achievement:** this is the scores obtained by the students after completion of a learning experience. For the purpose of this study, this is determined by their scores in the 2014 State Qualifying Examinations. All through the study, academic achievement and performance is used interchangeably.

**School Location:** this is the geographic location of the school, schools located in the state capital or local government headquarters are classified as Urban while those located out of these areas are Rural.

**Teacher Variables:** These include:

a. **Teacher Qualification:** The highest academic qualification obtained by the teacher. A teacher that has M. Ed, B. Ed is considered highly qualified, NCE less qualified while M. Sc, HND without a PGDE is considered not-qualified.
b. **Teacher Experience:** The number of years the teacher has put into active service as a teacher. 1-3 years is considered less- Experienced while above 3 years is considered as Experienced

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

Nigeria has been grappling with poor performance of students in secondary school final examinations such as senior secondary school leaving certificate examinations (SSCE) National Examination Council (NECO), 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 (FMOE, 2001). Another Educational survey which was conducted by the National Population Commission in 2004 indicated a widening gap between Northern and Southern states. 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. The national policy on education stipulates that the teacher- student's ratio in the secondary schools should be 1:40. Wosayanju, (2005) maintained that large class may pose some teaching challenges such as delayed feedback, resulting in inefficiency,

poor quality of students, and reduction in teaching with less assignment so as to reduce the burden of marking, all of which may encourage shallow learning.

The quality of education depends on the teacher as reflected in the performance of their students. Teachers play crucial role in the educational attainment of students because they are ultimately responsible for translating into actions the principles based on practice during interaction with the students. Teacher variables such as qualification, motivation and experience may be contributing factors to their output.

Teacher Qualification entails the basic training acquired by a teacher to enable him practice in the teaching profession. According to the National Policy on Education (2004), Nigeria Certificate in Education (NCE) is the minimum qualification for teaching in the primary schools.

Teachers experience entails the number of years a teacher has been practicing the art of teaching. Experience; they say, is the best teacher. An experienced teacher is more likely to be efficient in class control, determination of individual differences and ability to improvise teaching aids A newly employed teaching despite the level of training may find the practice difficult in the first few months, but as he progresses, he gets more confident and may be able to device different methods to deal with different types of class room problem. A study conducted by Olatunde, (2009) on the influence of teachers' experience and students' achievement discovered that students taught by more experienced teachers achieve higher level, because their teachers possess mastery of the content and acquired classroom management skills to deal with different classroom problems. This is determined by the teachers' qualification, experience and motivation. Another study by Chako, (1981) of teacher and student

characteristics as correlates of learning outcome in mathematics found out that teacher's attitude towards teaching significantly predicts students' attitude as well as achievement in mathematics.

There is the tendency for qualified teachers to seek deployment in schools located in urban towns, particularly in the state capitals where more school facilities and services tended to be concentrated. Teachers with the highest training are posted to largest cities, and even more noticeably to the capital. This and more findings abound on the disparity in the quality of teachers in urban schools compared to those in rural areas, which consequently affect student's academic performance. Ibukun **(**1988**)** in his investigation observed that teachers in urban secondary schools in Ondo State tend to be better qualified pointing out that there was no deliberate government policy supporting such lopsided resource allocation. In his conclusion, he said rural schools probably become progressively poorly staffed arising from personal refusal of teachers to serve in remote locations. In such location, their pattern of school lives are characterized by dilapidated buildings, which form extension to old ones thus forming a sort of patchwork with others, growing too old and no longer viable.

## 1.2 Statement of Problem

The low performance of the students in the Senior School Certificate Examination (SSCE) in recent years lends credence to this study. Data collected by the Kaduna State Education Resource Centre shows that between 1996-2002, only an average of 2% of public secondary schools students passed their SSCE, the actual figure ranged from 0.81% in 1996 to 1.08% in 2001 and 5.28% in 2002.In the year 2003, about 26000 candidates sat for the examination band only 2,078 or 8.0% candidates passed. In the year 2004, about 25,000 sat the examination with only 557

0r 2.2% candidates being qualified for university entirely. In 2010, only 15.97% candidates passed, 2013 only 9.02% of the candidates passed the SSCE, while in 2014, 12.30% of the candidates qualified for admission into the university.

Therefore, this study sets to find out the interactive influence of class size, teachers variables like qualification, motivation, and experience, school location on students' academic performance in selected senior secondary schools in Kaduna State.

## 1.3 Objectives of the Study

The following are the objectives of this work:

1. To determine the difference in academic performance of students taught in small class size and large class size.
2. To explore the difference in academic performance of students taught by teachers with higher teaching qualification teachers and those taught by teachers with lower teaching qualification.
3. To determine the difference in academic performance of students taught by experienced teachers and those taught by less experienced teachers.
4. To investigate the difference between the academic performances of senior secondary school students located in rural and urban areas of Kaduna State.

## 1.4 Research Questions

The following are the research questions:

1. Does class size differentiate academic performance of senior secondary school students in Kaduna State?
2. Is there any difference in academic performance of students taught by teachers with higher qualification and those taught by teachers with lower teaching qualification in Kaduna State?

3. Does the academic performance of students taught by experience teacher defer from their counterparts taught by less experience teacher?
4. Will school location impact negatively or positively on the academic performance of senior secondary school students in Kaduna state?

## 1.5 Research Hypotheses

The following null hypotheses were developed to serve as a guide to the researcher:

$H_{01}$: There is no significant difference in academic performance of students taught in large or small classes in Senior Secondary School in Kaduna State

$H_{02}$: There is no significant difference in the academic performance of students taught by highly qualified teachers and those taught by less qualified teachers of Senior Secondary School students in Kaduna State.

$H_{03}$: There is no significant difference in the academic performance of students taught by experienced teacher and those taught by less experienced teacher of Senior Secondary School students in Kaduna State.

$H_{O4:}$ There is no significant difference in academic performance of Senior Secondary School students located in the rural or urban areas of Kaduna State.

## 1.6 Significance of the Study

This study is on the influence of class size, teacher variables and school location on academic performance among secondary school students in Kaduna State. Findings from this study will be beneficial to the following stakeholders in the education sector:

Teachers are the translators of educational policies into practice. The teachers' role in education is very important; without the teacher the whole educational plans

will be a total failure. Therefore would -be teachers will be informed of their importance to the educational process; they will be enlightened on their need to consider the students and resolve to put in their best so that students can also be assisted to be at their best.

The policy makers will find the findings of this work useful in that it will enable them to know the relationship between the variables. That emphasis should not be on enrolment but the teacher factor should also be considered in any planning. The parents will find the findings of this work useful as they will be enlightened on the importance of the teacher in the educational sector, those that perceive the teacher negatively will be orientated to view the teacher positively. This can be achieved through sensitization in the Parent Teachers Association (PTA) meeting.

Government would be made to see the need to bridge the gap between the rural and urban schools by providing the rural dwellers the social amenities which will enhance better academic performance of students in their final examinations like the SSCE. The community should assist the government by providing internet facilities, taxis and buses to facilitate movement of teachers and students to their school. Adequate incentives should be provided to rural area teachers to encourage them to put in their best to remain in their duty stations.

## 1.7 Scope and Delimitation

This study focuses on some selected public senior secondary schools in Kaduna State. The study concentrates mainly on students in senior secondary school class two (SSS 2) and teachers of English Language. The study made use of the English language result only, the reason being that English Language is being offered by all senior secondary school students and it is a prerequisite for the senior

Secondary school certificate. This is to enable the researcher get a complete academic result of these students and be sure they would be available in the schools during the research. Students in Junior Secondary School (1) one to Senior Secondary school one(SSS 1) will not be involved in this study.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter reviews literatures that are related to relationship of class size and teacher variables on student's academic performance. It is discussed under the following sub-themes:

1. Conceptual framework Concept of Academic Achievement

i. Concept of Class size

ii. Concept of School Location

iii. Concept of Teacher Variables

2. Theoretical frame work

i. Class size

ii. Teachers variables

3. Review of related studies

4. Summary

## 2.2 Conceptual Framework

### 2.2.1 Concept of Academic Achievement/Performance

Academic performance is the behaviour exhibited by an individual, 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. The term Academic achievement and performance will be used interchangeably all through this study.

The demonstration of knowledge could be in terms of teacher made test or external examination, the test could be written or performance act. The result of the

demonstrated knowledge in the test; which is called achievement, will indicate whether the child has achieved or not. The child that does not perform well is said to be a failing child or what is referred to as academic failure or poor academic performance.

### 2.2.2 Concept of Class Size

Class size refers to an educational tool which can be used to describe the average number of students per class in a school. Hoffinan (1980) described class size as the number of students per teacher in a class. The National Policy on Education (1981) recommended that the teacher-pupil ratio should be 1:35. For the All Nigerian Conference of Principals of Secondary Schools (ANCOPS), class size should remain at a maximum of forty students per class for effective management and better control.

### 2.2.3 Concept of School Location

School location implies the geographical setting in which a school is situated. School location has also been viewed as one factor that affects students' academic achievement (Akpan, 2001). Over the past two decades, research has indicated that the educational aspirations of students who study in the rural areas lag behind those of their urban counter-parts (Haas, 1992; Stern, 1994; Kampits, 1996; Khattri, Riley & Kane, 1997; Kannape land De Young, 1999; Hu, 2003; Arnold et al, 2005).

Making a critical analysis of location factors, Hallak, (1977) surmised that provision of education in rural areas is normally fraught with the following difficulties and problems: qualified teachers refuse appointment in isolated villages; villagers refuse to send their children to schools because they are dependent on them for help; parents hesitate to entrust their daughters to male teachers; some villagers have few children for an ordinary primary school; lack of roads or satisfactory means of

communication makes it difficult to get books and teaching materials to the school which place difficulties in the way of organizing school transport among others. Writing on the improvisation of science teaching equipment in line with location, Balogun (1982) lamented that unfortunately in Nigeria, where there is a preponderance of poverty among its populace and a wide gap between the rich and the poor …disparity in the distribution of resources and social amenities on the part of the government, the population has polarized into two –of those who favourably affected and those who are disfavoured. These two groups have been forced on economic reasons and levels of education to organize themselves into two different sub-geographical locations to a very large extent determine what amenities and/or facilities are made available to each. The location of a school has a big role to play on the educational performance of students in the school. Immediate environment of a child play a major role in the socialization of such a child. Therefore, the area in which a school is located can affect the educational achievement of a student. A school in the heart of the government reserved area (G.R.A) or housing estate cannot be compared with a school located in an unsuitable place like motor garage, main street, noisy environment, and nearness to a big market among others.

Noisy environment is capable of hampering teaching and learning conditions. Long journey to school can be drudgery. These deplorable states inform the present journey.

### 2.2.4 Concept of Teacher Variables

**Qualification**

A key recommendation of the 1998 National Policy on Education was that the minimum (Grade II) qualification for primary school teachers should be the National Certificate of Education (NCE), which for new teachers requires three years of full-

time attendance at an accredited college of education. This certificate used to be awarded by the colleges of education themselves. However, this is now the responsibility of the National Teachers' Institute (NTI).

**Teacher Experience**

The term teacher experience is used here to denote the number of years a teacher has been practicing the art of teaching. Experience, they say, is the best teacher. The best trained teacher just going into teaching will experience some difficulties in the first few days or even months but as he/she progresses, he/she begins to get adjusted to the process and becomes more confident. Implying that beginning teachers will find small class size easier to handle than the large class size, gradually as the teacher grows in the teaching profession, such a teacher will be able to handle any class, the size notwithstanding.

An untrained teacher will also be able to get used to teaching after some times, even though the fear is that some harm may have been done. I had a personal experience where a fresh graduate on service posted to teach us at the College of Education. The first few days were tough on her as she would be seen sweating profusely any time she was teaching. After some times she said that she overheard students saying she now makes "shakara" and no longer sweat in the class as she has now overcome her initial phobia. However, because she was always annoyed when asked questions at her early days in the school, we missed a lot of things that we could not get clarifications on.

## 2.3 Theoretical Framework

In this study,the researcher reviewed theories that are presumed relevant to the study. Among them are the following:

Academic Performance: Attribution Theory

Class Size: Economic Theory

Teacher Variables: Education Production Theory,

Urban Location Models and Tie bout Models of Community Choice.

### 2.3.1 Class Size

Reducing class size to increase student achievement is an approach that has been tried, debated, and analyzed for several decades. The premise seems logical: with fewer students to teach, teachers can coax better performance from each of them. Some researchers have not found a connection between smaller classes and higher student achievement, but most of the researches show that when class size reduction programs are well-designed and implemented in the primary grades (K-3), student achievement rises as class size drops.

### 2.3.2 Economic theory on class size

Hoxby (2000) offers an economic theory to explain the reason why class size did not significantly influence students' academic performance. Hoxby (2000) maintains that class size was a primary example of the education production fallacy; one could not assume there was a relationship between educational inputs like class size and outputs such as achievement. She argues that "…while class size reduction always affords opportunities for increased investment in each child's learning, it is not obvious that every school takes up such opportunities" (Hoxby, p. 240). Bonseronning (2003) maintains that class size research made little use of economic theory. He asserted that since education production involved teachers, students and a number of other actors, the efforts of these actors and their complicated interactions were the determinants of student achievement;"for this reason, it seems unlikely that

class size changes will have uniform effects on student achievement always and everywhere" (Bonseronning, p. 964).

Other researchers wrote that students may benefit from an increased class size. Pong and Pallas (2001) reported some studies found that students do better in large classes. They hypothesized that this could be because more experienced teachers are given larger classes or low achievers are placed in smaller classes. Borland et al. (2005) stated that in a larger class there was an implied increase in associated skills from which an associated student may benefit and peer effects on student achievement were expected to be positive. Furthermore, if students competed with one another, there would be an additional positive effect with increased class size.

Conversely, Normore and Ilon (2006) offered an economic argument that professed small classes could save money. "…in the long run, potential benefits may offset the costs. Smaller classes in primary grades start students on a path that reduces the need for special education, grade retentions, or disciplinary measures and increases the likelihood of high school graduation" (p. 434). Nevertheless, their research did not convince Normore and Ilon that class size reduction (CSR) was worth the cost.

### 2.3.3 Teachers Variables

#### The Educational Production Theory

An *education production function* is an application of the economic concept of a production function to the field of education. It relates various inputs affecting a student's learning (schools, families, peers, neighborhoods, etc.) to measured outputs including subsequent labour market success, college attendance, graduation rates, and most frequently, standardized test scores. The original study that eventually prompted

interest in the idea of education production functions was by a sociologist, James S. Coleman. The Coleman Report, published in 1966, concluded that the marginal effect of various school inputs on student achievement was small compared to the impact of families and friends. Later work, by Eric A. Hanushek, Richard Murnane, and other economists introduced the structure of "production" to the consideration of student learning outcomes (Hanushek, 2008).The baseline of the theory is that even though the teacher is an important factor in the determination of students' academic performance, so many other factors such as class size, location of school and other teachers' variable greatly affects the academic performance of the students. Implying there is no single factor that determines the students' academic performance but a combination of factors

### 2.3.4 Teacher qualification

Professional teacher is the one who possesses professionally based knowledge in the theory and practice of education as well as find job satisfaction in the belief that he/she is making an important contribution to the social, cultural and economic development of his/her country. Such a teacher should equally, be able to understand students' abilities to exploit educational benefits of the social context within which he/she lives. He/she should be able to assist students to reach their full intellectual and social potentials.

Teachers are central to any consideration of schools, and a majority of education policy discussions focus directly or indirectly on the role of teachers. There is a *prima facie* case for the concentration on teachers, because they are the largest single budgetary element in schools. Moreover, parents, teachers, and administrators emphasize repeatedly the fundamental role that teachers play in the determination of

school quality. Yet there remains little consensus among researchers on the characteristics of a good teacher, let alone on the importance of teachers in comparison to other determinants of academic performance. Teacher quality is the concept that embodies what the teacher does and they can do in terms of their assigned roles in the school. Related to the concept of teacher quality is teaching quality and it has been observed that one way of determining the quality of teaching in schools is by looking at the intermediate outcome of student performance (Sanders, 1999). There are several ways to evaluate a student's quality attributable to formal education, but the most tractable indicator is how he or she performs in tests (World Bank, 2003).

Teacher quality involves the level of qualification and research on the value of a teacher's advanced degree is mixed: some studies show that while additional teacher education has a positive correlation with student achievement in some cases, others find that it negatively affects achievement (Greenwald, Hedges, & Laine, 1996; Hanushek, 1986). Goldhaber and Brewer (1997) found that a teacher's advanced degree is not generally associated with increased student learning from the eighth to the tenth grade, but having an advanced degree in Math and Science for Math and Science teachers appears to influence students' achievement. The same results are not found to be true for teachers of English or History. In the same way Goldhaber and Brewer (1997) suggest that the findings of other studies about the impact on student achievement of teachers' advanced degrees are inconclusive because they considered only the level of the degree and not the subject of the degree, which may affect student achievement in different ways than the degree level. Nevertheless, results from all the studies seem to imply that there is not a positive correlation between

teachers having advanced degrees in subjects other than those they teach and student achievement.

### 2.3.5 Teacher experience

There is a wide range of findings on the relationship between years of teaching experience and student outcomes. Hanushek (1986) found that fewer than half of the 109 previous studies on the estimated effects of teacher experience showed that experience had any statistically significant effect on student achievement; of those, 33 studies found that additional years of experience had a significant positive effect, but seven found that more experience actually had a negative impact on student achievement. Other studies show a stronger positive relationship between teacher experience and student outcomes in some, but not all the cases they reviewed (e.g., Greenwald et al., 1996). Murnane (1995) suggests that the typical teaching learning curve peaks in a teacher's first few years (estimated at year two for Reading and year three for Math).

It is also plausible that a positive finding on experience actually results from the tendency of more senior teachers to select higher-level classes with higher achieving students (Hanushek, 1986). Thus, we might reasonably infer that the magnitude of the experience effect, should it exist, is not terribly large.

Teacher absenteeism, an observable indicator of teacher effort and performance, has been the focus of several recent studies. Chaudhury *et al*. (2000) report on surveys in six developing countries that yield observational data on absence of teachers and health workers: India, Uganda, Peru, Ecuador, Bangladesh and Indonesia; averaging across the six countries, they found an absence rate of 19 percent

among primary school teachers. Teacher absence predicts lower scores of pupils in tests in general.

Being still on human resources concern, various educators for example, Ukeje (1970) and Fafunwa (1969) have written extensively on the prime importance of teachers to the educational development of any nation albeit simple, complex, developed or developing. From the writings of these educators, one can infer that whatever facilities are available, whatever content is taught, whichever environment the school is situated and whatever kind of pupils are given to teach, the important and vital role of the teacher cannot be over-emphasized. Assuming that necessary facilities are adequately provided for, the environment is conducive to learning, the curriculum satisfies the needs of the students and the students themselves have interest in learning, learning cannot take place without the presence of the teacher. Fagbamiye (1977b) noted that schools with stable, experienced and qualified teachers usually have better school facilities in terms of school buildings, books and equipment than those schools which have difficulty in attracting experienced and qualified staff. Teachers' conditions in private primary schools of Rwanda seem to be better than those of their counterparts of public primary schools and thereby, their motivation differs accordingly; therefore, this has an effect on pupils' academic performance.

### 2.3.6 Academic Performance

#### Attribution theory of Academic Performance

The study of attribution was initially associated with Fritz Heider (1896–1988, 1958). Later Bernard Weiner (1935) of the University of California at Los Angeles developed a more comprehensive and extensive model of human attributions. Weiner's model is particularly informative in research on student learning in school

settings. In his model, Weiner outlined the processes through which learners form causal beliefs (Weiner 1985, 2005). A basic assumption of Weiner's model of attributions is that learners are affected by both environmental factors (e.g., characteristics of the students' home or school) and by personal factors (e.g., prior experiences and prior knowledge). These background variables affect the types of attributions that individuals are likely to make.

His first dimension of attribution response is locus of control. Locus of control describes the cause of an outcome as either internal or external. An internal cause would be something like the skill of the learner, or his mood/attitude. An external cause would be a parent or teacher. Many have observed that learners attribute success to internal causes and failure to external causes.

The second dimension is stability. This refers to the idea that many causes for success are stable. Most see things like ability and knowledge as being fairly stable. Other causes, such as effort and circumstances are considered unstable. The key thought with this dimension is that if a learner’s success is linked to a stable cause, he is much more likely to have repeated success than if it is a result of an unstable cause.

The third dimension is controllability. This means that some of the causes for success are controllable. An excellent example of this is learning strategies. A student can decide in advance a strategy that will help him succeed. Something that is not as controllable would be the difficulty of the task. It could vary, and is not dependent on the student.

Attribution theory, in relation to student achievement, means that students have the best chance for success when the causes have an internal locus of control,

with stable and controllable causes. In this scenario, a student is set up for repeated successes in learning.

There are many practical implications of attribution theory for educators. First, teachers need to realize that they can affect the types of attributions that students make. Teachers affect students' attributions on a daily basis, through their comments to students, feedback on assignments and examinations, and the types of praise that they offer during instruction. These comments can have important long-term effects on student learning and motivation. A student who consistently learns to attribute failures to a lack of ability in a particular subject area is unlikely to continue to be motivated to achieve in that subject area in the future. Educators need to remember the power they have in shaping students' attributions.

Second, teachers can educate parents about attributions. Since parents provide feedback and make comments to their children about performance on academic work; teachers can encourage parents to provide effective feedback. For example, teachers can send home a weekly newsletter to parents explaining what is being learned in class and offering specific suggestions to parents about providing appropriate feedback to children.

Finally, educators should be aware that students do think about the causes of their own successes and failures. Teachers can engage students in conversation to learn about their students' attributions and to monitor potentially inaccurate and harmful beliefs. Teachers may be surprised by some of their students' attribution beliefs; one-on-one conversations may provide insight to teachers and provide opportunities for shaping students' beliefs about their performance.

### 2.3.7 Determinants of Academic Performance

Here the researcher is concerned with those factors that operate to prevent students from performing well. It is sometimes unfortunate to see some of the good students whom we think could have performed well getting contrary results. What happens in such cases may be the result of some these factors that are at work. Some of these determinants or factors are briefly identified and discussed below.

- **The examination questions.**

Some of the examinations may be very ambiguous so that the students do not have a clear understanding of the question. Once the questions are misunderstood or misinterpreted then it follows logically that the answer will be out of tune.Apart from lack of clarity in the question either due to improper typing or in-correct framing, there is also the problem of the choice of words in setting examination questions. In essay question, some words used are in most cases not even understood by the examiners. For instance, such words as discuss, evaluate, compare and contrast, some of these words are not understood by the examiner, and then the students will find it more difficult to know what is wanted in the question.

Therefore, some students perform poorly because of ambiguity of the words used in the examination.

- **Deficient examination strategies**

Preparing for and taking examinations are specific skills that students must acquire if they are to succeed in many of our public examinations (Bakare 1986). Lack of these skills is often a direct cause of failure in examinations. It is thus not enough to have adequately learnt the material, but the techniques of retrieving,

organizing, expressing and presenting the materials learnt under examination conditions are also critical and essential for success in academic.

- **The Marker**

The marker could also determine the academic performance of students. Rockdolf (2004). This could be so if the marker is careless in marking. He could award points where he should not or otherwise. The marker could also make mistakes in calculating the total scores of the students in a paper or papers thereby affecting the students' performance. The marker may also be ignorant of the basic facts about the subject he is marking or may also be ignorant of the basic facts about the subject he is marking or may be out-dated about the facts. So when he sees a student presenting facts found in the book he/she read, then; he/she marks the student down. It is therefore very important to know the determinants of our academic performance.

- **Marking Scheme**

Some of the marking schemes prepared by the team of examiners in some subject impede the students' performance. It is not unlikely to find that in some subjects. Marking scheme is out value and it is expected that any student who does not produce such points are not doing well. In support of this, Lambo **(**1982**)** observed that times existed when he was with WASC markers in Economics where he did argue with the team that prepared marking scheme in Economics because the factor on that scheme had no bearing to what the questions were demanding. In some cases marking scheme had to be disregarded and a relevant one prepared. From Lambo's experience therefore, many bright student do and can fail because the marking scheme used in marking their scripts are in themselves wrong ones.

- **Time Allocation**

Students' performance may be hampered if the time allocated to an examination is not appropriate. If the time falls too short of the questions to be answered this puts students in a state of anxiety and therefore makes them to be nervous. Lambo (19982). With shortage of time a lot mistakes are bound to occur and with so many of such mistakes, the chances of good performance is reduced. Shortage of time also leads to illegible writing and this affects the marker attitude to the paper hence reducing possibility of good performance by the student. It is therefore very important to give just enough time for any paper so that students could be given the chance to correct their mistake. Also connected with time allocated is if the examination is fixed in a very hot and sunny period, it will affect the student's academic performance.

- **Sudden Changes in Examination Time Table**

Another determining factor that affects the students' performance in Okoye's **(**1982**)** view is the impromptu changes on the examination time table. These changes sometimes force students out of school only to return from their homes to take examination after some weeks break. This makes the students feel less in their academic work since they are out of the academic area of the school where seeing others on the work will motivate them to do something instead of becoming lazy. They pick up their books for revision only when return to the school premises probably a day or two to the examinations. The festive mood experienced at home is carried over, and consequently they perform poorly in examinations where they could have done better if changes in the time table had not occurred.

- **Nature of Home Discipline**

Family discipline could produce a child that is compliant, insecure, un-inquisitive and lacking in initiative. These traits may negatively affect his school

adjustment, his overall happiness in school and his level of anxiety in academic performance situations such as important or critical examinations. According to Blooms(1975), the child who has been exposed to a permissive and lax discipline at home gets into constant trouble at school where he attempts to behave according to his personal whims and caprices. Not being used to obeying rules, such a child subsequently disobeys school rules and incurs much punishment on him. This affects his happiness at school, his concentration and his motivation to achieve. Interpersonal problems and problems with school authorities distract him from his academic work with resultant deterioration in academic work. Children exposed to a democratic discipline are better adjusted to school.

- **Family Relationship.**

This refers to relationships between husband and wife, between parents and children and between siblings. Family conflicts, especially those between husband and wives can be most disruptive of children's learning in school. Adelabbu (2003) posits that two dearest people in their lives being at logger heads create a sense of insecurity and unhappiness. This affects negatively their concentration in school, their motivation to learn and their level of aspiration. All these can lead to academic failure especially when they are of average or below average intellectual ability. Other family conflicts could have similar effects on the child's academic performance.

- **Level of Stimulation**

The foundation of a child's school learning is laid by the home. Important in this regard is level of cognitive stimulation which the home provides at different times during childhood and adolescence. Cognitive stimulation refers to the availability, richness and the use made of various learning materials which are designed to foster such cognitive skills as perception, memory, language reasoning and creativity. If its

solid foundations are not laid for the acquisition of these skills when the child is young, later learning becomes a chore and is often unsuccessful. Provision of toys and books in the home, provision of a model for language acquisition and development and provision of educative travels are also important aspects of cognitive stimulation. Also important in academic performance through adolescence is the family's emphasis on the importance of academic performance, helping the child with the demand of the school and giving appropriate rewards and punishments for the child's response and attitude to his academic work. Many families that fail to do these or which are not in a position to do them as a result of their own situation are contributing to their children's academic failure.

- **Cognitive Skills**

Bakare **(**1979**)** has identified a hierarchy of cognitive skills which underlies all academic learning. These skills are perception, conception, memory, reasoning and creativity. Absence of these skills predisposes the child to academic failure. Unfortunately, many Nigerian children come from backgrounds where deficits in these skills are cumulative hence except deliberate attempts are made to foster these skills, academic failure becomes inevitable.

- **Background Knowledge and Skills**

This refers to appropriate entry characteristics. The represents one of the most common and direct causes of learning failure in Nigerian schools. Every learning task has prerequisite knowledge and skills which must be mastered in order to accomplish the learning task. If these prerequisites are absent, then the students fail to master the learning task. This is what Bloom (1976) has called entry learning task or entry behaviours. When the necessary entry behaviour is present, learning a task becomes easy. The time spent in mastering the task is also relatively short. In Nigerian schools,

large scale failures are most probably due to lack of appropriate cognitive and affective entry behaviours. Due to this problem, students therefore become bored or confused by the subjects and develop negative attitude towards learning and failure results. This is especially so because in many cases a lot more is built on weak academic foundation.

- **Emotional State**

Emotional problems could arise from any area or aspect of the students' lives. Thus, it could be in the physical, social sexual, religious, family, personal future or academic aspects of one's life. These problems could give rise to worries. Worry tends to affect concentration, motivation and overall learning ability (Bloom, 1975). Worry adversely affects all the three learning stages of acquisition, retention and recall. This directly results in poor academic performance.

Emotional instability is a frequent source of under achievement and may lead to poor self - concept, low self - esteem, doubt of one's ability to achieve success in school, lack security necessary to accomplish as much as one could (Umoh**,** 1988). According to Blair (1966), emotional disturbance leads to difficulties of learning, and among its symptoms are fatigue, exaggerated fears, angers and responses of proportion to stimuli. He also maintained that unmet needs, previous experiences of school failure among others are causes of emotional instability. In Nigeria, the university undergraduate's emotional disturbance could be seen as a result of poor or inadequate financing of their education and lack of peace in the university environment (for example: student riot). With their unstable emotion, they may not be able to produce good academic performance in the examination. In order to get rid of emotional disturbance among the undergraduate students, the school has to develop

devices to know each student's areas of strengths and weaknesses, and also to provide an instructional programme with a good deal of early individual guidance designed to match teaching with individual's needs and abilities.

- **Physical Health**

A number of physical deficits such as central nervous system damage or injury, peripheral nervous system deficits and physical deformities could result in academic failure or in poor academic performance (Bakare, 1986). Thus central nervous system involvement such as brain damage or spinal cord injury would directly affect the learning capacity of the child. Similarly, peripheral nervous system deficits which affects any of the sensory organs especially the visual mode or the auditory mode will directly affect learning (Bakare, 1979).

- **Finance**

The financial situation of the school is also an important determinant of student performance. If the school is in a poor financial situation, that may affect the school library which may not have adequate books. Another area of concern is that the financial situation of the school will affect the supply of equipment needed for practicals, mostly in the physical science. Also poor finances do affect the quality and quantity of the equipment's supplied. It may be attributed to the poor quality of science equipment as a result of financial constraints in our schools that most of the boys interviewed by Gesinde (1983) revealed their dislike for science subjects in the school. Therefore, an important hindrance to academic performance is the poor school finances which affect so many areas of the school environment.

- **Teacher's Attitude Toward the Learners**

Teachers' attitude towards the learners is very crucial in the teaching/learning situation. In Nigeria where teacher is the "pilot" of the class, his attitude toward the

learner goes a long way towards enhancing or hindering learning. The teacher has to know the needs of his students. This will encourage them to learn and perform well academically. His encouragement could be in the form of reward i.e. marking of their scripts regularly and awarding marks to the skills tested. Students will be encouraged to learn the skill they do not know by their teachers, for example, methods of recalling the learned facts and examination techniques. For this reason teachers are advised to maintain good attitude toward their students. According to Umoh (1988), the teacher's acceptance by his pupils is largely dependent upon his attitudes toward them when teachers do not have sensitive feelings, do not sense their needs and do not show genuine interest in them, their academic performance could be hampered.

- **Ability versus Subject Choice Incongruities**

An important step towards students' performance in school examination is taken at point when subjects are chosen. It is observed that at this point most of students became unrealistic with themselves. This is because there is always a difference between the students' ability to perform and the subject combination. With this lack of congruence between ability and subject affects choice in our school. Students' performance at important school examinations falls below standards. It is therefore necessary for the school authorities to systematically advice their students when the point of subjects choice is reached so that their ability is given a highest consideration so that when combining subjects to enhance performance that are enviable in their examinations. Students should be made to understand that the price of having attended a secondary school should not be seen in the type of subjects they are able to produce in final year. In Obanya's **(**1976**)** studies, he was able to find out that most of the students choose their subjects not according to interest and ability but

as a result of home influence and future career. Such a consideration often leads to poor performance.

### 2.3.8 Factors that influence academic performance of students

The characteristics of all the schools that the students have attended up until that point should matter. These characteristics include not only the class sizes in which they have been enrolled, but also the capacities of their teachers, including academic aptitude, experience, subject matter knowledge, ability to motivate students to learn, their instructional methods and coverage of content, and their classroom management skills. They also include the physical condition of the school facilities, the educational technology that is available and is *used* in the schools, the number and quality of support and professional staff other than teachers, and the quality of the school administrators. Put another way, a student's educational attainment A at time *t*, A(*t*), depends on the whole time path of school-related resources R that the student has been exposed to up until that time, R(*t*).

However, children are in their schools for less than half of the days of a year and for only about 6 hours a day. So what goes on outside of the school may be equally, or more important, than what goes on inside the school, in determining students' educational attainment.

One important set of factors pertain to the family, such as the value that they place on education and the time and financial resources that they have been able to devote to supporting their children's schooling up until that time, F(*t*). On average, factors such as the family's income, the number of parents or other adults in the home, the adults' education levels, the number of siblings, and whether both parents are working are likely to influence parents' views of the importance of education and

the resources that they devote to encouraging education and monitoring their children's progress.

A third set of factors relates to the characteristics of the school community in which students have been educated each year up until age *t* and the characteristics of the classrooms in which they were enrolled each year, S(*t*). Attitudes of one's peers toward education and the effort that one's peers put in may influence an individual's effort and learning. The socio-demographic characteristics of one's classmates, including their race and ethnicity, may matter. Some people assert that the matching of teachers and students by race, gender, and ethnicity may also matter; so too, may the way that students are grouped in classrooms. Students in classes that are heterogeneous, in terms of the "ability levels" of the students, may learn more, or less, than students enrolled in classes in which students are fairly homogeneous in terms of their "ability levels."

The prevailing attitudes toward academic performance that are found in the school that a student attends each year are also likely to matter. A final set of factors is the characteristics of the broader community, M(*t*), that the student lived in each year. Did the community value and support education? Is there peer pressure outside of school not to do well? Such *neighbourhood* or *community* effects are often alleged to be very important. Summarizing all of these forces, it is difficult control all the factors in addition to a student's current class size, that influence a student's educational attainment at a particular time.

There are two general strategies. One is to randomly assign students and teachers to classes of varying sizes and observe students' rate of learning in the different settings. Another strategy is to collect data on the relevant factors affecting

student learning and exercise some form of statistical control. The former strategy, randomized experiments, tend to be more "internally" valid, because they explicitly control for all of the confounding factors that might affect the observed relationship between schooling out- comes and class size. But randomized experiments tend to be very expensive, and are typically conducted with small samples that cover a limited number of grades and school settings. The second strategy, commonly referred to as quasi-experiments, tends to be more "externally" valid. Researchers typically use data from large state or national surveys, and thus the findings can be generalized across different settings and for students at different ages. This approach has more stringent data requirements:

According to Bakare (1982), if factors such as school resources, family resources, school community characteristics, and neighbourhood or community features that affect achievement are also correlated with class size, these must be included in the analysis. We discuss below the limitations of both experimental and quasi-experimental approaches, review the findings stemming from each approach, and suggest ways that future experiments could be improved.

With either approach, the researcher wants to know the functional form of the relationship between outcomes and class size, and why smaller classes might matter. For example, is there some threshold at which decreases in class size have a dramatic effect? Small class sizes may matter more in the early elementary grades, when students are becoming socialized to school and forming work habits, than they do in the high school grades. Small class sizes may matter more for children from disadvantaged backgrounds, who do not have the same resources in the home to support their education as students from rich families. Small classes may matter more

for children who have difficulty learning and need to be motivated than they do for bright, highly motivated students. Finally, small classes may matter more or less depending on the methods of instruction. For example, small classes may benefit students more when instruction relies on discussion, by allowing more students to participate and be recognized, than when lecture and seatwork are the main modes of instruction. Moreover, small class sizes may matter more for some educational outcomes than they do for others. The educational attainment of a student can be measured by the number of years of elementary and secondary schooling that the student completes, the student's test scores for a given number of years of schooling, or the student's post-secondary school educational attainment. Indeed, if one takes a very market-oriented approach and argues that a major purpose of the educational system is to prepare students for the world of work, the quality of the education that a student receives may be reflected in the student's post-schooling labour market earnings. Being educated in smaller classes may influence some, but not necessarily all, of these different outcome measures.

## 2.4 Theory of School Location

### Urban Location Models and Tie bout Models of Community Choice

Theoretical modelling of individual locational decisions has relied upon two distinct modelling traditions: urban location models and Tie bout models of community choice. In urban location models, a household's location is determined by the trade-off between accessibility and space, ignoring public goods. On the other hand, Tie bout models emphasize public goods and taxes but ignore accessibility. Some recent works provide initial efforts at a unified treatment of those two artificially separated streams of literature. Importantly, the issue of race is absent from the theoretical models, although it is partially captured by the correlations of race and income.

A key element of the theoretical models is the general equilibrium nature of locational decisions and schooling choice. With changed economic incentives, the level and distribution of educational services change along with the locational decisions of households. This has direct ramifications for a number of educational policy and finance decisions. Urban Location Models in Urban economics has largely focused on household location and urban form as dictated by accessibility concerns. A variety of authors helped develop the basic urban location model, including Alonso (1964), Mills (1967, 1972), Muth (1969) , and Kain (1975).The general structure is clearly developed in Muth's classic book, *Cities and Housing* (1969), in which he analyses the workings of price systems in urban housing markets and investigates the determinants of the spatial structure of urban areas and the growth of cities. His book spearheaded a theory of the internal structure of a city emphasizing housing markets, accessibility, and land use and formalized a model of household locational choice. In the most basic model, he assumes that the household consumes an aggregate commodity called housing services, works in a central business district, and resides in one of the series of residential contours that surround the central business district. A household chooses the location that provides the best trade-off between housing costs and commuting costs. The housing industry produces the housing service.

In Muth model, the price of housing space is an inverse function of distance from the central business district, and the cost of commuting varies directly with both distances from the central business district and wage income. Muth finds that a change in wage income will increase commuting distance if the income elasticity of demand for housing space exceeds unity, but a change in non-wage income will increase commuting distance if the income elasticity of demand for housing space is positive. His theory of

income segregation suggests that central locations provide the best trade-off for the poor, while suburban locations provide the best trade-off for the wealthy. Muth and many researchers following him provide extensive empirical studies that help us understand the basic aspects of residential choice and location.

Nonetheless, the basic income location model does not completely match the empirical facts. In one recent paper, Glaeser, Kahn, and Rappaport (2008) find that the income elasticity for land is too low to explain much of the "poor in cities, rich in suburbs" equilibrium in the United States. Their explanation revolves around better access to public transportation in central cities.

## 2.5 Review of Related Studies

Empirical studies conducted within and outside Nigeria on the influence of class size, teacher variables and location of schools were reviewed.

### 2.5.1 Class size

Between 1969 and 1997, the average pupil/teacher ratio nationally in American public and private elementary and secondary schools declined from 22.7 to 16.6, a decline of over 26%. The comparable changes in elementary and secondary schools' average pupil/ teacher ratios were, respectively, 25.1 to 18.3 and 19.7 to 14.0 (Campbell *et al*., 2000). If one restricts one's attention to public schools, in which the vast majority of American children are educated, one finds very similar numbers, both in terms of levels and of changes. With such a large decline in pupil/teacher ratios, the public might have expected to observe substantial increases in the amount that students learned over the period.

Aggregate time-series evidence of changes in how much students have learned in the United States can be obtained from the *National Assessment of Educational Progress* (*NAEP*) tests. *NAEP* is the only national representative assessment of student knowledge in subject matter areas, and it has been conducted periodically in a number of areas, including reading, mathematics, and science.

Comparable data for the science test are available from 1969, for the mathematics test from 1973, and for the reading test back from 1971. What immediately jumps out from this is the lack of a large increase in student test scores on any of the tests that is commensurate with the substantial decline in the average pupil/ teacher ratio nationwide that took place during the period. For students at age 17, the average science test score declined between 1969 and 1984 then increased slightly thereafter. However, by 1999 it was still lower than its 1969 level. The mathematics average score for 17-year-olds declined between 1973 and 1982, then; increased through 1992 and has remained roughly constant since. Finally, the reading scores of the 17- year-olds rose only slightly during the period.

The study focused on the test scores of the oldest enrolled students in each year because their educational outcomes occur near graduation from high school. It is reasonable to ask, however, what the trends have been for younger students in lower grades. The average mathematics test scores of 9- and 13-year-olds did increase somewhat over the 1978 to 1996 period. However, even on this test, the increase in scores was not at all proportionate to the decline in the pupil/teacher ratio that had taken place. One's first inclination might be to suggest that the decline in pupil/teacher ratios did not have a major impact on students' academic performance

during the last quarter of the 20th century, and to conclude that expending resources to reduce average class sizes is not a prudent investment.

Mary Lee Smith & Gene Glass (1980) incorporated some of the early studies into a controversial meta-analysis, which concluded, with little distinction among the various indicators of instruction, that reducing class size was associated with better teaching. In an effort to build on this work, a team of researchers at the Far West Laboratory embarked on the "Class Size and Instruction Program" (CSIP), in which they worked with one school in Virginia and one in California to reduce class size, while monitoring changes in instruction (Cahen, Filby, McCutcheon, & Kyle, 1983). In mid-year, two second grade classrooms in each school were divided into three, reducing class size by about one-third (from 19 or 20 to 13 in Virginia, and from about 33 to 22 in California). These concerns were articulated beginning more than 20 years ago by Educational Research Services (1978); Educational Research Services (1980); and Robinson & Wittebols (1986). This design is especially vulnerable to a "Hawthorne effect," as the teachers were clearly aware of the purpose of the study, were selected due to their interest in trying out smaller classes, and thus would have had an artificial incentive to improve their teaching in the smaller classes. Thus, this study may shed light on what is *possible* with class-size reduction rather than what is *general*.

Nevertheless, the authors found that teachers' instructional approaches were substantially the same before and after the class-size reduction. Discussing the Virginia case, the authors (Cahen, Filby, McCutcheon, & Kyle, 1983, p. 119) noted that the teachers appeared to lack knowledge of various instructional strategies; rather, they relied on a similar format for most lessons. Soboth before and after the class-size

change, they most often gave brief introductions and directions for lessons rather than incorporating motivational discussions, demonstrations, or other activities. They did not provide opportunities for students to become involved in expressive activities or in small-group or individual projects.

There were no changes in instructional content or in the way content was presented. In quantitative comparisons, the only instructional differences observed were that students spent more time academically engaged, and less time off-task, in the smaller classes.

In a British study of what may be *possible* with small classes, Hargreaves, Galton, and Pell (1997, 1998) examined "expert teachers" whom they expected to adapt their teaching strategies to cope with new situations. The researchers observed14 teachers in three settings: In their own class, in another teacher's class (which had a different number of students) and, for a subset of the teachers, in their own class with only half the students. Thus, like the CSIP study, the researchers focused on the same teachers instructing classes of different size. On the whole, few clear differences emerged from the comparisons, although there was a tendency for more sustained interactions between teachers and students in the smaller class settings. In addition, teachers spent significantly more time on general monitoring and classroom management in larger classes, a finding that seems consistent with the CSIP observation of less off-task behaviour in smaller classes.

Using an experimental design better suited to finding generalizable results, Stan Shapson and his colleagues (Shapson**,** Wright**,** Eason**,** & Fitzgerald, 1980) likewise reported modest differences between classes of varied sizes. They examined 62 fourth- and fifth-grade classes in Toronto, in which students were randomly

assigned to class sizes of 16, 23, 30, or 37 students. Classroom observations revealed virtually no consistent differences in classroom practices in smaller versus larger classes. The researchers noted that the proportion of students addressed individually by teachers was higher in smaller classes, but no more time was spent on individualization in smaller classes. In other words, the amount of individual attention was the same in different size classes, but the constant amount of time divided by smaller numbers of students allotted more time per student. Moreover, in contrast to the CSIP and the British study, Shapson found no relations between class size and student engagement or "classroom atmosphere."

Data from observations of Project STAR teachers also failed to yield a consistent pattern of instructional differences across larger and smaller classes. Even a summer professional development institute did not lead to instructional modifications among teachers in smaller classes. Evertson & Randolph (1989, p. 102) concluded, "Our findings show that teaching practices did not change substantially regardless of class type assignment or training condition."

### 2.5.2 Teacher experience

Researches show that teachers become more skilled with experience (Flanagan, Kawata, & Williamson, 2000; Hanushek, Kain, O'Brien, & Rivkin, 2005; Kane, Rockoff, & Staiger, 2006; Gordon, Kane, & Staiger, 2006; Harris & Sass, 2007; Aos, Miller, & Pennucci, 2007; Clotfelter, Ladd, & Vigdor, 2006, 2007). The preponderance of evidence suggests, however, that teacher experience matters most during the first several years of a teacher's career.

How long teacher performance continues to improve is a point of contention among researchers. Hanushek & Kain (2005), for example, contend that experience

matters only in the first year of teaching. By their estimates, "having a first year teacher on average is roughly equivalent to having a teacher a half standard deviation down in the quality distribution". Grissmer Kawata & Willliamson (2000) analysis of state data on the National Assessment of Educational Progress revealed positive effects on student achievement in states with large proportions of teachers who had at least two years of experience, but no evidence that additional years of experience were associated with higher achievement. Gordon, Kane, & Staiger (2006) found large gains in teacher effectiveness between the first and second year of teaching, much smaller gains between the second and third year, and no substantial improvement after the third year in the classroom. A number of other studies also conclude that teacher experience effects are largely concentrated in the early years (Hanushek & Rivkin, 2007, including Rockoff, 2004; Rivkin, Hanushek, & Kain, 2005; Boyd et al., 2005).

In contrast, a small number of studies suggest that teacher experience effects may be evident for a longer period of time. Murnane & Phillips (1981) found that experience had a significant positive effect on elementary student achievement among teachers during their first seven years of teaching. Ferguson (1991) found that at the high school level, Texas students taught by teachers with more than nine years of experience had significantly higher test scores than students whose teachers had five to nine years of experience. Rivers and Sanders (2002) report that "current TVAAS research suggests that teachers' effectiveness increases dramatically each year during the first ten years of teaching" (p. 22). In the most extreme case, Clotfelter, Ladd, &Vigdor (2006, 2007a) found evidence of growing teacher effectiveness out to 20 or more years in their analyses of North Carolina teacher data, although more than half of the gains in teacher effectiveness occurred during the first few years of teaching.

In sum, the current method by which most teachers are paid assumes that teachers who have graduate degrees and more teaching experience are more effectiveand therefore should automatically be paid more than teachers with no advanced degrees and less teaching experience. Evidence suggests, however, that these factors are not consistently related with student performance, with the exception of initial levels of experience and the possible exception of some advanced degrees at the secondary level, particularly subject-specific degrees in Mathematics and Science. A small number of studies indicate that holding a subject-specific degree does predict student achievement in high school Mathematics and Science but not in other subjects. The research is quite clear that there is a relationship between teacher experience and student achievement, but the preponderance of evidence suggests that the biggest improvements in teacher effectiveness occur during the first few years in the classroom. Moreover, only a portion of the large gains in average teacher effectiveness after Year 1 may be due to on-the-job learning (Hanushek, *et al* 2005). Average teacher effectiveness also increases, in part, because beginning teachers who are not successful often leave the profession after their first year. Some evidence suggests that at the high school level there may be sustained experience effects that last longer.

These findings suggest that there is little empirical support for compensation policies that automatically reward teachers for additional degrees and experience. Compensation systems that include measures of teachers' ability to increase student learning gains would likely be a more effective way to identify and reward top performers and ultimately improve teacher quality.

### 2.5.3 Location of school

School location has also been viewed as one factor that affects students' academic achievement (Akpan, 2001). Over the past two decades, research has indicated that the educational aspirations of students who study in the rural areas lag behind those of their urban counter-parts (Haas, 1992; Stern, 1994; Kampits, 1996; Khattri, Riley & Kane, 1997; Kannapel and De Young, 1999; Hu, 2003; Arnold et al, 2005).

Related findings from other studies have further indicated that students from rural schools place 21 rural high schools in 21 states, Ley, Nelson and Beltyukova asked students to indicate the importance of 21 attributes relating to their personal goals after high school. The data revealed that they placed more importance on personal qualities (e.g., being dependable and having the ability to get along with others) and less importance on specific areas of academic achievement (e.g., being proficient with Basic English and Mathematics skills). It follows, then, that lower educational aspirations and less importance placed on academics by students in rural schools could lead to poor academic achievement in Physics than their urban counterparts. In the words of Haas (1992) such rural students could exhibit a sense that "school isn't for me."

A study by Tanimowo **(**1995**)** discovered that the distribution of schools between urban and rural areas shows disorder, lack of planning and inefficiency. The inefficiency here refers to pupil academic performance. The implication is that while people in some areas enjoy minimum travelling distances to acquire education, some people in other places suffer by having to cover maximum distances to acquire education. In line with the above, Ezike (1997) conceptualized urban environment as

those environment which have high population density containing a high variety and beauty and common place views. He further identified the rural environment as being characterized by low population density containing a low variety and isolated place views. Kuliman *et al.* (1977) observed that teachers do not accept postings to rural areas because their conditions are not up to the expected standard as their social life in the areas is virtually restricted as a result of inadequate amenities; facilities are deficient, playground are without equipment, libraries are without books while laboratories are glorified ones.

The result of study by Alokan (2011) showed that school location has significant effect on student academic performance in Physics. This is in line with Isiugo-Abanihe and Labo-Popoola (2004) findings that students in urban areas performed significantly better than those in rural areas and also this is in support of school location playing a significant role in academic performance of students. Various review of literature on influence of location on academic performance is not the same. While some maintain that urban students perform better in examinations than their rural counterparts, others have found that rural students (in spite of all odds) perform better. Some have submitted in their findings and concluded that no particular set up (urban or rural) can claim superiority over the other because their performances are the same. Alokan (2010) found out that students' problems are strongly associated with poor performance and that sex and location do not affect the negative relationship between student problems and academic performance.

## 2.6 Summary

The chapter reviewed related literatures on influence of class size and teacher variables- qualification and experience on academic performance of secondary school students. The concepts of class size, influence of class size, benefits of class size and

empirical studies on class size were discussed. Class with up to 40 students is classified as small class size, while class with over 40 student is classified as large class size.

The concept teacher qualification and empirical studies on teacher qualification was also discussed. Teachers with NCE, B. Ed, M. Ed and Ph.D. are classified as qualified while teachers with M. SC, HND without PGDE are classified as not qualified.

Teachers who have taught between 1-3 years are classified as less – experienced, while those that have taught over 3 years are classified as experienced.

Under the sub-heading school location, school located at the state capital and local government headquarters are classified as urban schools while those located outside of these areas are classified as rural schools.

And finally, academic performance under which the concept of academic performance, theories of academic performance and determinants of academic performance were explored.

**2.6.1 Uniqueness of the Study**.

The aforementioned research works have been conducted to understudy the lone effects of these variables on students' academic achievement. But on considering the interactive nature of various personal, social, psychological and school variables, this research intends to investigate the individualistic and collective effects of class size, teacher variables of qualification and experience; and school location on academic performance of secondary schools students' academic with regard to class size.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

In this chapter, methodology of the study is presented. The research design, population of the study, sample and sampling technique adopted for this study is discussed. The instrument for data collection, validity and reliability of the instrument, method of data collection and analysis were all discussed.

## 3.2 Research Design

Research design for this work is ex post facto design method. The justification for the choice of this design is due to the fact that this study attempt to explore cause and effects relationships where cause already exist and cannot be manipulated. It uses what already exist and looks for backward to explain why. Ex post facto research is ideal for conducting social research when it is not possible or acceptable to manipulate the characteristics of human participants. This design was chosen for this study because the students had already written the state qualifying examination in English language, hence the study simply seek to find out the effect of the class size, teacher qualification and experience and school location on their performance in the State qualifying Examination in English Language. The researcher does not intend to manipulate the condition on ground.

## 3.3 Population

The population of this study comprises of all the SS II male and female students who attempted the Kaduna State Qualifying Examinations in 2014 in English Language. The total no students who sat for the SQE is 1060 and48English language teachers of selected senior secondary schools located in rural and urban areas of Zaria and Kaduna educational zones in Kaduna State.

**Table 3.1: Population of study in Urban areas of Zaria and Kaduna Educational Zone**

| SN | Educational zone | Selected schools | Total No of students in SS II |
|---|---|---|---|
| 1. | Kaduna | A | 178 |
| 2. | Kaduna | B | 90 |
| 3. | Zaria | C | 202 |
| 4. | Zaria | D | 90 |
| 5. | Zaria | E | 75 |
| 6. | Zaria | F | 72 |
| 7. | Zaria | F | 170 |
| | **Total no of students** | **877** | |

**Table 3.2:Population of study in Rural areas of Zaria and Kaduna Educational Zone**

| SN | Educational zone | Name of selected schools | Total No of students in SS II |
|---|---|---|---|
| 8. | Kaduna | G | 12 |
| 9. | Kaduna | H | 29 |
| 10. | Zaria | I | 21 |
| 11. | Zaria | J | 26 |
| 12. | Zaria | K | 32 |
| 13. | Zaria | L | 30 |
| 14. | Zaria | M | 33 |
| | **Total No of students** | **=** | **183** |
| Total Population of students | | | **1060** |

**NB**: Class with up to 40 students is classified as small class size, while class with over 40 student is classified as large class size.

### 3.4 Sample and Sampling Technique

The sample size for this study is the entire population of students who sat for the English language examination in 2014 state qualifying Examination which is 1060

SS II students from fourteen schools and the 48 English language teachers randomly selected from Kaduna and Zaria educational zones of Kaduna State

**Table 3.4: Population and Sample size of Teachers with NCE, B.Ed. and M.Ed. Qualification.**

| SN | SCHOOL | NO OF ENGLISH TEACHERS WITH NCE | NO OF ENGLISH TEACHERS WITH B.ED | NO OF ENGLISH TEACHERS WITH M.ED |
|---|---|---|---|---|
| 1. | School A | 1 | 2 | 2 |
| 2. | B | - | 2 | 2 |
| 3. | C | - | 3 | 1 |
| 4. | D | - | 1 | 2 |
| 5. | E | - | 2 | 2 |
| 6 | F | - | 2 | 2 |
| 7. | G | - | 2 | 2 |
| 8. | H | 1 | 1 | 1 |
| 9. | I | 2 | 1 | 1 |
| 10 | J | 2 | 1 | - |
| 11. | K | 1 | 1 | - |
| 12. | L | 2 | 1 | - |
| 13. | M | 1 | 1 | - |
| 14. | N | 2 | 1 | - |
| **TOTAL =** | | **12** | **21** | **15** |

**TOTAL = 48**

## 3.5 Instrument for Data Collection

**3.5.1** The major instruments for data collection was a structured questionnaires Teachers Questionnaire tagged *Teacher Variables and School Location Question Items* {TVSLQI} (Appendix I) consists of two parts, section A deals with bio-data of the teachers developed by the researcher from existing records in relation to the objectives of the study and results of the Kaduna State 2014 SSCE qualifying examination results in English language describes thus;

### 3.5.2 Teachers Questionnaire:

The questionnaire tagged *Teacher Variables and School Location Question Items* {TVSLQI} (Appendix I) used collect bio-data of the teachers.

Responses to the instrument for *TVSLQI* were scored as follows: Teachers with varying degree of teaching qualification of NCE, B. Ed, M. Ed Ph.D. are classified as qualified while teachers with M. SC, HND without PGDE are classified as not qualified.

Class with up to 40 students is classified as small class size, while class with over 40 student is classified as large class size.

Teachers that have taught between 1-3years are classified as less – experienced, while those that have taught over 3 years are classified as experienced.

Schools located at the state capital and local government headquarters are classified as urban schools while those located out of these are classified as rural schools.

### 3.5.3 Students' Academic Performance in English language Result:

To determine the students' academic performance, the researcher made use of results of 2014 State Qualifying Examinations in English language usually administered to SS II students to determine those that will be eligible to write the Senior Secondary School Certificate Examination (SSCE). The examination is designed by the Kaduna State Ministry of Education.

## 3.6 Validity and Reliability

To ensure the validity of the instrument for data collection, the researcher gave the instruments to experts in the department of Educational Psychology & Counselling, Ahmadu Bello University, Zaria for content and face validation. Their advice and suggestions have been incorporated into the final draft of the instruments.

The State Qualifying Examination is a standardized test instrument developed by the Education Resources Council of Kaduna State Ministry of Education, usually conducted in May/June every year.

### 3.7 Procedure for Data Collection

The researcher personally visited the sampled schools on different days to administer the instrument for data collection. A total number of 50copies of the bio-data forms were distributed at the different schools. With the approval of the Principals, the researcher was assisted by the senior masters of the schools after briefly explaining the procedure to the teachers. 48 copies of the bio-data forms distributed were retrieved. The teachers filled the forms during the 6$^{th}$ period of their lesson. For the students, results of the Qualifying examination in English language were collected at the Educational Resource Centre, The graded performances in the (A1 to F9) were assigned points as follows: 'A1=9', 'B2'=8', 'B3=7', 'C4=6', 'C5=5' 'C6=4', 'D7=3' 'E8=2' and 'F9=1'. The researcher was earlier introduced to the Kaduna State Ministry of Education where she was introduced to the Kaduna Zonal Office of the Ministry of Education and the resource centre. The resource centre organizes the qualifying examinations and also keeps results of such examinations.

### 3.8 Procedure for Data Analysis

The data collected from samples respondents were subjected to coding and analysis using the IBM version 20 package. The first section presents the bio data variables in frequencies and percentages, the second section use descriptive mean statistics to answer the research questions. The third section tests the five research hypotheses using the Independent t test and the Analysis of Variance Statistics. All hypotheses were tested at 0.05 alpha level of tolerance. The summary of findings as well as recommendations is also included. Hypotheses 1, 2, 3, were testing using the T-test while hypothesis4 of this

study were tested using Analysis of Variance (ANOVA). This is meaningful to the reader who shall have no bottleneck with the interpretation and understanding.

# CHAPTER FOUR

# PRESENTATION AND ANALYSIS OF DATA

## 4.1. Introduction

The data collected from performances of students in the State Qualifying Examination in English Language were analysed along with class size, teacher variables: qualification, year of experience and location of schools, to establish their influence on the academic performance of senior secondary school students in Kaduna state in this chapter. Two sets of data were used in the analysis. The first set consists of state qualifying examination results from seven schools with large class size and seven schools with small class size. The graded performances in English language (A1 to F9) were assigned points as follows: 'A1=9', 'B2'=8', 'B3=7', 'C4=6', 'C5=5' 'C6=4', 'D7=3' 'E8=2' and 'F9=1'. The aggregate summation scores were used as the academic performance of the students in the 2014 State Qualifying Examination in fourteen (14) selected secondary schools in Kaduna State. The teachers' variables were obtained with a structured bio-data. 48 English language teachers were selected along the students' results from the fourteen (14) schools. Analysis of the data is discussed in line with the research objectives and questions. The chapter begins with the analysis of the teachers' socio-demographic characteristics. The hypotheses of the study were tested with a discussion of the findings presented at the end of the chapter.

## 4.2 Descriptive Analysis of the Socio-demographic Characteristics

A total of fourteen schools were selected for the study. Among the variables selected along with the performances of the students in the selected schools were location of the school, class size, teacher highest educational qualification, and years of teaching experience and what they considered to be a large class size.

**Table 4.1: Demographic data of respondents using Grades, Location and Qualification.**

| Variables | Frequency | Percentage |
|---|---|---|
| **Grades** | | |
| F9 | 111 | 12.0 |
| E8 | 306 | 33.1 |
| D7 | 203 | 22.0 |
| C6 | 110 | 11.9 |
| C5 | 48 | 5.2 |
| C4 | 54 | 5.8 |
| B3 | 55 | 6.0 |
| A2 | 9 | 1.0 |
| A1 | 28 | 3.0 |
| **Location** | | |
| Urban | 693 | 75.0 |
| Rural | 231 | 25.0 |
| **Size** | | |
| Large | 742 | 80.3 |
| Small | 182 | 19.7 |
| **Qualification** | | |
| NCE | 12 | 1.3 |
| BED | 387 | 41.9 |
| MED | 525 | 56.8 |

Table 4.1 above showed that a total of 14 secondary schools were used for the study with the total students from each school that sat for the State Qualifying Examination. The highest number of students of 189 representing 20.5%, 173 or 18,7% , 114 students representing 12.3%., 12 or 1.3%.being the least respectively. The total number of students that wrote the exam in all the 14 selected secondary schools was 1060.

When the students were classified according to their State Qualifying Examination result, it showed that 111 or 12.0% had F9 while 306 or 33.1% had E8, as against 203 or 22.0% had D**7** while 110 or 11.9% had C6. A total of 48 or 5.2% had C5 while 54 or5.8% had

C4. A total of 55 or 6.0% had B3 while only 9 or 1.0% had A2 and the rest 28 or 3.0% had A1. This shows that majority of the students had F9 and the least number had A2. Also a total of 742 or 80.3% of the students were from large class sizes while the rest 182 or 19.7% are students from small class sizes.

A total of 693 or 75.0% of the students are from urban located secondary schools while the 231 or 25.0% of the students are from secondary schools located in the rural areas. on the teachers qualification, a total of 12 or 1.3% were taught by NCE teachers while a total of 387 or 41.9% were taught by BED teachers and the rest 525 representing 56.8% of the students were taught by teachers with MED qualification.

### 4.3 Research Questions

The aim of this study is to establish the influence of class size, teacher variables of qualification, years of experience and location of schools on the academic performance of some selected Senior Secondary School students in Kaduna State. To achieve this, the major objectives were investigated with research questions as follows:

**Research Questions One:**

Does class size differentiate academic performance of senior secondary school students in Kaduna State?

The determination of class size was based on the categorization in Table 4.5.

**Table 4.5: Descriptive mean statistics on the difference in the academic performance of students taught in large and small class size in the state**

| | Variable | N | Mean | Std. Deviation |
|---|---|---|---|---|
| Academic | Large | 742 | 3.3774 | 1.95646 |
| Scores | Small | 182 | 2.9615 | 1.97880 |

Table4.5above is the descriptive statistics on the mean descriptive statistics in the state qualifying examination result of students taught in large and small class size. The calculated mean performance were 3.38 and 2.96 by students from large and small class sizes respectively indicating that students from large class size had significantly higher performance in than their counterparts from small classes.

**Research Questions Two:**

Is there any difference in academic performance of students taught by qualified teachers and those taught by unqualified teachers in Kaduna State?

Teachers who did not have professional qualifications were grouped into one category while those with educational oriented qualifications were grouped into the second categories. The mean performances of their students were then compared as indicated in Table 4.6.

**Table 4.6: Descriptive mean statistics in the state academic performance of students on the basis of their teachers' qualification**

| Teachers qualification | N | Mean | Std, deviation |
|---|---|---|---|
| NCE | 12 | 4.7500 | 0.75378 |
| BED | 387 | 3.2590 | 1.84590 |
| MED | 525 | 3.2997 | 2.05959 |
| **Total** | **924** | **3.2955** | **1.96677** |

The above table is a descriptive mean statistics on the differences in the academic performance of students taught by qualified less qualified and unqualified teachers in the state qualifying examination. The mean of the academic performances are 4.75, 3.26 and 3.29 by students taught by teachers with NCE, BED and MED qualification respectively, showing that the higher the teachers qualification, the higher the students' performance. The result above also showed that there is no significant difference in the academic performance of students taught by teachers with either BED or MED qualification.

**Research Questions Three:**

Does the academic performance of students taught by experienced teachers defer from their counterparts taught by inexperienced teachers?

Teachers with less than three years of working experience were classified as inexperienced, while those with higher years of teaching were grouped as experienced teachers. The mean scores of their students in the examination were computed along these two categories as presented in Table 4.7.

**Table 4.7: Mean scores of students taught by experienced and inexperienced teachers**

| Variable | Level of experience | N | Mean | Std, deviation |
|---|---|---|---|---|
| State qualifying examination Academic score | Less experience | 47 | 2.0000 | 0.55168 |
| | Experienced | 877 | 3.3649 | 1.99120 |

The above descriptive mean statistics showed that significant difference exist in the academic performance of students taught by experienced teachers and those taught by less experienced teachers. Their calculated mean performances were 2.000 and 3.37 by students taught by less experienced teachers and those taught by experienced teachers respectively indicating that students taught by experienced teachers had significantly higher performance in the state qualifying examination than those taught by less experienced teachers.

**Research Questions Four:**

Will school location impact negatively or positively on the academic performance of Senior Secondary School students in Kaduna state?

Scores of the students in the urban schools and those of rural schools were computed and compared as indicated in Table 4.8.

**Table 4.8: Descriptive mean statistics on the difference in the academic performance of students from urban and rural located schools**

| Variable | Year | N | Mean | Std. Deviation |
|---|---|---|---|---|
| Academic | Rural | 693 | 3.1515 | 1.79397 |
| Scores | Urban | 231 | 3.7273 | 2.36443 |

According to the descriptive mean statistics above, difference exist in the academic performance of the students who are taught in schools located in rural and urban schools. Their calculated mean performances were 3.15 and 3.72 for rural and urban students respectively suggesting that urban students performs better in state qualifying examination than their counterparts from rural areas.

## 4.4 Hypotheses Testing

The hypotheses formulated to determine the significance of the observed variability in the categories of the variable and their relatedness with the students performances in the state qualifying examination are tested in this section. They consisted of four null hypotheses. Null hypotheses 1, 2 and 3 were tested using the independent t-test while null hypothesis 4 was tested using Analysis of Variance (ANOVA)

**Hypothesis One**:

There is no significant difference in academic performance of students taught in large or small size classes in Senior Secondary Schools in Kaduna State. The null hypothesis states that there is no significant difference in academic performance of students taught in large or small classes in Senior Secondary School in Kaduna State.

**Table 4.9: Independent t-test statistics on the difference in the academic performance of students taught in large or small classes**

| Variable | Year | N | Mean | Std. Dev | Df | t-calculated | t-critical | Sig (p) |
|---|---|---|---|---|---|---|---|---|
| Academic | Large | 742 | 3.3774 | 1.95646 | 922 | | | 0.011 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Scores | Small | 182 | 2.9615 | 1.97880 | | 2.564 | 1.96 |

Calculated P<0.05, calculated t >1.96, at df 922

Results of the independent t-test statistics above showed that significant difference exist in the performance of the students taught in large and small class. Reasons being that the calculated p value of 0.011 is higher than the 0.05 alpha level of significance while the t-calculated value of 2.56 is higher than the t-critical value of 1.96, at df 922. Their calculated mean performances were 3.38 and 2.97by students from large and small class sizes respectively suggesting that students taught in large class had significantly higher performance in English language in the state qualifying examination than their counterparts from small classes. Hence the null hypothesis which states that there is no significant difference in the academic performance of students taught in large or small class is hereby rejected.

**Hypothesis Two**:

There is no significant difference in the academic performance in English Language of students taught by teachers with varying degrees of qualification on Med, B.ed and NCE in Senior Secondary School students in Kaduna State.

**Table 4.10: Post hoc multiple comparison using Scheffe and LSD on the difference in the academic performance of students on the basis of their teachers qualification**

| | (1) Qualification | (j) Qualification | Mean difference (I – J) | Sig. |
|---|---|---|---|---|
| | | BED | 1.45026* | 0.042 |
| | NCE | MED | 1.49095* | 0.034 |
| | | NCE | -1.45026* | 0.042 |
| Scheffe | BED | MED | 0.04069 | 0.953 |
| | | NCE | -1.49095* | 0.034 |
| | MED | BED | -0.04069 | 0.953 |
| | | BED | 1.45026* | 0.012 |
| | NCE | MED | 1.49095* | 0.009 |
| | | NCE | -1.45026* | 0.012 |
| LSD | BED | MED | 0.04069 | 0.757 |
| | | NCE | -1.49095* | 0.009 |
| | MED | BED | -0.04069 | 0.757 |

The mean difference is significant at the 0.05 level

Results of the Analysis of Variance statistics, descriptive mean statistics and the Post Hoc Multiple comparison statistics showed that significant difference exist in the academic performance of students on the basis of their teachers' qualification. Reasons is that in the analysis of variance statistics, the calculated p value of 0.034 was found to be lower than the 0.05 alpha level of significance while the calculated F ratio value of3.39 was found to be higher than the F critical value of 2.60. The mean of the performances are 4.7500, 3.26 and 3.30 by students taught by teachers with NCE, BED and MED qualification respectively, showing that the higher the teachers qualification, the higher the students' performance. The Post Hoc multiple comparison test using Sheffe and LSD showed that significant differences exist

between students taught by NCE and those taught by BED or MED teachers. Differences between students taught by teachers with either BED or MED qualifications was found not to be significant. In conclusion, the null hypothesis which states that there is no significant difference in the academic performance of students on the basis of their teachers' qualification is hereby rejected.

**Hypothesis Three:**

There is no significant difference in the academic performance of students taught by experienced teacher and those taught by inexperienced teacher of Senior Secondary School students in Kaduna State.

The scores of the students for inexperienced and experienced teachers as computed and examined in Table 4.11 were subjected to a two sample t-test procedure in the test of this hypothesis. The result of the t-test procedure is summarized in Table 4.12.

**Table 4.11: Two sample t-test on academic performance of students taught by experienced and inexperienced teachers in English language in the terminal examination**

| Variable | Level of experience | N | Mean | Std, deviation | Df | t-calculated | t-critical | Sig (p) |
|---|---|---|---|---|---|---|---|---|
| State qualifying examination Academic score | Less experience | 47 | 2.00 | 0.55 | 922 | | | |
| | Experienced | 877 | 3.36 | 1.99 | | 4.69 | 1.96 | 0.00 |

Calculated $p < 0.05$, calculated $t > 1.96$ at df 922

Results of the independent t-test statistics above showed that significant difference exist in the academic performance of students taught by experienced teachers and those taught by less experienced teachers. Reasons being that the calculated p value of 0.000 is higher than the 0.05 alpha level of significance while

the t-calculated value of 4.69 is higher than the t-critical value of 1.96, at df 922. Their calculated mean performances were 2.000 and 3.37 by students taught by less experienced teachers and those taught by experienced teachers respectively indicating that students taught by experienced teachers had significantly higher performance than those taught by less experienced teachers. Hence the null hypothesis which states that there is no significant difference in academic performance of students taught by experienced teachers and those taught by less experienced teachers is hereby rejected.

**Hypothesis Four:**

There is no significant difference in academic performance in English Language of Senior Secondary School students located in the rural or urban areas of Kaduna State.

**Table 4.12(a): Analysis of variance on the academic performance of students on the basis of their teachers' qualification**

ANOVA

| | **Sum of squares** | **DF** | **Mean square** | **F** | **F critical** | **Sig.** |
|---|---|---|---|---|---|---|
| Between groups | 26.091 | 2 | 13.046 | 3.390 | 2.60 | 0.034 |
| Within groups | 3544.249 | 921 | 3.848 | | | |
| **Total** | **3570.341** | **923** | | | | |

**Table 4.12(b): Descriptive statistics on academic performance of students in English language on the basis of their teachers qualification**

| | **N** | **Mean** | **Std. deviation** |
|---|---|---|---|
| NCE | 12 | 4.7500 | 0.75378 |
| BED | 387 | 3.2590 | 1.84590 |
| MED | 525 | 3.2997 | 2.05959 |
| **Total** | **924** | **3.2955** | **1.96677** |

**Table 4.12(c): Post hoc multiple comparison using Scheffe and LSD on the difference in the academic performance of students in English language on the basis of their teachers qualification**

| | (1) Qualification | (j) Qualification | Mean difference (I – J) | Sig. |
|---|---|---|---|---|
| | | BED | 1.45026* | 0.042 |
| | NCE | MED | 1.49095* | 0.034 |
| | | NCE | -1.45026* | 0.042 |
| Scheffe | BED | MED | 0.04069 | 0.953 |
| | | NCE | -1.49095* | 0.034 |
| | MED | BED | -0.04069 | 0.953 |
| | | BED | 1.45026* | 0.012 |
| | NCE | MED | 1.49095* | 0.009 |
| | | NCE | -1.45026* | 0.012 |
| LSD | BED | MED | 0.04069 | 0.757 |
| | | NCE | -1.49095* | 0.009 |
| | MED | BED | -0.04069 | 0.757 |

*The mean difference is significant at the 0.05 level

Results of the Analysis of Variance statistics, descriptive mean statistics and the Post Hoc Multiple comparison statistics showed that significant difference exist in academic performance of students on the basis of their teachers' qualification. Reasons being that in the analysis of variance statistics, the calculated p value of 0.034 was found to be lower than the 0.05 alpha level of significance while the calculated F ratio value of 3.39 was found to be higher than the F critical value of 2.60. In the mean statistics, the mean academic performances are 4.75, 3.26 and 3.29 by students taught by teachers with NCE, BED and MED qualification respectively, showing that the higher the teachers qualification, the higher the students'

performance in the state qualifying examination. The Post Hoc multiple comparison test using Scheffe and LSD showed that significant differences exist between students taught by NCE and those taught by B. ED or M. ED teachers, but differences between students taught by teachers with B. ED or M. ED was not significant. In conclusion, the null hypothesis which states that there is no significant difference in the academic performance of students on the basis of their teachers' qualification is hereby rejected.

## 4.5 Summary of Findings

The major findings of the study were:

1. Class size has significant influence on students' academic performances at the State Qualifying Examination. (t= 2.56, p = 0.01) showing that students taught in Large classes performing better than their counterparts taught in smaller classes.
2. Professional Qualification of teachers significantly influences the performances of the students (f = 3.39, p = 0.03) with students taught by higher teaching qualifications performing better than their mates taught by teachers with lower qualifications.
3. Teachers experience was found to have major influence on the academic performances of the students (t = 4.69, p =0.00) indicating that students taught by experienced teachers perform better than their counterparts taught by teachers with less experience.
4. The location of school has major influence on students' academic performance (t = 3.89, p = 0.00) showing students in the urban areas performing better than the students in the rural areas.

## 4.6 Discussion

From the data collected for this study on the influence of class size, teacher variables; qualification, years of experience and location of schools on the academic performance of Senior Secondary School students in Kaduna State, a number of observations or findings have been made. From the analysis of the research questions and tests of the hypotheses, there is evidence that teachers' variable have some major influence on the academic performance of students in terminal examination. Four hypotheses were tested in order to establish this influence. The finding on class size is not consistent with Wosayanju (2005) who maintained that large class size poses some teaching challenges such as delayed feedback, resulting in inefficiency, poor quality of students, and reduction in teaching with less assignment so as to reduce the burden of marking all of which encourages shallow learning.

In the test of hypothesis one, the performances of students in small class size and those in large class size were compared. Amazingly the result indicated that the variability in performances between the two groups was statistically significant, with students in small class sizes performing lower than their counterparts in large class size. The data and subsequent results of findings shows that majority of the schools with large class size are located in the urban areas. It also indicated that most of these schools in the urban areas have teachers with higher qualifications than their counterparts in the rural areas. On the other hand schools in the rural areas were found to have smaller student population and teachers with lower teaching qualification of NCE.

The result is therefore not so surprising as the schools in the urban areas has everything going for them in terms of qualified and experienced teacher with good social amenities such as electricity, access to the internet facilities and other teaching

and learning materials for adequate studies; this goes a long way go to support the influence environment has on the learning behaviour of the students. Surprisingly enough factors such as noise pollution, distractions and having to travel long distance to school, all negative effects of schooling in the urban areas seems not to affect the performance of these students in the urban areas. On the other hands environmental factors such as serene and tranquil environment, short distance to school, seems not to positively impact on the rural students' academic performance. It therefore posits that class size alone cannot determine the outcome of a learning experience. The null hypothesis which states that there is no significant difference in the academic performance of senior secondary school students is therefore rejected. From the observed mean scores for the two groups, it was found that students in large class size had higher performance than those in small class size.

Hypothesis two tested for significant difference in the academic performance of students taught by teachers with higher teaching qualification and those taught by teachers with lower teaching qualification in the state qualifying examinations in the selected Senior Secondary Schools. The result of the test revealed that the academic performance of students taught by teachers with higher qualification was significantly higher than that of students taught by teachers with lower teaching qualification. The null hypothesis was therefore rejected.

Hypothesis three tested for significant difference in the academic performance of students taught by experienced teacher and those taught by inexperienced teacher in the terminal examination. The result of the test revealed significant difference between the two groups. The null hypothesis was therefore rejected. This finding is not consistent with Hanushek & Kain (2005), who contended that experience matters only in the first year of teaching. By their estimates, "having a first year teacher on

average is roughly equivalent to having a teacher a half standard deviation down in the quality distribution".

In a similar study, Grissmer, Kawata & Willliamson (2000) analysis of state data on the National Assessment of Educational Progress revealed positive effects on student achievement in states with large proportions of teachers who had at least two years of experience, but no evidence that additional years of experience were associated with higher achievement. His finding agrees with the report of Gordon, Kane, & Staiger (2006) who found large gains in teacher effectiveness between the first and second year of teaching, much smaller gains between the second and third year, and no substantial improvement after the third year in the classroom. The result here is consistent the report of Olatunde (2009) whose study on influence of teachers' experience and students achievement revealed that students taught by more experienced teachers achieve higher level, because their teacher have master the content and acquired classroom management skills to deal with different classroom problems.

Hypothesis four tested for significant difference between academic performances of the students from urban schools and those in from rural schools in the terminal examination. The test reveals that location of school does have major influence on the students' performances in the state qualifying examination. The null hypothesis was therefore rejected. This finding is consistent with the reports of Isiugo-Abanihe & Labo-Popoola (2004) findings that students in urban areas performed significantly better than those in rural areas and also this is in support of school location playing a significant role in academic performance of students and

Alokan (2011) who showed that school location has significant effect on student academic performance in physics.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This study aimed at finding out the influence of class size, teacher variables, and location of schools on the academic performance among senior secondary school students in Kaduna State. This chapter presents the summary of chapters, implications of findings for all stake holders in educational sector conclusion, recommendations and suggestions for further studies.

## 5.2 Summary of the Study

Chapter one presented the background to the study, statement of the problem, four objectives that served as a guide to the study were set based on the influence of class size, teacher variables of qualification and experience on the academic performance of senior secondary school students in Kaduna State. Related to these are four research questions and four hypotheses. Significance of the study was stated, basic assumptions made and finally, the scope and delimitations of the study were highlighted.

Chapter two looked at the framework on which the research will be based. The theoretical framework chosen for the study consists of three theories, one for academic performance, one for class size and the other for Teacher variable of qualification and experience. One of the theories on academic performance is the Attribution Theory of Bernard Weiner (1935).A basic assumption of Weiner's model of attributions is that learners are affected by both environmental factors (e.g., characteristics of the students' home or school) and by personal factors (e.g., prior

experiences and prior knowledge). These background variables affect the types of attributions that individuals are likely to make.

The second theory is the Economic Theory on Class size by Hoxby (2000).The fundamental assertion of the economic theory explained the reason why class size did not significantly influence students' academic performance. Hoxby (2002) maintained that class size was a primary example of the education production fallacy; one could not assume there was a relationship between educational inputs like class size and outputs such as achievement. She argued that "…while class size reduction always affords opportunities for increased investment in each child's learning, it is not obvious that every school takes up such opportunities" (Hoxby, p. 240). The third theory on teacher variables is the Education Production Theory. The main premise of this theory is that an *education production function* is an application of the economic concept of a production function to the field of education. It relates various inputs affecting a student's learning (schools, families, peers, neighbourhood, etc.) to measured outputs including subsequent labour market success, college attendance, graduation rates, and most frequently, standardized test scores. The fourth theory is the Urban Location and Tie bout Models of Community choice. The theory posits that with changed economic incentives, the level and distribution of educational services change along with the locational decisions of households. This has direct ramifications for a number of educational policy and finance decisions. Urban Location Models in Urban economics has largely focused on household location and urban form as dictated by accessibility concerns.

Again the chapter looked at the literature review that addressed issues pertaining to class size teacher variables of qualification and students' academic performance and school location. Key concepts such as class size, qualification, experience, academic

performance, school location has been identified and explained in the chapter to facilitate understanding of all necessary concepts to the study.

Chapter three presented the methodology adopted for the study. The study adopted the Expo Factor Design. Population of the study consists of all senior secondary school II students and the English- Language teachers in Kaduna and Zaria Educational zones of Kaduna State. There are a total of 1060 students who sat for the 2014 State Qualifying Examinations and 48 teachers who taught English language in SSII. Two instruments were used for Data collection. To measure teacher variables, the Teacher Variables and School Location Question Items (TVSLQI), while in determining the students' academic performance, the Results of the 2014 State Qualifying Examinations in English Language were analysed.

Chapter four presented data collected from the field. The Statistical package IBM version 20 was used in the analysis of data. The data collected were subjected to a descriptive analysis using frequency and percentages tables for the demographic characteristics. Means and standard deviations were used for the research questions. The hypotheses were tested using the inferential statistics including the two sample t-test and the Analysis of Variance (ANOVA). A total of four null hypotheses were tested. Hypotheses 1, 2, 3 were analysed using the t-test while hypothesis 4 was analysed using the Analysis of Variance (ANOVA). All the null hypotheses were rejected. It was found that inverse relationship exists between class size, teacher variables, school location and academic performance of SS II students in Kaduna State. Class size has significant influence on students' academic performances at the State Qualifying Examination. ($t= 2.56$, $p = 0.01$). Professional Qualification of teachers significantly influences the performances of the students($f = 3.39$, $p = 0.03$). Teachers experience was found to have major influence on the academic

performances of the students (t = 4.69, p =0.00). The location of school has major influence on students' academic performance (t = 3.89, p = 0.00).

### 5.3.Conclusion

Based on the findings of this study, the following conclusions are arrived at:

1. Academic performance of students at the State Qualifying Examination is significantly influenced by their class sizes with large classes performing better than their counterparts in the smaller classes.
2. The professional qualifications of teachers significantly and positively influence the academic performances of their students. The higher the qualification of the teachers the better the students' academic performance.
3. Teaching experience significantly influence academic performance of students in the State Qualifying Examination.
4. Location of school has significant influence on the students' academic performance at the State Qualifying Examination with the schools located in rural areas recording lower grades than their counterparts in the urban areas.

## 5.4 Recommendations

The following recommendations are suggested based on the outcome of the findings:

1. In spite of the amazing results of the influence of class size on the academic performance of secondary school students, and the facts that large classes has some advantages it is still recommended that schools should stick to the 40:1 student –teacher ratio as stipulated by the National Policy on education. Class management and control is easy easier to achieve in a smaller class which goes a long way to determine the outcome of the learning experience.
2. The government should mandate and motivate teachers who are posted to the rural areas to stay in the teaching profession to gain adequate experience as this study showed that students taught by teachers with higher qualifications perform better.

3. Government should monitor equal distribution of experienced teachers to schools located in both rural and urban areas as it is discovered that teachers with higher qualifications tend to refuse postings to the rural areas.
4. Restructuration of class size require more facilities, therefore stakeholders should endeavour to provide required facilities and instructional materials for the teaching and learning the schools.

## 5.5. Suggestions for Further Studies

1. This study Influence of Class size, teacher variables, and School Location on the Academic performance of Senior Secondary School Students was conducted in two of the Educational zone of Kaduna State and could be replicated in other zones in the state using other teacher variables.

2. The study could be replicated using student variables such as learning styles, memory, recall and maladjusted behavior.

3. The study could also be replicated using other demographic variables such as age, sex and could be carried out in other parts of Kaduna State.
4. This study was conducted using 2014 State Qualifying Examination results, it is suggested that further studies could be conducted using the results of test conducted by the researcher.

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## APPENDIX I

## QUESTIONNAIRE

TEACHER VARIABLES AND SCHOOL LOCATION QUESTION ITEMS *{TVSLQI}*

Dear Respondent,

This research work is an academic exercise, kindly respond as honest as you can, do not write your name. Any information provided by you will be treated with utmost confidentiality. Kindly tick [√] on the option you feel corresponds to each item.

**SECTION A: BIODATA**

NAME OF SCHOOL ……

LOCATION OF SCHOOL RURAL [ ] URBAN [ ]

AVERAGE NO, OF STUDENTS PER CLASS: 1-40 [ ] 41-80 [ ]

81-Above [

WHAT IS YOUR HIGHEST QUALIFICATION?NCE [ ] B.ED [ ]

M.ED [ ] OTHERS {SPECIFY}…….

HOW LONG HAVE YOU BEEN TEACHING?

1-5 yrs [ ] 6-10yrs [ ] 11-15yrs [ ] above 15 yrs [ ]

WHAT DO YOU UNDERSTAND AS LARGE CLASS SIZE?

30-50 [ ] 51-80 [ ] 81-100 [ ] Above 100 [ ]