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The Role of Motivation on the Academic Performance in Physics among Senior Secondary School Students in Abuja Municipal Area Council, Nigeria

***Omeh Emeka; & **Mrs. Osakwe F.U.**

*Lightway Academy, Abuja, Nigeria. **National Teacher's Institute, Kaduna, Nigeria
Corresponding Author: omeh.emeka@yahoo.com
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Abstract

This study investigated the Role of Motivation on the Academic Performance in Physics among Senior Secondary School Students in Abuja Municipal Area Council, Federal Capital Territory Abuja, Nigeria. In order to carry out the study three research questions were formulated. The instruments of data collection are the questionnaire titled "Student Motivation and Academic Performance Questionnaire (SMAPQ)" and Student's Performance Test (SPT) comprises of past WAEC theory questions used to measure the performance of students. The instruments were validated and the reliability was tested using Cronbach's alpha at a coefficient of 0.75 and 0.76. The population of the study covered all public senior secondary schools in AMAC out of which three public schools were randomly selected using purposive stratified random sampling technique, 105 students were selected as sample using simple random sampling technique. The data collected was analyzed using simple percentages, mean, standard deviation and the hypotheses formulated were tested using Pearson product Moment Correlation Coefficient at 0.05 level of significance. The findings revealed the following: that motivation plays a key role in the academic performance of students in physics; the quality of teachers; learning environment are some of the important factors that motivates students in learning of physics. From the findings of the study, the following recommendations were made: Teachers should apply appropriate strategy in stimulating students' motivation to learn physics by making the lesson interesting, the government and Educational Administrator should provide favorable climate and classroom environment for learning and well-furnished physics laboratory.

Keywords: Motivation, Physics Education, Academic Performance, Senior Secondary School Students, Science Education, Learning Environment, Teacher Effectiveness.

Introduction

The word "motivation" comes from a Latin word called "movere" which means to move. Thus, motivation can literarily mean the driving force that cause an individual to act or move in order to achieve a specific goal. Motivation is an influential factor in teaching and learning process. The success of learning depends on how high or low is the level of motivation of students. Motivation effects student learning (Ormrod, 2000; Gedera, Williams & Wright, 2013) and plays an important role in directing behavior towards a certain goal, increasing the effort and energy towards a goal, increasing the initiative and perseverance of an activity, and improves individual performance. Lack of motivation makes students lose interest and evade more serious learning. They take more interest, are more active, and have a better conceptual understanding when they are highly motivated (Narangoda et al., 2021; Nuraysha et al., 2024).

The science which aims at understanding the physical world we live in is called physics. Study have shown that students with good foundation in physics have a higher degree of precision and accuracy when approaching new problems and are able to reason both deductively and inductively. Since physics heavily relies on mathematical ideas and logic, it aids students in developing critical thinking. Vetii (2011) defined Physics as the study of energy and matter in space and time and how they are related to each other. Physics studies how things move, and the force that makes them move. Physics is considered as the most problematic area within the realm of science, and it traditionally attracts fewer students than other science like chemistry and biology.

Academic performance has been described as the scholastic standing of a student at a given moment. This scholastic standing could be explained in terms of the grades obtained in a course or groups of courses (Daniels & Schoulen, 2013).

The performance of students in physics senior secondary school certificate examination in Abuja Municipal Area Council had shown improvement especially in the private schools while the public schools lag behind in the federal capital territory. Annual report and analysis for 2017/2018 WAEC and NECO examination performance for public schools in FCT released by Federal Capital Territory Administration Education Secretariat shows a 57.7% for NECO and 49.7% in WAEC for candidates who acquired five credits including mathematics and English language. In 2018/2019 the report shows a similar trend with a slight increase for WAEC at 56.43% and NECO at 57.7% as against 68.0% and 65.5% for the private schools in the same 2017/2018 and 2018/2019 examination year. Scholars like (Ademola, 2014; Amuche et al., 2014; Mohammed et al., 2017; Kunwar; 2021; Shehzadi et al., 2022; Annoh, 2024;

Kitula, 2026), affirm that private schools perform better than their public counterpart in external examination. Kurabachew (2019) is of the opinion that the availability of laboratory promotes the success of science and academic performance patterns are also determined by the teacher qualification and related home environment factors.

Abah, Ada and Taangahar (2016) described physics as one of the most difficult science subjects because of its mathematical components. Odogwu and Babajide (2018) define performance as a measure of the output of learning. It is expressed in terms of change in knowledge, skills and attitudes of individuals as a result of their experiences within the school system. Performance can be measured through assessment test or examination. Examination or test assessment scores are graded in the senior secondary schools in the following grade scores 80-100 percent as excellent (A_1); 70-79 percent as very good (B_2); 65-69 percent as good (B_3); 50-64 percent as credit (C_4-C_6); 40-49 as pass (E_8-D_7) and 39 percent and below represents fail. Physics been a key foundational subject for science and engineering have continue to record more failure than other subjects. National Examination Council report and analysis between 2011- 2015 of performance of candidates in FCT for selected subjects reported by National Bureau of Statistics shows that the failure rate of physics decreases from 4.74% in 2011 to 1.61% in 2015. This 1.61% recorded represents 6,968 students out of 432,509 candidates who sat for the examination.

WASSCE for school candidates' performance analysis report from 2019-2021 reported by National Bureau of Statistics shows a rapid increase of performance for private schools in Abuja from 71.47% in 2019 to 84.05% in 2021. The public schools in Abuja recorded a performance rate of 40.54% to 77.70%. Though remarkable progress had been recorded in the physics performance of students in Abuja Municipal area Council, more effort is still required in the public schools which have continued to struggle to measure up with the private schools despite located in the heart of Federal Capital Territory and attracts more government funds than public schools in other area council in Abuja. National Examination Council Annual report and analysis on candidate performance by subjects in SSCE 2024 internal examination, in physics candidates recorded 3.52% failure rate which represents 26,117 candidates who fail physics (NECO annual report, 2024). However, WAEC and NECO reports consistently highlight poor performance in these areas, which has been attributed to factors such as unqualified teachers, inadequate resources, poor learning environments, and student-related challenges like low interest and anxiety (Ogunleye, 2019; Awofala & Fatade, 2021). In order to solve this problem of poor academic performance in physics researchers have also look into factors or causes of poor academic performance in physics. (Tarekegn, 2017) highlight factors like teachers' training and conceptualization of the subject, students' understanding of the subject, physical resources such as laboratories, teaching aids and text books as some of the challenges that limits students from learning physics effectively. Nigeria's examination system, primarily through WAEC and NECO, plays a pivotal role in evaluating secondary education outcomes. These bodies assess core subjects including Mathematics and Physics and determine students' eligibility for tertiary education. However, persistent low performance

in science subjects has raised concerns about curriculum delivery, teaching quality, and school environments (WAEC, 2023; NECO, 2022; Ezeudu & Obi, 2021; Abdulhamid et al, 2025). The lack of all these factors tends to create a lot of difficulty in the effective teaching and learning of physics. However, secondary schools in Abuja Municipal Area Council (AMAC) are not an exception of this situation. It is against this background that this study seeks to investigate the role of motivation on the academic performance in physics among some selected public senior secondary schools in Abuja Municipal Area Council.

Purpose of the Study

1. Determine the relationship between students' motivation and academic performance in physics
2. Examine the factors that influence the level of motivation to learn physics among students
3. Determine the effect of students' perception of physics on their academic performance

Research Questions

The following research questions were raised to guide the study:

1. To what extent students' motivation influences their academic performance in physics?
2. What are the factors that influence student's motivation to learn physics?
3. To what extent does student perception of physics influence their academic performance

Hypothesis

H_{01}: There is no significant relationship between public schools' students' motivation and physics academic performance scores

H_{02}: There is no significant difference between public schools male and female students' physics academic performance

H_{03}: There is no significant relationship between public school students' perception of physics and their academic performance

Review of the Related Literature

Motivation refers to what propels and directs people to act (Tuckman & Monetti, 2011). From this point of view therefore, motivation is an impetus or inspiration that propels one to act towards achieving a particular goal. People have not only different amounts, but also different kinds of motivation (Oruche, 2019).

So, motivation is one of the influential factors in learning that drives learners to struggle to reach their goals in learning process which can also become a stimulus in learning process. Its importance stems majorly from the fact that it guides students in activities that facilitate learning (Schunk, 2000 in Oruche, 2019). Either way, student motivation and engagement are

closely related elements of student learning that can have an impact on learning outcomes (Gedera, Williams & Wright, 2013). The success of learning depends on high or low motivation of students. It can drive learners in reaching learning goals.

Motivation impacts learner understanding and plays a critical role in guiding behaviour toward a certain objective, increasing the effort and power in the direction of an objective, enhancing the initiative and perseverance of a task, and enhancing one's efficiency. Motivation is vital issue in maintaining learners in their schooling process, and was discovered to be main substantial aspect that influences learning performance (Zulnaidi *et al.*, 2021). Adequate motivation not only sets in motion the activity which results in learning, but also sustains and directs it (Oruche, 2019).

Students' Attitude

An attitude is a collection of feelings, thoughts, and behaviors toward a specific thing, person, thing, or event. Attitudes are frequently influenced by experiences or upbringing. A person's learned inclination to react favorably or adversely to an item, circumstance, idea, or other person is referred to as their "attitude" (Sarmah & Puri, 2014). The effect of attitude on physics achievement can either be positive or negative depending on the individual learner. Affective, cognitive, and behavioral are the three main components of attitude (Syyeda, 2016). Students with positive attitude towards learning always performed absolutely well in their studies. On the other hand, a pessimistic view hinders effective learning, which has an effect on performance (Joseph, 2013). However, Naki (2018) stated that the attitudes of students towards physics, the thoughts and beliefs about the course, the habits of studying and constantly postponing tendency are very influential towards their achievement.

Instructional Method

The term teaching methods refers to the general principles, pedagogy and management strategies used for classroom instruction (Jackson, 2012). According to Sharma (2012), methods are the ways and means through which the curriculum is transacted through teachers to the students. It is a link in the process of teaching and learning environment. Ogbonna (2000) and Umar (2011) suggest that one of the most influential factors in teaching is the teachers‟ method of teaching. Abimbola (2011) and Umar (2011) have identified poor teaching methods adopted by teachers at senior secondary school level in Nigeria as one of the factors contributing to the poor performance of students in science subjects. The major objective of education at all levels is to bring about a fundamental change in the student using a range of teaching and learning strategies or methods (Oigara, 2011). The teaching approaches in teaching can make the subject interesting or boring. The type of principal and instructional strategies utilized is the best ways to categorize a teaching method. Physics instruction should be able to strike a balance between quantitative thinking and problem-solving and qualitative thinking and conceptual comprehension.

Physics teaching should be methodical and broken-down step by step. This is certainly the preserve of the teacher but once it is not handled properly, the performance of the learners will be questionable (Assem, 2017).
Teaching methods that encourage learners-centered activities should be utilized always by the teacher. However, it's important to enhance students' learning through means by which students will have a say in what they learn.

Students' Perception

The majority of individuals mistake perception for attitude, which is just erroneous. The ability to observe or be aware of something is referred to as perception (Mbonyiryivuze et al., 2021). It refers to how something is interpreted or comprehended. The human brain is constantly operating and interpreting things in accordance with what the mind accepts. It may accept things in the correct or incorrect manner at times. Depending on the actions that take place in the classroom, the mind may perceive the subjects to be extremely challenging, causing fear (Ndunguru et al., 2013). Physics students are few and far between in many schools, especially when compared to other subjects. Students' perceptions of difficulty are working against them, causing them to lose interest. Most of the time, students' attitudes and perceptions are not taken into account during the teaching and learning processes, allowing them to create negativity in the lesson. Student's negative perception could hinder learning outcome. According to Ndalichako & Komba (2014), students have negative attitudes toward science subjects because the majority of them see it as a difficult aspect. Kihwele (2020) and Majere *et al.* (2012), found students perceive negative attitudes and perceptions toward learning physics as impediments to their performance and also poor mathematical foundation is one of the reasons that discourages them from studying physics because it requires computations. Positive attitudes drive students to pay full attention during the session, which leads to good learning (Tadele et al., 2016). In order for expected outcomes to occur in teaching and learning, students' attitudes and perceptions must be taken into account.

Teacher Qualification

In terms of student learning, effective teacher traits, including teacher actions and behaviors from the start to the finish of a lesson, are crucial. Haussler & Hoffmann (2000), as cited by Korur & Eryılmaz (2012) point out that the issues most related to effective teaching are the personal effectiveness of teachers and teachers' pre-service and in-service professional development activities. According to (Hariss & Sass, 2013; Adebayo & Owolabi, 2021) the credentials of the teachers affect how well students succeed academically, which in turn affects how well the standard of education rises. According to (Darling Hammond *et al*, 2009; Tylor & Robinson, 2019), teacher certification is seen as a requirement for the teaching profession in Sub-Saharan African (SSAC) countries and is also seen as a way to help a professional teacher advance their knowledge and abilities. Additionally, they noted that teachers who possess highly developed knowledge and skills have the opportunity to play a significant role

in important decisions regarding the provision of high-quality services, which can be accomplished by raising students' academic performance and also developing their own careers in the teaching system.

Methodology

The descriptive survey research design was adopted. Francis (2003) observed that this method enables the researchers to describe an event, situation or phenomenon as it is as at the time of the study. It also helps the researcher to systematically document current opinions and information on research work.

The population of the study focused on the public senior secondary school students of physics in Abuja Municipal Area Council (AMAC). The area council has twenty-four public senior secondary schools off which three schools are selected using a purposive stratified random sampling technique, the three schools each provided one science class which sum up to a total population of 144 science students out of which 105 sample size was selected using random sampling technique by applying the hat and draw method. The names of the sampled schools were written, squeezed and put in a container. The container was shaken to ensure even distribution while three teachers were asked to pick from the container until the sample size is determined, each teacher had to pick from the container 35 times. The sample size of 105 participants selected from the population is based on a 95% confidence level and 5% margin error according to Krejcie & Morgan, 1970.

A structured questionnaire for data collection was constructed by the researcher titled "Student Motivation and Academic Performance Questionnaire (SMAPQ) and Student's Performance Test (SPT) comprises of past WAEC Theory questions was used to measure the performance of students. The instrument was validated and the reliability of the instrument is tested using Cronbach's alpha at a coefficient of 0.75 and 0.76. The instrument was constructed on a 4-points rating or Likert scale with response modes of Strongly Agree (SA) (4 points), Agree (A) (3 points), Strongly Disagree (SD) (2 points) and Disagree (D) (1 point). Finally, "strongly agreed" and "agreed" were regarded as "agreed" and "strongly disagreed and disagreed" were regarded as "disagreed." Simple percentage, mean and standard deviation were used to answer the research questions. A mean score of above 2.5 is adopted as the acceptable mean for this study. The null hypotheses formulated were tested using Pearson product Moment Correlation Coefficient at 0.05 alpha levels of significance.

Table 1: Public Senior Secondary Schools in AMAC

S/NO:	SCHOOL
1	AIR FORCE GIRLS COMPREHENSIVE SCHOOL
2	ARMY DAY SECONDARY SCHOOL ASOKORO
3	ARMY DAY SECONDARY SCHOOL MAITAMA
4	GOVERNMENT DAY SECONDARY SCHOOL KARU
5	GOVERNMENT DAY SECONDARY SCHOOL WUSE II
6	GOVERNMENT SCIENCE SECONDARY SCHOOL PYAKASA
7	GOVERNMENT SECONDARY SCHOOL AIRPORT

S/NO:	SCHOOL
8	GOVERNMENT SECONDARY SCHOOL GARKI
9	GOVERNMENT SECONDARY SCHOOL GWAGWA
10	GOVERNMENT SECONDARY SCHOOL GWARINPA
11	GOVERNMENT SECONDARY SCHOOL
12	GOVERNMENT SECONDARY SCHOOL JIKWOYI
13	GOVERNMENT SECONDARY SCHOOL JIWA
14	GOVERNMENT SECONDARY SCHOOL KABUSA
15	GOVERNMENT SECONDARY SCHOOL KARSHI
16	GOVERNMENT SECONDARY SCHOOL KARU
17	GOVERNMENT SECONDARY SCHOOL LUGBE
18	GOVERNMENT SECONDARY SCHOOL MABUCHI
19	GOVERNMENT SECONDARY SCHOOL NYANYA
20	GOVERNMENT SECONDARY SCHOOL TUNDUN-WADA
21	GOVERNMENT SECONDARY SCHOOL WUSE
22	GOVERNMENT SECONDARY SCHOOL, GOSA
23	GOVERNMENT SECONDARY SCHOOL, GWARINPA ESTATE
24	MODEL SECONDARY SCHOOL MAITAMA

Education Planning Research and Statistics, FCT Education Secretariat, 2019

Table 2: *Breakdown of the Sample Size*

Sample for the study	Male	Female	Total
SCHOOL A	20	7	27
SCHOOL B	33	18	51
SCHOOL C	17	10	27
Total	**70**	**35**	**105**

Table 3: *Rating of Questionnaire Options*

S/No.	Options	Rating
1	Strongly Agreed (SA)	4
2	Agreed (A)	3
3	Strongly Disagreed (SD)	2
4	Disagreed (D)	1

Table 4: *Distribution of Respondents by their Gender*

Gender	Frequency	Percentage (%)
Male	70	66.67
Female	35	33.33
Total	**105**	**100**

The respondents were analyzed by their gender, the result as indicated in Table 4, showed that 70 (66.67%) were males.35 (33.33%) were females. This indicates that majority of the respondents were male.

Table 5: *Distribution of Respondents by their Age group*

Age range(yrs.)	Frequency	Percentage (%)
10-15	57	54.29
16-21	33	31.43
22-26	15	14.28
27 and above	0	0
Total	**105**	**100**

Table 5 shows the ages of the respondents which were grouped into ranges of 10-15 years, 16-21 years, 22-26years, and 27 and above years. This indicates that the majority of the respondent ranges from the age of 10- 15 with 57 while the least respondent falls in the ranges of 27 and above years with zero respondent.

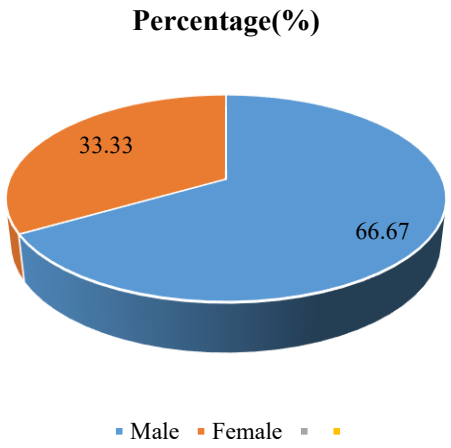


Figure 1: Percentage of Respondent by gender

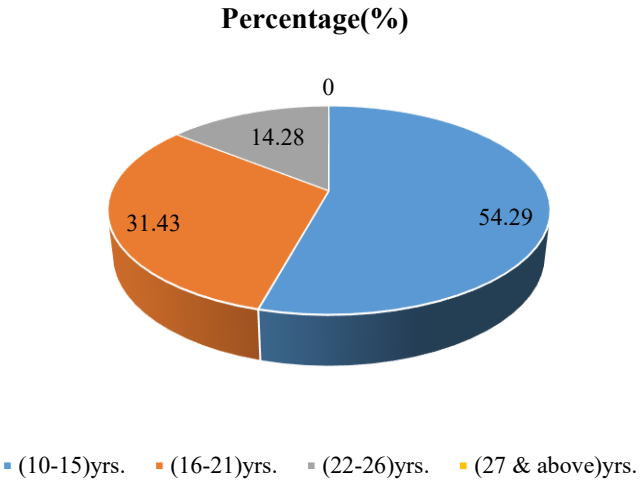


Figure 2: Percentage of Respondent by Age Range

Research Question 1: To What extent does motivation influences the academic performance of students in learning physics?

Table 6: *Responses on the influences of motivation on the academic performance*

Item/ No:	Items Description	SA	A	SD	D	TA	TD	$\bar{\bar{X}}$	σ	%A	%D
1	Motivation enhances academic performance of student in physics	0	78	27	0	78	27	2.74	0.44	74.29	25.71
2	Motivation arouse students' curiosity in learning physics	11	66	28	0	77	28	2.84	0.59	73.33	26.67
3	Teachers must be well disciplined for students of physics to be motivated	0	64	37	4	64	41	2.57	0.57	60.95	39.05
	Cumulative (%)									**69.52**	**30.48**

Source: Field work, 2026

Questionnaire item one in table 6: sought to assess whether motivation facilitate teaching and learning of physics. The response for agreed is 78, representing 74.29% scores against disagreed with a score of 27 representing 25.71% and a mean score of 2.74.

Research Question 2: What are the factors that influence students' motivation to learn physics?

Table 7: *Responses on the factors that influences students' motivation*

Item/No:	Items Description	SA	A	SD	D	TA	TD	$\bar{\bar{X}}$	σ	%A	%D
4	Teachers must be patient, and supportive to average learners in physics	0	61	44	0	61	44	2.58	0.50	58.10	41.90
5	The learning task used by teachers in physics should be authentic	2	59	35	9	61	44	2.51	0.68	58.10	41.90
6	The classroom must be relatively well organized for teaching and learning to take place by physics department	0	54	35	16	54	51	2.36	0.74	51.43	48.57

Item/No:	Items Description	SA	A	SD	D	TA	TD	$\bar{\bar{X}}$	σ	%A	%D
7	In every physics lesson, teacher should give room for questions and answers	20	44	27	14	64	41	2.67	0.94	60.95	39.05
8	Teachers of physics are expected to organize practical in order to make the lesson applicable in real life	2	67	34	2	69	36	2.66	0.55	65.71	34.29
	Cumulative (%)									**58.86**	**41.14**

Source: Field work, 2026

Questionnaire item 7 and 8 in table 7: examine teacher's instructional techniques and methods, how it influences student's motivation in learning physics. In every physics lesson, teacher should give room for questions and answers scored 64 agreed representing 60.95% and 41 disagreed representing 39.05% with a mean score of 2.67. Item 8: teachers of physics are expected to organize practical in order to make the lesson applicable in real life scored 69 agreed representing 65.71% and 36 score for disagreed which represents 34.29% with a mean score of 2.66.

Research Question 3: To what extent does student perception influence their motivation in learning physics?

Table 8: *Responses on students' perception of physics as it influences academic performance*

Item/ No:	Items Description	SA	A	SD	D	TA	TD	$\bar{\bar{X}}$	σ	%A	%D
9	I like the mathematical part of physics	0	55	46	4	55	50	2.48	0.57	52.38	47.62
10	Physics is a difficult subject to learn	0	74	29	2	74	31	2.68	0.51	70.48	29.52
Cumulative (%)										**61.43**	**38.57**

Source: Field work, 2026

Questionnaire item 9 and10 in table 8: sought to ascertain the influence of student's perception of physics on their academic performance. I like the mathematical part of physics scored 55 agreed representing 52.38% as against 50 representing 47.62% with a low mean score of 2.48. Physics is a difficult subject to learn scored 74 agreed representing 70.48% and 31 disagreed representing 29.52% with a high mean score of 2.68.

Table 9: *Public Senior Secondary School Teachers in AMAC*

Year	Qualified teachers (QT)		Percentage (QT)	Unqualified Teachers (UQT)		Percentage (UQT)	Students-Teacher Ratio (STR)	Students-Qualified Teacher Ratio (SQTR)
	Male	Female		Male	Female			
2017	540	1126	88.71	100	112	11.28	15	17
2018	555	1001	88.76	87	110	11.24	17	19
Cumulative (%)			**88.74**			**11.26**	**16**	**18**

FCT Education Secretariat, 2019

Table 10: *Student's Performance Test Result (SPT)*

PASSES								**FAILURE**			
A_1		**B_2**		**B_3**		**C_4-C_6**		**D_7-E_8**		**F_9**	
M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
3	1	8	3	13	4	39	19	5	4	2	4
(2.9%)	(0.9%)	(7.6%)	(2.9%)	(12.4%)	(3.8%)	(37.1%)	(18.1%)	(4.8%)	(3.8%)	(1.9%)	(3.8%)
Total	**90 (85.7%)**							**15 (14.3%)**			

Source: Field work, 2026

Table 10: shows the performance percentage scores of students in the physics test conducted a score of 50 and above is considered a pass mark which is in line with the minimum requirement of credit pass in WEAC examination while a score below 50 is considered as fail. A pass rate of 85.7% and a failure rate of 14.3% were recorded; the female students recorded a 25.7% pass rate as against 60.0% of the male students.

Test of Hypotheses

H_{01}: There is no significant relationship between students' motivation and physics academic performance scores in public schools.

Table 11: Relationship between students' motivation and physics academic performance scores in public schools

Variables	N	X	Sd	df	R	t-cal.	t-critical	*p*	Decision
Motivation	105	69.52	12.45	103	0.61	7.87	1.98	0.0001	Rejected
Academic performance	105	73.18	11.20						

Significant level at 0.05: df = 103, t-critical = 1.98, t-cal. = 7.87

The evidence given in table 11 based on hypothesis one tested showed that the t-cal. is greater than t-critical (i.e., 7.87 > 1.98) and p-value 0.0001 < 0.05 given at 103 degrees of freedom at 0.05 level of significance, therefore the null hypothesis is rejected. This implies that there is a

significant effect of motivation on the academic performance of students in physics.

H_{02}: There is no significant difference between male and female students' academic performance in physics.

Table 12: Difference between male and female students' academic performance in physics

Variables	N	X	Sd	Df	R	t-cal.	t-critical	*p*	Decision
Male	70	59.04	9.91	103	0.21	2.21	1.98	0.029	Rejected
Female	30	54.35	11.24						

Significant level at 0.05: df = 103, t-critical = 1.98, t-cal. = 2.21

Table 12 shows that the t-cal. is greater than t-critical (i.e. 2.21 > 1.98) and p-value 0.029 < 0.05 given at 103 degrees of freedom at 0.05 level of significance. Therefore the null hypothesis is rejected. This implies that there is a significant difference between public schools male and female students' academic performance in physics.

H_{03}: There is no significant relationship between students' perception of physics and their academic performance.

Table 13: Relationship between students' perception of physics and their academic performance

Variables	N	X	Sd	Df	R	t-cal.	t-critical	*p*	Decision
Student perception	105	58.86	10.42	103	0.61	7.94	1.98	0.0001	Rejected
Academic performance	105	69.52	9.87						

Significant level at 0.05: df = 103, t-critical = 1.98, t-cal. = 7.94

Table 13 shows that the t-cal. is greater than t-critical (i.e. 7.94 > 1.98) and p-value 0.0001< 0.05 given at 103 degrees of freedom at 0.05 level of significance, therefore the null hypothesis is rejected. This implies that there is a significant relationship between students' perception of physics and their academic performance.

Result of Findings

1. The first finding of this study revealed that motivation plays a key role in the academic performance of students in physics in senior secondary schools in Abuja municipal Area Council.
2. This study revealed that there is significant difference between public and private school students' academic performance in physics.
3. This study revealed that students' perception of physics also influences their academic performance.

Discussion of Findings

The finding from hypothesis one revealed that the t-cal. is greater than t-critical (i.e. 7.87 > 1.98) and p-value 0.0001 < 0.05 given at 103 degrees of freedom at 0.05 level of significance, therefore the null hypothesis was rejected. This implies that there is a significant influence of motivation on the academic performance of students in physics. There is a significant positive correlation between students' motivation and their academic performance scores in physics. This is in line with the findings of previous studies which supports the facts that motivation is an important factor that contribute to the academic performance of students in physics and science education (Junio, 2009; Nandola 2011; Kaur & Vadhera, 2020; Akkaya, 2024; Ahmad, Noorani, & Sewani, 2025).

Table 12 results showed differences in the academic performance mean scores of male and female students. With the male mean scores of 59.04 which is higher than 54.35 with mean difference of 4.69 revealed that male students achieved higher than the female students in physics. The hypothesis tested also revealed the t-cal. is greater than t-critical (i.e., 2.21 > 1.98) and p-value 0.029 < 0.05 given at 103 degrees of freedom at 0.05 level of significance. Therefore, the null hypothesis was rejected. This implies that there is a significant difference between public schools male and female students' academic performance in physics. This finding is in line with claims by previous scholars like (Sweeney, 2013; Dawal, 2021 & Yakubu, 2021) who opined that female student's performance are lower in mathematical inclined subjects like physics, as males were superior to females on problem solving tasks and on specific abilities related to problem solving.

The third finding of this study from hypothesis three revealed that the way students perceive physics is related to their academic performance. Table 13 results showed differences in the students' perception mean scores and academic performance mean score. With the students' perception and academic performance mean score of 58.86 and 69.52 respectively with mean difference of 10.66 revealed that there is a significant mean score difference. The analysis on shows the that t-cal. is greater than t-critical (i.e., 7.94 > 1.98) and p-value 0.0001< 0.05 given at 103 degrees of freedom at 0.05 level of significance, therefore the null hypothesis is rejected. This implies that there is positive relationship between students' perceptions of physics and their academic performance. This finding support previous study by (Abraham et al., 2022) opined that physics students' perceptions of difficulty are working against them, causing them to lose interest in the subject. Opaleye and Olatunde (2018) posited that physics students' consideration of concepts as difficult were mostly concepts with too many formulae and laws and those with too much calculations but little practical work. Majere *et al.* (2012) and Kihwele (2020), found students perceive negative attitudes and perceptions toward learning physics as impediments to their performance. Likewise, Ndalichako and Komba (2014) reported that students have negative attitudes toward science subjects because the majority of them see it as a difficult aspect.

Conclusion

Based on the findings of this research work, it was affirming that the role of motivation on the academic performance of student in physics is a critical component of learning. Motivation is vital in getting student engage in academic activities. It is also important in determining how much students will learn from the activities they perform or the information to which they will be exposing to. Motivation also is needed to arouse students' interest in physics and it is needed to sustain it for any further studies related to physics. On the academic performance of students in physics it was revealed that male students performed better than female students in study related to mathematics like physics subject in Abuja Municipal Area Council (AMAC). Students' perception of physics is considered as one of the key factors that hampered students' academic performance in physics. This study also highlights factors such as attitude, Teachers' qualifications, student's perception and instructional method as some of the factors that can influence students' motivation in learning.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Teachers should apply appropriate strategy in stimulating students' motivation to learn physics by making the lesson interesting, the use of reinforcement, instructional resources and assigning responsibilities to students.
2. The government and Educational Administrator should provide comfortable environment for learning and well-furnished physics laboratory.
3. Workshop, conferences and seminars should always be organized for teachers of all categories on the importance of teachers' self-efficacy and pedagogical content knowledge.
4. Government and non-governmental organization should join hand together to fund education and also motivate teachers and further supervise the activities of teachers in the school.
5. Students should be given choice or allowed to choose their subject combination, parents and teachers should only guide them in the process. Proper orientation, workshop and seminar should be given to the students by their teacher on the importance of studying physics.
6. Curriculum planners should help in designing curriculum with sequential physics content that are interesting to the learners

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