

**INFLUENCE OF SCHOOL ENVIRONMENT ON SECONDARY
SCHOOL STUDENTS' LEARNING OF BIOLOGY IN EGOR LOCAL
GOVERNMENT AREA IN EDO STATE**

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BENIN CITY**

JULY, 2023

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**A PROJECT SUBMITTED TO THE DEPARTMENT OF CURRICULUM
AND INSTRUCTIONAL TECHNOLOGY, FACULTY OF EDUCATION,
UNIVERSITY OF BENIN, BENIN CITY IN PARTIAL FULFILLMENT
OF THE REQUIREMENT OF THE AWARD OF THE BACHELOR OF
SCIENCE (ED) DEGREE IN BIOLOGY EDUCATION**

JULY, 2023

CERTIFICATION

This is to certify that this project was carried out by **Edith OSAYANDE** with Matriculation number **EDU1408270** in the Department of Curriculum and instructional Technology, Faculty of Education, University of Benin, Benin City as adequate in scope and quality for the partial fulfillment for the award of Bachelor of Science (ed) Degree in Social Studies

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DEDICATION

This project work is dedicated to God Almighty for His infinite mercies.

ACKNOWLEDGEMENTS

I wish to acknowledge my Project supervisor, Dr. Iniobong Johnnie Umoh whose contributions made this work a success. I also appreciate all the lecturers in the Department of Curriculum Instructional Technology especially those in my course area (Biology Education) and the Head of Department, for their immense contribution to my studies.

My deepest appreciation goes to my loving and caring Husband and other members of my family for their love and prayers. I am forever grateful for the unalloyed support and motivation received my children for making my studies in the University of Benin enjoyable.

My sincere gratitude goes to the Almighty God, for His provision, love, and grace towards me throughout my academic programme at the University of Benin, Benin City

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ABSTRACT

The purpose of this study is to examine the influence of school environment on Biology students' academic performance in secondary schools in Egor Local Government Area of Edo State.

The researcher employed the use of survey design in the study. The instrument used to collect data for the study was a structured questionnaire. Data gathered from respondents were analyzed using percentage, mean statistics and standard deviation. From the data analyzed, it was discovered that:

A sample of 100 students was used in this study and they were drawn from four randomly selected junior secondary schools representing the entire population. The instrument used to collect data for the study was a structured questionnaire. The validity of instrument was ascertained by the researcher's supervisor and the questionnaire was analyzed using simple percentage method. Data obtained from the questionnaire administered were analyzed using percentage, mean statistics and standard deviation.

The findings indicate school building, classroom furniture's, class size, instructional materials and school location influence the academic performance of junior secondary students. Based on the findings it was recommended among others that the education sector should be appropriately funded to enable the sector acquire the necessary facilities to make the learning environment very adaptable, useful and viable to meet the educational goals of Nigeria and government should ensure that schools are provided with effective and adequate toilet facilities on the one hand, while the school authorities should also sensitize parents about the need for toilet facilities and solicit for their support on the other hand.

CHAPTER ONE

INTRODUCTION

Background to the Study

Biology is one of the science subjects many students offer both at the secondary and tertiary levels of education. The fact that this subject is one of the science subjects (particularly required for Medical, Veterinary, Agricultural, Biochemistry, Microbiology, Pharmaceutical disciplines in the universities) stimulates the learning of the subject at the secondary school level as a priority. The fundamental objectives of biology education are to prepare students to acquire: adequate laboratory and field skills in biology; meaningful and relevant knowledge in Biology, ability to apply scientific knowledge to everyday life in matter of personal and community health and agriculture and lastly reasonable and functional scientific attitudes (Federal Ministry of Education, 2014). The study of Biology is essential for the nation's scientific and technological development. Without sound knowledge and wholesome attitude towards biology, the much needed and vouched technological breakthrough may not be achieved. For instance, the knowledge of biology is brought to play in the areas of manufacturing and processing industries,

medicine, food production and pharmaceuticals among others. Thus, the knowledge of Biology helps in checking environmental degradation such as desertification, erosion, water hyacinth, land, air and water pollution.

The primary purpose of teaching and learning process is to bring about in the learner desirable change in behaviour through critical thinking. This process however, does not take place in vacuum but in an environment structured to facilitate learning. According to Okoro (2014) environment could be described as a system within which living organisms interact with the physical elements. It consists of all elements existing around man and which exert some influence on him. These include physical, biological and social attributes. Environment, according to Webster's Comprehensive Dictionary is the sum total of all surrounding of a living organism, including natural forces and other living things which provide conditions for development and growth as well as of danger and damage. Environment can also be seen as aggregate of all the external condition and influence affecting the life and development of an organism while school environment is a place where the learners learn to interact with learning facilities in order to be socialized and face the challenges in the society.

The Organization for Economic Co-operation and Development (OECD, 2009) defines school environment as a physical space that supports multiple and diverse teaching learning programmes including current technologies, one that demonstrates optimal, promotes effective performance and operation over time; one that respects and is in harmony with the environment; and one that encourages social participation, provide a healthy, comfortable, safe, secure and stimulating setting for its occupants. School environment is the thread that connects to the various activities on the school. The school environment, include the classrooms, libraries, technical workshops, laboratories, teachers' quality, school management, teaching methods, peers, and others are variables that affect students' academic performance (Panama, 2020). The school environment also include the planning of instructional spaces, administrative places, spaces for conveniences, equipment's, the teachers as well as the students are all essential in teaching-learning process. Hence, the school environment remains an important area that should be studied and well managed to enhance students' academic performance in Biology

Academic performance of a child could be defined as the learning outcome of the child. This includes the knowledge, skills and ideas, acquired

and obtained through their course of study. According to Panama (2020), academic performance in school is evaluated in a number of ways. It could be by taking written and oral tests, performing presentations, submission of homework and participating in class activities and discussion. Students' academic performance can be explained in form of grades obtained from tests or examinations on subjects taken. A student is said to have good academic performance when the student scores above the expected standard set by the examiners while poor academic achievement is a performance that is adjudged by the examiner and some significant others as falling below an expected standard.

Over the years, researchers like Panama (2020) and Wanjobi (2011) among others have maintained that academic performance of students have been unstable and that this menace of the unstable academic performance among secondary school leavers have stared at students, parents, government, society, teachers and other educational stakeholders in the face. In addition, Oyovwi (2015); Aimuamwonsa (2020) have shown in their various studies that the level of academic performance of students in public examination has no

doubt made parents lost confidence in the ability of some public secondary schools to produce good products.

Biology is a science subject that is most popular among students in the Senior School Certificate Examination (Ajaya, 2016), yet students' performance in Senior School Certificate Examination (WAEC) seem to be wobbling. This can be seen in Maxwell (2017) analysis of the performance of candidates in the Biology WASSCE results, which confirms high percentage failure. However, a number of factors are said to have contributed to the dwindling students' academic performance in secondary school. Various researchers in Nigeria stressed that these factors include: poor study habits, materials, indiscipline, teachers' ineffectiveness and poor teaching methods. From these researcher's views, the unstable academic performance of students in Biology is a reflection of the school environment in the area of human factors. It is against this background that the researcher deems it fit to examine the influence of learning environment in the area of school building, class size, class furniture, availability and utilization of instructional materials and science laboratory on Biology students' academic performance in secondary schools in Egor Local Government Area

Statement of Problem

It has been observed in the recent past that secondary schools in Nigeria are not living up to expectation in delivering quality education expected of the system. A lot of problems seem to be bedeviling the secondary school system ranging from inadequate facilities, old and dilapidated structures, inadequate instructional materials, non-availability of text books, laboratory apparatus and other learning resources and unqualified teachers thereby making the system ineffective. Furthermore, there is a agreement of opinion about the wobbling standard of education as a problem that is hindering the posterity of the Nigerian nation in terms of producing quality manpower resources. To this end, researchers have continued to find out the reasons for the wobbling academic performance of secondary school students. In addition to the foregoing, the researcher having completed her Teaching Practice exercise observed that school environment in most secondary schools is not conducive for leaning and in addition, the researcher also observed that in some cases, students sit on the ground to receive lessons, also many of the school building are old, some classroom do not have chairs and desk for students and teaxhers as well, in some case, the classrooms dilapidated, laboratories are ill equipped,

libraries, playing grounds are in a terrible state of despair to the extent that in some of the secondary schools, teaching and learning take place under uncomfortable school environment lacking basic materials. To this end, this researcher is curious to ascertain the influence of school environment on Biology students' academic performance in secondary school in Egor Local Government Area of Edo State.

Purpose of the Study

The purpose of this study is to determine the influence of school environment on Biology students' academic performance in secondary school in Egor Local Government Area of Edo State. The study specifically sought to examine:

- i. What constitutes school environment in secondary schools
- ii. Does the availability of school building influence the performance of Biology students in public secondary schools in Egor Local Government Area
- iii. Does the availability of classroom furnitures influence the performance of Biology students in public secondary schools in Egor Local Government Area?
- iv. Does class size influence Biology students learning in public secondary schools in Egor Local Government Area?

- v. Does the availability of instructional materials influence Biology students learning in public secondary schools in Egor Local Government Area?
- vi. Does the availability of laboratory influence Biology students learning in public secondary schools in Egor Local Government Area?

Research Questions

The following research questions were raised to guide the study?

1. What constitutes school environment in secondary schools?
2. Does availability of school building influence the performance of Biology students in public secondary schools in Egor Local Government Area?
3. Does availability of classroom furniture's influence the performance of Biology students in public secondary schools in Egor Local Government Area?
4. Does class size influence the performance Biology students in public secondary schools in Egor Local Government Area?
5. Does availability and utilization of instructional materials influence Biology students in public secondary schools in Egor Local Government Area?
6. Does availability of laboratory influence Biology students in public secondary schools in Egor Local Government Area?

Significance of the Study

The result of this work will help to reveal how the school environment influences the academic performance of students in public secondary schools. Findings from this study will be relevant to Biology students because it will provide insight into the problems and solutions that will help in taking specific actions which will efficiently and effectively address the dwindling performance of students in our secondary schools in WASSCE, NECO exams.

Again, findings from this study will be relevant to Biology teachers who are the principal agents of curriculum implementation because it will provide recommendations that would help them to make appropriate utilization of learning environment to create conducive atmosphere that would enhance effective teaching and learning.

Furthermore, findings of this research will help parents in determining the choice of the type of school for their children. This is because, their children will enjoy good school learning environment that will lead to quality school personnel and product of the school.

In Addition, findings from this study will provide the school principals the opportunity to improve in instructional spaces planning, administrative

places planning, circulation spaces planning, spaces for conveniences planning, accessories planning. It will help the school principals to improve in school supervision so as to ensure both quality teaching and learning in the schools.

Moreover, the findings will help assist curriculum planners in formulating effective planning and implementing policies and programmes for improved school academic performance in Biology. Finally, it is expected that this study will also serve as available data for future researchers in the field.

Scope and Delimitation of the Study

This study will examine the influence of school buildings, classroom furniture's, class size and availability and utilization of instructional materials, laboratory as constituents of learning environment. This study is delimited to Biology students from public secondary schools in Egor Local Government Area of Edo State. The sample will involve both male and female students.

Definition of Terms

The following terms are operationally defined as used in the study:

Academic Performance: students score in class evaluation.

Class size: Class size refers to the number of students a teacher faces during a given period of instruction.

School Environment: This refers to instructional spaces, administrative places, spaces for convenience and school equipment's

Secondary School Students: These are students who have graduated from primary school. They are usually within JSS1 – SSS3

CHAPTER TWO

REVIEW OF RELATED LITERATURE

In this chapter, the researcher reviewed several literatures relating to the topic. The review is presented under the following sub-headings:

- Concept of School Environment
- Concept of Academic Performance
- Influence of Class Size on Academic Performance
- Influence of School Building and Students' Academic Performance
- Influence of Laboratory Facilities and Academic Performance
- School Furniture's and Academic Performance of Secondary School
- Instructional Materials and Academic Performance of Secondary School
- Summary of Reviewed Literature

Concept of School Environment

Environment is a place where an individual functions. An environment is the natural surroundings of an organism and it can be land, air or water. Environment is the physical world inhabited by man, or the realm of nature untainted by man (human action), or the cultural milieu – the physical environment as modified by human action, (Panama, 2020). It could also be seen as things, around the child that he might perceive or that might have some

effect on him. It can be view as all system of air, land, water and life that surround man. In other words environment is the sum total of all the external conditions which may act upon an organism or community to influence its development or existence. It is the whole sum of the surrounding external conditions within which an organism, a community or an object exists. Ashton (2011) asserted that environment is a place where the child grows up to function as a positive member in the society. It includes the home, the school, the peer group, and the classroom. It covers all that is related to the child's upbringing including his /her spiritual life, social requirements, and psychological needs.

School environment include instructional spaces planning, administrative places planning, circulation spaces planning, spaces for conveniences planning, accessories planning, the teachers as well as the students themselves are essential in teaching-learning process. The extent to which student learning could be enhanced depends on their location within the school compound, the structure of their classroom, availability of instructional facilities and accessories. It is believed that a well-planned school will gear up expected outcomes of education that will facilitate good social, political and

economic emancipation, effective teaching and learning process and academic performance of the students. Booth and Okely (2015) looked at school environment as the physical environment (e.g. facilities and equipment), school policies (e.g. time allocated for physical and Health Educational Sport).

The Glossary of Educational Reform (2014) defined school environment as the diverse physical locations, contexts, and cultures in which students learn. Since students may learn in a wide variety of settings, such as outside-of-school locations and outdoor environments, the term is often used as a more accurate or preferred alternative to classroom, which has more limited and traditional connotations—a room with rows of desks and a chalkboard, for example. The term also encompasses the culture of a school or class—its presiding philosophy and characteristics, including how individuals interact with and treat one another—as well as the ways in which teachers may organize an educational setting to facilitate learning. Learning environment encompasses all resources human and material, programmes and opportunities, for students to use these resources creatively and imaginatively to learn and develop their potentials.

School environment is described as a physical space that supports multiple and diverse teaching and learning programmes and pedagogies, including current technologies; one that demonstrates optimal, cost effective building performance and operation over time; one that respects and is in harmony with the environment and stimulating setting for its occupants. Organization for Economic Co-operation and Development (OECD, 2009) described learning environment as a physical space that supports multiple and diverse teaching learning programmes including current technologies, one that demonstrates optimal, promotes effective performance and operation over time; one that respects and is in harmony with the environment; and one that encourages social participation, provide a healthy, comfortable, safe, secure and stimulating setting for its occupants. The learning environment is the immediate surroundings in which the students find themselves. Learning environment includes the classroom, school location, school facility, school climate and technology, etc, is a variable that affects students' academic performance. Learning environment play major role in the life of the students and teachers. Similarly, learning environment has also been emphasized as an

essential requirement for smooth teaching and learning process to take place (Ogbemudia and Aiasa, 2013).

According to Tsavga (2011) the school environment plays a vital role in determining how students perform or respond to circumstances and situations around them. This implies that no society is void of environmental influences. The learning environment determines to a large extent how a student behaves and interacts, that is to say that the environment in which we find ourselves tend to mould our behaviour so as to meet the demands of life whether negatively or positively. The author opined that the desire for both qualitative and quantitative education has multiplied the problem of providing an effective and conducive learning environment for teaching and learning. In Nigeria, there is an increase in the number of students' enrolment in schools with little or no regards to improving the learning environment so as to better their performance. In the same vein Orlu (2013) opined that an improved environmental condition leads to higher intelligence scores while poor environmental conditions reduce these scores.

There is no misgiving that student's high-quality academic performance and outcomes is connected to the nature of learning environment and the

available useful facilities. Various experiential studies have established that learning environment is a critical necessity for student's academic achievement in Nigeria. The educational process of development occurs in physical, social, cultural and psychological environment which implies that a proper and adequate environment is very much necessary for a fruitful learning. High academic achieving learners are likely to have been exposed to curriculum content under an ideal learning environment. Hence the affirmation of the opinion of Shamaki (2015) that "educational attainment/achievement is likely to be determined by the idealness of the learning environment".

Shamaki, (2015) conducted a study to determine the influence of school environment on students' academic achievement at senior secondary school level and found a significant difference between the mean performance of students taught in an ideal learning environment and that of students taught in a dull learning environment. Adamu (2015) examined the impact of learning environment on the Performance of Biology Students in public secondary schools in Taraba State, Nigeria and the findings revealed a significant difference in the performances of the two groups implying that a classroom building; class with adequate furniture; class with small class population and

the use of instructional materials has positive impact on the performance of students in junior Secondary schools. In a related development, Also, Mudassir and Norsuhaily (2015) conducted a study to examine how school environment influence students' academic performance in secondary schools. The result of the study indicated that students from a school with adequate facilities, good teachers and favorable environment perform better than those from schools with fewer facilities, unqualified teachers and less enabling environment. In another research by Duruji, Azuh and Oviasogie (2014) examined the impact of school environment on students' performance in external examination in secondary schools in Ota, Nigeria considering factors such as school facilities, class size, school location and school plant planning, aesthetics, maintenance culture, sanitation, conveniences. The study established that" the state of school environment and quality of infrastructure, together with the extent to which they are being maintained has a strong bearing to academic performance among students". Odeh, Oguche, and Ivagher, (2015) conducted a research whose main thrust is to investigate the influence of learning environment on academic achievement of students in secondary schools. The results of the study indicate that school climate, discipline and physical facilities have

significant influence on academic achievement of secondary school students in Benue State, Nigeria. This implies that schools that fail to provide the necessary learning facilities and create a conducive atmosphere for teaching and learning may hardly put in the best in their students especially in the area of academic achievement.

Components of Learning Environment

Learning environment characterizes the organization at the school building and classroom level. It refers to the “feel” of a school and can vary from school to school within same district. Several aspects of school’s physical and social environment comprise its components. Ajayi (2016) has identified components of learning environment as appearance and physical plants; faculty relations; leadership and decision making; environment that is welcoming and conducive for learning; environment that promotes communication and interactions; environment that promotes a sense of belonging and self-esteem and the environment that promotes learning and self-fulfillment. He characterized environment that is welcoming and conducive by school building as to contain normal class population, students should feel safe and comfortable everywhere on school properties, class orderliness should be

maintained, classrooms and grounds are clean and well-maintained, noise free environment, classrooms are furnished and staff members have sufficient books.

He further characterized environment that promotes interactions by good interactions among the occupants of the environment, teachers are collegial and students grouping are diverse, parents and teachers are partners in the education, teachers are opened to students' suggestions and students are offered the opportunity to participate in decision making and but staff and students are trained to prevent and resolve conflicts. However, he characterized environment as a sense of belonging and self-esteem by interactions of teachers and other staff members with students' caring, responsiveness, supportive and respectful, students trust teachers and other staff members, moral is high among teachers and staff, school is opened to diversity and welcoming to all cultures, teachers, other staff members and students are respected and valued, also teachers, staff and students feel that they are contributing to the success of the school, there is a sense of community, the school is respected and valued by teachers, staff, students and families and parents perceive the school as warm, inviting and helpful. He also

characterized environment that promotes learning and self-esteem by emphasis on academic, but all types of intelligence and competence are respected and supported, expectations are high for all students and all are encouraged to succeed, progress is motivated regularly, results and assignment are used to evaluate and redesigned teaching procedure and content, results and assessment are promptly communicated to students and parents, achievement and performance are awarded and praised, and teachers are confidently and knowledge. However, the various aspects or components of learning environment do not operate independently of one another. For example, the physical environment can encourage or discourage social interaction. Similarly, social interaction facilitates a warm affective environment.

Collectively, the physical, social, and affective environments contribute to, and are impacted by the academic environment. Thus, for the purpose of this study only the physical learning environment was considered. Learning environment includes all of the factors that can affect the learning within and outside the classroom (example, method of presentation, involvement of students, materials and resources, then outside the classroom example, sports, social clubs, social and cultural interaction (Cheter, 2008). OECD (Organization for

Economic Co-operation and Development) (2011) Considered components of learning environment as learning space and its operational environment within its flexible and modifiable learning spaces and their learning environments which are formed through pairs of dimensions. They are all interactive and totally supportive of one another.

In Nigeria, education is placed in the concurrent list. Therefore, both the Federal and States Ministries of Education are vested with the responsibility of the establishment and maintenance of minimum standards/benchmarks in pre-primary, primary, secondary, and similar institutions in the country. These benchmarks are expected to be adhered to by school owners and managers in order to ensure quality education. Education standards cover all aspects of the education enterprise, such as inputs, processes and output/outcome. From the perspective of the learners, who are the target beneficiary at the school level, it is the definition of the concepts, knowledge and skills that learners are to acquire. Emphasis on education standards has been more on what learners should know, as prescribed in the curriculum.

According to Ogunu (2007), educational benchmarks are standards that guide the performance of the educational system. They are the goals or target

that learners, teachers, staff, and school managers should aspire to attain. There are several dimensions of educational standards, which include- infrastructure/physical standards, curriculum or content standards, teaching, and learning standards, management and leadership standards, care, support/guidance standards and professional standards. Educational benchmarks describe the minimum standards that represent the barest acceptable level of performance and not the optimum.

In rural areas especially, schools should not be located immediately next to market squares or religious centers to avoid the spillover effects of such facilities during school hours unless there is absolutely no other alternative while in urban and semi-urban areas, schools should be located in accordance with the relevant metropolitan master plans without prejudice to any provision of the minimum standards. All classrooms should have cross ventilation with at least four large windows. The rooms should be standard size of 7.3 m by 9.2m (24” by 30”) and ceiled with asbestos sheets, large enough to seat a maximum of 40 students, with a chalkboard not less than 1.2m by 2.4m (4ft by 8ft) in size, all walls should be plastered and floors screened and damp free. Desk should be 0.9m (2ft8ins) and seat 0.54m (1ft10ins) high, a maximum of

four seater seat. Moreover, there should be a toilet to 40 student, good water supply, and electricity supply. Spacious and large enough playground for a standard football field and will be able to accommodate/or serve for other games like athletics, lawn tennis, basketball, badminton, and others. A well-stocked library, laboratories, fine art room, home economics room, introductory technology workshop, a computer room, and their like. Also, administrative block containing the principal’s office, bursar’s office, and furnished staff rooms, guidance and counselling room (Edo State Ministry of Education, 2002; Nwadiani & Ugolo, 2011)

Table 1: FEDERAL MINISTRY OF EDUCATION GUIDELINES ON MINIMUM STANDARDS IN SCHOOLS

S/N	ITEM DESCRIPTION	MANDATORY	IDEAL	OPTIMAL
	MAXIMUM NUMBER OF PUPILS PER CLASS			
	1. Pre-primary	20	10	20
	2. Primary	40	30	35
	3. Secondary	45	40	35
	PUPIL-TEACHER RATIO			
	1. Pre-primary	20:1	10:1	20:1
	2. Primary	40:1	40:1	35:1
	3. Secondary	35	30	25
	AMENITIES			
	(i). Certified Potable Water Supply:	-	-	-

	(a) Pre-Primary: (b) Primary: (c) Secondary:	- - -	- - -	- - -
	(v). Toilets: 1:40 pupils either water closet or ventilated improved pit (VIP) type in convenient locations on the premises (a) Pre-Primary: (b) Primary (c) Secondary:	VIP VIP VIP	Water closet Water closet Water closet	
	Playground (a). To engage students' population in indoor game with facilities that must be provided in schools (b). Playground within walking distance for day schools must be provided			
	Electricity Supply (generating set) for machines and for minimum comfort of staff and students especially in secondary school			
	FENCING Perimeter fence in block work, hedge, shrubs, wire-chain. etc. should demarcate every school compound to discourage encroachment. i). Pre-primary ii). Primary I iii) Secondary			
	PHYSICAL STRUCTURE			

	<p>a). Adequate Agriculture Farm lands for crops and animal rearing for rural schools</p> <p>b). Urban schools should have a plot of land for practical demonstration and for a few farm animals</p> <p>a. Pre-primary</p> <p>b. Primary</p> <p>c. Secondary</p>			
	<p>Playgrounds</p> <p>Playfields should have suitable physical characteristics such as level surfaces, good drainage, short grass, etc. In addition, football pitches should be oriented ^I N-S (that is, North-South)</p>			
	<p>Gardening: There should be some provision for gardening in each school, no matter how small.</p>			
	<p>d).</p> <p>ASSEMBLY/EXAMINATION HALL</p> <p>Primary and Secondary: All schools must have a hall big enough to seat twice the total enrolment of students. This may be in form of multi-purpose assembly hall or a group of adjoining classrooms \vita moveable partitions and a raised platform at one end.</p>			
	<p>LABORATORIES</p> <p>(i). Science corner in classroom</p> <p>a. Pre-primary</p>			

	<ul style="list-style-type: none"> b. Primary (ii) All-Purpose Science <ul style="list-style-type: none"> a. Pre-primary b. Primary iii). ISS: <ul style="list-style-type: none"> Every school must have a separate well-equipped standard laboratory, workshop for Integrated Science. Agricultural Science. introductory Technology, Home Economics. etc. 		
	<ul style="list-style-type: none"> a. Fire fighting equipments must be installed in all laboratories 		
	<ul style="list-style-type: none"> b. Library – well stocked reading library for Secondary school supervised by a teacher-librarian and library attendant with a basic book collection 		

Adapted From Federal Ministry of Education Guidelines 2002

Concept of Academic Performance

Academic performance in this context simply means the scores students have obtained in either examination or test which has led to their performance. Bossaert and Verschueren (2011) defines academic achievement as student’s

success in meeting short or long term goals in education in the big picture according to the authors, academic achievement means completing high school or earning a college degree. Lassiter (2015) looks at students' academic achievement as referring to a students' strong performance in a given academic area. A student who earns good grades or awards in science has achieved in the academic field of science. He further stated that education associations and schools monitor the overall level of student academic achievement to decide what, if any challenges, need to be made in the educational system.

According to the Cambridge University Reporter (2013), academic achievement is frequently defined in terms of examination performance. It is an indication of what the students have learned or what skills the students have mastered. This is usually measured through assessments like standardized tests, performance assessments and portfolio assessments. The most well-known indicator of measuring academic performance is grades which reflect the student's "score" for their subjects and overall tenure. Success is measured by academic performance in most educational institutions. In this case, how well a student meets standards set out by an institution itself or an external

examination body either set up by the government or an independent outfit signifies success or good performance.

Academic performance refers to a person's performance in a given academic area (e.g. reading or language arts, mathematics, science and other areas of human learning. Academic performance relates to academic subjects a child studies in school and the skills the child is expected to master in each (Kathryn, 2010). It includes excellence in sporting behaviour, it includes excellence in sporting behaviour, confidence, communication skills, and others. However, Steinberger (2015) posit that academic performance encompasses students' ability and performance; it is multidimensional; it is intricately related to human growth and cognitive, emotional and social physical development; it reflects the whole child; it is not related to a single instance, but occurs across time and levels, through a student's life in public school and into post-secondary years and working life. Academic performance refers to how well a student is accomplishing his tasks and studies. Academic achievement of students especially at the secondary school level is not only a pointer to the effectiveness or otherwise of schools but a major determinant of the future of youths in particular and the nation in general. Academic

achievement of learners has attracted attention of scholars, parents, policy makers and planners. Adeyemo (2016) opined that the major goal of the school is to work towards attainment of academic excellence by students. According to him, the school may have other peripheral objectives but emphasis is always placed on the achievement of sound scholarship. Every learner is expected to record high academic achievement at the end of his or her course of study. Academic performance in school is evaluated in a number of ways. For regular grading student students demonstrate their knowledge by taking written and oral tests, performing presentations, submission of homework and participating in class activities and discussion.

Teachers evaluate in the form of assignment, test and examination to describe how well a student has done. Poor academic achievement is a performance that is adjudged by the examiner and some significant others as falling below an expected standard.

The issue of unstable academic performance of students in Nigeria has been of much concern to the government, parents, teachers and even student themselves. The quality of education not only depends on the teachers as reflected in the performance of their duties, but also in the effective

coordination of the school environment. According to Ajewole and Okebukola (2020), a number of factors are said to have contributed to the students' poor academic achievement in school. The authors stress that a host of these factors may surround students' poor achievement in school which may include: poor study habits and lack of available resource materials, poor school climate, indiscipline, inadequate facilities, teachers' ineffectiveness, the teaching method and the type of school environment available for both the students and the teachers.

Influence of Class Size on Academic Performance

Classroom is the place where the students learn the various skills that are necessary to qualify them to become significant adults. Ashton (2001) states that a classroom is where the students gain understanding of the contribution that they can make to build their identity and their society. It is where the students acquire the knowledge needed to achieve their ultimate goals and objectives in future life. With the classroom being such an important place in the growth and development of a student, it is important, therefore, to understand the ways in which to form its environment in order to have maximum effective instruction. If schools play a major role in teaching the

students how to be successful adults, then every necessary measure should be taken to safeguard that the learning environment is one that helps students work hard to achieve success. If not dealt with adequately, a classroom can be set up in a way that hinders creativity or, at least, in a way that does not promote acceptable learning level (Kilie, 2012).

Every classroom plays host to different personality types of learners who come into the classroom differently prepared with a uniquely set characteristics that determine their levels of aspirations within the same classroom environment. The classroom environment is therefore a common playground hosting all these personalities at the same time. The problem of organizing these into a reasonable, identifiable and useful whole falls on the teacher who is the second living component in the classroom environment and a chief facilitator of learning. What features do the classroom possess which are able to synchronize the differences in individuals in the class to enable them benefit from the academic activities? The answer to this question can be found within the classroom environment. Classroom environment encompasses a broad range of educational concepts including the physical setting, the psychological environment created through social contexts and numerous instructional

components related to the characteristics and behaviours (Miller & Cunningham, 2015)

Ezike (2018) investigated classroom environment and students' academic interest as correlates of achievement in Senior Secondary Biology students in selected Public Secondary Schools in Ibadan, Oyo State, Nigeria. The result showed significant relationships between classroom environment and academic achievement, while combined contribution of classroom environment and academic interest was equally significant. Gilavand (2016) in a study whose aim is to investigate the impact of environmental factors (schools' open space, noise, lighting and paintings in educational institutions) on learning and academic achievement of elementary students, found that environmental factors (appropriate coloring, lighting of educational environment and schools' open space) has impact on learning and academic achievement of elementary school students. As noted earlier, unfavourable classroom environment can discourage learners and they become less willing to learn invariably affecting their interest in classroom activities. Interest as a psychological construct plays a major role in various life activities including academic. The decision to engage or not to engage in an activity, desire to

persist or even to re-engage after disengagement and the degree of effort and time put into an activity are mainly dictated by the level of interest in the individual. There are many things that can affect this environment in the classroom. These may include physical elements such as wall art, arrangement of desks, and other learning resources. Also, there are non-physical elements such as the classroom regulations and rules, or even the sounds and light within the room. Each of these can affect a student's focus and hence his learning in the class. These elements can also affect the teacher's attitude in the class as well (Dihaisat, 2016)

Classroom size has a great impact on the teaching-learning process. The more reasonable the class size, the easier it is for teacher-learner interaction which stands as an essential element in the process of language teaching. Generally, teachers are fully aware of the importance of direct interaction for language learning. Hence, a large class size may have a negative impact on the teaching-learning process since the teacher cannot provide feedback for a large number of students or he may not have enough time to assess their work as they are doing their exercises. According to Oni (2014), small class size leads to proper engagement of the learners, increases their participation and

attentiveness, and keeps them alert. Smaller class size allows educators to focus more on the pupils in their teaching and results in better understanding and helps the teachers to adjust their methods to meet individual students' needs. At another level, it is found that large class size makes monitoring of students' very difficult and thus encourages pupils' disruptive behaviour. Furthermore, the quality of feedback to students, becomes very low and slow in classes with large number of students.

However, Okoro (2015) reported that the class-size in secondary schools ranges between 35 or 40 students. He argued that few pupils per class are uneconomical, as they do not make full use of space, teachers and teaching materials. Okoro (2015) reported that average class-size influences the cost of education while capital cost could be reduced by increasing the average class-size in schools while Nwadiani (2000) argued that the higher the class-size, the lower the cost of education. He contended however, that most classrooms are over-crowded spreading resources thinly and thereby affecting the quality of education. Ajayi (2010) stated that relationship between classroom size and academic performance has been a perplexing one for educators must especially Nigeria universities, Studies have found that the physical environment, class

overcrowding, and teaching methods are all variables that affect students' achievement.

Umar (2017) carried out a study on the effect of classroom environment on achievement in English as a foreign language: a case study of secondary school students in Gezira State: Sudan. The purpose of this study is to examine the effects of classroom environment on learning English as a foreign language by a group of first grade students at Secondary School. The results reveal that there are significant differences between the achievements of the Experimental and the Control group in English in favour of the Experimental group who have studied under favourable classroom conditions. Boniface (2018) carried out a study to examine classroom environment and academic interest as correlates of achievement in senior secondary school chemistry in Ibadan South West Local Government Area, Oyo State, Nigeria. Result showed significant relationships between classroom environment and academic achievement, students' academic interest and achievement in Chemistry. Composite contribution of classroom environment and academic interest was significant. However, classroom environment better predicted achievement than students' academic interest.

Influence of School Building and Students' Academic Performance

The quality of school building plays a vital role in students' academic achievement. Lewis (2010) tried to identify the independent effects of school building quality in a study of test scores and found out that good facilities had a major impact on learning. Edward, (1992) observed that disciplinary incidents increased in schools with better buildings. This may be caused by the strict discipline standards in these schools among other factors. Earthman (1995) supported this when he pointed out that schools with lesser quality of building had fewer disciplinary incidents than schools that are rated higher on the structural components. School buildings that can adequately provide a good learning environment are essential for student success. Old building does not have such features as control of thermal environment, adequate lighting, good roof and adequate space that are necessary for a good learning (NCES, 2012). This may be because they are not functioning due to poor maintenance. Older buildings do not have the main attribute of modern building that are associated with a positive physical environment conducive to student learning,

The structure of the building has also been viewed as an important factor in school environment which can influence the health, happiness and academic

achievement of students. A well-facilitated school building improves students' educational outcomes. School building with school plants, classrooms, toilets, and fresh drinking water facilities, libraries, offices, laboratories, and other materials as well as infrastructure are quite helpful to bring betterment in the educational system due to which teachers and students are highly motivated towards the teaching-learning process. School building must be equipped with all educational facilities and resources. Without educational resource, school building is quite meaningless and useless where students will not able to show better academic performance or teachers to show better teaching performance. According to Idiong (2011), school building provides basic housing accommodation for both students and their teachers. Hence, motivates teacher to work. The nature of school building like classroom, staffroom, library and laboratory has a direct impact on teachers' job motivation. Adele (2015) conducted the study on environment variables and students' performance in Port Harcourt Educational zone of Rivers State. The result of the analysis amongst others shows that school building has a positive influence on students' performance

Research conducted locally and internationally has linked adequacy of school infrastructure facilities and student academic performance (Ekundayo and Ajayi, 2009; Alimi and Adegimile, 2012; Ariani. and Mirdad , 2016) and that actualization of goals and objectives of an education system is influenced by the physical of a school. Poor physical learning environment is an endemic feature for many schools in developing countries. The situation is however reported relatively better for private schools when compared to government schools. School building must be very brightened and decorated with multi-colors, lawns, swimming pool, grounds and other facilities in it so that students' interest towards learning and teachers interest towards teaching may be increased. Natural light and well-ventilated as well as the clean, airy building has a positive impact on students' learning.

The quality of school building either hinders or helps the teaching-learning process because in new, well-designed, and pleasant constructed buildings, students' concentration and attention towards learning increase due to which they attain brilliant academic grades. Students' learning performance is improved with the newly, facilitated school building. School building requires proper desks, network, labs, performance spaces, practice spaces, and

the like; these spaces must be sufficiently spacious, safe, and equipped with the right stuff. School building must be equipped with basic facilities and resources like science labs, cafeteria, ICT laboratories, art room, library, examination hall, electricity, water, toilet, common room, guesthouse, playgrounds and other such facilities to utilize for the development and enhancement of the school along with the quality of teachers and students.

According to Adeiza, the availability, relevance and adequacy of educational resources contribute to academic achievement and that unattractive school buildings, crowded classrooms, non-availability of playgrounds and surroundings that have no aesthetics can contribute to poor academic performance. Betts (1996) asserted that when the right quantity and quality of human resources are brought together, it can manipulate other resources towards realizing institutional goals and objectives. Consequently, every educational institution should strive to attract and retain the best of human resources. Ajayi, Ekundayo & Osalusi (2010) the availability and quality of educational facilities such as school buildings, classrooms, chairs, tables, laboratories etc have positive impacts of the academic performance of students.

This means that the school environment determines how much learning and teaching will be possible.

Alimi and Adegimile (2012) examined Infrastructural Availability and Students' Academic Performance in Biology in North West geo – political zone of Nigeria. The study revealed that the available infrastructural facilities in the zone were not adequate in schools and students' academic performance was a matter of concern; that classrooms, furniture, library and computer/ICT facilities taken together accounted for 52.8 percent of the variation in level of students' academic performance in secondary schools. Eliufo and Maro (2019) in their study examined the relationship between schools' building physical condition and students' examination performance in Tanzania. The study has established a positive correlation exists between a school's physical condition and examination performance, However, Iyang (2015) opined that most secondary schools in a state of disrepair. The state of physical facilities in secondary schools is in a deplorable condition. There are broken, decayed and battered facilities in our schools which may not be as a result of old age but simply out of neglect. This statement is in agreement with Emenalo (2017), who maintains that, the poor condition of some school plant especially school

buildings in secondary schools today is not as a result of old age per say but out of neglect. Today, it is a common phenomenon in secondary schools to see dilapidated buildings, broken chairs etc. however, Emenalo (2017) noted that most public secondary schools are like abandoned construction site. There is hardly a public secondary school that does not have blown-off building, just as most of them cannot boast of well-equipped laboratories. The classrooms are full of pot-holes due to leaking roofs, just as most of the classrooms do not have doors and windows. In some of the schools the teachers stay under the tree in place of staff room because what is called staff room does not differ from a waste store.

Influence of Laboratory Facilities and Academic Performance Of Students

Laboratory is a place where the scientists do their work. He also added that it is a room that is well equipped for the purpose of carrying out practical work and allows students to have experiences that are consistent with the goal of scientific literacy. Olubor nd Unyimadu, 2011). opined that a laboratory is essential in the secondary schools to practice various experiments by the students and get convince about the fact, events, phenomena etc. Laboratories

have been found to be scientists' workshops where practical activities are conducted to enhance a meaningful learning of science concepts and theories.

Laboratories have been found to be a primary vehicle for promoting formal reason skills and students understanding, thereby enhancing the desired outcome in students. Modern teaching and learning can never be effective and efficient without laboratories and their proper utilization. In other words, the importance of laboratories cannot be over stressed. Laboratories are the nucleus for the study of almost all secondary school subjects which involve discoveries, inquiries (experimentation) and recording Without well-equipped laboratories, studying sciences and their likes will manifest in imagination and rote learning which will rather cause confusion and disinterest whose resultant effect is poor academic performance. Laboratories are essential to the teaching of science in schools and the success of any science course is so much dependent on the laboratory provision made for it. Students rely on the laboratory as a place where they can both watch the teacher's demonstration as well as carry our practical work themselves.

In essence, the absence or non-availability of laboratories and laboratory equipment has adverse effect on the performance of students in both science

subjects and other subjects in the secondary schools. Omoswewo (2010) in a survey, found out that while 95% of teachers indicated that they have laboratories in their various schools, only 35% of those sampled indicated that they have various facilities to perform the required experiments for the West African school certificate Examinations. He noted that practical experiments have been observed to be central to the teaching of science, in that they develop scientific investigation, motivates and creates curiosity, objectivity and willingness to evaluate evidence; the reason why availability and utilization of laboratories cannot be over emphasized.

The science laboratory has a direct effect on both students' attitudes and academic performance. It is generally believed that constant practice leads to proficiency in what the learner learns during classroom instruction; hence, the dictum "practice makes perfect. The quality of teaching and learning experience depends on the extent of the adequacy of laboratory facilities in secondary schools and the teacher's effectiveness in the use of laboratory facilities with the aim of facilitating and providing meaningful learning experiences in the learners. Investigating the relationship between adequacy and academic performance in,

Ekanem and Obodom (2016) examines the availability of scientific equipment in the laboratory and students' academic performance in Chemistry in secondary school in Akwa Ibom State. Results reveal low level of facilities and no correlation between availability and adequacy- of equipment and performance. Akpan (2016) examines adequacy of laboratory facilities using frequency counts and percentages. The result revealed that 61.1% of the total respondents agreed that the laboratory facilities for the teaching of Chemistry were adequate in secondary schools, while 38.9% of the respondents agreed that laboratory facilities were not significantly adequate. At a workshop organized by the Cross River State Ministry of Education for Science Teachers Vacation Course (TVC) in 2008, the science teachers complained that laboratory facilities for teaching various science subjects were not adequate in secondary schools for the teaching and learning of the physical sciences.

Okafor (2015) found that the adequacy of laboratory facilities had a significant effect on the students' academic performance in Biology. Aburime (2014) investigated the influence of adequacy of laboratory facilities and academic performance in Chemistry and found that adequacy had significant influence on students' academic performance in secondary school Chemistry

teaching. Ekanem and Obodom (2016)) attributed the prior poor performance in sciences to inadequate facilities in the science laboratories of many schools. In fact, they asserted that what is commonly observed in most schools is a classroom space called the laboratory. One or two “leeuwen hock” type (archaic) microscopes, a few hand lenses and a few dried up specimen in bottles. They further stated that many of the public secondary schools in Nigeria hardly have adequate material resources in their laboratories and libraries All in all, non-availability of laboratories appears to adversely affect the academic performance of students in all schools in general and secondary schools in particular. Neji, Ukwetang and Nja, (2014) conducted a study on evaluating the adequacy of laboratory facilities on students’ academic performance in secondary school in Calabar, Nigeria. The study evaluated the extent of adequacy of laboratory facilities on students’ academic performance in Calabar. The results obtained from the data collected and analyzed showed that laboratory facilities in secondary schools are not adequate enough for teaching chemistry. This result was also affirmed in the tested hypothesis which show that adequacy of facilities does not significantly contribute to the variance in students’ academic performances

Dike and Salisu (2015) studied inadequate laboratory facilities and utilization: pedagogical hindrance to students' academic performance in Biology in senior secondary certificate examination in Zaria Metropolis. The findings of the study revealed inadequate availability and utilization of laboratory facilities in the senior secondary schools. Inadequate laboratory facilities affect meaningful teaching and learning in schools and hindrance to academic performance and hence the significant relationship between the laboratory facilities and the performance of students

Similarly, Adeogun (2001) discovered a very strong positive significant relationship between instructional resources and academic performances. According to Adeogun, schools endowed with more equipment's performed better than schools that are less endowed. Thus, education resources had a significant effect on students' academic performance in secondary schools. In the same vein, Adu, Ojelabi and Adeyanju (2009) simply viewed outcome of students in school as a function of teachers and facilities for teaching and learning in the school. This position was corroborated by Ijaduola, Oniand Muraina (2011) in their studies who remarked that educational resources and its school environment are the basic anvil upon which students achievement

are built and nurtured. To this end, poor educational equipment's means poor academic achievement.

On laboratory facilities, it is a fact that laboratory is at the centre of scientific studies so long as science remains both a product and process. The availability of laboratory equipment, facilities and materials play a vital role in determining the extent of best laboratory practices that will ensure acquisition of science process skills and competence in science concepts by the learners. According to Abimbola (2001) one major aspect of Science education that is of great concern is in the area of availability and effectiveness of use of specialized and relevant science equipment, facilities and instructional materials. The school laboratories that are well designed, stocked and safe for teaching and learning of science ensure active practical exercises (Katcha, 2005). Laboratory work is an indispensable part of science instruction, and no effective science education can exist without practical work (Udo, 2010). Laboratory practical's are dependent on the level of equipping of the laboratory with relevant instructional materials and the ability of the teacher to effectively and efficiently utilize them. The challenges often faced in doing practical's in inadequately equipped laboratories has led teachers to separate

science lessons into practical and theory lessons or classes and or shifting practical work until the second term of the final year (Ekpo, 2019).

According to Ekpo any effort to separate Science into practical and theory lesson account to perpetuating the dichotomy and this is antithesis of what science is. The biology students have been performing below expectation because of poor laboratory practical's. The biology students are often many because it is thought to be simpler than other science subjects and instructional aids seemed to be very common as they can be sourced in the environment. However, the students and teachers always found that the required materials are in short supply considering the number of students to utilize them and consequently student's persistent poor performance in biology (WAEC, 2013). The current trend in science curricular emphasis implies that science laboratory work should be taught as an integral part of classroom instruction in science with pre-and-post laboratory discussion

Katcha and Wushishi (2015) examined the effects of laboratory equipment on performance and attitude change to biology learning among Senior Secondary School Students in Federal Capital Territory (FCT) Abuja. The findings indicated a significant difference between the performance of

biology students exposed to adequately equipped laboratory and those exposed to inadequately equipped laboratory. The difference was in favour of those exposed to adequately equipped laboratory. Also, that, the attitude change of biology students exposed to adequately equipped laboratory is not gender-related.

In addition, there are a considerable numbers of studies investigating the effects of lighting and air conditioning in the classroom on student achievement. For example, Al-Amayreh (2011) postulated that schools should provide various kinds of learning environments, such as, choosing welcoming colours for the walls of classrooms, shaded and spotlight lights, quiet corners or areas with large, bean-filled brightly patterned cushions for quiet reflective thought, modern work stations and large conference type areas for group work. Earthman (2004) added other factors to those seen as enhancing learning: temperature rates, heating and air quality.

School Furniture's and Academic Performance of Secondary School Students

Students comfort is paramount in order to induce students' academic performance. Availability of furniture guarantees students attention span and

interest in class activities. in order to promote academic performance for all students in inclusive classrooms. One potential area to explore is classroom furniture. The furniture in each classroom should function to facilitate learning while allowing the appropriate level of participation without distractions. Today there are numerous interesting school furniture options including adjustable desks and chairs as well as ergonomically designed fixed furniture Iqbal, Hassan, and Ali, (2015) observe that well-furnished classrooms stimulate children's interests in acquisition of reading skills. Iqbal, *et al*, thus advice teachers to arrange the students' furniture in accessible manner. Comfortable furniture motivates students to spend more time looking and reading books either alone or with peers.

Ezike,(2018) investigated classroom environment and students' academic interest as correlates of achievement in Senior Secondary Chemistry students in selected Public Secondary Schools in Ibadan, Oyo State, Nigeria. The result showed significant relationships between classroom environment and academic achievement, while combined contribution of classroom environment and academic interest was equally significant. Gilavand (2016) in a study whose aim is to investigate the impact of environmental factors

(schools' open space, noise, lighting and paintings in educational institutions) on learning and academic achievement of elementary students, found that environmental factors (appropriate coloring, lighting of educational environment and schools' open space) has impact on learning and academic achievement of elementary school students.

According to Ajayi, Ekundayo & Osalusi (2015) the availability and quality of educational facilities such as school buildings, classrooms, chairs, tables, laboratories etc have positive impacts of the academic performance of students. This means that the school environment determines how much learning and teaching will be possible. Ivory (2011) conducted a study on the impact of dynamic furniture on classroom performance: A pilot study in western Washington. The purpose of the study was to understand how dynamic classroom furniture may impact classroom performance. The data from this study indicated that no one type of furniture provided the same effect for all elementary students, but rather that personal characteristics may dictate the best match for focus, work completion, and neatness

Also, Jaggi, Bakhshi and Sandhu (2013) studied classroom furniture: how suitable for students. The results revealed that furniture were not properly

designed thereby creating undue stress, mental fatigue and lack of motivation for learning, at the same time not facilitating ease of use. The students believed that the classroom furniture was not ergonomic and user friendly, thus its continuous use for long duration may affect health, well-being and academic performance of the students. Abdolreza (2016) conducted a study on the Impact of Educational Furniture of Schools on Learning and Academic Achievement of Students. The results obtained from this study showed that appropriate educational furniture has positive impact on the ratio of learning and educational progress of students at elementary level. Similarly, Okoaloga (2018) investigated the influence of school plant provision on students' academic performance in secondary schools in the North Central States of Nigeria. The results revealed that provision of classrooms, school libraries, school laboratories, school workshops, school playgrounds and school furniture have significant influence on students' academic performance in secondary schools.

Instructional Materials and Academic Performance of Secondary School Students

Instructional materials serve as a channel between the teacher and the students in delivering instructions. They may also serve as the motivation on the teaching-learning process. It is use to get the attention of the students and eliminate boredom. Instructional materials are highly important for teaching; especially for inexperienced teachers. Teachers rely on instructional materials in every aspect of teaching. They need material for background information on the subject they are teaching. Teachers often use instructional materials for lesson planning. These materials are also needed by the teachers to assess the knowledge of their students. Teachers often assess students by assigning tasks, creating projects, and administering exams.

Instructional materials are essential for all of these activities. The transmission of facts, ideas and information from the teacher to the students in a systematic order or procedure is referred to as teaching. During this process instructional material otherwise known as teaching aids meant to make instruction more meaningful, clear and much more interesting to students are brought in display. It is believed that if adequate instructional materials are

made available to school and are used appropriately in teaching-learning process, a better performance could be achieved. Adalikwu and Isaac (2012) investigated the influence of instructional materials (teaching aids) on students' academic performance in senior secondary school Chemistry in Cross River State. The study revealed that students taught with instructional materials performed significantly better than those taught without instructional materials and also that the use of instructional materials generally improved students' understanding of concepts and led to high academic achievements.

In a study, by Olumorin, Yusuf, Ajidagba and Jekayinfa (2015) observed that instructional materials help teachers to teach conveniently and the learners to learn easily without any problem. They asserted that instructional materials have direct contact with all sense organs. Kochhar (2012) supported that instructional materials are very significant learning and teaching tools. He suggested the needs for teachers to find necessary materials for instruction to supplement what textbooks provide in order to broaden concepts and arouse student's interests in the subject.

However, Ogbondah (2008) asserted that there is gross inadequacy and underutilization of instructional materials necessary to compensate for the

inadequacies of sense organs and to reinforce the capacity of dominant organs. He noted that school teachers should try their possible best in the provision of locally made materials in substitution for the standard ones to promote their lessons. Enaigbe (2009) noted that basic materials such as textbooks, chalkboard and essential equipment like computer, projector, television and video are not readily available in many schools. Ikioya (2008) examined the difference in the availability, adequacy, and functionality of Physical Education facilities in Edo state. The findings of the study revealed that decentralization enhances the availability, adequacy, and functionality of school Physical Education facilities. Ofojebe (2013) evaluated the availability, utilization, and maintenance of physical facilities in secondary schools in Anambra State. The result revealed that there were no adequate physical facilities in secondary schools in Anambra State.

Summary of Literature Review

This chapter reviewed essential areas that are related to the study at hand to gain an insight into the issues bordering on poor condition of learning environment especially the physical aspect. The literature was reviewed under the following headings: concept of environment, concept of learning

environment, However, in the light of the proceeding literature review, with its positive and negative revelation concerning the learning environment of students in the secondary schools, the study would no doubt add to the knowledge of the readers upon the findings highlighted in the review of the related literature. From the discussions presented in this chapter, it is clear that conducive learning environment can have positive effect on students in schools. For example, it was shown that facilities such as library, laboratory, staffroom, instructional materials, workshops and a host of others can positively improve the performance of students in school. To further assess the quality of teaching and learning in secondary schools, this study also determined the influence of school environment in the area of class size, school building, furnitures, laboratory facilities, instructional materials, its availability, functionality and utilization on students' achievement in secondary schools in Egor Local Government Area, Edo State, Nigeria. This implies that it is not just the number of graduates of the system that matters but how relevant and competent the graduates are in meeting the societal needs and aspiration.

CHAPTER THREE

METHODOLOGY

In this chapter, the descriptions of the procedures that were followed in the conduct of this study are presented. These procedures are explained below in the following sub-headings.

- Research Design
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validation of Instrument
- Reliability of Instrument
- Method of Data Collection
- Method of Data Analysis.

Research Design

The researcher employed descriptive survey design in the study. The survey design is an appropriate method because it will help the researcher to explore and gather information on current situation concerning issues being investigated in the study. The independent variable is school environment specifically in the area of school building, classroom furniture's, class size, instructional materials and laboratory while the dependent variable is students' academic performance.

Population of the Study

The population of this study consist of the thirteen (13) public secondary schools in Egor Local Government Area of Edo State with a total population of nine thousand, one hundred and twenty two (9,122) students. (Ministry of Education, Benin City Students Enrollment, 2021)

Sample and Sampling Techniques

The sample of 120 students was used in this study and they were drawn from six randomly selected secondary schools representing the entire population. A random sampling procedure was used to obtain the sample size.

Research Instrument

The instrument used to collect data for the study is a structured questionnaire. The questionnaire was divided into two sections, A and B. Section A will be used to collect Demographic data of the respondents while the section B contained items that will be used to elicit responses from the respondents based the research questions raised for the study. The questionnaire was modified on a four linker's scale of measurement:

- Strongly Agree (SA);
- Agree (A);

- Disagree (D); and
- Strongly Disagree (SD).

Validity of the Instrument

In order to establish the validity of the instrument, the researcher presented the questionnaire to the project supervisor and two other lecturers in the Department of Curriculum and Instructional Technology for validation. Their corrections, suggestions and criticisms helped in the improvement of the work.

Reliability of the Instrument

To determine the reliability of the instrument, the instrument was administered to twenty (20) respondents from the randomly selected school who were not part of the study. The results gathered were gathered and analyzed using Cronbach's Alpha Reliability Technique to establish the reliability of 0.78.

Method of Data Collection

The researcher personally administered the questionnaire to the selected schools. The researcher explained to the respondents in each school the

purpose of the study and how to respond to the items on the questionnaire. The questionnaire were administered and collected on the spot by the researcher.

Method of Data Analysis

Data obtained from the questionnaire administered were analyzed using percentage, the level of influence was expressed in percentages and the different levels were as follows:

Keys:

70% and above – Very High

60-68 % - High

40-59% Low

30% and below – Very Low

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF FINDINGS

This chapter presents data analysis and discussion of the findings.

Presentation of Data Analysis

Research Question One: What constitutes school environment in secondary schools

Table 1: Percentage Analysis of the Constitution of School Environment

Variable	Type	N	%
School Building	Dilapidated	40	40%
	Non Dilapidated	60	60%
School Furniture's	Adequate	35	35%
	Non Adequate	65	65%
Class Size	Normal	75	75%
	Abnormal	25	25%
Laboratory	Available	5	5%
	Not available	95	95%

From the Table1, responses indicate that most school building were not dilapidated, school furniture's were not adequate, most of the classes had normal size while laboratory were not available in most of the schools.

Research Question Two: Does availability of school building influence secondary school students learning of Biology in public secondary schools in Egor Local Government Area?

Table Two: Availability of school building and students performance of Biology

	ITEMS	N	%	Remark
1	The buildings in the school are dilapidated	100	65	Agree
2	There are new buildings in my school	100	47	Disagree
3	Learning in dilapidated building is difficult	100	87	Agree
4	The buildings are not enough to contain students	100	98	Agree
5	Teachers find it difficult to teach in buildings with no roofs	100	99	Agree
6	Most buildings do not have roofs	100	76	Agree
7	Students who learn in dilapidated buildings performs well in examinations	100	22	Disagree

In response to research question two, Table 3 showed that the respondents agreed to item one, three, four, five and six while the respondents disagreed with the other items. With these results, it is evident that the availability of school building influences students' performance of Biology.

Research Question three: Does availability of classroom furniture’s influence secondary school students learning of Biology in public secondary schools in Egor Local Government Area?

Table three: Availability of Classroom Furniture’s and Biology Students Performance

S/N	ITEMS	N	%	Remark
1	There are enough chairs and desk for students to sit	100	20	Disagree
2	Every student has his/her shelve where books are kept	100	21	Disagree
3	Most of the desk and chairs are broken	100	74	Agree
4	Teachers do not have enough chairs and desk in their offices	100	62	Agree
5	Students are not willing to learn where there are no chairs and desks	100	92	Agree
6	Students who pass their exams have desk and chairs	100	82	Agree
7	Most students perform poorly because they do not have chairs to seat in class	100	88	Agree

In response to research question three, Table 4 showed that the respondents agreed to item three, four, five six and seven while the respondents disagreed with the other two. With these responses it can be said that most secondary schools lacks adequate furniture’s for students and this unavailability of classroom furniture’s influences students’ performance of Biology.

Research Question Four: Does class size influence secondary school students learning of Biology in public secondary schools in Egor Local Government Area?

Table Five: Influence of Class size and Biology Students Performance

	ITEMS	N	%	Remark
1	The classrooms in my school are spacious	100	98	Agree
2	The classrooms in the school is usually littered with dirt	100	60	Agree
3	My classroom is dark; so we can't see what is written on the board	100	70	Disagree
4	There are no chalk boards in most classrooms	100	12	Disagree
5	Teachers can't control the noise because the classrooms are large	100	85	Agree
6	Students who learn in crowed classroom performs poorly	100	74	Agree
7	Students are not motivated to learn in crowded classrooms	100	312	Agree

In response to research question four, Table 5 showed that the respondents agreed to item one, two, five, six and seven while the respondents disagreed with the other items. From the responses give above, it is correct to state that class room size influences students' performance of Biology.

Research Question Four: Does availability and utilization of instructional influence secondary school students learning of Biology in public secondary schools in Egor Local Government Area?

Table Six: Availability and utilization of Instructional Materials and Students Performance in Biology

	ITEMS	N	Scores	Remark
1	There are charts for learning	100	10	Disagree
2	We are taught with projectors	100	21	Disagree
3	Students learning is improved when taught with computer	100	62	Agree
4	Students who learn with pictures have good grades	100	72	Agree
5	Those who learn with projectors remember what they learnt more than other	100	328	Agree

In response to research question five, Table 6 showed that the respondents agreed to item three, four and five while the respondents disagreed with the other items. Hence, the availability and utilization of Instructional Materials influences students' performance of Biology.

Research Question Six: Does availability of laboratory influence secondary school students learning of Biology in public secondary schools in Egor Local Government Area?

Table 7: Availability of Laboratory and Biology Student’s Performance

S/N	ITEMS	N	Score	Remark
1	There is laboratory in my school	100	16	Disagree
2	The laboratory in my school is empty	100	86	Agree
3	Teachers do not use laboratory in teaching the students	100	74	Agree
4	Learning with laboratory improves students learning	100	84	Agree

In response to research question six, the table showed that the respondents agreed to item two, three and four while the respondents agreed with the other item. With these results, it means that availability of Laboratory influences students’ performance of Biology.

Discussion of Findings

From the analysis shown, the finding of the study revealed from the Research Question 1 that that most school building were not dilapidated, school furniture’s were not adequate, most of the classes had normal size while laboratory were not available in most of the schools. This finding is in line

with (Obanya (2018) who stated that school building must be adequately provided so that students' interest towards learning and teacher's interest towards teaching may be increased. Thus, school building requires proper desks, network, labs, performance spaces, practice spaces, and the like; these spaces must be sufficiently spacious, safe, and equipped with the right stuff. School building must be equipped with basic facilities and resources like science labs, cafeteria, ICT laboratories, art room, library, examination hall, electricity, water, toilet, common room, guesthouse, playgrounds and other such facilities to utilize for the development and enhancement of the school along with the quality of teachers and students. In a summarized view, Ajayi (2010), assented that availability and use of quality educational facilities such as classrooms, school buildings, chairs, tables and laboratories had huge positive impact on the academic achievement of every school student. Therefore, decent school physical facility is of critical value.

Also, it was revealed that the classroom influence the academic performance of Secondary Students, because the arrangement of within the classroom and without influence the academic performance of secondary school students, this was agreed by the assertion of Molnar, (2012) who stated

that the relationship between classroom size and academic performance has been a perplexing one for educators must especially Nigeria universities, Studies have found that the physical environment, class overcrowding, and teaching methods are all variables that affect students' achievement. And this is in line with Jaiyeoba and Atanda (2011) who stated that while emphasizing the importance of space for convenience to students' academic performance, their availability and accessibility by students could also result in better performance and if otherwise, the opposite will be the case.

It was also discovered that school furniture influence the academic performance of secondary this finding is supported by Ayodele (2014) who pointed out that the availability of adequate chairs, desks and other facilities are necessary for the accomplishment of any educational goals and objectives. Hence it was revealed that effective management of school facilities brings about development of educational programmes and facilitates educational process. It also results to boosting of the morale of teachers and students and enhances the usefulness in the determination of the worth of a school. This correlates with Ahmed (2013) revealed that a significant number of secondary school physical environments are not conducive for learning. The poor quality

and inefficient conditions of our secondary schools were affirmed by Yusuf and Sofoluwe (2014). The status of physical facilities especially in our public secondary schools today appears to be of great concern to educators. It seems that the provision of these school facilities have dwindled over the years, perhaps due to increase in school enrolment rate which had led to population explosion in public schools.

Furthermore, it was disclosed that class size influence the academic performance of students in public junior secondary school to a large extent this agrees with Yaman & Uygulamada (2009), who asserted that small class was found to have enhanced students' effective learning and academic success, and there is a relationship between the number of students in a class and their academic success. They also claimed that the quality of learning and academic success is higher in small classes than in large classes and that small class can also enhance the quality of support for individual students. This can have a positive impact on their overall academic performance. This finding is in line with Dillon and Kokkelenberg (2002) who pointed out from their research that large classes negatively affect the performance of students more than others. They claimed that large classroom size and over populated schools have direct

impact on the achievement of students. This finding aligns with Toth, and Montagiga (2002).who opined that large classes present more challenges for classroom management, pupil control, and marking, planning, and assessment. They maintained that teachers in large classes are put under more strain when faced with large classes. However, they claimed that in smaller classes, it can be easier for teachers to spot problems and give feedback, identify specific needs and gear teaching to meet them, and set individual targets for students.

It was also revealed that the availability and utilization of Instructional Materials influences students' performance of Biology. The influence of instructional materials in promoting students' academic performance and teaching and learning in educational development is indisputable. Obioha (2006) and Ogunleye (2002) reported that there were inadequate resources (Teaching aids inclusive) for teaching in most secondary schools in Nigeria. They further stated that the available ones are not usually in good conditions. There is the need therefore, for improvisation.

From the last research question, it was shown that the availability of Laboratory influences students' performance of Biology. This finding aligns with the position of Olubor nd Unyimadu, (2011) who opined that a laboratory

is essential in the secondary schools to practice various experiments by the students and get convince about the fact, events, phenomena etc. Laboratories have been found to be scientists' workshops where practical activities are conducted to enhance a meaningful learning of science concepts and theories. Laboratories have been found to be a primary vehicle for promoting formal reason skills and students understanding, thereby enhancing the desired outcome in students. Modern teaching and learning can never be effective and efficient without laboratories and their proper utilization.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The purpose of this study was to assess the influence of school environment on Biology students' academic performance in secondary school in Egor Local Government Area of Edo State.. Specifically, the study examined the academic performance of students in Biology in public secondary schools in Egor Local Government Area, whether the availability of school building, classroom furniture's, class size, instructional materials and availability of laboratory influence the performance of Biology students in public secondary schools in Egor Local Government Area. Data gathered from respondents were analyzed using percentage, mean statistics and standard deviation. From the data analyzed, it was discovered that:

1. School buildings influences students learning of Biology
2. classroom furniture's influences student's learning of Biology
3. Class size has influence learning of Biology
4. Also, instructional materials were seen to influence students' learning of Biology

5. The availability of laboratory also influence learning of Biology

Conclusion

The school environment plays a vital role in determining how students perform or respond to circumstances and situations around them. To a large extent, it determines how a student behaves and interacts, that is to say that the environment in which students find ourselves tend to mould their behaviour either negatively or positively and also impacts on the performance of students. There is no misgiving that student's high-quality academic performance is connected to the nature of learning environment and the available useful facilities in the school. Consequently, the quality of education not only depends on the teachers as reflected in the performance of their duties, but also in the effective coordination of the school environment and the availabilities of various facilities that makes up the learning environment.

Recommendations

The following recommendations have been made based on the findings of the study:

1. The education sector should be appropriately funded to enable the sector acquire the necessary facilities to make the learning environment very adaptable, useful and viable to meet the educational goals of Nigeria.
2. Government should ensure that schools are provided with effective and adequate toilet facilities on the one hand, while the school authorities should also sensitize parents about the need for toilet facilities and solicit for their support on the other hand.
3. The State government should try as much as they can to ensure that classroom resources and school buildings are adequately provided in all public schools.
4. There should be provision of laboratory equipment's in public school for students to learn by government.
5. Government should focus more attention in terms of necessary facilities in the schools located in rural areas for them to have the same opportunity like their counterpart in the urban school location areas, to enhance student's achievement irrespective of the geographical school location.

6. Schools instructional facilities to enhance teacher's effectiveness. This should be provided also for schools in rural areas
7. Government should ensure that more building are constructed in rural areas and more especially, the dilapidated one should be renovated.

Appendix

Dear Respondents,

This is a study the influence of school environment on Biology students' academic performance in secondary school in Egor Local Government Please complete the structured questionnaire by ticking the relevant box or filling the blank spaces. If you have any question, please ask before you start. Provide the details below and then proceed to answer the questions. Please note that the information you are giving would be used for research purposes and would be treated with confidentiality.

NOTE: SA = Strongly Agree A = Agree D = Disagree
SD = Strongly Disagree

Thank you for your cooperation.

Section A: Demographic Data

1. Students Class: SS1 () SS2 ()

Section B:

S/N	SCHOOL BUILDING	SA	A	D	SD
1	The buildings in the school are dilapidated				
2	There are new buildings in my school				
3	Learning in dilapidated building is difficult				
4	The buildings are not enough to contain students				
5	Teachers find it difficult to teach in buildings with no roofs				
6	Most buildings do not have roofs				
7	Students who learn in dilapidated buildings performs well in examinations				
	SCHOOL FURNITURE				
8	There are enough chairs and desk for students to sit				
9	There are shelves for students				

10	The desk and chairs are broken				
11	Teachers do not have chairs and desk in their offices				
12	Students are not willing to learn where there are no chairs and desks				
13	Students who pass their exams have desk and chairs				
14	Students will pass even if they don't have chairs for sitting				
	CLASS SIZE				
15	The classrooms in my school are spacious				
16	The classrooms in the school is usually littered with dirt				
17	My classroom is dark; so we can't see what is written on the board				
18	There are no boards in the classroom				
19	Teachers can't control the noise because the classroom are large				
20	Students who learn in crowed classroom performs poorly				
21	Students are not motivated to learn in crowded classrooms				
	INSTRUCTIONAL MATERIALS				
22	There are charts for learning				
23	We are taught with projectors				
24	Students learning is improved when taught with computer				
25	Students who learn with pictures have good grades				
26	Those who learn with projectors remember what they learnt more than other				
	LABORATORY FACILITIES				
27	There is laboratory in my school				
28	The laboratory is empty				
29	Teachers do not use laboratory in teaching the students				
30	Learning with laboratory improves students learning				

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