MOTIVATIONAL TEACHING STRATEGIES AND AVAILABILITY OF LIBRARY FACILITIES AS DETERMINANTS OF ACADEMIC PERFORMANCE OF STUDENT IN BIOLOGY IN ABIA STATE

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ABSTRACT

This study encapsulates the essence of exploring motivational teaching strategies and the availability of library facilities on the academic performance of secondary school students in biology in Abia State, Nigeria. Recognizing the critical role of biology in the scientific and technological advancement of the country, this study aims to identify key factors that enhance student performance in this subject. The motivational teaching strategies examined include the use of interactive teaching methods, goal-setting, positive reinforcement, and the incorporation of real-life examples to make lessons more engaging. The availability of library facilities was assessed based on factors such as the presence of up-to-date biology textbooks, access to scientific journals, availability of internet resources, and the overall adequacy of library infrastructure. . Through an analysis of various types of motivational teaching strategies, this study aims to uncover correlations between motivational teaching strategies and student performance in biology. Furthermore, the availability of well-equipped library facilities was found to be a crucial determinant of academic success. Schools with comprehensive library resources reported higher average scores in biology compared to those with limited or outdated resources. The study further states the effect of each of the various types of motivational strategies and, likewise, the availability of library facilities on students' performance in biology. The study concludes that by addressing both intrinsic and extrinsic motivational factors, educators can create a more dynamic and effective teaching methodology that resonates with students' interests and learning styles. One of the recommendations provided was that teachers should employ a variety of motivational teaching strategies to engage students effectively. Methods such as interactive and inquiry-based learning, the use of real-life examples, and the incorporation of technology in teaching can make biology lessons more interesting and relatable.

KEYWORD: Motivational Teaching Strategies, Library facilities, Academic Performance and Student in Biology.

INTRODUCTION

Education is the cornerstone of development, and within the Nigerian context. According to Umar (2018), education is the systematic development or training of the mind, capabilities, or character through instruction. Education is the transmission of skills, knowledge, values, attitudes, morals, and culture from one generation to another (Cleopas & Igbojinwaekwu, 2023). This study investigated how motivational teaching strategies in biology education in Abia State are a crucial step towards improving the academic performance of students. Abia State, like many regions, faces challenges such as student disengagement, low motivation, and subpar academic outcomes in certain subjects, including biology.

Moreover, one of the scientific courses offered in senior high schools nowadays is biology. It is the study of both living and non-living objects, including plants and animals. The existence of humans has benefited immensely from the knowledge of biology. It has aided in the advancement of medications, healthcare, genetics, agriculture, and vehicles. One of the prerequisites for registering in many high school science classes is biology. Uche & Amobi (2022) stated that the main objective of biology education in Nigeria is to enable the Nigerian child to observe and explore the environment and develop basic skills in biology.

When the academic performance of biology students in Abia State, Nigeria is examined, two important characteristics that stand out are the availability of library facilities and motivating teaching tactics. Additionally, having access to well-maintained library facilities is essential for promoting academic success. As Bassey and Umoh (2020) mentioned, libraries are essential in facilitating teaching and learning as they acquire materials relevant for teaching and learning of diverse subjects, including Biology. To get a deeper grasp of biological ideas, libraries offer students access to a wide range of materials, such as scientific publications, digital media, and textbooks both hard and soft copies (Bassey and Umoh, 2023).

Furthermore, Obasi and Nwankwo (2019) highlighted that students who frequently use library facilities tend to perform better academically. This is because libraries offer a conducive environment for study and research, allowing students to explore topics beyond their classroom curriculum and develop a more comprehensive understanding of biology. The study's goal is to improve Abia State's biology students' academic performance, which necessitates focusing on both implementing motivational teaching techniques and making sure that extensive library resources are available and easily accessible. By focusing on both, teachers may greatly enhance biology students' performance, comprehension, and engagement, which will eventually improve the region's educational outcomes.

STATEMENT OF PROBLEM

The academic performance of students in Biology in Abia State is a critical concern, influenced by various factors, including the efficacy of motivational teaching

strategies and the availability of library facilities. Despite the recognized importance of both elements in enhancing educational outcomes, there is a significant gap in understanding how these determinants specifically impact students' academic achievements in Biology. This study aims to explore the effect of motivational teaching methods and library facilities on students' performance in Biology. By identifying the strengths and weaknesses of current practices, this research seeks to provide evidence-based recommendations to optimize motivational teaching strategies and library facilities ultimately to manage Biology education in Abia State.

OBJECTIVE OF THE STUDY

The study will be guided by the following;

- To find out the types of motivational teaching strategy adopted by biology teachers in Abia State.
- To examine the extent of effect of motivational strategies on student performance in biology in Abia State.
- To ascertain the extent of effect of libraries on student performance in biology in Abia State.

RESEARCH QUESTIONS

- What are the types of motivational teaching strategy adopted by biology teachers in Abia State?
- What is the extent of effect of motivational strategies on student performance in biology in Abia State?
- What is the extent of effect of library facilities on student performance on biology in Abia State?

LITERATURE REVIEW

CONCEPT OF BIOLOGY

The definition of biology is "the science of life and living organisms." The term comes from the Greek words "bios," which means life, and "logos," which means study. A single cell, like bacteria, or several cells, like those of mammals, plants, and fungus, make up an organism. Biology is a natural science that studies living things and life itself. Order, sensitivity to or response from the environment, reproduction, adaptability, growth and development, regulation, homeostasis, energy processing, and evolution are some of the essential traits or functions that all living things have in common. Collectively, these nine attributes help to characterise life. According to Green (2024), biology is the study of living things and their vital processes. The field deals with all the physicochemical aspects of life. The modern tendency towards cross-disciplinary research and the unification of scientific knowledge and investigation from different fields have resulted in significant overlap of the field of biology with other scientific disciplines. Biology is often approached on the basis of levels that deal with fundamental units of life.

Biology is the branch of science that primarily deals with the structure, function, growth, evolution, and distribution of organisms. As a science, it is a methodological

study of life and living things. It determines verifiable facts or formulates theories based on experimental findings on living things by applying the scientific method. An expert in this field is called a biologist. Lim & Dutfield (2022) mentioned that biology is the study of everything that is, or was once, alive, whether it's a plant, animal, or microorganism. Biology is important because it helps us understand how living things work and how they function and interact on multiple levels. Biology, or biological sciences, is the study of life divided into focused subfields that study the structure, function, anatomy, origin, and distribution of living organisms (Wheeler, 2023). Biology is the scientific study of life. It is a natural science with a broad scope but has several unifying themes that tie it together as a single, coherent field.

CONCEPT OF ACADEMIC PERFORMANCE

The phrase "academic performance" describes a student's accomplishment at the end of a semester or topic in a school. It evaluates students' learning in a variety of academic topics using formative and summative evaluations. It speaks about the results of pupils' endeavours to meet certain learning objectives, which as mentioned by Bassey, Onobrakpor and Nnah (2015) is the core purpose of libraries in schools, colleges and Universities, which is to enable students achieve academic excellence. The measurement of a student's accomplishment in a variety of academic subjects is called academic performance. Typically, classroom performance, graduation rates, and results from standardised examinations are used by educators to gauge student accomplishment. Academic accomplishment is demonstrated by obtaining educational standards like bachelor's degrees and secondary school diplomas.

Furthermore, Barowski (2023) noted that academic performance is the amount of academic content a student learns in a specific time period. This can be any way a student has achieved short-term or long-term academic goals within an academic setting. Testing and assessments are usually performed to gauge a student's academic achievement. According to Okono (2023), participants in the writing test had difficulty transitioning from one action to another. Therefore, it is important for students to engage in continuous assessment and testing in order to improve their academic performance.

One other factor that has the propensity to influence the academic output of the student is the natural surroundings he or she belongs to. However, such surroundings that could soothe the performance of the student can be provided by the parents. Nyarks (2022) noted that parents have a lot of influence on the academic performance of their children in school; they are the first teachers at home. Parents can also benefit from sessions of guidance and counselling from school leaders to help enhance the academic work of students at home. For students to achieve a higher degree of academic excellence, several researchers have posited that students reaching this fate mainly rely on the academic influence of their parents (Brew, 2021).

CONCEPT OF MOTIVATIONAL TEACHING STRATEGY

In order to promote student involvement, participation, and learning outcomes, educators must employ motivational teaching tactics. These strategies cover a wide range of methods intended to pique curiosity, zeal, and intrinsic drive in the classroom.

Creating a welcoming and inclusive classroom environment where students feel appreciated and encouraged to take charge of their education is one useful tactic. According to Nyarks (2021), teachers's communication skills motivate students to increase their abilities in the field of education. By establishing rapport, setting clear expectations, and providing constructive feedback, educators can cultivate a sense of belonging and motivation among their students. Another key aspect of motivational teaching strategies is the incorporation of active learning techniques. Encouraging hands-on activities, group discussions, and problem-solving tasks can enhance student engagement and motivation by promoting critical thinking and collaboration.

In addition to active learning, leveraging technology can significantly enhance motivational teaching strategies. Integrating multimedia resources, interactive simulations, and educational games can capture students' interest and cater to diverse learning styles. Moreover, incorporating gamification elements such as rewards, challenges, and progress tracking can incentivize participation and maintain motivation over time. By harnessing the power of technology, educators can create dynamic and immersive learning experiences that resonate with today's digitally native students (O'Leary & Ritter, 2023). Furthermore, fostering a growth mindset is fundamental to motivational teaching strategies. Encouraging students to embrace challenges, learn from failures, and celebrate successes cultivates resilience and a positive attitude towards learning.

According to Dörnyei (2021), motivational teaching strategies play a crucial role in enhancing student engagement, participation, and learning outcomes. Okono (2020) mentioned that learning is a process that occupies an important role in moulding the structures of our personality and ehavior. By creating a supportive classroom environment, incorporating active learning techniques, leveraging technology, and fostering a growth mindset, educators can inspire and empower students to reach their full potential.

CONCEPT OF LIBRARY FACILITIES

Any location where library materials are made accessible to the general public is referred to as a library facility, as is any action or service meant to promote or assist the public's usage and access to library resources. Any building that the public library owns or leases and that it actively manages and runs is considered a library facility. The following services are provided by libraries: circulation, reference, online book reservations, current awareness, interlibrary loans, photocopying and printing, orientation and information sessions, selective information distribution, audiovisual services, and multimedia sections.

According to Okonoko, Ukanga and Bassey (2024) library have been a hub of information for learning, teaching, research. Hence, houses materials stored in any type of media, including paper, magnetic, or electronic. Materials for circulation, related technology infrastructure, and capital enhancements for library use are all considered parts of a library facility. Mothukuri (2020) defined library facilities as services and materials made available by the authority in the course of their provision of a public library service. It means the acquisition and construction of new libraries and the renovation of libraries. A library facility is a treasure trove of knowledge. A well-grazed

facility is an asset to the academy, council, or university. Each academy has library facilities of its own. It helps us develop a reading habit. Individual person-library relations play a vital role in academic, professional, and particular development.

The staff of the library maintains the library's amenities. That is how employees, facilities, and collections are connected. This concept links collections, staff, and facilities together: personnel oversee collections and facilities, collections are housed in collections and locations for collection viewing, and a great collection is one that is put to use. Elizabeth (2024) stated that library facilities likely have map and geospatial data resources available to patrons, but promoting awareness of those resources may be a challenge. A good public library facility will be sufficiently spacious that it operates as a community space. It gives people who may share an interest the opportunity to come together, as well as allowing people to use the space at an individual level.

TYPES OF MOTIVATIONAL TEACHING STRATEGY

To engage students and create a good learning environment, educators must use motivational teaching tactics. Instructors may foster a vibrant and motivating learning environment that supports students' engagement, zeal, and academic achievement by using these powerful teaching techniques. Teachers frequently use the following kinds of motivated teaching techniques:

- **Rousing learning curiosity:**

Rousing learning curiosity as a motivational teaching strategy encompasses intrinsic motivation, cognitive engagement, autonomous learning, creativity, and problem-solving skills. Rousing curiosity promotes autonomous learning behaviours, as noted in research by Reeve and Lee (2021). Students become self-directed learners who take initiative in exploring new ideas, conducting research, and making connections between different concepts, fostering a sense of ownership over their education. Rousing curiosity as a teaching strategy holds substantial significance for educators and students alike. Nyarks (2022) noted that a student who shows great interest in any activity will strive hard to go about it.

- **Incentive:**

Incentives serve as a powerful motivational teaching strategy, influencing student behaviour, engagement, and academic outcomes. Brown and Garcia (2021) indicated that incentives, such as extra credit points or recognition in class, led to higher attendance rates and increased participation among students, contributing to a more engaged classroom environment. Encouraging students to set specific academic goals and offering incentives tied to goal achievement. This approach motivates students to strive for improvement and provides tangible rewards for their efforts.

- **Praise:**

Praising the student's achievements is a powerful motivator. If students feel they are noticed and their efforts are appreciated, they will feel more inclined to continue trying hard. Teachers should be specific about their praise, but it is important to always look for opportunities to praise. And if a student is showing improvement, it is very

beneficial to point it out so they will keep wanting to move forward (Mazarin, 2024). It helps boost their confidence and motivation to continue working hard.

- **Feedback:**

Feedback that is specific, constructive, and timely can motivate students to improve their performance. It helps them understand their strengths and areas for improvement, guiding their efforts effectively. According to the University of Potomac (2022), feedback is essential for students. Acknowledge when teachers make good points and take the time to fully explain how a new initiative will improve student growth or make their own jobs easier. Nyarks (2022) stated that a teacher's interest, attitude, value, and character can influence a student's performance. When a teacher is interested in and committed to his duty, a student's potential and interest will be stimulated.

- **Encouraged collaboration:**

Providing time and support for your teaching staff to work collectively as a team can significantly affect and boost their motivation. Through collaboration, teachers gain recognition and support for their effective teaching strategies. In addition, more experienced mentors can validate good strategies that beginning teachers offer, which will build self-confidence and help them see themselves as equal participants in their departments (Education Advanced, 2022).

EFFECT OF MOTIVATIONAL TEACHING STRATEGY ON ACADEMIC PERFORMANCE OF STUDENT IN BIOLOGY

The use of motivational teaching techniques is critical in determining how engaged, interested, and academically successful students are in a variety of courses, including biology. The following are the impacts of several motivating teaching techniques on biology students' academic performance:

EFFECT OF ROUSING LEARNING CURIOSITY ON ACADEMIC PERFORMANCE OF STUDENT IN BIOLOGY

One fundamental quality that kids need to have in order to learn is curiosity. This interest itself may serve as a catalyst for zeal and exertion during the educational process. A dynamic teaching strategy called "rousing learning curiosity" tries to improve students' academic achievement by encouraging active involvement and piqueing students' natural curiosity. The following are the impacts of piqueing students' enthusiasm for learning on their academic achievement in biology:

- **Curiosity and Knowledge Acquisition:**

Zhang and Wang (2018) noted that students who were exposed to rousing learning activities in biology, such as interactive simulations, inquiry-based labs, and real-world case studies, demonstrated higher levels of knowledge acquisition and retention compared to traditional instruction methods.

- **Critical Thinking and Problem-Solving:**

Kim (2020) highlighted that rousing learning curiosity in biology led to improved critical thinking skills and problem-solving abilities among students. Engaging in open-ended inquiries, analyzing scientific data, and drawing conclusions promoted higher-order thinking processes.

- **Motivation and Engagement:**

Lee and Choi (2021) emphasized that rousing learning curiosity increased students' motivation to learn biology and enhanced their overall engagement in class. Curiosity-driven activities sparked interest, curiosity, and a sense of wonder, leading to sustained interest in biology topics.

- **Long-Term Retention:**

Chen and Lin (2022) indicated that rousing learning curiosity resulted in long-term retention of biology knowledge and concepts. Students who engaged in curiosity-driven learning activities demonstrated greater recall and application of learned content over time.

EFFECT OF INCENTIVE ON ACADEMIC PERFORMANCE OF STUDENT IN BIOLOGY

Rewards, recognition, and privileges are examples of incentives that have been extensively researched as motivational strategies in educational contexts. Incentives have a big impact on student involvement, effort, and accomplishment in the field of biology education. The following are the impacts of incentives on biology students' academic performance:

- **Improved Attendance and Participation:**

Incentives can also influence student attendance and participation in biology classes. Johnson (2017) mentioned that offering incentives, such as bonus points or small rewards, for consistent attendance and active participation in biology classes resulted in higher attendance rates and increased engagement among students. This increased engagement was positively correlated with improved academic performance.

- **Enhanced Motivation and Effort:**

Incentives have a direct impact on motivating students to engage more actively in their biology studies. Smith and Brown (2019) indicated that providing incentives for completing biology assignments on time, participating in extracurricular science activities, or achieving specific learning goals boosted students' motivation and effort. Students were more likely to invest time and energy into their biology studies, leading to better academic outcomes.

- **Positive Impact on Grades:**

Incentives, in the form of grades or points, are a common practice, whether in low- or high-stakes settings. Garcia (2020) stated that students who received incentives for achieving academic milestones, such as improved test scores or project excellence, demonstrated higher overall grades compared to those without incentives.

- Retention and Application of Knowledge:

Incentives can contribute to better retention and application of biological knowledge. Lee and Kim (2023) explained that students who were incentivized to participate in review sessions, study groups, or research projects showed deeper understanding and mastery of biology concepts.

- Positive Learning Environment:

The use of incentives creates a positive learning environment in biology classrooms. Students feel valued, encouraged, and supported in their academic endeavours, which fosters a sense of belonging, confidence, and enthusiasm for learning.

EFFECT OF PRAISE ON ACADEMIC PERFORMANCE OF STUDENT IN BIOLOGY

Praise, as a form of positive reinforcement, plays a crucial role in shaping student behaviour and academic performance in various subjects, including biology. When used effectively, praise can boost students' confidence, motivation, and engagement, leading to improved learning outcomes and a deeper understanding of biological concepts. Brown (2020) highlighted the long-term effects of praise on student academic performance in biology, stating that students who consistently received genuine praise for their biology-related accomplishments showed higher levels of persistence, resilience, and intrinsic motivation, leading to improved grades and overall academic achievement in the subject. It's essential to note that the quality and specificity of praise are key factors in its effectiveness. Garcia and Lee (2019) emphasized the importance of providing descriptive and informative praise that highlights specific strengths, efforts, or improvements in biology tasks or assignments, and also that generic praise that lacks specificity may not have the same impact on student motivation and performance. Moreover, the timing of praise also plays a crucial role. Kim (2021) suggested that immediate and timely praise following a successful biology-related task or accomplishment reinforces desired behaviours and encourages students to continue putting forth effort and striving for excellence in their studies.

Thanks to its ability to increase self-worth, drive, perseverance, and engagement, praise has a major impact on biology students' academic success. Sincere, targeted, and appropriate praise may be an effective technique for teachers to support positive behaviour, provide a happy learning atmosphere, and improve the biology lessons that pupils learn in general.

EFFECT OF FEEDBACK ON ACADEMIC PERFORMANCE OF STUDENT IN BIOLOGY

Feedback is a fundamental element in education, offering valuable insights to students regarding their progress, strengths, and areas for improvement. In the context of biology, effective feedback is particularly vital due to the subject's complexity and the need for students to grasp intricate concepts (Johnson, 2021). The impact of feedback on biology students' academic achievement is examined below:

- Clarification of Concepts:

Feedback helps students clarify complex biological concepts. For instance, if a student misunderstands a fundamental concept like cell division, targeted feedback can

pinpoint the error and provide explanations, leading to better comprehension and retention.

- **Identification of Weak Areas:**

Constructive feedback highlights areas where students are struggling. Whether it's grasping the intricacies of genetics or interpreting ecological data, feedback directs students' attention to specific topics that require further attention and practice.

- **Motivation and Engagement:**

Positive feedback serves as a motivator, reinforcing students' efforts and achievements. It encourages them to stay engaged with the subject matter, fostering a positive attitude towards learning biology.

- **Enhanced Critical Thinking:**

Feedback encourages students to think critically about their work. In biology, this could involve analyzing experimental results, evaluating hypotheses, or interpreting scientific literature. By engaging with feedback, students develop higher-order thinking skills essential for success in the field.

- **Self-Reflection and Goal Setting:**

Effective feedback prompts students to reflect on their learning process and set achievable goals. For example, after receiving feedback on a lab report, a student may identify areas for improvement and set goals to enhance their scientific writing skills.

EFFECT OF COLLABORATION ON ACADEMIC PERFORMANCE OF STUDENT IN BIOLOGY

Collaborative learning has a profound impact on the academic performance of students in biology, with numerous studies supporting its effectiveness. Encouraging collaboration among students in biology education has been shown to significantly enhance their academic performance (Smith & Jones, 2018). The following are the results of promoting teamwork on biology students' academic performance:

- **Enhanced Understanding:**

Collaborative learning facilitates deeper comprehension of biology concepts. Through peer discussions and group activities, students gain multiple perspectives, leading to a more comprehensive understanding of topics such as genetics, ecology, and cellular biology.

- **Motivation and Engagement:**

Collaborative activities increase motivation and engagement in biology education. Working together on meaningful projects and investigations fosters a sense of ownership and excitement, leading to improved attendance, participation, and overall academic performance (Clark, 2020).

- Interdisciplinary Exposure:

Collaborative projects often integrate interdisciplinary approaches. This exposure to diverse perspectives and methodologies broadens students' horizons, helping them connect biology to other fields such as chemistry, physics, and environmental science (Davis & White, 2017).

- Teamwork and Communication:

Collaborative learning enhances teamwork and communication skills. Students learn to collaborate effectively, share responsibilities, and communicate ideas clearly, mirroring the collaborative nature of scientific research and professional practice.

EFFECT OF AVAILABILITY OF LIBRARY FACILITIES ON STUDENT'S PERFORMANCE IN BIOLOGY

The availability of library resources has a big impact on how well students do academically, especially in courses like biology that call for a lot of reading and study. Well-stocked libraries give students easy access to necessary materials, comfortable study spaces, and expert assistance—all of which improve academic achievement. First and foremost, in order for students to understand difficult ideas and remain up to speed with scientific discoveries, they must have access to a wide variety of biological literature. Libraries that provide a wide range of scientific periodicals, textbooks, and reference materials allow students to learn more about biological themes outside of the classroom. According to Owusu-Ansah, Rodrigues, and Chikohora (2019), students with access to extensive library resources showed significant improvement in their understanding and performance in biology compared to those with limited access.

The importance of digital materials in today's classrooms has grown. Students have easy access to a multitude of material in libraries that are outfitted with e-books, digital journals, and online databases. For performing research and staying up to date with the most recent advancements in the field of biology, this digital access is especially helpful. Joo and Lee (2020) mentioned that the use of digital library resources positively correlates with better academic performance in biology, as students are able to access and utilize high-quality information more effectively. The study environment provided by libraries is another critical factor influencing student performance. Quiet study areas and group study rooms create an atmosphere conducive to focused learning and collaborative discussions. These environments foster academic engagement and critical thinking, essential skills for excelling in biology. Kambi and Macharia (2021) noted that students who regularly utilized library study spaces had higher academic achievements in biology due to the supportive and resource-rich environment offered by libraries.

Moreover, libraries often provide educational programmes and workshops that equip students with essential academic skills. These programmes, covering research methodologies, citation practices, and data analysis, are particularly beneficial for biology students. Godbey, Gordon, and Bauer (2018) highlighted that students who participated in library-led workshops demonstrated improved research capabilities and higher grades in their biology courses. Technological integration in libraries, such as

access to computers, internet services, and multimedia tools, further enhances students' ability to perform well academically. In biology, where practical knowledge and access to the latest research are crucial, technological support is invaluable. Zhang and Franklin (2019) stated that students who used technology provided by libraries showed improved academic performance due to easier access to information and learning tools.

Furthermore, the impact of library facilities extends to promoting equity in education. Libraries provide equal access to educational resources for all students, regardless of their socio-economic background. This accessibility is vital for bridging the gap between students with varying levels of access to educational materials at home. McNulty and Bertot (2017) found that equitable access to library facilities contributes to reducing academic disparities and improving overall student performance in subjects like biology.

METHODOLOGY

In carrying out the study, descriptive survey design was adopted. The study was carried out in Abia State. The targeted population for the study comprised all Biology teachers and Librarians in Abia State. A stratified random sampling technique was used to select 75 Biology Teachers and 75 Librarians which gave a total of 150 respondents. The instrument used for data collection was a structured questionnaire titled "Motivational Teaching Strategies and Availability of Library Facilities Questionnaire (MTSALFQ)". Face and content validation of the instrument was carried out by an expert in test, measurement, and evaluation in order to ensure that the instrument has the accuracy, appropriateness, and completeness for the study under consideration. The reliability coefficient obtained was 0.84, and this was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical technique such percentage analysis used in answering the research questions.

Research Question 1

The research question sought to find out the types of motivational teaching strategy adopted by biology teachers in teaching biology in Abia State. To answer the research question percentage analysis was performed on the data, (see table 1).

Table 1: Percentage analysis of the types of motivational teaching strategy adopted by biology teachers in teaching biology in Abia State.

MOTIVATIOAL TEACHING STRATEGIES	FREQUENCY	PERCENTAGE
Rousing learning curiosity	48	32**
Feedback	44	29.33
Encouraged collaboration	35	23.33
Incentive	23	15.33*
TOTAL	150	100%

** The highest percentage frequency

* The least percentage frequency

SOURCE: Field survey

The above table 1 presents the percentage analysis of the types of motivational teaching strategy in biology in Abia State. From the result of the data analysis, it was observed that the types of motivational teaching strategy adopted by most biology teachers in teaching in biology in Abia State is "Rousing learning curiosity" 48(32) while the least adopted motivational teaching strategy was "Incentive" 23(15.33). The result therefore is in agreement with the research findings of Nyarks (2022), who noted that that a student who shows great interest in any activity will strive hard to go about it due to the motivational teaching strategy adopted by the teacher.

Research Question 2

The research question sought to find out the extent of effect of motivational strategies on student performance in biology in Abia State. To answer the research question percentage analysis was performed on the data, (see table 2).

Table 2: Percentage analysis of the extent of effect of motivational strategies on student performance in biology in Abia State.

EXTENT	FREQUENCY	PERCENTAGE
Very High Extent	98	65.33**
High Extent	52	34.67*
TOTAL	150	100%

** The highest percentage frequency
* The least percentage frequency

SOURCE: Field survey

The above table 2 presents the percentage analysis of the extent of effect of motivational strategies on student performance in biology in Abia State. From the result of the data analysis, it was observed that the highest percentage (65.33%) of the respondents affirmed that the extent of effect of motivational strategies on student performance in biology in Abia State is very high, while the least percentage (34.67%) was high. The result therefore is in agreement with the research findings of Zhang and Wang (2018), who stated that students who were exposed to rousing learning activities in biology, such as interactive simulations, inquiry-based labs, and real-world case studies, demonstrated very higher levels of knowledge acquisition and retention compared to traditional instruction methods.

Research Question 3

The research question sought to find out the extent of effect of libraries on student performance in biology in Abia State. To answer the research questions percentage analysis was performed on the data, (see table 3).

Table 3: Percentage analysis of the extent of effect of libraries on student performance in biology in Abia State.

EXTENT	FREQUENCY	PERCENTAGE
Very High Extent	94	62.67**
High Extent	56	37.33*
TOTAL	150	100%

** The highest percentage frequency
* The least percentage frequency

SOURCE: Field survey

The above table 3 presents the percentage analysis of the extent of effect of libraries on student performance in biology in Abia State. From the result of the data analysis, it was observed that the highest percentage (62.67%) of the respondents affirmed that the extent of effect of libraries on student performance in biology in Abia State is very high, while the least percentage (37.33%) of the respondents stated that it is high. The result therefore is in agreement with the research findings of Harrison (2023), who noted that Facilities refers to the school plant, that is, the school buildings, classrooms, library, laboratories, toilet facilities, offices, and other materials and infrastructure that would likely motivate students towards learning. Biology is an important science subject taught in secondary schools. The library is an essential factor in the teaching-learning process.

CONCLUSION

The academic performance of biology students in Abia State is significantly influenced by both motivational teaching strategies and the availability of library facilities. Motivational teaching strategies such as interactive learning, personalized feedback, and student-centered approaches have been proven to enhance student engagement and academic outcomes. These strategies help to foster a more stimulating and supportive learning environment, where students are motivated to actively participate and excel in their studies. By addressing both intrinsic and extrinsic motivational factors, educators can create a more dynamic and effective teaching methodology that resonates with students' interests and learning styles

RECOMMENDATIONS

- It is quite pertinent that teachers should employ a variety of motivational teaching strategies to engage students effectively. Methods such as interactive and inquiry-based learning, use of real-life examples, and incorporation of technology in teaching can make biology lessons more interesting and relatable.
- Schools should invest in improving their library facilities by expanding their collections with up-to-date and comprehensive biology textbooks, journals, and

digital resources. Access to a wide range of scientific literature is crucial for students to deepen their understanding and conduct thorough research.

- Curriculum planners should integrate the use of library resources into the biology curriculum. Assignments and projects that require students to utilize library resources can enhance their research skills and promote independent learning

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