# TEACHER MOTIVATION AND SCIENCE STUDENT" ACADEMIC PERFORMANCE IN ILORIN METROPOLIS SECONDARY SCHOOLS, KWARA STATE

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**Abstract**
*The purpose of this research is to examine the teacher's motivation and students' academic performance in science subjects in secondary schools. The population for the study comprised 157 secondary schools and all science teachers and students in Ilorin metropolis public secondary schools.200 teachers were randomly selected for the study Hence a structural questionnaire which contained about Twenty (20) questions relating to influence of motivation on the academic performance of science students was prepared and administered to 180of the 3 senatorial districts of Kwara state. The statistical tool used to analyse the data of 180 copies of the returned questionnaire was descriptive statistics using table and percentage (%). In addition to confirm the validity of the responses of the respondents, chi-square method was also employed to test six of the questions on the questionnaire distributed to the respondents. As a result, the response of the finding showed that: motivation of science teacher can translate into an improved academic performance of science students in secondary schools, prompt payment of salaries, provision science instructional materials, payment of funds benefits and conducive working environment all were discovered to enhance the teacher job performance and this improve student academic performance of science student in Ilorin metropolis secondary schools. It was concluded from this study that teacher motivation is a sin - squad-non to an improved academic performance. Hence, the paper recommend that school authorities ,ministries of education and all other stakeholders in education, parents, teachers, ministries of education and all other stakeholders in education should play their parts in ensuring that adequate educational media or science teacher instructional materials as well other equipped necessary facilities are provided in all science secondary school in other to encourage and motivate science teacher in other to improve in academic performance of students .*

## Introduction

Education serves as a foundational pathway for young people to acquire the skills and values needed to build successful careers and contribute meaningfully to society. Parents and guardians send their children to school with the hope that they will not only secure prosperous futures but also grow into responsible citizens. When asked about their future ambitions, many children express dreams of becoming doctors, engineers, or pilots—aspirations that hinge on excelling in their final school examinations. Realizing these ambitions requires both personal effort and committed support from teachers.

Despite these early dreams, it is often observed that fewer students pursue science subjects in secondary school, and many of those who do struggle to perform well. This trend is concerning given the critical role that science and technology play in modern society and the global push toward technological advancement. For Nigeria to remain competitive, it is essential that young people develop strong foundations in science and mathematics from secondary school onward. (Chisom, O. N., et al 2023) However, a notable decline in both enrollment and achievement in science subjects has raised alarms among educators, parents, and policymakers.

Research into the causes of poor performance in science reveals that low student motivation is a key factor. According to Fomunyam, D. K. G. (2021). Motivation is defined as the internal drive that directs and energizes actions is essential for sustained learning. It encompasses both intrinsic motivation, which comes from internal satisfaction, and extrinsic motivation, driven by external rewards. Psychologists agree that students who are motivated are more likely to participate actively in learning, which in turn positively influences their attitudes toward science and their career aspirations in scientific fields. (Badmus, O., & Omosewo, E. O. 2020).

Previous educational reforms in Nigeria, such as the shift from the 7-5-2-3 system to the 6-3-3-4 system, aimed to improve science education. However, challenges in fostering motivation among science students remain. Reflecting on her experiences as a postgraduate student in education, the researcher recalls a class discussion where classmates stressed that improvements in science education require a strong emphasis on motivating both teachers and students. Some argued that motivation significantly influences attitudes toward science learning, while others questioned its measurable impact.

In light of this, the present study seeks to examine the effect of motivation on science performance among secondary school students in Kwara State. By selecting schools from each of the state's three senatorial districts Kwara South, Kwara North, and Kwara Central—the research aims to provide a comprehensive analysis and identify actionable insights for stakeholders in education. This study will address key questions on how motivation affects learning outcomes and suggest strategies to enhance student engagement in science.

Some of the specific statements that this research work will attempt to verify and seek to proffer solutions are:

1.How does motivation affect performance of science students?
2.Does teachers motivation translate to student's academic improvement?
3.Can a teacher perform effectively without motivation?
4.Can student perform excellently without motivation?

What are motivational instruments, or devices that really affect the performance of science students in secondary school? The problem therefore is how can students' performances in science subjects improve in our secondary schools?

**Purpose of the Study:**

Motivation used in this study is to hinged on the concept of need or propensity: that is the desire to actively participate in class work in order to score higher marks in examinations.

The main purpose of the study therefore, is to examine how teacher motivation enhances students' academic performance in science subjects such as chemistry, physics, mathematics, Agricultural science and Biology in secondary schools of Ilorin metropolis other objectives are;

1. To critically examine the available motivators that boosts the morale of science teacher in secondary schools.
2. To determine the influence of the science teacher's motivation on the academic performance of the science students in Ilorin metropolis
3. To determine the effectiveness of the motivational instruments /tools used by the science teachers during teaching and learning processes.

**Research Questions:**

1. Does motivation influence teacher job performance in secondary schools.
2. Does motivation of science teachers translate into improved academic performance of science students in secondary school.

3. Can using instructional materials by teacher inspire students towards having an improved academic performance.

**Research Hypotheses:**

Main Hypothesis

$H0_1$: There is no significant relationship between teacher motivation and science students' academic performance in Ilorin metropolis secondary schools.

Operational Hypothesis:

$H_1$: There is no significant relationship between prompt payment of teacher's salaries and science student academic performance.

$H_2$: There is no significant relationship between regular payment of science teacher Fing benefits /promotion and student academic performance.

$H_3$: There is no significant relationship between provision and utilization of science instructional materials and students' academic performance in science subjects in secondary school in Ilorin metropolis

**Literature Review**

Motivation is defined in various ways by different authors, but it generally refers to an internal drive that initiates, directs, sustains, and influences behaviour towards achieving goals. Align with Bandhu, D., et al, (2024) that suggest motivation is a complex process that influences an individual's attitude, behaviour and performance. Berelson and Steiner describe motivation as an inner state that activates and channels behaviour toward objectives. It involves the process through which an individual's needs and desires lead to action, aiming to fulfil organizational goals. The fact that Odo, F. C et al (2024) emphasizes that motivation promotes full participation and commitment, which is essential for workplace success. Considering Fakai, A. A. (2023), the term motivation is derived from Lati Word "movere" which means "to move" to action. motivation makes workers kick like engine leading to action and performance. At every state of human development there are certain needs that an individual wants to meet. With regards to Brown, J. S. (2023). motivation is the act of influencing and stimulating an individual to action.

According to Agha (2011), motivation is the act of encouraging oneself or others to achieve a desired behaviour or outcome. It includes measures taken by management to create a positive work environment that meets teachers' needs, fostering satisfaction, commitment, and effectiveness in their roles. Motivation is like fuel, energizing behaviour and determining the quality, direction, and strength of a teacher's actions.

Effective motivation requires adapting techniques over time to meet changing needs Government is responsible for motivating teachers by providing wages, incentives, and other morale boosters to encourage optimal performance. Enhanced motivation can help teachers perform willingly and enthusiastically toward educational goals while achieving personal job satisfaction.

Motivation could be described as intrinsic and extrinsic reward given to an employee to enable him to increase his service in an organization in shrift its morale booster for a worker. Research has consistently shown that motivation plays a significant role in students' academic achievement and performance. According to Findsrud, R et al, (2018) motivation can be defined as the driving force that initiate and sustains behaviour towards achieving a goal on the subject. Banegas, D. L. (2013). Motivation is a kind of driving force within the individual. Speaking about Salminen, I. (2018). motivation as a process which governs the choice made by persons, among various forms of voluntary actions. Jones (1955) definition appeared to be one of the most

comprehensive of all definition of motivation found in the literature, and state that motivation has to do with "how behaviour gets started, is energized, sustained, directed, and stopped, what kind of subject reaction is present in the organism while all this going on. Motivation in relation to science student performance refers to the driving forces that initiate and direct students' behaviour and engagement in learning science. It is a crucial factor that influences students' interest, effort, and persistence in science learning. Motivation that can affect science student performance can be classified in two:

1. Intrinsic Motivation: This type of motivation comes from within the individual. Students with intrinsic motivation are driven by a genuine interest, curiosity, and enjoyment of learning science. They are motivated to learn science for its own sake, and their goal is to understand and master the subject matter. Example: "I love learning about science because it helps me understand the world around me.
2. Extrinsic Motivation: This type of motivation comes from external factors. Students with extrinsic motivation are driven by factors such as grades, rewards, recognition, or social pressure. Their goal is to achieve a specific outcome or reward, rather than to learn science for its own sake. Example: "I'm studying science because I want to get good grades and make my parents proud.

Understanding the different types of motivation can help educators and policymakers create supportive learning environments that foster motivation and improve science student performance. Motivation can be broadly classified into extrinsic and intrinsic forms (Deci & Ryan, 2000). Extrinsic motivation refers to motivations that come from external sources, such as rewards or punishments, while intrinsic motivation refers to motivations that come from within the individual, such as a sense of personal satisfaction or interest in the task.

(Deci & Ryan, 2000) suggested that Student who feel competent in their science classes are more likely to be motivated to learn and engage in learning activities.

(Deci & Ryan, 2000). Students who feel that they have a high degree of autonomy in their science classes are more likely to be motivated to learn and participate in class.

Deci and Ryan's Self-Determination Theory (2000) distinguishes between two key types of motivation: Intrinsic Motivation: The internal drive to learn and engage with science due to the inherent enjoyment, curiosity, and satisfaction it brings (Deci & Ryan, 2000).

Students motivated intrinsically find science interesting and are more likely to persist through challenges.

Extrinsic Motivation: Engagement driven by external factors like rewards, grades, or parental pressure (Deci & Ryan, 2000).

While extrinsic motivation can be a good starting point, overuse can undermine intrinsic motivation according to (Adamma, O. N., et al 2018) demonstrate that students with higher intrinsic motivation in science courses tend to achieve better academic results.

However, research by Alsuwailem, M. (2023). suggests that a healthy balance between intrinsic and extrinsic factors can be optimal. Students are more motivated when they perceive the relevance of science content to their lives and future aspirations (Lamssali, M., et al 2024).

Studies by Okada, A. (2024). emphasize the importance of connecting science learning to real-world application. Meulenbroeks, R., et al (2024) indicates that motivated students tend to participate actively in class discussions, complete assignments more thoroughly, and show greater interest in science exploration There are several motivation theories of motivation for this study influence of motivation on student academic performance in biology among senior secondary school students in Ilorin metropolis, Kwara state the following theories was delve in to. Self-Determination Theory (SDT) proposes that motivation is influenced by the degree to which individuals feel that they have autonomy, competence, and relatedness in their learning environments. (Deci & Ryan, 2000).

Students who feel that their science classes are supportive of these needs are more likely to be motivated to learn. Goal-Setting Theory proposes that the specific, challenging, and attainable goals that individuals set for themselves can influence their motivation and performance. (Swann, C., et al 2021). Students who set appropriate goals in their science classes are more likely to be motivated to learn and achieve their desired outcomes. Attribution Theory proposes that individuals make attributions about the causes of their successes and failures, which can influence their motivation and performance (Galambos, D. 2023). Motivation serves as a critical fuel for success in science education. By fostering intrinsic motivation, emphasizing relevance, and acknowledging individual differences, educators can create a more engaging and enriching learning environment that ignites students' passion for science and propels them towards academic achievements

**Methods**

Descriptive research design was adopted for this study. Descriptive research is for finding answers to questions and not in itself sufficient or comprehensively enough to provide answers from its description. Lim, W. M. (2024). also collaborated this fact by stating that a descriptive survey type of research generally tries to collect information from a representative of a group and based on such information, inference is drawn about the behaviour of the entire population. Nworgu (2014) also stressed that survey research is one in which group of people or items are studied by collecting and analysing data from only a few people or items considered to be representative of the entire group. This design was considered appropriate for this study because it enables the researcher to collect series of data from the variables of the study which made it easier to find the relationship between motivation as an independent variable and student academic performance as a dependent variable. Research design is the plan, structure, and strategic questions to control variance.

The plan is overall scheme of the research including how the research objectives will be achieved and how the problems encountered will be tackled. The approach used for this research allowed the researcher to collect and analysed data on the Effect of motivation on the performance of science students in secondary schools.

The population of the study consists of all teachers and the entire science students in the 157 secondary schools in Ilorin metropolis, Kwara State.

Since the topic of this research work is effect of motivation on the performance science students in secondary schools, the subjects which formed the population of this study are all secondary school's science students in Kwara state.

According to Salawu S.k et al (2023) Sample is the process of selecting and choosing a small representative (i.e. sample) part of a population with the aim of generating required data that the conclusion of which are generalized about the whole population. The population for the study comprises all secondary school science students in Kwara state. A sample of the 200 respondents' science were chosen for the purpose of this study, using proportionate sampling Techniques six secondary schools in Kwara state were randomly selected. These schools are those which have been presenting student for WAEC and NECO Examination for at least five years from each school in the metropolis for this descriptive and analytical research work, the major instrument that the researcher used in collecting or gathering data was the researcher design questionnaire. The questionnaire was constructed to contain part A and part B have a few well items related to the objective of the study. This simply means that part of the questionnaire contained questions on personal data such as Age, Name of Schools, Sex e. t. c. While part B sought information on the problems associated with influence of motivation on student academic performance. A proforma was also designed to collect five years WAEC result, of science students from the sampled schools.

The instrument was validated by three experts in the field of Test and Measurement from Al-Hikman University, Ilorin

According to Adewumi et al (2015), "a test is said to be valid when it measures what is supposed to measure".

Reliability refers to the consistency of a test at a specific period. It is the degree of accuracy with which an instrument measures what it is supposed to measure. Reliability is the extent to which a test is consistent in measuring whatever it does measure, dependability, stability, relative freedom from errors of measurement. It is the consistency of scores obtained by the same person when re-examine with the same test on different set of equipment items. However, in determining the reliability of this instrument, test& re-test method was used and two sets of data obtained were subjected to Pearson products moment correlation statistics. Coefficient value of 0.69 was obtained signeted that the instrument was reliable.

Information gathered during the course of this study was analysed and interpreted. The analyses were then presented in tabular form. To make for further understanding of the statistical table, Descriptive method of data analysis was employed to answer all the research questions. While the inferential statistics of, chi-square method was used to test the generated hypothesis at 0.05level of significance.

**Findings and Discussion of Results**

Percentage method was used in presenting and answered all the research questions.200 questionnaire were administered,180 of them were returned which were used for both descriptive and inferential analysis.

RQ1: Does motivation influence science teachers job performance?

**Source: Researcher's survey 2024**

| Categories of respondents | No | Agree No | Percent % | Disagree No | Percent % |
|---|---|---|---|---|---|
| Male | 120 | 80 | 44.7 | 45 | 23.6 |
| Female | 60 | 40 | 22.6 | 15 | 9,4 |
| Total | 180 | 120 | 67 | 60 | 33 |

Table1: shows that having received and processed 180 questionnaires, 120 respondents (80 male and 40female) representing about 67 percent of the whole respondents agreed that motivation of science teacher will improve their job performance hence induce them to put in more commitment which eventually enhance student academic performance motivation alone has a significant influence on their job performance in Ilorin metropolis secondary schools.

**RQ2:** Does motivation of science teacher translate into improved students' Academic performance in science subjects

Table2: Responses on how motivation of science. Teachers improve students' academic performance in science subjects.

| No of respondent | Agree No | Percent % | Disagree No | Percent % | Total % |
|---|---|---|---|---|---|
| 180 | 135 | 95 | 45 | 5 | 100 |

**Source: Researcher's survey 2024**

Table 2. shows that total number of respondents to these questions were 180 out of which 135 of them representing 95% agreed that science teacher motivation has tendency to improve student academic performance. This possible because when teacher is happy, he is productivity

will improve which will in turn translate to an improve student academic performance.45 of the respondent representing only 5% were of the opinion that teacher motivation may not have direct bearing on student academic performance. The reason for this response may be from the fact that motivation is not the only driving force for a better performance.

RQ3: Can using instructional materials by teachers inspire students towards having an improved academic performance?

Table3: Teachers are more effective when they use science instructional material which enhance students' academic performance.

**Source: Researcher's survey 2024**

| Categories of respondents | No | Agree No | Percent % | Disagree No | Percent % |
|---|---|---|---|---|---|
| Female | 60 | 58 | 96.7 | 2 | 3.3 |
| Male | 120 | 100 | 83.3 | 20 | 16.7 |
| Total | 180 | 158 | 87.7 | 22 | 12.2 |

As shown in Table,158 respondents (55female plus 100male) representing about 87.7% are opinion science teacher are more effective when they use instructional material. This instructional material may be Audio-Visual such as projector, speaker, it may be visual materials like chart on cardboard, improvised objects, real objects, textbooks. This therefore translate to an improved performance by student in science subjects.

**Research Hypothesis**

**HO:** There is no significant relationship between teachers' motivation and students' academic performance of science students in Ilorin metropolis secondary schools.

Table4: Correlation analysis of teacher motivation and students' academic performance in science subjects.

| **Variable** | **N** | **X** | **SD** | **R-value** | **p-value** | **Decision** |
|---|---|---|---|---|---|---|
| Teacher motivation | 180 | 3.34 | 0.39 | Notaccepted | | |
| | 0.07 | | 0.00 | | | |
| Students Academic performance | 180 | 3.07 | 0.48 | | | |

Table 4 showed that calculated R-value (0.07) while the p-value of (0.00) is less than the significant value of (0.05). Hence the null hypothesis which stated that there is no significant relationship between teacher motivation and science student academic performance is hereby not accepted. Hence, teacher motivation is a determinant of science students' academic performance in Ilorin metropolis secondary schools. Meaning that if teachers are well motivated, it will improve their job performance and translate to better performance by students

**$H0_1$:** There is no significant relationship between prompt payment of teacher salaries and science students' academic performance in science subjects

**Table5:** Analysis of relationship between payment of teacher salaries and student academic performance in science subjects

| Variable | No | X | SD | R-value | p-value | Decision |
|---|---|---|---|---|---|---|
| Payment of teachers' salaries | 180 | 3.32 | 0.35 | | | Not rejected |
| | | | | 0.81 | 0.100 | |
| SAP | 180 | 3.80 | 0.42 | | | |

Table5 revealed p-value of 0.100 is greater than the significant level of 0.05 and hence the null hypothesis which states that there is no significant relationship between prompt and payment of salaries and science students' academic performance is accepted. Therefore, payment of teacher salaries does not determine students' academic performance in science subjects. This implies that there may be other motivational factors that could enhance their job performance that may likely improve students' performance rather than payment of salaries alone.

**$H0_2$:** There is no significant relationship between regular payments of teacher firing benefit/promotion as at when due and students' academic performance in science subjects.

Table6: Analysis of relationship between regular payment of fringe benefits and promotion and student academic performance in science subjects.

| Variable | N | X | SD | R-value | p-value | Decision |
|---|---|---|---|---|---|---|
| Regular payment Of benefits/promotion | 180 | 3.47 | 0.32 | | | |
| | | | | 0.107 | 0.001 | Rejected |
| Students' academic Performance | 180 | 3.06 | 0.45 | | | |

Table6 indicated that p-value of 0.001 is less than the significant value of 0.05, hence the null hypothesis is not accepted. Hence there is a significant relationship between payment of fringes benefits, promotion as at when due and the students' academic performance. This means that when entitlement of teachers is paid regularly and their promotion is done as at when due, it will boost their morale to work and thus translate to better performance by students

$H0_3$: There is no significant relationship between teachers' usage of science instructional materials and students' academic performance in science subjects in Ilorin metropolis.

**Table7:** Analysis of teacher's usage of science instructional materials and students' academic performance in Ilorin metropolis,

| Variable | N | X | SD | R-value | p-value | Decision |
|---|---|---|---|---|---|---|
| Regular payment Of benefits/promotion | 180 | 3.52 | 0.37 | | | |
| | | | | 0.107 | 0.001 | Rejected |
| Students' academic Performance | 180 | 4.05 | 0.41 | | | |

**Table 7** indicated the p-value of 0.005 less than the significant level of 0.05 which implies that the null hypothesis which states that there is no significant relationship between teacher usage of instructional materials and students' academic performances is thereby not accepted. Thus, there is a significant relationship between the two variables. Therefore, teacher usage of instructional materials for the teaching of science subjects is a determinant of science students' academic performance in science subjects in secondary schools in Ilorin metropolis, Kwara state. This result implies that as the usage of instructional facilities by teacher will improve students' performance in science subjects in secondary schools in Ilorin metropolis, Kwara State.

**Summary of Findings**

Analysis of data in table 4 revealed that the result supports the proposition in the alternative hypothesis is (i)that teacher motivation has tendency to improve the performance of science students in secondary schools. considering the analysis of data in table 6 it has also been shown that the results of the analysis is supported the proposition in alternative hypothesis (ii)that motivation of science teachers through regular provision of fringe benefits and promotion has translate into an improved academic performance of science students in secondary schools. similarly, analysis of data shown in table 6 also supports the preposition in alternative hypothesis (iii)that: using motivational device such as an effective science instructional material has propelled or inspire students towards having an improved academics performance (i.e. good grade).

**Conclusion**

In conclusion, motivation has a significant influence on the academic performance of secondary school students in science subjects in Ilorin metropolis. The study suggests that teacher motivation is a crucial factor in determining students' interest, effort, and achievement in science-based subjects. Teachers who are motivated tend to have a positive attitude towards their job performance which will in turn enhance student performance. The findings of this study highlight the importance of motivation, such as promotion at as when due, regular payment of fringe benefits and usage of science instructional materials as they play a vital role in enhancing students' academic performance.

**Recommendations:**

1. Teachers should strive to create a supportive and inclusive learning environment that fosters students' interest and enjoyment in science subjects.
2. Government through the Ministry of education should provide enough and adequate instructional facilities to teachers to complement the existing ones that will further enhance student performance.
3. Government should regularly provide fringe benefits such as science teacher allowances and promotion as at when due to stimulate teacher satisfaction in order to translate to an improve student academic performance.
4. Further research should be conducted to explore the influence of motivation on students' academic performance in other subjects and contexts’

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