**CHAPTER ONE**

**INTRODUCTION**

**1.1 Background of the Study**

Education is a very important human activity. It helps any society fashion and model individuals to function well in their environment. According to Boit, Njoki and Chang’ach (2012), the purpose of education is to equip the citizenry to reshape their society and eliminate inequality. In particular, secondary education is an important sector in national and individual development. It plays a vital role in creating a country’s human resource base at a level higher than primary education (Achoka, Odebero, Maiyo & Mualuko, 2007).

Biology occupies a unique position in the school curriculum. Biology is central to many science related courses such as Medicine, Pharmacy, Agriculture, Nursing, Biochemistry and so on. It is obvious that no student intending to study these disciplines can do without Biology. Considering its fundamental characteristics and importance, Biology is today a standard subject of instruction at all levels of our educational systems, from pre-primary to tertiary. It is the only core science subject at Secondary School Certificate Examination (SSCE), whose study is very relevant to man’s successful living (Akindele, 2009). Araoye (2009) opined that exposure to Biology education offers the learners a wide range of relevance to all aspects of life. Biology is a key subject on the curriculum of [Nigerian Educational Research and Development Council](https://www.facebook.com/NERDC?fref=nf)(NERDC). The philosophy behind the subject according to Araoye (2009) is to produce knowledgeable, highly motivated, professional and effective teachers of Biology who will be able to develop in students, an appreciation and understanding of Biological process and principles.

As a subject discipline, it is quite popular at all levels of Nigerian education. It has a large student enrolment than any other science subject especially at the upper basic level of the Nigerian education (Ofoegbu, 2003). This has been attributed to several factors including the students’ perception of the subject as simple and non- availability of other science subjects in some schools such that Biology is made compulsory for both science and non-science students.

However, in spite of the popularity of Biology among students, the failure rate has remained very high (Akubuilo, 2004). Several researchers have pointed out different reasons for students poor performance, some of which are due to the abstractness of certain aspects of Biology, lack of understanding on the students’ part, certain Biological concepts and terminologies, etc (Okeke and Ochuba, 1986; Nzelum, 2010). As a result of failure experiences, some students begin to doubt their intellectual abilities and come to believe that their efforts to achieve are futile .These feelings in turn, leads to a low persistence level; they give up quickly even as in learning as soon as something appears to be difficult . Hence, there is a great need for students to be motivated to develop positive attitude which is crucial to performance in any subject. Akpan (1987) cited by Adedeji (2007), opined that poor attitude of students and even of teachers to Biology is a destabilizing factor to successful Biology development.

These factors, among others, have drawn attention of researchers and curriculum planners towards Biology as a subject in the school curriculum (Kareem, 2003). In spite of the importance and popularity of Biology among Nigerian students, performance at senior secondary school level had been poor (Ahmed, 2008). Studies have shown the significance of teacher- student ratio to cognitive learning in the school (Fabunmi and Okere, 2000). There is a relationship between factors like class size or population, instructional materials and methods, teacher’ strength, students’ attitude and performance in examination. Reo*,* Stoodt and Burns (1987) discovered that in reading scores on individual test, the smallest classes were significantly higher and largest classes were lowest of all.

There is a need for modern innovative teaching approaches in line with latest development in science and technology to help the conventional methods for better performance. Practical experience is very fundamental in the Biology class. Nwagbo (2007) observed that most Biology teachers use all the Biology periods for theoretical aspect of the subject neglecting the weightier practical aspect which has potential for developing critical thinking and objective reasoning abilities in the students. Research has shown that many teachers lack the competencies, skills and creativity to organize practical classes (Ofoegbu, 2003; Akubuilo, 2004 cited by Uzoechi,2009). Students are rarely taught Biology practical according to Ajala (2002), at the basic and secondary levels and this affects performance at the post-secondary level. To Araoye (2010), for better results at the basic education levels, teachers need to be more proactive, creative and committed.

United Nations Educational Scientific and Cultural Organization (UNESCO) (2006) stated that, Nigerian teachers of youths, primary and secondary school pupils have the responsibility of making a paradigm shift from being instructors, expositors, fact givers and verifiers to facilitators, stimulators, proactive and productive. However, despite the threat of discouraging reports of poor students’ performance, influx of incompetent, half-baked and inadequate skilled graduates in the labour markets, high achievement still need to be readdressed and harnessed in the educational system.

On the other hand, instructional methods are decisions about organizing people, materials and ideas to provide learning (Nwachukwu, 2005). Weston and Cranton (1986) viewed instructional methods as both the teaching strategies and the materials used in the process of teaching. It determines the approach a teacher may take to achieve learning objectives. Some of these instructional methods include demonstration, discussion, inquiry and lecture among others. According to Saskatchewan Education (2002), Instructional skills are the most specific category of teaching behaviours. They are necessary for procedural purposes and for structuring appropriate learning experiences for students. These include such techniques as questioning, discussion, directive giving, explaining and demonstrating. Hence, students learn by doing, making writing, designing, creating and solving (Davis, 1993).

Demonstration is the most widely used instructional method for the acquisition of practical skills as it involves verbal and practical illustrations of a given procedure. This method is seen to be highly effective because it involves active participation of the students (Ogwo and Orangu, 2006). Research findings by Ugwuanyi (1998) on the effects of instructional approaches on students’ academic performances indicated that students taught with demonstration performed significantly better than those taught with inquiry method. Hence, ensuring effective instructional methods for the provision of quality secondary education is therefore important in generating the opportunities and benefits of social and economic development (Onsumu, Muthaka, Ngware & Kosembei, 2006). One of the indicators of quality of education being provided is cognitive achievement of learners (United Nations Educational, Scientific and Cultural Organization, [UNESCO], 2005). According to Adediwura and Tayo (2007), academic achievement is designated by test and examination scores or marks assigned by the subject teachers. It could also be said to be any expression used to represent students’ scholastic standing.

Levin, Wasanga and Somerset (2011) reported that the academic achievement of students at secondary school level is not only a pointer of the effectiveness of schools but also a major determinant of the well-being of youths in particular and the nation in general. Yusuf and Adigun (2010); Lydiah and Nasongo (2009) noted that the performance of students in any academic task has always been of special interest to the government, educators, parents and society at large. It has been proved that teachers have an important influence on students’ academic achievement. They play a crucial role in educational attainment because the teacher is ultimately responsible for translating policy into action and principles based on practice during interaction with the students (Afe, 2001).

Along this premise, this study is set to investigate the effects of teachers instructional methods on students academic performance in Biological sciences in secondary schools using Kano State as study case.

**1.2 Statement of Research Problem**

Biology is generally conceived by most students as the easiest science subject and so, enjoys larger number of enrolment than other basic science subjects (Ajewole, 2006). However, the yearly percentage pass in the subject is very low compared with students’ performance in other basic sciences as well as other subjects. This, it should be stated, does not translate to it’s being easy (Nzelum, 2010). The May/June 2014 West Africa Examination Council result recorded yet another failure with only 21.81 percent of the candidates considered to have passed (Akonedo,2015).

Instructions in Biology lack proper approaches in most cases. When the students cannot easily understand and follow the instructions, the lessons become boring and engender negative attitude and low interest to the students towards the course been taught. This eventually results in low academic performance by the students, which in turn results to elongation in time of formal education, low self esteem, lost of self confidence, degradation of sense of responsibility, inadequate developed minds for national building, etc. It was noted that difference in the performance of students has been attributed to teachers’ methods or techniques of lesson presentation (Udom, 2008).

This study therefore sought to investigate the effects of teacher’s instructional methods on student’s academic performance in Biological sciences in Kano State.

**1.3 Purpose of the Study**

The objectives of the study are to:

1. To find out the students mean achievement scores in Biology when taught with demonstration and lecture methods.
2. To find out the academic achievement scores of male and female students taught Biology with demonstration and lecture methods.

**1.4 Significance of the Study**

School principals and teachers are important factors in the school system and their influence on student performance and overall school effectiveness cannot be overemphasized. Hence, the need to investigate the impact of teachers instructional methods on students academic performance being part of the major variables that could contribute to school effectiveness and national development.

This study will be valuable in terms of theoretical and practical significance in the area of Human Resource Management, particularly the performance management of teacher with primary focus on student academic performance and school effectiveness.

The result will help to sensitize the Ministries of Education in the country to organize workshops on instructional strategies for teachers and supervisors to enhance their performances and better the overall performance of students academically, socially and economically.

Students will also benefit from the outcome of this study as it would lay a sound basis for further researches. The findings of these researches will significantly uplift the economies educational status with respect to the current status of schools, students and learning generally. This will in turn form the basis for sound governmental intervention and hence result into impressive student performance, well mannered individuals and responsible youth dominated society. Academicians could also use this study and its findings as reference material in other related educational studies. The study will also be useful to the policy makers, educational planners, school administrators and other officials that are directly or indirectly charged with administering the school and to the entire society.

**1.5 Scope of the Study**

The researcher intends to examine the effects of teacher’s instructional methods on students academic performance in Biological sciences in secondary schools in Kano. As such, the study will investigate instructional methods of teacher including demonstration and lecturing, overall academic performance of students in Biological sciences in secondary schools in the state and finally present the interplay between them.

**1.6 Research Questions**

This study will attempt to answer the following questions:

1. What are the student’s mean achievement scores in Biology when taught with demonstration and lecture methods?
2. What are the academic achievement scores of male and female students taught Biology with demonstration and lecture methods?

**1.7 Research Hypothesis**

The following null hypothesis will be tested in the study.

**H01:** There is no significant difference in the student’s mean achievement scores in Biology when taught with demonstration and lecture methods.

**H02:** There is no significant difference in the academic achievement scores of male and female students taught Biology with demonstration and lecture methods.