

THE IMPACT OF LIBRARY TYPE USE ON PERCEIVED ACADEMIC PERFORMANCE OF PHYSICS STUDENTS IN FEDERAL COLLEGE OF EDUCATION, ABEOKUTA, OGUN STATE

By

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Abstract

The low level of college students' academic performance in physics has been a major concern for major stakeholders. However, the role of library in the improvement of students' academic performance in physics cannot be down played. This study therefore examines the impact of library type (Physical and Internet) use on perceived academic performance of physics students in Federal College of Education, Abeokuta, Ogun State. The study adopted descriptive survey research design. All the thirty-four (34) 200level and 300level physics students were purposively sampled for the study. The validated self-designed Questionnaire was used. The data collected were analyzed using frequency counts, simple percentages and an independent sample t-test. Findings from the study showed that physics students in the Federal College of Education perceived their performance in physics to be high. The study revealed that the majority of the students prefer the physical library to the Internet library. Furthermore, the result showed that Although students patronize physical library than internet library, their performances do not vary significantly based on the type of library used. It was recommended that government and college administrators should provide well equipped and functionary library for student in order for students to always be satisfied with the service provided and consequently enhance their patronage of the physical library. Also, students should be encouraged to combine both the physical library and internet library for an effective student's academic output in physics.

Key words: *Physics, Perceived Academic performance, Library type, Physical Library, Internet Library.*

Introduction

The importance of education in the holistic development of an individual and a nation cannot be over-flogged. The desire of the country and society for excellent talent not only requires higher education with a higher quality of talent cultivation but also puts forward higher requirements on the academic performance of college students (Zheng & Mustapha, 2022). The main objective of learning is to bring about a relatively permanent change in the behaviour of learners. All efforts of every educational stakeholder (government, parents, teachers, students) are directed towards achieving this goal. The extent to which this goal has been achieved is measured by students' academic performance. The student's academic performance is an essential indicator of a student's ability. It is a primary criterion used by many institutions in determining if a student is qualified to be placed at an academic level or if an individual will be on a job. Academic achievement is a direct manifestation of learning effectiveness and a valid indicator to evaluate the effectiveness of teaching and education in higher education as well as the overall development of students. Academic performance is commonly measured by college students' GPA (credit point average), which can be accurately calculated from the marks of each course to measure students' academic achievement (Zheng & Mustapha, 2022). However, the academic performance of students has also been measured by how students perceived their academic performance.

Physics is one of the major science subjects that has a high rate of failure among students, not only in secondary schools but also among college students studying physics. According to Ogonna, & Joseph (2020), Physics is perceived by students at all levels of the educational system to be a difficult course due to its abstract nature. As a result of this, students perform poorly in the subjects. The academic achievement of college students is influenced by various factors, and researchers have done a lot of research in this area. A study conducted by Olufemi, Adediran, & Oyediran, (2018) revealed that students' factors, parental background, school factors, and teachers' factors all have a serious influence on students' academic performance. In another study, Adeyemi & Adeyemi, 2014 focused on institutional factors as predictors of students' academic achievement in colleges of education in Southwestern Nigeria. They found that institutional factors such as student-teacher-ratio, lecturers' interest and commitment, instability of school calendar, and teaching method, were predictors of academic achievement among college of education students. The factors which are capable of influencing the academic performance of students cannot be exhausted in a study.

How students utilize library resources is also a key determinant of their academic performance in any subject. However, studies have shown that the level of college education students' utilization of library resources is low. For instance, a study conducted by Paul & Anyaegbu, (2020) to assess the perceived impact of information literacy skills on College of Education students' effective use of library resources in federal colleges of education in Anambra State found that College of Education students do not effectively utilize their library resources. In addition, Soto Paz, (2019) submitted that Even though the vast majority of students agree that the library helps when searching for information, they do not use it which shows that students do not find the university library useful. Studies have shown that students' utilization of library resources is one of the crucial factors that affect their performance in any subject. For instance, a study conducted by Ngera, Echaune, & Wamalwa, (2023) on library resources as a predictor of students' learning outcomes in Physics at Secondary Schools in Kenya revealed that library resources management had a significant effect on student's academic achievement in Physics. The study showed that the number of students who sat in the library at once had a significant effect on students' academic performance and the number of reference books a student was able to access in the school library also had a positive effect on students' academic performance. Furthermore, the study revealed that the number of times a student went to the school library in the past week to study Physics without the librarian's assistance had a significant effect on students' academic performance while the number of different Physics textbooks that a student could access in the library revealed a positive effect on student's academic achievement.

Due to technological advancements and higher expectations in teaching and learning in the 21st century, the use of library resources has gone beyond the utilization of only resources in the physical library as various online learning materials can now be accessed via different technological devices such as smartphones, tablets, or laptops. Therefore, students can now make a choice of which type of library they prefer between the physical library and the Internet library. The question remains does the type of library used have any effect on students' performance in physics? Kumah, (2015) Conducted a comparative study on the use of the Library and the Internet as Sources of Information by Graduate Students in the University Of Ghana. The study found that students still utilize the library to satisfy their information needs. The largest percentage of the students (72.1%) indicated that they use both the physical library and the Internet, although Internet usage was more (10.9%) than the physical library (6.7%), hence the Internet was the most preferred source of information by the students than the physical library. Also, Soto Paz, (2019) analyzed the preferences in the use of the Internet and/or physical library in the search for information at the University of Puerto

Rico. The study found that 91% use the Internet for information seeking, 0% use the physical library, and 9% use the online library. According to Ugwuanyi, (2022), Electronic journals from libraries have proven to be quite useful to the growing number of students who have access to the internet. In his study on the impact of library electronic journals on students' academic achievement in physics, he found that Students' physics grades significantly improved when they read electronic publications from the library (Ugwuanyi, 2022). Furthermore,

Statement of the Problem

Physics is a very important science subject that could be a powerful tool in shaping the technological advancement of any nation. To enhance proper teaching and learning of the subject. Physics has been introduced into the NCE curriculum as a course of study. However, a large percentage of college education students still find learning the course difficult which reflects in their academic performance. This is a serious issue for educational stakeholders because when teachers in training who are expected to enter the teaching profession after graduation do not grasp major concepts in the subject, it becomes difficult for them to impart knowledge. Although various factors are responsible for failure in Physics among college student, their attitude toward the use of the library cannot be underestimated. Despite the provision of library materials and facilities students' use of these resources is still low. This has resulted in low academic performance among students of the Federal College of Education, Abeokuta.

Researchers have investigated various causes of low academic performance among students in the Federal College of Education, Abeokuta. However, little work has been done on how the type of library used by students affects their performance in physics. This is the gap this study is set to fill. Therefore, the study investigates the Impact of library type (physical and internet) on the perceived academic performance of physics students at Federal College of Education, Abeokuta, Ogun State.

Research Questions

To accomplish the objectives of the study, the following research questions are formulated to guide the investigation

- i. To what level do students perceive their physics academic performance in the Federal College of Education, Abeokuta?
- ii. What is the most preferred type of library among physics students in the Federal College of Education, Abeokuta?
- iii. To what extent do Physics students utilize library resources in the Federal College of Education, Abeokuta?

- iv. Is there a significant difference in perceived physics academic performance between students who use the physical library and students who use the internet library?

Methodology

The survey research design was adopted in the study because it seeks to collect information from respondents about the variables under consideration. The population of the study consisted of all physics students in the Federal College of Education, Abeokuta, Ogun State. The research instrument used for this study was a self-designed questionnaire that had two sections namely Section A and Section B. Section A of the questionnaire consisted of information library types and the use among the physics students such as: what is your preferred type of library? How often did you visit the Gani Bello Library in person last semester? how often did you visit your departmental Library in person last semester? Section B of the questionnaire consisted of structured items on the Perceived Academic Performance of the students such as: I satisfactorily perform every academic task required of me, I have an outstanding Performance, I am satisfied with my academic Performance in physics, etc.

The questionnaire was facially and content validated by a librarian for correction and modification before the administration of the instrument. The purposive sampling technique was adopted to select all the thirty-four (34) second-year and third-year students of the physics department. The sampling method was used considering the population size and only second-year and third-year students were purposively selected because they have completed at least two semesters and will be able to appropriately supply the information in the questionnaire. The questionnaire was distributed to the respondents and was retrieved immediately from the respondents after filling it out. The data collected were analyzed using frequency counts, simple percentages, and an independent sample t-test.

Results

Research Question 1: To what level do students perceive their physics academic performance in Federal College of Education, Abeokuta?

Table 1: Level of Students' Perceived Academic Performance

	Frequency	Percent	Valid Percent	Cumulative Percent
Low	12	36.4	36.4	36.4
High	21	63.6	63.6	100.0
Total	33	100.0	100.0	

Table 1 shows the frequency of the level to which students' perceived their academic performance. The result shows that 21 of the respondents representing (63.6%) scored high in perceived academic performance while 12 of the respondents representing (36.4%) scored low in perceived academic performance. This means that the majority of physics students in the Federal College of Education perceived their performance in physics to be high. This study disagreed with the finding of Ogonna, & Joseph (2020) who asserted that Physics is perceived by students at all levels of the educational system to be a difficult course due to its abstract nature, and as a result of this, students perform poorly in the subjects.

Research Question 2: What is the most preferred type of library among physics students in Federal College of Education, Abeokuta?

Table 2: Preferred Type of Library

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Physical library	24	72.7	72.7	72.7
	Internet library	9	27.3	27.3	100.0
	Total	33	100.0	100.0	

Table 2 shows the frequency of students' preferred type of library. The result shows that 24 of the respondents (72.7%) prefer a Physical library while only 9 of the respondents (27.3%) prefer Internet library. This implies that the majority of physics students in the Federal College of Education prefer the physical library to the Internet library. The findings of this study disagree with the findings of scholars who found that a larger percentage of students prefer the use of Internet library to a physical library (Kumah, 2015; Soto Paz, 2019). The student preference of physical library may be tied to the availability and accessibility of relevant materials in the school library.

Research Question 3: To what extent do Physics students utilize library resources in Federal College of Education, Abeokuta?

Table 3: Mean and Standard deviation of extent of library resources utilization by Physics students in Federal College of Education, Abeokuta.

		Frequency	Percent
1.	How often did you visit the Gani Bello Library in person last semester?		
	Never	11	33.3
	Once a month	16	48.5
	Once a week	4	12.1
	Multiple times in a week	2	6.1
2.	How often did you visit your departmental Library in person last semester?		
	Never	11	33.3
	Once a month	10	30.3
	Once a week	12	36.4
	Multiple times in a week	0	0
3.	How often did you use the online library last semester?		
	Never	6	18.2
	Once a month	6	18.2
	Once a week	7	21.2
	Multiple times in a week	7	21.2
	Daily	7	21.2
4.	On average, how long do you usually stay in the library?		
	Less than 30 minutes	4	12.1
	30 minutes–less than 1 hour	10	30.3
	1 hour–less than 1.5 hours	7	21.2
	1.5–less than 2 hours	7	21.2
	2 hours–less than 2.5 hours	1	3.0
	2.5 hours–less than 3 hours	1	3.0
	More than 3 hours	3	9.1
5.	On average, how long do you usually spend time on the internet library?		
	Less than 30 minutes	4	30.3
	1 hour–less than 1.5 hours	3	9.1
	1.5–less than 2 hours	5	15.2
	2 hours–less than 2.5 hours	5	15.2
	2.5 hours–less than 3 hours	2	6.1
	More than 3 hours	4	12.1

Table 3 shows the mean and standard deviation of Respondents' responses on the extent of library resource utilization by Physics students in the Federal College of Education, Abeokuta. The result obtained from item 1 reveals that 11 (33.3%) of the respondents never visited the Gani Bello Library in person last semester, 16 (48.5%) did once a month, 4 (12.1%) once a week and 2 (6.1%) visited multiple times in a week. The result obtained from item 2 shows that 11(33.3%) of the respondents never visited the departmental Library in person last semester, 10(30.3%) did once a month, 12 (36.4%) once a week, and 0(0%) visited multiple times in a week. Also, the result obtained from item 3 shows that 6 (18.2%) of the respondents never used the online library last semester, 6(18.2%) did once a month, 7 (21.2%) once a week, 7 (21.2%) multiple times in a week and 7 (21.2%) use the online library daily last semester.

Furthermore, the result obtained from item 4 shows that 4 (12.1%) of the respondents stay less than 30 minutes in the library, 10 (30.3%) of the respondents stay 30 minutes–less than 1 hour, 7 (21.2%) of the respondents stay 1 hour–less than 1.5 hours, 7 (21.2%) of the respondents stay 1.5–less than 2 hours, 1 (3.0%) of the respondents stay 2 hours–less than 2.5 hours, 1 (3.0%) of the respondents stay 2.5 hours–less than 3 hours and 3(9.1%) of the respondents stay More than 3 hours. Moreover, the result obtained from item 4 shows that 4 (12.1%) of the respondents stay less than 30 minutes in the internet library, 10 (30.3%) of the respondents stay 30 minutes–less than 1 hour, 3 (9.1%) of the respondents stay 1 hour–less than 1.5 hours, 5 (15.2%) of the respondents stay 1.5–less than 2 hours, 5 (15.2%) of the respondents stay 2 hours–less than 2.5 hours, 2 (6.1%) of the respondents stay 2.5 hours–less than 3 hours and 4 (12.1%) of the respondents stay More than 3 hours in the internet library. This result revealed that the majority 81.8% of physics students in the Federal College of Education visit the physical library at most once a month to utilize library resources while only 15.1% spend above 2 hours in the library. However, 63.6% of the students indicated that they use the Internet library at least once in a week, although 66.7% spend less than 2 hours on the Internet library. Considering the frequency of patronage and time used in the library, it is evident that students do not properly utilize the resources from both the physical library and the Internet library.

This is in tandem with the finding of Paul & Anyaegbu, (2020) who found that College of Education students do not effectively use library resources in federal colleges of education in Anambra State. Also Soto Paz, (2019) found that Even though the vast majority of students agree that the library helps when searching for information they do not use it, although they use the Internet as the first information-seeking tool over the physical library resources. This can be tied to their over-dependence on other materials outside the library such as handouts, course notes, textbooks, etc.

Research Question 4: Is there a significant difference in perceived physics academic performance between students who use traditional library and students who use virtual library?

Table 4: Mean score and the independent t-test

Group	Number	Mean	SD	Df	t- value	Sig
Physical Library	24	17.29	3.394			
Internet Library	9	16.11	4.226	31	.833	.315

Table 4 shows an independent samples t-test conducted to determine if there was a statistically significant difference in the mean scores in the perceived academic performance of students who use the Physical library and students who use the internet library. Physical Library scored higher (mean =17.29; SD =3.394) in perceived academic performance than Internet Library (mean =16.11; SD = 4.226). An independent samples t-test shows that there is no significant difference in perceived academic performance between students who use physical libraries and students who use internet libraries. This implies that the type of library used by physics students does not affect their perceived academic performance. This finding disagrees with the finding of Ugwuanyi, (2022), who found Electronic library resources to be quite useful to students who have access to the internet and that Students' physics grades significantly improved when they read electronic publications from the library. The insignificant difference between the use of physical library and internet library can be tied to the low utilization of library resources as this study reveals.

Conclusion

Based on the findings, it can be concluded that physics students in the Federal College of Education perceived their performance in physics to be high. The study revealed that the majority of the students prefer the physical library to the Internet library, however, most of the students do not effectively utilize library resources both from the physical library and the internet library which is an indication that they depend on other sources of materials for their academic activities. Furthermore, the result showed that students' performance do not vary significantly based on the type of library used. Hence, both the physical library and internet library can be combined to enhance student's academic performance in physics.

Recommendations

The following recommendations were made based on the findings from the study.

- The government and college administration should ensure that libraries are well equipped to make available and accessible relevant information resources in order for students to always be satisfied with the service provided and consequently enhance their patronage of the physical library.
- Also, provision should be made for students to have access school internet facilities, this will allow student easy access to other material on the internet which can be used to support the resource in the physical library.
- Furthermore, students should be encouraged to combine both the physical library and internet library for an effective student's academic output in physics.

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