CHALLENGES OF IMPLEMENTING BIOLOGY CURRICULUM IN SENIOR SECONDARY SCHOOLS IN OVIA NORTH EAST LOCAL GOVERNMENT AREA,BENIN CITY, EDO STATE.

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EDU2102019

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NIGERIA.

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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 REQUIREMENTS FOR THE AWARD OF A BACHELOR OF SCIENCE (ED) DEGREE IN BIOLOGY

OCTOBER, 2025.

CERTIFICATION

We, the undersigned, certify that this research work was carried out by Confidence Isesele in the Department of Curriculum and Instructional Technology, Faculty of Education, University of Benin in partial fulfillment of the requirements for the award of a Bachelor of Science (Ed) Degree in Biology.

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DEDICATION

This research work is dedicated to God Almighty who gave the researcher life, strength and provided all that was needed to make this research project a reality.

This research project is also dedicated to the researcher's mother, the Late Mrs Esther O. Isesele

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ABSTRACT

This study examines the challenges of implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area, Benin City, Edo State. The purpose of the study is to determine the challenges faced by both students and teachers during the implementation of the Biology curriculum and to ascertain the impact on students'performance academically.

A descriptive survey design was adopted for this study, the sample of the study study comprised of 40 teachers from selected senior secondary schools, data was elicited from the respondents using a questionnaire which was validated and proven to be reliable. The data retrieved from the respondents were analysed and the findings of the study revealed that teachers face many challenges during the implementation of the Biology curriculum and such challenges impact their ability to adequately carry out their duties thereby affecting the performance of students in Biology, some of the challenges revealed includes,poor teacher training, insufficient teaching aids and resources, inadequate teaching methods and overcrowded Biology classrooms and these challenges were proven to negatively impact students' performance in Biology.

The study concluded that several challenges hinder the Implementation of the Biology curriculum in senior secondary schools and these challenges has been proven to negatively impact students'academic performance, it is recommended that more funds should be allocated to the educational sector in order to boost the adequacy of the Biology laboratory and curriculum developers should review the Biology curriculum and lessen it's breadth and width and policy makers should increase the amount of time allocated to Biology practicals and lessons and ensure that such laws are being obeyed. School administrators should also ensure that the approved ratio of students to teachers are enforced in classrooms.

CHAPTER ONE

INTRODUCTION

Background to the Study

Science is a broad discipline which studies various natural occurring phenomenon in the world. It is the systematic study of the natural world through observation, experimentation, formulation of hypothesis and testing of theories against evidence obtained. Science seeks to explain the mechanisms behind various concept, it seeks to answer the question " why and how", it comprises of numerous disciplines some of which are Physics, Biology and Chemistry.

Biology is a branch of science which studies living organism and their life activities which includes their functions, evolution and how they interact with their environment for survivial. According to Dutfield and Lim (2022),Biology is the study of everything that is, or was once alive , whether it's a plant, animal or microorganism. Biology is the natural science that studies life and living organisms, including their physical structure, chemical processes, molecular interactions, physiological mechanisms, development and evaluation (Adam, Lameed and Ayodele 2022).

Curriculum is a vast topic and has a lot of conflicting definitions and theories, it was derived from a Latin word "currere" meaning 'to run' or more precisely 'to run a course' . Curriculum is all the selected, organized, integrative, innovative and evaluative educational

experiences provided to learners consciously or unconsciously under the school authority in order to achieve the designated learning outcomes which are achieved as a result of growth, maturation and learning meant to be best utilized for life in a changing society (Mulenga 2018). It can be deducted from the above definition that the content of the curriculum are not only properly selected but organized, meaning the curriculum is carried out step by step not haphazardly.

A well-designed curriculum is crucial for ensuring that students receive a high-quality education that prepares them for future success and enables them to be active members of the society, as recent report released by the New Secondary School Education Curriculum (NSSEC) body in January 2025 stated that “Curriculum plays a pivotal role in determining the quality and effectiveness of an educational system," and when assessing the standard of a school, three critical aspects are typically considered: the caliber of teachers, the learning environment, and the curriculum itself thereby highlighting the importance of the curriculum

Biology as already established, is a vital branch of science that elevates student’s understanding of the living world and provides essential skills applicable in various fields in life, hence the formulation of the biology curriculum, which is vast, detailed and practical. The objective of Biology curriculum in senior secondary schools according to the National Policy of Education is to provide the students with suitable laboratory and field skills in Biology, hence stating that Biology curriculum is practical in nature.The Biology Curriculum

also aims at developing broadly applicable skills, such as: problem solving, communication, critical thinking and objective reasoning abilities to enable them prepare for work place and self-sustainability in the world economy (Oghenevwede 2022).

The implementation of the Biology curriculum faces numerous challenges that can hinder effective teaching and learning. These challenges include poor teacher training, gender of the students, inadequate teaching method, vast nature of the curriculum, insufficient laboratory facilities and other teaching resources. These challenges have considerably undermined the essence and objective of the curriculum hence this study, which aims to outline, evaluate, and counter those challenges in order to improve teaching and learning outcomes positively.

The challenge of poor teacher training is crucial as teachers are one of the key implementers of the Biology curriculum. Neglecting to provide sufficient training and support to teachers leads to poor implementation (Chirimbana and Haimbangu, 2018). This indicates that teachers who don't possess adequate and appropriate skills needed to translate and implement the curriculum would struggle to effectively transmit the contents of the curriculum to the learners, thereby hindering learner's understanding. Teachers need to undergo continuous development in order to be in track and updated, as knowledge is dynamic and teaching outdated knowledge can also hinder the effectiveness of teaching, Andrews and Taylor (2018) stated that“ Teachers require re-education and sharing sessions

with colleagues to develop or refine the competencies necessary to implement the revised Biology curriculum" .

Gender of the students also play a key role in the implementation of the biology curriculum, a critical example is gender stereotyping where Biology has been made by society to look feminine thereby making it less attractive to the male students, (Makarova, Aeschlimann and Herzog, 2019). Based on this stereotype, male and female student tend to approach Biology with different levels of motivation which tend to hinder proper implementation of the biology curriculum.

Inadequate teaching methods in teaching Biology is also an alarming issue as the Biology curriculum is practical in nature hence the use of student centered method is highly recommended, but the use of teacher centered teaching methods limits learner's understanding, inhibits critical thinking skills in the students and fosters route memorisation, as a study carried out by Ezurike and Ayo-Vaughan (2020) stressed that the use of teacher-centered teaching methods involve uni-directional flow of information/knowledge from teacher to the student and do not encourage the process skill acquisition needed for proper understanding of biological principles, concepts and facts.

The Biology curriculum is vast and broad in nature compared to amount of time allocated, this is a major problem as not every aspect of the curriculum would be implemented and the chore of selecting that which would be implemented bores down to the

teacher's expertise. A study carried out by Ngema (2016) on teachers shows that teachers have to cover a lot within a short period of time and hence the mastery of the content is drastically reduced.

Insufficient laboratory facilities and other teaching resources is also another alarming issue as the Biology curriculum is practical in nature and these facilities are essential in order to carry out experiments and relate the contents of the curriculum to real life situations.To ensure the successful implementation of the Biology curriculum, adequate provision of resources, including physical facilities, textbooks, teaching aids, and stationery, is necessary (Abramo, Cicero, and Angelo, 2019).A lack of relevant textbooks, teaching aids, and digital resources can undermine the teaching and learning process (Joel and Ruhan, 2016).

Statement of the Problem

The Biology curriculum as already established is practical and meant to imbibe in learners critical thinking skills and laboratory skills, hence is requires teachers to possess adequate skills and proper training to be able to effectively implement the curriculum, there is also need for laboratory facilities to carry out practical lessons and other crucial experiments needed to foster in-depth understanding of biological concepts.Recent studies has shown that the Biology curriculum is not been properly implemented as WAEC Chief examiner's report, 2023 on Biology has shown that students lack in-depth understanding of basic topics, this can result from poor teacher training, lack of practical class due to insufficient laboratory

facilities, and inadequate teaching methods.The challenges of implementing the Biology curriculum faced by senior secondary schools in Ovia North East Local Government Area, range from poor teacher training, inadequate teaching methods, to insufficient laboratory facilities. These challenges are crucial and must be treated in order to improve the educational system, inability to rectify these challenges can result to various consequences ranging from poor student performance, as WAEC Chief examiner's report, 2022 has shown that student's performance was worse than that of the previous year, lack of interest in Biology is also another consequence and can arise from the use of teachers centered methods and inhibition of problem solving skills in learner's which leads to inability of the learner to relate the knowledge gained to real life situations. Gender (sex) of students can also pose a limitation in effective implementation of the Biology curriculum, an example is gender stereotypying in Biology, as the society has termed Biology,a feminine subject, this has led to decreased interest in the male student in learning Biology and increased interest in the female student, as a research carried out by Makarova, Aeschlimann, and Herzog in 2019 states that “gender science stereotyping hinders young women's self identification with STEM subjects, affecting their subject interest and careere aspirations". Hence the male students tend to be more interested in other science subjects like Chemistry, Physics and Mathematics while the female students are more interested in Biology.

This study aims to develop strategic ways of improving the implementation of the Biology curriculum by discovering the challenges faced by Biology students,particularly in Ovia

North East Local Government Area and to creat counter measures or recommendation to rectify these challenges, some of these recommendations includes quality teacher training, reduction of the curriculum size, and provision of quality and sufficient laboratory facilities.

Research Questions

The following research questions were raised for the study;

1. What challenges do teachers face in implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area ?

2. What are the challenges students face in implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area ?

3. Does these challenges affect student's academic performance in Biology in Ovia North East Local Government Area?

Purpose of the Study

The purpose of this study is to investigate the challenges faced by senior secondary schools in implementing the Biology curriculum, this study specifically intends to;

1. Identify challenges teachers face in implementing the Biology curriculum in senior secondary schools in Ovia North East Local Government Area

2. Identify the challenges students face in implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area

3. Determine if these challenges affect student's academic performance in Biology in Ovia North East Local Government Area

Significance of the Study

This study would be significant to the following; students, teachers, curriculum developers and other researchers;

The findings of this study would be beneficial to students as it would enable them identify the challenges and develop suitable strategies to counter them, students can benefit from improved teaching methods, better laboratory facilities, and more effective learning experiences, leading to enhanced understanding and performance in Biology.

The findings of this study can help teachers identify their flaws and improve their teaching skills by helping them to discover the most suitable teaching methods that would foster effective teaching and learning processes and improve their ability to implement the Biology curriculum.

The findings of this study can provide valuable insights for curriculum developers, enabling them to refine and modify the Biology curriculum, make it more relevant and effective, make it less broad, and address any identified challenges or gaps that pose a threat to it's implementation.

Lastly, the findings of this study can contribute to the existing body of research on Biology education, providing insightful recommendations for future studies and creating awareness for development of more effective educational interventions by other researchers.

Scope and Delimitation of the Study

This study examines the challenges faced in implementing the Biology curriculum by senior secondary schools and is delimited to Biology teachers in senior secondary schools in Ovia North East Local Government Area, Benin City.

Definition of Terms

The following terms were operationally defined.

- **Biology**: It is a branch of science which studies living organism and their life activities
- **Curriculum:** It can be defined as the series of activities which a learner must partake of before the completion of his/her course of study.
- **Challenges**: They refer to difficulties or obstacles that need to be overcome or solved.
- **Dynamic:** It simply means a change or progress which is gradual.
- **Implementation:** It can be defined as the process of transforming an idea into reality, simply it's practicalising something.

- **Innovative**: It refers to the creation of new ideas or modification of original ideas, methods, or products.
- **Integrative:** It refers to the combination of various different parts or elements to develop something new

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviews literature as it relates to the problem of study, the review of related literature was carried out under the following subheadings;

- Theoretical Framework
- Concept of Biology
- Concept of curriculum
- Nature of the Biology curriculum
- Challenges of implementing the Biology curriculum
- Methods of improving the implementation of the Biology curriculum
- Summary of review of related literature

Theoretical Framework

General Systems Theory (Ludwig Von Bertalanffy, 1937)

The system theory is a broad field with it's founder recognized as Ludwig Von Bertalanffy as he introduced the General Systems Theory (GST) at the University of Chicago in 1937 (Systems Thinking Alliance, 2024). The systems theory had major contribution from many other scientist through the years some of which include, Alexander Bogdanov who is actually a forerunner of the system theory, he proposed the theory of tektology, Norbert Weiner who proposed the theory of cybernetics in 1948, and Macy conferences which aided in the development of the systems theory. All these theories has given the systems thinking theory a firm and concrete foundation.

The systems theory is an interdisciplinary study of systems as they relate to one another within a larger and more complex system, Ludwig Von Bertalanffy defined the General Systems Theory as the general science of wholeness stating that the “the whole is greater than the sum” this is to say that the whole which refers to the larger complex system cannot be fully understood by simply looking at singular components, as the individual components of a system (subsystems) can't single handedly produce the complex system, without integration with other subsystems, this was emphasized in a article by University of Denver (2023).

Application to Education

Systems thinking is a way to look at complex problems and situations and figure out how to solve them, it entails examining how different parts of a system interact with one another and work together rather than examining each part separately. (Vidal, 2023). Therefore in application to education, the complex system here is the educational system and it's involves many sub system. An article by School of Education, American University,(2020) stated the interactive parts (subsystems) of the educational system, they include, laws and regulations, funding and funding policies, school and administrative offices, teachers and staff, books, computers, instructional materials, students, parents and the community. Therefore, following Vidal's definition, in order to solve problems arising in education, as in this case, the challenges of implementing the Biology curriculum, we must first analyse the relationship amongst the various parts in educational system, the role they play and how they influence education as a whole.

Concept of Biology

Biology is a wide branch of science which encompasses numerous field, It was formed around the 18th century and was coined from 2 Greek words; “bios" meaning life and “logos" meaning study or discourse, therefore, Biology literally means the study of life. Biology studies living organisms and the processes and functions they carry out to ensure their survival. Asuzu and Okoli (2019) in Edeh and Nnabuife (2023) defined Biology as a natural science that studies the living world, how it functions, what these functions are, how living

things came into existence and their interaction with each other and their environment. As seen above, Biology not just seems to study living organisms but their origin and how they react to their environment, Biology is a natural science that helps us to understand the world we live in, as this world is biological, as Pat-Anyaeji and Okeke (2019) in Edeh and Nnabuife (2023) stated that the knowledge of Biology helps one in understanding the world in its natural processes and with the knowledge obtained, create a better environment to live in. Hence, Biology not just studies living organisms but also helps us to modify our environment in order to suit our needs.

Biology is essential in our daily lives as Biology provide adequate knowledge required in almost every sphere of life ranging from food production, protection of the environment, bio engineering and agriculture, prompting its inclusion in the secondary school curriculum in Nigerian secondary schools (Nwuba, Egwu and Osuafor, 2022). Biology consist of numerous field with varying importance, they include Anatomy, Zoology, Botany, Ecology, Genetics, and many more. Anatomy is the branch of biology which studies how various parts of an organism are connected, and how they are related to other body parts both spatially and functionally (BD Editors, 2018), hence, Anatomy, helps us to understand how the body works. Zoology according to Cambridge dictionary is the scientific study of animals, especially their structure. Botany is a branch of biology that deals with the study of plants, including their structure, properties, and biochemical processes, (Pelczar, 2025), in essence, Botany helps us understand plant diversity and their various importance. Ecology is the study

of the interaction of living organisms in their habitat, Oribhabor (2024) opined that ecology is of great importance as it provides new knowledge into the relationship of people and environment, which is critical for food production, clean air and water, and biodiversity preservation in a changing climate. Genetics is the branch of biology concerned with the study of inheritance, including the interplay of genes, DNA variation and their interactions with environmental factors,(Berkman, 2025). Apart from the importance and contribution of Biology mentioned above, one of the major reason for it's inclusion in senior secondary school curriculum is to imbibe in the students critical thinking skills and the ability to provide solutions to real life situations as stated by the National Policy of Education (NPE).

Concept of Curriculum

Curriculum is a very broad subject with many definitions which has evolved through the years. It was derived from a Latin word " Currere" meaning 'to run' or 'to run a course'. Curriculum is a prescriptive content that illustrates what will be taught in a given educational program (input or subject matter), who will teach (teacher), who will be taught (learner), with what tools and in what context (milieu), with what effect (output/outcomes), and how that will be assessed (assessment), (Mohammed, 2023). The above, simply emphasizes on the comprehensive nature of the curriculum, it states that the curriculum is not just concerned with the course to be taught but everyone and all activities pertaining to the course to be carried out. In a study carried out by Lakhe (2024), he stated

that curriculum can be conceptualized as a well-organized plan for conducting educational activities in a school, college, university or in a specific course or program, which helps the students learn effectively and efficiently. Hence, curriculum is necessary to carry out any and all educational activities,l as it states the step by step process to be actualized.

A curriculum is very essential as a curriculum is not just about academic subjects but rather it also takes into consideration the extra curricular or co curricular activities, skill based learning, lifelong learning, reading habits and other development programs, and it also enables educators to achieve educational goals and empowers learners with knowledge, skills and attitude needed for success both in their personal and professional life, (Raj, 2025). The role of curriculum was also stated in an article by Raj (2025);

- For guiding educators during lesson planning
- Alignment of educational outcomes with already stated goals or objectives
- Provides structure and consistency during teaching and learning thereby give direction.

A good curriculum consist of several characteristics, an article by Education Minder (2022) highlited some essential characteristics, stating that a good curriculum should meet the needs of the students, it should be well organized, it should provide opportunities for learners to explore their talent and be creative, it should be made according to the demands of the society, it should provide quality and up-to-date content thereby keeping learners in track with the

ever evolving world, it should be flexible and adaptive in response to change, it should follow psychological principles and should promote integrated learning.

Over the years, curriculum has been misinterpreted as syllabus and this misconception has led to the usage of both worlds interchangeably which is very inaccurate, both terms are very distinct with different meanings, Raj (2025) stated that both possess distinct components for themselves in the education industry where curriculum is a broader term that encompasses all the other educational frameworks and includes elements like content, goals, teaching methodologies, assessment strategies and sub standard assessments, while on the other hand, the syllabus is a detailed outline of all the topic, assignments and assessments in a particular subject that is offered to a student under a curriculum in an academic year. She also emphasized that a curriculum is broader in scope than a syllabus which is much more narrow focusing only on subject specific topics and content to be taught.

Nature of the Biology Curriculum

The Biology Curriculum according to the National Policy of Education is meant to equip students with adequate laboratory and field skills, the Biology curriculum also aims at developing broadly applicable skills, such as: problem solving, communication, critical thinking and objective reasoning abilities to enable them prepare for work place and self-sustainability in the world economy, Oghenevwede (2022). Therefore, from the above, we deduce that, the Biology curriculum is practical in nature, this is needed in order to

adequately equip the student with the necessary skills needed to understand and dive into the world around them. The Biology curriculum exposes students the knowledge and skills required to make informed and beneficial decisions involving their health and environment by exposing them to a broad and comprehensive range of biological concepts,(Bara, Bara and Pupe 2024), hence, the Biology curriculum is also informative in nature as it provides crucial information which influences students decision making process.

Challenges of Implementing the Biology Curriculum

The challenges of implementing the Biology curriculum is a crucial factor that must be effectively addressed in order to facilitate the full delivery of the objectives of the Biology curriculum, these challenges include poor teacher training, gender of the students, inadequate teaching methods, the vast nature of the the biology curriculum, insufficient laboratory facilities and other teaching resources.

Poor teacher training leads to reduced teacher's efficacy or ability to produce desired results, and Mouktadir (2024) opined that the teacher's efficacy grreatly influences students motivation, their confidence, and provide students with a greater sense of control of their learning, which in turn positively affect students' performance in class activities. He also highlighted that teacher with high efficacy teach better than those with low personal efficacy,

this emphasizes the impact of the teacher's competency as it directly affects students academic performance in biology. The findings of a study carried out by Olajide (2022) on factors affecting the effective implementation of the Biology curriculum of senior secondary school in education district IV Alimonsho zone of Lagos State established that Teacher's qualification and competency plays a major role in the delivery of instructional content which invariably affect the academic performance of students. The study recommended that teacher's entry into the teaching profession should be strongly regulated by the government in order to scoop out unqualified teachers.

Gender of the students also poses a challenge to the proper implementation of the biology curriculum , as teaching sensitive topics like human reproduction in a mixed gender classroom may cause awkwardness and discomfort thereby limiting content coverage, and stereotyping, that is, branding Biology as a feminine subject also affects students performance and interest in Biology, (Makarova, Aeschlimann and Herzog, 2019).

Inadequate teaching methods also limits proper implementation of the Biology curriculum, as effective teaching methods enables learners to participate, connect and add excitement to the content being taught and influences many motivational variables of the learner such as the ability to think critically, (Mouktadir 2024). A study carried out by Ezurike and Ayo- Vaughan (2020) highlighted that the use of effective teaching methods such as student centered methods is very effective in enhancing student academic

achievement in Biology while the use of traditional or teacher centered methods were considered insufficient as it attributed to the poor performance of the students in Biology. All these shows the crucial role of the teaching methods utlised as regards the implementation of the biology curriculum.

The vast and voluminous nature of the Biology curriculum also impacts the implementation of the Biology curriculum, a study by Fairgaze (2022) reveals that an overloaded curriculum results in academic stress which can affect students physical and mental health thereby hindering learning and it can also affects student's ability to comprehend concepts in it's entirety which may result to route memorization and shallow education. Teachers faced with curriculum overload tend to lose motivation, purpose and are prone to frustration in the process, (Oduor, 2021). Therefore, from the above, we see that the vast nature of the Biology curriculum not only affects the students performance but the teacher's ability to implement the curriculum in the proper way.

Insufficient laboratory facilities and other teaching resources like textbooks, charts , e.t.c, also undermines the implementation of the Biology curriculum as Biology is practical in nature as already established, the provision of adequate laboratory facilities makes science learning easier because students actually learn through practical and interactive approaches, (Osita and Ugochukwu, 2022), they also concluded that the use of adequate laboratory facilities in teaching and learning biology is very effective as it drastically enhances students

academic achievement and performance. The use of other teaching resources or instructional materials is also very important as instructional materias play a key role in teaching and learning as they enhance student's interests, help overcome physical limitations, and enhance the presentation of subject matter,. (Abidoye, Abidoye, and Olaide, 2023). The findings of their study also supported that the use of instructional materials positively enhances students academic performance in Biology. This in turn tells us to the impact insufficient laboratory facilities and teaching resources have on the implementation of the Biology curriculum. Edeh and Nnabuife (2023) also highlighted the importance of teaching resources as the stated that adequate instructional materials makes learning concrete and relevant.

Methods of Improving the Implementation of the Biology Curriculum

The implementation of the Biology curriculum in senior secondary schools faces many challenges, some of which have already been established above, in order to minimize or eradicate these challenges and improve the implementation of the Biology curriculum, actions must be taken. Ezeh, Nwobodo and Ishiwu (2021) recommended that Biology teachers should be mandated by the government to attend various workshops, seminars and conferences which will help re-train teachers on the proper and effective way of using instructional media for the implementation of the Biology curriculum. Hassan (2019) also recommended that the welfare of Biology teachers should be looked into, since they are the final implementers of the curriculum, Hassan also recommended that the curriculum should

be reviewed regularly to meet the demands of the society and that the review of the curriculum may include the teaching equipments, materials and facilities used in teaching the content of the curriculum and that Biology teachers should use the appropriate teaching methods in delivering the contents of the curriculum. Bara, Bara and Pupe (2024) also highlighted that collaborative learning should be encouraged among students which will enable students to engage with other students with the same interests in Biology. Teachers should be conscious of creating an environment that will enable students participate fully in the teaching and learning of Biology, (Ezurike and Ayo-Vaughan, 2020). All these recommended will not only boost the implementation of the Biology curriculum in senior secondary schools but will to a great extent lead to the achievement of the Objectives of the Biology curriculum.

Summary of Review of Related Literature

In this chapter, the concept of Biology and the concept of curriculum was established and well defined, the importance and some of the branches of Biology and their roles were highlighted, the origin, role, importance and characteristics of curriculum were also stated, the nature of the Biology curriculum was also highlighted, as we established that the Biology curriculum is practical and informative in nature. The challenges of implementing the Biology curriculum were also stated and the views of other researchers were included, the method of improving the implementation of the Biology curriculum was also established with

various recommendations by other researchers been included. Part of the summary of review of Literature is the theory on which this review of related literature is built on which is the systems thinking theory founded by Ludwig Von Bertalanffy in 1937. Relevant research as related to this study done by Olajide (2022), Ezeh, Nwobodo, Ishiwu, (2021) and Edeh and Nnabuife (2023) were reviewed. This review of literature highlights the various challenges plaguing the effective implementation of the Biology curriculum, challenges which ranged from teacher's incompetency to inadequate teaching resources, the review of literature has established that these challenges not only affects the Biology curriculum delivery, but in a long run affects students performance massively.

Ludwig Von's theory has aided in highlighting that the components of the Biology curriculum from which these challenges sprout from, must be effectively addressed for the full delivery of the Biology curriculum to be achieved. The review of studies carried out by other researchers across the nation has helped in establishing that the Biology curriculum has not been effectively implemented and that there is need for prompt and rapid counter measures to these ravaging challenges thereby indicating the relevance of this study to senior secondary schools in Ovia North East local Government Area.

CHAPTER THREE

METHODOLOGY

This chapter will discuss the methods and procedures with which this study was conducted under the following sub-headings:

- Design of the Study
- Population of the Study
- Sample and Sampling Techniques
- Research Instrument

- ❖ Validity of the Instrument
- ❖ Reliability of the Instrument
- ❖ Method of Data Collection
- ❖ Method of Data Analysis

Design of the Study

The survey research design was utilized for this study. The design was sufficient to investigate the challenges of implementing the Biology curriculum in senior secondary schools in Ovia North East local Government Area. The research design was deemed suitable as it creates room for close contact between the researcher and the population of the study thereby generating a more objective result and it also allows the researcher to make proper generalisation of the population of the study. The dependent variable of the study is the implementation of the Biology curriculum while the independent variables are the challenges, such as, poor teacher training and qualifications, inadequate teaching methods, vast nature of the Biology curriculum, insufficient teaching and laboratory facilities. The intervening variables are teacher's motivation, students interests, community involvement and gender.

Population of the Study

The population of the study includes all Biology teachers in all senior secondary schools in Ovia North East local Government Area, Benin City, Edo State.

Table 1: List of schools in Ovia North East Local Government Area

S/N	Name of School.	Nature of School
1.	Army Day Secondary School, Isiohor.	Public
2.	Ebomisi Secondary school, Ebomisi.	Public
3.	Ezomo College, Ora	Public
4.	Ughoton Secondary School, Ekewan	Public
5.	Army Day Secondary School, Ekenwa	Public
6.	Utoka Secondary school, Utoka	Public
7.	Egbeta Secondary School	Public
8.	Ekosodin Secondary School, Ekosodin	Public
9.	Iguadolor Secondary School, Iguadolor	Public
10.	Iguedaiken Grammar School, Ekiadolor	Public
11.	Ikpiti Grammar School, Gelegele	Public
12.	Ise Grammar School, Ise	Public
13.	Nifor Secondary school, Nifor	Public
14.	Okada Grammar School, Okada	Public
15.	Ogbesse Secondary School, Ogbese	Public
16.	Oba Erediauwa Secondary School, Obareren	Public
17.	Oghede Secondary School, Oghede	Public
18.	Ogua Secondary School, Ogua	Public
19.	Okokhuo Secondary School, Okokhuo	Public
20.	Ore Nolomi Secondary School	Public
21.	Owan Secondary School, Owan	Public
22.	St. David Boys Secondary School in, Evbonika	Public

23.	Osasimwinoba Secondary School	Public
24.	Ugbineh Secondary School, Ugbineh	Public
25.	Uhen Secondary School, Uhen	Public
26.	Utese Secondary School, Utese	Public
27.	Golden Touch High School, Ugbowo	Private
28.	Gabus International college, Ugbowo	Private

Source: Edo State Secondary Education Board

Sample and Sampling Techniques

The sample size of the study involved 40 teachers from 5 senior secondary schools. The procedure for selecting the sample was purposeive sampling technique due to financial constraints and the proximity of the schools to the researcher.

Table 2: Sample size of the study

S/N.	School Name.	Number of Teachers Used
1.	Army Day Secondary School, Isiohor.	10
2.	Ekosodin Secondary School, Ekosodin	8
3.	Iguedaiken Grammar School, Ekiadolor	9
4.	Golden Touch High School, Ugbowo.	5
5.	Gabus International college, Ugbowo	8
	Total:	**40**

Research Instrument

The instrument used for the collection of data for this study was questionnaire which was tagged “A Questionnaire on the Challenges of Implementing the Biology Curriculum in Senior Secondary Schools in Ovia North East Local Government Area, Benin City, Edo State.” The instrument was carefully prepared by the researcher after the review of related literature and it comprises of two sections. Section A constitutes of the demographic data which elicit information from the respondent based on their sex, qualifications, and years of teaching experience. Section B together, comprises a total of 20 items that elicits information from the respondent based on the research questions which was earlier rasied for the study. The rating scale employed by the questionnaire is the likert scale made up of Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD).

Validity of the Instrument

The research instrument was validated by the researcher's supervisor and two other competent lecturers in the Department of Curriculum and Instructional Technology, Faculty of Education, University of Benin, Benin City, thereby ensuring face and content validity. Their opinions and corrections were appropriately applied during the preparation of the final draft of the research instrument.

Reliability of the Instrument

The reliability of the instrument was established through a pilot study whereby 20 copies of the research instrument was administered to 20 teachers who were not part of the sample of the study. The data collected was then analysed using the Cronbach Alpha method and a reliability co-efficient of 0.73 was obtained indicating that the research instrument is reliable and appropriate for the study.

Method of Data Collection

The data for the study was collected personally by the researcher by physically administering the research instrument to the sample of the study. After administration of the research instrument, the respondent were given a period of 15 minutes to fill the instrument before they were retrieved immediately.

Method of Data Analysis

The data collected from all the sections of the research instrument was analysed using simple percentages and frequency count.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter analyses the data retrieved from the sample of study (teachers) through the administered questionnaire. A total of 40 questionnaires were administered and retrieved from the sample. The results obtained are as follows;

Research Question 1: What challenges do teachers face in implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area ?

Percentage Mean = 50%

The following acronym and sign used in the tables below

Table 3: challenges teachers face in in implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area

S/N	ITEM	SA. FQ:. %:.	A. FQ. %.	D. FQ. %.	SD. FQ %	DECISION
1	I find it difficult to complete the Biology Curriculum before examination begin	8. 20%.	15. 38%.	15. 37%.	2. 5%.	Rejected
2	I receive sufficient training and	14.	13.	11.	2.	Rejected

	support to teach Biology effectively	35%.	33%.	27%.	5%.	
3	I have sufficient teaching aids and resources for effective delivery of the Biology curriculum	15. 38%.	14. 35%.	8. 20%.	3. 7%.	Rejected
4	The Biology curriculum is too broad to cover within the allocated time	14. 35%.	17. 43%.	9. 22%.	0. 0%.	Rejected
5	I receive regular training on Biology curriculum updates.	11. 28%.	12. 30%.	11. 27%.	6 15%.	Rejected
6	Large class sizes are manageable for effective and learning process of Biology.	4. 10%.	9. 22%.	11. 28%.	16 . 40%.	Rejected
7	I have access to adequate laboratory facilities to teach Biology effectively.	10. 25%.	12. 30%.	8. 20%.	10. 25%.	Rejected

Findings

Item 1 to Item 7 were all rejected, being below the percentage mean of 50%. Item 1 and item 4 which highlights specific problems regarding the Implementation of the Biology curriculum, disagrees that teachers face such challenges outlined while the other items being rejected agrees that teachers face the outlined problems attached to them.

Research Question 2: What are the challenges students face in implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area ?

Table 4: challenges students face in in implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area

S/N	ITEM	SA. FQ:. %:.	A. FQ. %.	D. FQ. %.	SD. FQ %	DECISION
8	I am able to explain Biology concepts clearly to my students.	14. 35%.	21. 53%.	5. 12%.	0. 0%.	Accepted
9	There are enough Biology. textbooks and charts	10 25%.	16. 40%.	10. 25%.	4. 10%.	Rejected

	available for students in my school's library.					
10	Most of my students find Biology concepts easy to understand.	11. 28%.	17. 42%.	6. 15%.	6. 15%.	Rejected
11	I'm able to give enough time and support to my students during Biology practicals.	13. 32%.	15. 38%.	8. 20%.	4. 10%.	Rejected
12	Biology practicals are frequently organised in my school.	4. 10%.	20. 50%.	12. 30%.	4. 10%.	Accepted
13	I am able to use interesting teaching methods to engage my students during Biology lessons	16. 40%	18. 45%	4. 10%	2. 5%.	Rejected
14	Students have access to a well equipped Biology Laboratory in my school	6. 15%	13 33%	12. 30%	9. 22%	Rejected

Findings

Item 8 and item 12 were accepted thereby disagreeing that students face challenges during the implementation of the Biology curriculum as regards the problems attached to them, while other items were rejected, indicating that students faced numerous challenges as outlined during the implementation of the Biology curriculum

Research Question 3: Does these challenges affect student's academic performance in Biology in Ovia North East Local Government Area?

Table 5: Effects of these challenges academic performance in Biology in Ovia North East Local Government Area

S/N	ITEM	SA. FQ:. %:.	A. FQ. %.	D. FQ. %.	SD. FQ %	DECISION
15	Use of teaching resources such as textbooks and live organisms in teaching Biology increases student's performance in Biology.	24. 60%.	15. 38%.	0. 0%.	1. 2%.	Accepted
16	Sex influences students' performance in Biology.	4. 10%.	11. 27%.	13. 33%.	12. 30%.	Rejected
17	Biology practicals increases student's interest in Biology.	21. 53%.	12. 30%.	5. 13%.	2. 5%.	Accepted
18	Use of student centered teaching methods such as field trip and excursion increases student's understanding of biological concepts	26. 65%.	12. 30%.	1. 3%.	1. 2%.	Accepted
19	Students with access to Biology	15.	15.	8.	2.	Rejected

	textbooks perform better in Biology examinations	38%.	37%.	20%.	5%.	
20	Students in overcrowded classroom struggle more with Biology practicals.	19. 48%.	17. 42%.	2. 5%.	2. 5%.	Rejected

Findings

Item 15, item 17 and item 18 were accepted thereby agreeing that students performance in Biology are affected by challenges encountered during the implementation of the Biology curriculum, while item 16, item 18 and item 20 were all rejected indicating that outlined challenges don't have any negative impact on student's academic performance in Biology.

Discussion of Finding

The findings of this study supplies essential insights regarding the challenges of implementing the Biology curriculum in senior secondary schools in Ovia North East Local Government Area and it's effect on students' academic performance in Biology.

Regarding the challenges of Implementing the Biology curriculum and it's effect on students'performance in Biology, this study revealed that teachers are not sufficiently trained and supported to teach Biology curriculum effectively which in turn affects students' performance, this finding is in agreement with the findings of a study carried out by Edeh and Nnabuife (2023) which concluded that the Biology curriculum is not being implemented thoroughly by Biology teachers due to lack of support. Insufficient teaching aids and resources was revealed as a challenge hindering the implementation of the Biology

curriculum as teachers lack the necessary instructional materials needed for effective delivery of the Biology curriculum, this is supported by the findings of the study carried out by Abidoye, Abidoye, Olaide (2023), which highlights that Biology instructional materials boost the Implementation of the Biology curriculum as it has a positive influence on students' academic performance but is insufficient in Secondary schools. Another challenge revealed by this study, is that of overcrowded nature of Biology classrooms, many teachers affirmed how unmanageable overcrowded classrooms are, during Biology lessons and practicals, this opposes the result of a study by Abidoye, Abidoye and Olaide (2023) which stated that class size did not significantly affect the utilization of Biology instructional resources, hinting that class sizes doesn't affect Biology curriculum Implementation. Lack of access to a well equipped laboratory was also proven to hinder the Implementation of the Biology curriculum, this can hinder practical learning and the ability of students to relate biological concepts to real life situations, this is supported by the results of the study carried out by Osita and Ugochukwu (2022) which concluded that students performance in Biology is enhanced by effective use of laboratory facilities. This study also revealed that students are not able to understand Biology concepts easily due to the poor teaching methods used, this correlates with the findings of the study carried out by Ezurike and Ayo-Vaughan which states that poor teaching methods are utilized in senior secondary schools and this leads to poor academic performance of student in Biology thereby hindering the implementation of the Biology curriculum.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the findings from the study, draws conclusions and supplies appropriate recommendations as fostered by the findings of the study.

Summary

This study examines the challenges of implementing Biology curriculum in senior secondary schools in Ovia North East Local Government Area,Benin City, Edo State. Chapter one consisted of the background of study where foundational concepts as related to the topic were thoroughly outlined and possible challenges that plaguing the implementation of the Biology curriculum was established and problems that might result from those challenges were stated, the purpose and the population concerned as regards to the study was also determined. Chapter 2 reviews essential literature as related to the study. The review of literature provided insights to the perceptions of other researchers concerning the study and also solidified the significance of the study as the review of literature exposed possible damages the challenges of implementing the Biology curriculum could fathom to and the theory on which the study carried out is based on, was effectively outlined. Chapter 3 highlighted the methodology by which the research was conducted. The study was carried out using survey research design, the population of the study was determined, the sample of the study was represented by 40

teachers from selected senior secondary schools and they were accessed using a properly constructed questionnaire which was validated by experts and considered reliable when tested using the Cronbach Alpha method and a reliability coefficient of 0.73 was obtained, the method of data analysis which includes frequency count and simple percentages was also specified. Chapter 4 comprises of analysis of the data derived from the findings of the study using frequency count and simple percentages, the findings of the study was also adequately discussed and it also revealed some challenges hindering the implementation of the Biology curriculum in senior secondary schools in Ovia North East local Government, the challenges revealed includes, poor teacher training, insufficient teaching aids and resources, inadequate teaching methods and overcrowded Biology classrooms.

Conclusion

The major challenges of implementing the Biology curriculum in senior secondary schools in Ovia North East local Government as revealed by the findings of this study includes, poor teacher training, insufficient teaching aids and resources, inadequate teaching methods and overcrowded Biology classrooms, these challenges were also found to have profound impact on the students' academic performance and understanding of biological concepts hence, these challenges must be immediately addressed by efficient counters measures.

Recommendations

It is recommended that the Government allocates more funds to the educational sector as this will facilitate the construction of well furnished and functioning Biology laboratory which is required for proper implementation of the Biology curriculum in senior secondary schools, school administrators should lessen the number of students allocated to a class and should adhere to the normal ratio of students to teachers as approved by the Federal Government, as this will drastically reduce overcrowding in Biology classrooms. Teachers should be mandated to undergo frequent training and provided with enough support in order to boost effective implementation of Biology curriculum in senior secondary schools particularly in Ovia North East local Government Area.

Suggestions for Further Study

The researcher suggests that beyond the scope of this study carried out, further study should be carried out using a larger population and sample size and room should be created for evaluation of the degree of which the Biology curriculum is implemented in senior secondary schools from the students' perspective.

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APPENDIX I

A QUESTIONNAIRE ON THE CHALLENGES OF IMPLEMENTING THE BIOLOGY CURRICULUM IN SENIOR SECONDARY SCHOOLS IN OVIA NORTH EAST LOCAL GOVERNMENT AREA, BENIN CITY, EDO STATE.

Dear respondent,

The researcher is an undergraduate student of the Department of Curriculum and Instructional Technology, Faculty of Education, University of Benin. The information being asked for is to enable her complete her research. This research work is purely for academic purpose, hence you are enjoined to kindly and honestly assist to provide answers to the questions below. Your responses will be treated with utmost confidentiality.

Thanks.

Miss Confidence Isesele

Section A: Demographic Data

(To be ticked by all respondents)

Sex: Male [ ] Female [ ]

Qualification: NCE [ ] BSc (Ed) [ ] MSc (Ed) [ ]

Teaching Experience: 1–5 years [ ] 6–10 years [ ] Above 11 years [ ]

Instructions: Please indicate your level of agreement with the following statements by ticking (✓) the appropriate box using the following scale;

Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

S/N	ITEMS	SA	A	D	SD
	Section B: Challenges faced by teachers in the implementation of the Biology curriculum				
1.	I find it difficult to complete the Biology curriculum before				

	examination begins.				
2.	I receive sufficient training and support to teach Biology effectively.				
3.	I have sufficient teaching aids and resources for effective delivery of the Biology curriculum.				
4.	The Biology curriculum is too broad to cover within the allocated time				
5.	I receive regular training on Biology curriculum updates				
6.	Large class sizes are manageable for effective teaching and learning process of Biology				
7.	I have access to adequate laboratory facilities to teach Biology effectively				
	Section C: Challenges faced by students in the implementation of Biology curriculum				
8.	I am able to explain Biology concepts clearly to my students				
9.	There are enough Biology textbooks and charts available for students in my school's library				
10.	Most of my students find Biology concepts easy to understand				
11.	I am able to give enough time and support to students during Biology practicals				
12.	Biology practicals are frequently organized for students in my school				
13	I am able to use interesting teaching methods to engage my students during Biology lessons				
14.	Students have access to a well equipped Biology laboratory in my school				
	Section D: Impact of the challenges in the implementation				

	of Biology curriculum on student's academic performance				
15.	Use of teaching resources such as textbooks and live organisms in teaching Biology increases student's performance in Biology				
16.	Sex influences student's performance in Biology				

17.	Biology practicals increases student's interest in Biology				
18.	Use of student centered teaching methods such as field trip or excursion increases student's understanding of biological concepts				
19.	Students with access to Biology textbooks perform better in Biology examinations				
20.	Students in overcrowded classrooms struggle more with Biology practicals				

APPENDIX II

UNIVERSITY OF BENIN
BENIN CITY, NIGERIA
DEPARTMENT OF CURRICULUM AND INSTRUCTIONAL TECHNOLOGY
FACULTY OF EDUCATION

OFFICE OF THE HEAD OF DEPARTMENT

P.M.B. 1154,
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Our Ref: CIT/46

Your Ref:

Date: 3rd September, 2025

The Executive Chairman
State Secondary Education Board,
Sapele Road,
Benin City.

RECEIVED
STATE SECONDARY EDUCATION BOARD
9/9/2025
BENIN CITY.

Dear Sir,

LETTER OF INTRODUCTION

The bearer, **ISESELE CONFIDENCE with matriculation no: EDU2102019** is final year level student in the above named Department. As part of her field work, she is required to collect data from all Senior Secondary Schools in Ovia North East, Local Government Area, Edo State. It is for this reason that I write to solicit your kind assistance to enable her with the number and comprehensive list of all Senior Secondary Schools in Ovia North East Local Government Area.

The researcher is carrying out a study on "**Challenges of Implementing Biology Curriculum in Senior Secondary Schools in Ovia North East, Benin City.**"

Kindly give her the necessary assistance to actualize her purpose.

Thank you.

HEAD OF DEPT.
03 SEP 2025

Prof. E.O. Idehen
Head of Department
email -festus.idehen@uniben.edu GSM NO: 08020893797

APPENDIX III

EDO STATE SECONDARY EDUCATION BOARD

Address: Ground Floor, Palm House Edo State Secretariat,
Benin City, Edo State.
Email: stateeducationboard@edostate.gov.ng

LIST OF SENIOR SECONDARY SCHOOLS IN OVIA NORTH EAST LGA

S/N	School Name	Address	School LGA
1	ARMY DAY S/S ,ISIOHOR	Army School Of Transport & Supply Isiohor	Ovia North East
2	EBOMISI S/S, EBOMISI	Ugbogiobo	Ovia North East
3	EZOMO COLLEGE, ORA	Benin-Akure Road, After By-pass, Ora	Ovia North East
4	UGHOTON S/S, EKEWAN	Upper Ekewan Rd, Ikpako/ Ekewan Village Benin City	Ovia North East
5	UTOKA G/S, UTOKA	utoka Village Community	Ovia North East
6	ARMY DAY S/S, EKENWAN	Inside Ekenhuan Barrack	Ovia North East
7	EGBETA S/S,	ALONG BENIN OKADA ROAD.	Ovia North East
8	EKOSODIN S/S, EKOSODIN	Ekosodin Secondary School Road, Ekosodin	Ovia North East
9	IGUADOLOR S/S, IGUADOLOR	Along Upper Siluko Road Iguadolor Community	Ovia North East
10	IGUEDAIKEN G/S, EKIADOLOR	Iguedaiken community, Along Ekiadolor Road	Ovia North East
11	IKPITI G/S, GELEGELE	Gelegele Town	Ovia North East
12	ISE G/S, ISE	Utekon Community	Ovia North East
13	NIFOR S/S, NIFOR	20 Isuwa Lane, Nifo	Ovia North East
14	OBA EREDIAUWA S/S, OBARENREN	Obarenren	Ovia North East
15	OGBESSE S/S, OGBESSE	Okada / Ogbesse Road	Ovia North East
16	OGHEDE S/S, OGHEDE	KM 6 Upper Ekehuan Rd	Ovia North East
17	OGUA S/S, OGUA	OFF BENIN-LAGOS ROAD.	Ovia North East
18	OKADA G/S, OKADA	ALONG OKADA ROAD.	Ovia North East
19	OKOKHUO S/S, OKOKHUO	ALONG EKIADOLOR/ IGUEDIAKEN ROAD.	Ovia North East
20	Ore-Nolomi Secondary School	UPPER SILUKO ROAD BENIN CITY.	Ovia North East
21	OSASIMWINOBA S/S	ALONG AKURE ROAD.	Ovia North East
22	OWAN S/S, OWAN	Benin Akure Road	Ovia North East
23	ST. DAVID BOYS M/S/S., EVBONIKA	Evboweka	Ovia North East
24	UGBINEH S/S, UGBINEH	KM 25 Upper Ekenwan Road, Ugbineh	Ovia North East
25	UHEN M/S/S, UHEN	OkadaOgbese Road	Ovia North East
26	UTESE S/S, UTESE	ALONG OKADA ROAD	Ovia North East

IDUMWONYI O.
Director, PRS Dept.,
SSEB.