Educational Facilities and Students Academic Performance in Biology inTertiary Institutions in Cross River State, Nigeria.

DOI: https://doi.org/10.60787/tjesds.vol1no3.38
(https://tjesds.org.ng/index.php/home/article/view/38)
(https://doi.org/10.60787/tjesds.vol1no3.38)

Dr. Micheal Obun Etan .
Department of Evironmental Education
University of Calabar, Calabar
Mickkyetan1@gmai 07038847618

Ugboma Giftie Emmanuel
Institute of Education
University of Calabar,Calabar.
ugbomagifie@gmail.com
08050936676

Abstract

This study evaluate the extent to which "Educational facilities influence students academic performance in biology in tertiary institution in Cross River State, Nigeria". To achieve the study, two research question was posed and two null hypothesis was formulated and tested at.05level of signifance. The population of the study comprised of 2,771 students were selected from the four tertiary institution in Cross River State, which included university of calabar, university of cross river state, college of Education Akaamkp and federal college of education, Odudu. A sample of 831 students offering biology education was selected from the four tertiary institution in Cross River State. The instrument for dada collection was 10 items questionnaire. The instrument was titled: Use of educational facilities questionnaire (UEFQ). From the administered questionnaire data was organized and analyzed using analysis of variance (ANOVA). The result revealed that there is no significant difference in the use of educational facilities like libraries and ICT laboratory on students academic performance in biology in tertiary institution in Cross River State.

In view of the finding of the study, it was concluded that school facilities remain an essential factor in the realization of the goal of education.

Base on this result, it was recommended among others, funding and support for library facilities and resources should be expanded by the government and institution managers to

serve students learning and researcher. Investing in ICT infrastructure and facilities is crucial for fostering contemporary instructional methods and digital capabilities among students.
Keywords: Educational facilities; Academic performance; Biology education; Tertiary institutions

Introduction

Education has been seen as a veritable tool for the development of a society. It molds, builds and sharpens the individual's character, making him valuable in the society. This suggests that a nation that lacks sound educational culture and philosophy stands the risk decay, whereas a nation that sees to the development of its educational sector is bound to achieve great success. Onyebuenyi and Oluka, (2022) defined education as the process by which a man is made useful through the inculcation of moral and acceptable standards for wide understanding and effective utilization of the resources within his environment and beyond. Education through its pedagogical dispositions equips an individual with the necessary capabilities to survive in a society.

While various factors such as student socioeconomic status and parental involvement are among the important factors and predictors of student academic performance, utilizing school facilities offer a feasible opportunity for improving academic performance in biology which has brought about the problems of utilization of school facilities and poor academic performance on students in biology. In other to achieve the goals of academic performance of students in biology, a lot needs to be done in the school system as the performance of students has been greatly affected by factors like school facilities.

According to Adesina and Ogunsanjo, (2014), Students' achievement can also be referred to as academic achievement. Academic performance is the outcome of education and the extent to which a student has achieved their educational goal. Performance is usually measured by examinations or test assessment. Students' performance in biology cannot be traced by a single factor but by multiple factors such as environment, student attitude, teaching techniques, school facilities and many more. Moronkola, (2015) emphasized that students' achievement, activities, perception of their coping strategies and positive attributes were indirectly related to students' composite scores through academic performance in schools.
The use of Educational facilities in teaching and learning, have been observed to be a vital and potent factor to quality education which help to enhance students' academic performance in biology. These educational facilities play a vital role in providing students with a conducive learning environment and resources necessary for student educational development. Effective learning can occur through one's interaction with the environment. Environment here refers

to the facilities that are available to facilitate students learning outcomes or achievement (Wilcockson, 2014).

These school facilities range from physical structures like laboratories, libraries and lecture halls to materials used for teaching such as books, chalks, among others. These facilities go a long way to impact and enhance students' performance in biology and can be realized when there are qualified teachers to handle the courses and utilize the available educational facilities. These school facilities are sometimes either available in one environment and unavailable in another causing structural imbalance which could lead to disparity among learners and their academic performance (Akomolafe & Adesua,2016).

A conducive and well-equipped learning environment can enhance students' motivation, focus and knowledge retention. A learning environment has significant impact on the cognitive and affective engagement of students (Rosenthal & Zimmerman,2014). These Educational facilities provide access to resources and tools necessary for learning. Understanding the relationship between these facilities and academic performance can help educational institutions make informed decisions regarding infrastructure development and resources allocation, ultimately enhancing students' learning outcomes. A greater performance or achievement of students is as a result of strong and effective facilities system (Mokaya, 2013)

These educational facilities often serve as spaces for collaboration and interaction among students. Such interactions can contribute to a deeper understanding of concepts like critical thinking and problem-solving skills. The use of educational facilities such as Libraries and ICT laboratories can influence students' study habits and productivity, enabling students' complete academic tasks more efficiently. However, the cry about the falling standard of education in the country is attributed to inadequate educational facilities utilization in Tertiary Institutions. Some of these facilities can be regarded as the items that make teaching and learning possible, effective and easier in the school.

Good school facilities support educational enterprises thereby influencing academic performance. The establishment of schools is for the purpose of teaching and learning hence it is important that the needs of the learners and also teachers/lecturers are properly accommodated to facilitate the teaching and learning process for effective academic outcomes. The better the performance of students, the more effective the school system is assumed to be (Philas, 2015).

Effective educational facilities are responsive to the changing programs of educational delivery and at a minimum, schools should provide a physical environment that is comfortable, safe, secure, accessible, well illuminated, well ventilated and aesthetically pleasing. However, educational facilities do not only consist of physical structures, variety of building systems such as mechanical, plumbing, electrical and power, it also includes furnishings, materials and supplies as well as various aspects of the building grounds (Osuji, 2016).

Academic performance according to Bell, cited by Isah, (2015) is a measurement of success of how well a student meets standards set out by the institution. Academic performance is how students deal with their studies and how they cope with or accomplish different tasks given to them by their instructors (Siva in Isah 2015). Academic performance measures the aspect of behavior that can be observed at a specific period. This can be obtained with the use of either teacher-made test or standardized achievement test developed from school subjects like biology. The fact is, without educational facilities, teachers cannot have effective teaching. The condition of facilities in a learning environment determines teachers and students' performance because if facilities are inadequate and not utilized, the learning process would be impaired and academic productivity may decrease (Elisu, Abdul-Razak & Isaac, 2016).

Educational facilities like libraries serve as a hub for knowledge and information and offer a wide range of books, journals, research materials and digital resources that support students' academic pursuit. (Lisdune Network 2016). By utilizing libraries effectively, students can engage in independent study, research and critical thinking, thereby enhancing their understanding of various subjects and courses. Access to well stocked library facilitates comprehensive learning and enables students and teachers to explore diverse perspectives, leading to improved academic performance.

ICT laboratories provide hands-on experiences and practical applications of theoretical concepts. These facilities offer students the opportunity to conduct experiments and engage in scientific inquiry, developing essential laboratory skills (Omiko, 2015). Through these practical sessions, students gain a deeper understanding of scientific principles and technological concepts. The use of these equipment in ICT laboratories equip students with valuable skills for the digital age and contributing to academic performance in biology. e-learning platforms and online resources that enhance educational opportunities for students in biology. By eliminating disruptions caused by power outages, students focus on their studies and maximize their academic performance.

ISSN: 1595-8051 EISSN: 3092-9571

These facilities provide students with valuable resources and practical learning opportunities. By leveraging these educational facilities effectively, students can enhance their understanding and overall academic performance in biology.. The state of educational facilities in the Nigerian educational systems is very discouraging. Often found are shortage or under equipped lecture rooms, laboratories. However, teachers need facilities in an ideal learning environment to stimulate student' interest in learning which would invariably lead to high performance. The importance of Educational Facilities cannot be relegated therefore facilities like modern laboratories, libraries, are to be put in place in all our schools (Bandele, 2013). Quantity and quality of physical facilities used during the teaching and learning process directly influences the output sent to the society

Ikegbusi, Eziamaka and Ihenacho (2021) asserted that school facilities are needed to develop cognitive areas of knowledge, abilities and skills that are necessary for academic achievement. From the forgoing, one can see that school facilities play a crucial role in academic achievement of students in biology. This problem of poor performance is more pronounced in ill-equipped schools (Ikegbusi, Onwuasonya & Chigbo-Okeke, 2016)

According to Ikegbusi (2019), learning can occur through one's interaction with the environment. Environment here refers to facilities that are available to facilitate students' learning outcomes. According to Limon (2016), facilities form one of the potent factors that contribute to academic performance and achievement in the school system. However, many institutions in Cross River State are carrying academic activities with little or poor available educational facilities that are not being utilized. This goes a long way to show the poor recognition of the utilization of educational school facilities on students' academic performance in biology by the management and school administrators. This present study therefore, seeks to determine how facilities like Libraries and ICT laboratories, influence students' academic performance in biology in Tertiary Institutions in Cross River State.

Methodology

The design adopted in conducting this study is descriptive survey method. The design was considered appropriate because it can determine the quality of research.it also involves gathering of data that describe events and then organized.it involves collections of quantitative information that can be tabulated along a continuum in numerical form, such as scores, or it can describe categories of information. This research design is therefore considered appropriate for this study because it will allow the researcher to make use of a representative sample of the population from the generalization of the study result.

The study is conducted in tertiary institution in Cross River State, Nigeria. The study population consist of all students in the faculty of education in the four selected tertiary institution in Cross River State in 2020/ 2021 academic session. The selected department have a total population of (2,771) students from the four faculty of education in tertiary institution. The study adopted purposive random sampling techniques.

Research questions

i. To what extent does the use of library influence academic performance of students in biology.

ii. To what extent does the use of ICT laboratory influence academic performance of students in biology.

Research Hypothesis

i. There is no significant influence of the use of libraries on students' academic performance in biology.

ii. There is no significant influence of the use of ICT laboratory on students' academic performance in biology.

The questionnaire was the instrument use for data collection for the study. The researcher first introduce himself to the respondents and inform them of the exercise and the essence of giving objective responses to the items.

Instrument

Data was collected using a structured questionnaire, titled use of educational facilities questionnaire.

Research Results

The results of the study are presented hypothesis by hypothesis. Each hypothesis was tested at .05 level of significance.

Ho_1

To what extent does the use of the library influence students' academic performance in biology.

ISSN: 1595-8051 EISSN: 3092-9571

Table1: One-way Analysis of Variance (ANOVA) influence of the use of libraries on students' academic performance in Biology

Variable	Use lib. n	N	of Mea	Std. Deviation		
Students' academic performance in biology	High	312	15.34	2.71		
	Low	221	13.17	2.26		
	Moderate	298	16.83	2.14		
	Total	831	28.48	3.63		
Variable	Source of Variation	SS	Df	M	F	p-value
	Between Groups	42232.62	2	21116.31	213.2*	.0000
	Within Groups	85781.22	828	171.22		
	Total	128013.84	83			

Significant .05 level

The analysis of Table 1 showed that the calculated F ration of 213.2 (P<.05) is significant at 2 and 828 degree of freedom. Also, the P value of 0.0000 is less than P<.05. This implies that 2.1% of the variance in the dependent variable (academic performance in biology) could be accounted for by the use of library facilities by students.

However, though the percentage contribution is small, a close look at the table showed that (F=213.2, P<.05), since P (.0000) is less than P (.05), it means that there is a significant influence of Library facility use on students' academic performance, hence the Null Hypotheses is rejected that is to say that adequate use of library facilities will go a long way in promoting students' academic performance in biology in Tertiary Institutions in Cross River State.

The study is inline with Atanda (2021) perceived school library as that part of the school where a collection of books, periodical magazines and newspapers,films and firm-strips, videotapes, rewarding of all types, slides, computers study kits are housed for the use of teachers and students for learning. The study is also in accordance with Suresha (2016)studied the uses' satisfaction with library resources and services and services among the faculty members and students of st. claret degree college, Bangalore. the study found that a large

number of respondents were satisfied with library resources and services and that books are the most widely used

H_{O2}

To what extent does the use of ICT laboratories influence academic performance of students in biology.

TABLE2: One-way Analysis of Variance (ANOVA) influence of **i**nfluence of the use of ICT on students' academic performance in Biology.

Variable	Use of ICT	N	Mean		Std. Deviation	
Students' academic performance in Biology	Low	226	18.12		3.07	
	High	319	13.77		2.36	
	Moderate	286	17.82		2.70	
	Total	831	33.48		3.95	
Variable	Source of Variation	SS	Df	MS	F	p-value
	Between Groups	42232.62	2	21116.31	52.33*	.0021
	Within Groups	85781.22	828	171.22		
	Total	128013.84	830			

*Significant at .05 level

The analysis in Table 2 showed that the calculated F ration of 52.33 (P<.05) is significant at 2 and 828 degree of freedom. Also, the P.value of 0.0021 is less than P<.05. This implies that 0.5% of the variance in the dependent variable (Students' academic performance in biology) could be accounted for by the use of ICT laboratories in Tertiary Institutions. However, though the percentage contribution is low, a close look at the table showed that (F=52.33, P< .05). Since P (0.0021) is less than P(.05), it means that there is a significant relationship between ICT facilities use and students' academic performance in biology, hence the Null Hypotheses is rejected. It therefore means that adequate use of ICT laboratories will go a long way to promote students' academic performance in biology in Tertiary Institutions in Cross River State. The study is in line with okeke (2021establishes that ICT laboratory enhance the students' research skills, a majoy determinant of academic performance.

ISSN: 1595-8051 EISSN: 3092-9571

Uğur, Pektaşa, Harun and Talip (2019) equally found that experience of students in technology-equipped laboratories has been seen as an effective way to teach and learn physics. In this sense, experiments and demonstrations using computer-based data collection systems and simulations that allow students to design their own virtual experiments in the physics laboratory come into prominence. The researchers also investigated the effects of computer-based laboratory applications and virtual laboratory applications on students' graph drawing, understanding and interpretation skills, attitudes towards the physics laboratory and motivation for learning science. Sixty university students participated in the pre-test post-test semi-experimental design study.

Discussion of the finding:

The discussion of the finding of this study is presented hypothesis by hypothesis.

The result of hypotheses one revealed that there is significant influence of the use of library facilities on students' academic performance. This conclusion was based on the fact that the calculated F ratio is 213.2. This means that 2.0% of the variance in the dependent variable (students' academic performance in biology could be accounted for by the use of library facilities by students in tertiary institutions. Thus the Null hypotheses was rejected and the alternate hypotheses retained. This means that there is a significant influence of library use on students' academic performance in biology in tertiary institutions in Cross River State, Nigeria.

This finding lends credence to Ikegbusi, Eziamaka and Ihenacho (2021) who asserted that school facilities are needed to develop cognitive areas of knowledge, abilities and skills that are necessary for academic achievement. The finding also supports Ikegbusi, Onwuasonya and Chigbo-Okeke (2016) who noted that poor performance is more pronounced in ill-equipped schools.

The result of hypotheses two revealed that there is significant influence of the use of ICT laboratories on students' academic performance in biology. This conclusion was based on the fact that the calculated F ration is 52.33. This means that 0.5% of the variance of the dependent variable (students' academic performance in biology) could be accounted for by the use of ICT laboratories by students in tertiary institutions thus the Null hypotheses was rejected and the alternate hypotheses retained. This means that there is a significant influence of ICT laboratories use on students' academic performance in biology in Tertiary Institutions in Cross River State, Nigeria.

This result is in line with Ali, Haolader and Muhammad (2013) who averred that the use of ICT is imperative as it gives chance to the instructors and learners to operate, store, control

and retrieve data other than promoting self- regulated and active learning. The result also agrees with Talukder et al (2016) who worked on the impact of ICT on students' performance in the undergraduate level of tertiary institutions in Bangladesh found that there is significant relationship between the use of ICT laboratories and performance of students. ICT is one of the school facilities that must be available for its effective functioning. This is because technology can drive learning of the students as they use it to search for information, get materials, attend lectures and so on.

Conclusion .

The study examined the influence of educational facilities and learner's academic performance in biology in tertiary institutions in Cross River State. The study concluded that the use of library has greatly influenced students' academic performance in biology. Thus, there is a high and significant influence of the use of libraries on students' academic performance. This implies that the use of libraries has a positive and significant influence on students' academic performance in biology in tertiary institution in Cross River State. The study concluded that there is high and significant influence of the use of ICT laboratories on students' academic performance. This implies that the use of ICT laboratories has positive and significant influence on students' academic performance in biology in tertiary institution in Cross River State.

Recommendation:

Based on the find of the study; following recommendation are considered.

1. Funding and support for library facilities and resources should be expanded. To serve student learning and research requirements, it is advised that the library collection be regularly upgraded and expanded, both physically and digitally. The impact of libraries on academic achievement may be increased by including library education and activities within the academic curriculum.
2. Lecture rooms should be equipped with modern technological devices like whiteboard and tablets to enhance the learning process.

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ISSN: 1595-8051 EISSN: 3092-9571

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