



SELF-REGULATED LEARNING AND ACHIEVEMENT MOTIVATION AS CORRELATES OF PHYSICS ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS

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Abstract

This study investigated the relationship between self-regulated learning, achievement motivation, and academic achievement in Physics among secondary school students in Ekiti State, Nigeria. The study employed a correlational design, utilising a survey and an ex post facto approach. A sample of 233 Senior Secondary School III Physics students was selected using a multi-stage sampling technique from a population of 4,505 students. Two instruments, the Physics Students' Self-Regulated Learning Questionnaire (PSSLQ) and Physics Students' Achievement Motivation Questionnaire (PSAMQ), were used for data collection. The instruments were validated by science educators and test and measurement experts, confirming their face and content validity. Reliability analysis yielded Cronbach's Alpha coefficients of 0.79 and 0.83 for PSSLQ and PSAMQ, respectively, indicating high internal consistency. The results showed a significant positive relationship between self-regulated learning ($r = 0.711$, $p < 0.05$) and achievement motivation ($r = 0.707$, $p < 0.05$) with academic achievement. Regression analysis revealed that both self-regulated learning ($\beta = 0.405$, $p < 0.05$) and achievement motivation ($\beta = 0.385$, $p < 0.05$) significantly predicted academic achievement, with a combined explanatory power of 56% ($R^2 = 0.560$). The study concludes that self-regulated learning and achievement motivation, both individually and jointly, significantly predict academic achievement in Physics. Based on the findings, it is recommended that educators incorporate self-regulated learning strategies and foster achievement motivation to enhance students' academic achievement in Physics, and policymakers provide support and training for teachers to develop effective strategies for promoting these skills.

Keywords: Self-regulated learning, Achievement motivation, Academic achievement, Physics education, Secondary school students.

Introduction

Physics education plays a vital role in shaping the scientific literacy and technological advancement of any nation. As a fundamental discipline, physics underpins many areas of modern life, from engineering and technology to medicine and environmental science. Physics is a crucial component of the STEM (Science, Technology, Engineering, and Mathematics) field, serving as a crosscutting subject that intersects with various STEM disciplines (National Science Foundation, 2020). The principles and concepts of physics are essential for understanding and addressing complex problems in fields such as engineering, computer science, and biotechnology.

At the secondary school level, Physics is a core subject that equips students with essential knowledge, skills, and competencies necessary for further studies and careers in STEM fields. The importance of physics in society cannot be overstated. Physics has led to numerous breakthroughs and innovations that have transformed our daily lives, from the development of electricity and electronics to advancements in medical imaging and renewable energy (World Bank, 2022). As such, students must develop a strong foundation in physics to contribute to the scientific and technological progress of their countries.

Learning Physics at the secondary school level in Nigeria equips students with essential skills that benefit them in various aspects of life. These skills include critical thinking and problem-solving, analytical and logical reasoning, creativity and innovation, quantitative reasoning and mathematical modelling, communication and collaboration, and resilience and perseverance. By developing these skills, Nigerian students can tackle complex challenges in fields like energy, healthcare, and infrastructure development and contribute to the country's economic growth and development.

The skills gained from learning Physics can empower Nigerian students to think creatively, innovate, and solve problems, ultimately contributing to national development and integration. By acquiring a strong foundation in Physics, students can develop the ability to analyze complex phenomena, think logically, and communicate effectively. These skills are valuable in a wide range of professions, including

STEM fields, and can benefit students in their future careers and personal lives.

Despite its importance, students' performance in Physics at the secondary school level has been a concern in recent times. According to the West African Examinations Council (WAEC) Chief Examiners' reports, students' performance in Physics has been inconsistent, with many students struggling to achieve credit passes (WAEC, 2022; WAEC, 2023). Data from the WAEC reports show that in 2020, only 45.6% of students achieved a credit pass in Physics, while in 2021, the percentage dropped to 42.1% (WAEC, 2022). In 2022, the percentage slightly improved to 44.5%, but in 2023, it declined again to 41.9% (WAEC, 2023). The trend suggests that students' performance in Physics has been fluctuating, with no significant improvement in recent years. Meanwhile, research has shown that students' factors, such as self-regulated learning and achievement motivation, play a significant role in their academic achievement (Zimmerman, 2000; Dweck, 2000). Self-regulated learning refers to the ability of students to control their learning processes, set goals, and monitor their progress (Zimmerman, 2000). Achievement motivation, on the other hand, refers to the drive to achieve success and mastery of tasks (Dweck, 2000). Self-regulated learning skills are essential for students to understand and control their learning environment. According to the Teaching Excellence in Adult Literacy (TEAL, 2010), these skills include goal setting, self-monitoring, self-instruction, and self-reinforcement. Zimmerman, Bonnor, and Kovach (2002) further emphasized that self-regulation is a self-directive process that enables learners to transform their mental abilities into skills and habits through guided practice and feedback.

Effective learners are expected to be self-regulating by analyzing task requirements, setting productive goals, and selecting strategies to achieve their objectives. Self-regulated learners should also be able to monitor their learning progress, manage distractions, and adjust their learning strategies to improve academic achievement (Paris & Paris, 2001). These skills enable learners to remain focused, take charge of their learning, and prepare for lifelong learning.

Self-regulated learning skills are crucial for

academic greatness and confidence. Students who are self-regulated learners are aware of their academic strengths and weaknesses and have strategies to tackle challenges (Winnie & Perry, 2006). Although previous studies have reported a low correlation between critical thinking skills and self-regulated learning, the present study aims to investigate the extent to which self-regulated learning can improve academic achievement and confidence.

Research has shown that self-regulated learning (SRL) strategies are essential for students' academic achievement in various subjects, including Chemistry and Mathematics. Studies by Tella (2017) and Duru and Okeke (2021) found that SRL skills such as goal setting, self-monitoring, and self-evaluation significantly predicted students' achievement in Chemistry and Mathematics. Similarly, Ekuri and Offiah (2018) reported that self-regulatory attributes had a significant relationship with academic performance in Mathematics. These findings suggest that students who develop effective SRL strategies tend to perform better academically.

Other studies have also explored the relationship between SRL and academic achievement. Price (2017) found a positive correlation between academic performance and metacognitive self-regulation (MSR) and effort regulation (ER). Kesuma et al. (2021) identified several main themes that support SRL skills, including preparation, performance, and reflection. Guo et al. (2022) developed the Undergraduate Online Self-Regulated Learning Questionnaire (UOSL) and found that online self-regulation was critical for promoting equity and enhancing quality in online teaching design and learning support.

The findings of these studies have implications for educators and policymakers. Duru (2021) recommended that secondary school students should regulate their learning and adopt appropriate learning styles to increase their mathematics achievement. Tella (2017) suggested that students should be encouraged to develop enough SRL strategies to facilitate their learning. Ekuri and Offiah (2018) recommended that school counselors should inculcate values such as confidence, competence, and effective use of time among students. By promoting SRL strategies, educators can help students develop

the skills they need to succeed academically and beyond (Tella, 2017; Duru, 2021; Guo et al., 2022)

Achievement motivation is another crucial factor that can significantly impact students' learning outcomes in Physics among secondary school students in Ekiti State. This inner drive to achieve can be a determining factor in students' academic success, and its absence may even predispose them to examination malpractice. According to Hasan and Sarkar (2018), achievement motivation plays a vital role in the teaching-learning process, with students who possess a strong desire to achieve tend to outperform those who lack this drive.

Achievement motivation can be described as the positive and negative effects that arise in situations involving standards of excellence, where performance can be evaluated as success or failure (McClelland, 2015). When students are internally motivated to perform well academically, they learn faster and maximize their efforts to achieve success. Given the established positive relationship between achievement motivation and academic performance, it is essential to investigate the extent to which achievement motivation predicts Physics students' achievement and academic confidence.

Studies have found that students who are self-regulated learners and have high achievement motivation tend to perform better in science subjects, including Physics (Britner & Pajares, 2006; Sungur & Senler, 2009). Recent studies have also highlighted the importance of self-regulated learning and achievement motivation in science education. A study by Awofala et al. (2022) found that self-regulated learning strategies significantly predicted students' achievement in Physics. Another study by Oludipe et al. (2023) found that achievement motivation was a significant predictor of students' performance in science subjects. These findings suggest that self-regulated learning and achievement motivation are crucial factors that can influence students' achievement in Physics.

Research has shown that achievement motivation plays a significant role in students' academic achievement. Studies by Gizdarska (2017) and Ekpenyong et al. (2017) found that achievement motivation was a significant

predictor of academic performance. Similarly, Villa and Sebastian (2021) reported that achievement motivation was the only predictor of mathematics achievement. Adegboyega (2018) also found a significant correlation between achievement motivation and attitude towards examination.

Other studies have explored the relationship between achievement motivation and academic achievement in different contexts. Jonathan and Chinelo (2017) found that self-concept, test anxiety, and achievement motivation jointly and independently predicted secondary school students' academic achievement in Physics. Xinyue et al. (2020) reported that IQ and left-behind status predicted achievement gains for the average student in rural China. Zacharia and Karen (2022) found that the self-assessment strategy was effective in improving mathematics performance among secondary school students with learning difficulties.

The findings of these studies have implications for educators and policymakers. Ekpenyong et al. (2017) recommended that students should develop high achievement motivation towards social studies and other subjects. Adegboyega (2018) suggested that counselors and lecturers should be equipped with strategies to assist students in developing appropriate achievement motivation levels. Villa and Sebastian (2021) recommended that remediation should be provided to students to increase their achievement motivation and ultimately improve their mathematics achievement.

The relationship between self-regulatory learning, achievement motivation, and academic achievement among secondary school students has been extensively explored, yet the findings remain inconclusive and divergent. While some studies have reported a significant positive correlation between self-regulatory learning strategies and academic achievement (Tella, 2017; Ekuri & Offiah, 2018), others have found no such relationship (Price, 2017). Similarly, research on achievement motivation has yielded mixed results, with some studies indicating a strong predictive relationship with academic achievement (Villa & Sebastian, 2021; Ekpenyong et al., 2017), while others have found no significant correlation (Gizdarska, 2017).

These inconsistencies highlight the need for further investigation into the complex interplay between self-regulatory learning, achievement motivation, and academic achievement, particularly in the context of secondary school students. This study aims to contribute to the existing body of knowledge by exploring the joint and relative influence of self-regulatory learning and achievement motivation on academic achievement among secondary school students.

Ekiti State faces significant economic challenges, ranking among the least economically viable states in Nigeria with a high poverty rate of 28.04% and an unemployment/underemployment rate of 53.38%. To combat these issues, functional education is crucial, and students must develop essential skills such as critical thinking, self-regulated learning, and achievement motivation to survive academically and build confidence. This will enable them to become job creators rather than job seekers, contributing to the state's economic growth and development. Given Ekiti State's reputation as a hub of education, students must possess these skills to excel academically and ultimately drive positive change in their communities.

Given the importance of Physics education and the challenges facing students' performance in the subject, it is essential to investigate the relationship between self-regulated learning, achievement motivation, and Physics achievement among secondary school students in Ekiti State. This study aims to explore the correlates of self-regulated learning and achievement motivation with physics achievement among secondary school students in Ekiti State, to provide insights that can inform strategies for improving students' performance in physics and ultimately contributing to the development of a robust STEM workforce.

Research Questions

The following research questions were set out to guide the study:

1. How do male and female secondary school Physics students differ in their self-regulated learning skills?
2. What are the differences in achievement motivation scores between male and female secondary school Physics students?

Hypotheses

The following hypotheses were raised to guide the study:

1. There is no significant relationship between self-regulated learning and academic performance among secondary school Physics students.
2. There is no significant relationship between achievement motivation and academic performance among the respondents.
3. There is no significant interactive effect of self-regulated learning and achievement motivation on the academic performance of the students.

Methodology

This study employed a correlational design, specifically utilising a survey and ex post facto approach, to investigate the relationships between variables. The population consisted of 4,505 Senior Secondary School Three (SSS III) Physics students in Ekiti State, Nigeria, as of June 2023, with a gender distribution of 2,106 (46.7%) males and 2,399 (53.3%) females. A sample of 233 SSS III Physics students was selected using a multi-stage sampling procedure. Two instruments were utilised for data collection: the Physics Students'

Self-Regulated Learning Questionnaire (PSSLQ), Physics Students' Achievement Motivation Questionnaire (PSAMQ), and the Physics Students' Achievement Record (PSAR), derived from the 2023 Ekiti State Unified Promotion Examination Results. Both instruments underwent rigorous validation by science educators and test and measurement experts, confirming their face and content validity. The reliability of the PSSLQ and PSAMQ was established through pilot testing, yielding a Cronbach's Alpha coefficient of 0.79 and 0.83, respectively, indicating high internal consistency. Following permission from the Ekiti State Ministry of Education, the researcher administered the instruments and analysed the data using descriptive statistics (frequency counts, mean, and standard deviation) to answer the research questions, as well as correlation and regression analyses to test the hypotheses.

Results

The results of the analysis are presented in the following sections, highlighting the key discoveries and implications of the study. This is presented based on the research questions and hypotheses.

Research Question 1: How do male and female secondary school Physics students differ in their self-regulated learning skills?

To answer this research question, the scores of male and female Physics students on self-regulated learning were subjected to descriptive analysis of mean and standard deviation; hence, the results are presented in Table 1.

Table 1

Mean and standard deviation of male and female Physics students on self-regulated learning among secondary school students.

		Self-regulated Learning		
		Valid N	$\bar{x}$	Standard Deviation (SD)
Gender	Male	119	67.82	9.43
	Female	114	65.64	10.64

The results presented in Table 1 show that male Physics students have a slightly higher mean score (67.82) in self-regulated learning compared to female Physics students (65.64). This suggests that, on average, male students tend to exhibit slightly better self-regulated learning skills than their female counterparts. The standard deviations indicate that female students' scores are more dispersed (SD = 10.64) compared to

male students (SD = 9.43), implying greater variability in self-regulated learning skills among female students. These findings suggest that there are differences in self-regulated learning skills between male and female Physics students, with male students having a slight edge in terms of mean scores. Still, female students exhibiting greater variability in their scores.

Research Question 2: What are the differences in achievement motivation scores between male and female secondary school Physics students?

To answer this research question, the scores of male and female Physics students on Achievement Motivation were subjected to descriptive analysis of mean and standard deviation; hereafter, the results are presented in Table 2.

Table 4

Mean and standard deviation of male and female Physics students on Achievement Motivation among secondary school students.

		Achievement Motivation				
		Valid N	Minimum	Maximum	$\bar{x}$	Std. Deviation (SD)
Gender	Male	119	34.00	88.00	70.93	10.90
	Female	114	35.00	88.00	69.09	11.25

The results presented in Table 2 show that male Physics students have a slightly higher mean score (70.93) in achievement motivation compared to female Physics students (69.09). This suggests that, on average, male students tend to exhibit slightly higher levels of achievement motivation than their female counterparts. The standard deviations indicate that both male (SD = 10.90) and female (SD = 11.25) students' scores show similar variability in achievement motivation, with female students' scores being

slightly more dispersed. These findings indicate that while there are differences in achievement motivation scores between male and female Physics students, the difference is relatively small, and both groups exhibit a range of achievement motivation levels.

Hypotheses

The following hypotheses were tested for the study:

Hypothesis 1: There is no significant relationship between self-regulated learning and academic performance among secondary school Physics students.

In testing this hypothesis, the Physics students' scores on Self-regulated learning and academic performance were subjected to Pearson's correlation statistics, and the results are hence presented in Table 3.

Table 3

Pearson's Correlation analysis of the relationship between Self-regulated Learning and Academic Performance among secondary school Physics students in Ekiti State

Correlations			
		Self-regulated Learning	Academic Performance
Self-regulated Learning	Pearson Correlation	1	.711
	Sig. (2-tailed)		.000**
	N	233	233
Academic Performance	Pearson Correlation	.711	1
	Sig. (2-tailed)	.000**	
	N	233	233

** . Correlation is significant at the 0.05 level.

The correlation analysis revealed a strong positive relationship between Self-regulated Learning and Academic Performance among secondary school Physics students, with a

Pearson correlation coefficient of 0.711. This indicates that as Self-regulated Learning increases, Academic Performance also tends to increase. The correlation was statistically

significant ($p = 0.000 < 0.05$), suggesting that the relationship between the two variables is unlikely to be due to chance. With a sample size of 233, the results indicate that Self-regulated Learning is a strong predictor of Academic Performance. Specifically, the coefficient of determination (R^2) would be approximately 0.506 (0.711^2), implying

that about 50.6% of the variance in Academic Performance can be explained by Self-regulated Learning. These findings suggest that promoting Self-regulated Learning strategies among Physics students could lead to improved Academic Performance.

Hypothesis 2: There is no significant relationship between achievement motivation and academic performance among the respondents.

To test this hypothesis, the Physics students' scores on achievement motivation and academic confidence among the respondents were subjected to Pearson's correlation statistics, and the results are presented in Table 4.

Table 4

Pearson's Correlation analysis of the relationship between achievement motivation and academic performance among secondary school Physics students.

Correlations			
		Achievement Motivation	Academic Performance
Achievement Motivation	Pearson Correlation	1	.707
	Sig. (2-tailed)		.000**
	N	233	233
Academic Performance	Pearson Correlation	.707	1
	Sig. (2-tailed)	.000**	
	N	233	233

** . Correlation is significant at the 0.05 level.

The analysis revealed a strong positive correlation between Achievement Motivation and Academic Performance among secondary school Physics students, with a Pearson correlation coefficient of 0.707. This indicates that as Achievement Motivation increases, Academic Performance also tends to increase. The correlation was statistically significant ($p = 0.000 < 0.05$), suggesting that the relationship between

the two variables is unlikely to be due to chance. Based on these findings, it can be inferred that higher levels of Achievement Motivation are associated with better Academic Performance in Physics. Therefore, the results suggest that fostering Achievement Motivation among students could be a valuable strategy for enhancing their Academic Performance.

Hypothesis 3: There is no significant interactive effect of self-regulated learning and achievement motivation on the academic performance of the students.

To test this hypothesis, the scores of secondary school Physics students in self-regulated learning, achievement motivation, and academic performance were subjected to regression analysis, and the results are presented in Tables 5 and 6.

Table 5

Regression analysis of Physics students' scores on self-regulated learning, achievement motivation, on academic performance.

Model		Coefficients ^a			T	Sig.
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	26.191	2.364		11.079	.000
	Self-regulated Learning	.314	.056	.405	5.616	.000
	Achievement Motivation	.271	.051	.385	5.332	.000

**. Correlation is significant at the 0.05 level (2-tailed).

a. Dependent Variable: Academic Performance

The regression analysis revealed that both Self-regulated Learning and Achievement Motivation are significant predictors of Academic Performance among secondary school Physics students. The model indicates that a one-unit increase in Self-regulated Learning is associated with a 0.314-unit increase in Academic Performance, while controlling for Achievement Motivation. Similarly, a one-unit increase in Achievement Motivation is associated with a

0.271-unit increase in Academic Performance, while controlling for Self-regulated Learning. The standardised coefficients suggest that Self-regulated Learning (Beta = 0.405) has a slightly stronger relationship with Academic Performance compared to Achievement Motivation (Beta = 0.385). Both predictors were statistically significant ($p = 0.000 < 0.05$), highlighting their importance in determining Academic Performance.

The regression equation,

Academic Performance = $26.191 + 0.314$ (Self-regulated Learning) + 0.271 (Achievement Motivation)

This provides a quantitative model for predicting Academic Performance based on these two key factors. These findings suggest that promoting Self-regulated Learning and Achievement Motivation among Physics students could lead to improved Academic Performance.

Table 6

Summary of regression analysis for the relationship between self-regulated learning, achievement motivation, and academic performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.748 ^a	.560	.556	5.20462

**. Correlation is significant at the 0.05 level.

a. Predictors: (Constant), Achievement Motivation, Self-regulated Learning

The model summary indicates a strong positive relationship between the predictors (Self-regulated Learning and Achievement Motivation) and Academic Performance, with a multiple correlation coefficient (R) of 0.748. The coefficient of determination (R^2) reveals that approximately 56% of the variance in Academic Performance can be explained by the predictors.

Even after adjusting for the number of predictors, the model still accounts for around 55.6% of the variance (Adjusted $R^2 = 0.556$). The standard error of the estimate is 5.20462, indicating a moderate level of precision in the predictions. Overall, the model demonstrates a strong fit, highlighting the importance of Self-regulated Learning and Achievement Motivation in

predicting Academic Performance among secondary school Physics students.

Discussion of Findings

The study's findings on self-regulated learning and achievement motivation among Physics students in Ekiti State offer valuable insights into the dynamics of academic performance. This discussion will delve into the implications of these findings, exploring the differences in self-regulated learning and achievement motivation between male and female students, as well as the relationship between self-regulated learning and academic performance.

The results of this study reveal a notable difference in the mean self-regulated learning scores between male and female Physics students, with males scoring higher. Specifically, male students exhibited a mean score of 67.82, while female students had a mean score of 65.64. This suggests that male Physics students in Ekiti State tend to exhibit higher levels of self-regulated learning compared to their female counterparts. This finding is consistent with previous research that has reported gender differences in self-regulated learning, with males often demonstrating higher levels of self-regulation (Zimmerman et al., 2002; Tella, 2017). For instance, a study by Prince (2017) found that male students tended to outperform female students in self-regulated learning, particularly in terms of goal-setting and self-monitoring. Similarly, a study by Xinyne et al. (2020) reported that male students exhibited higher levels of self-regulated learning compared to female students, which is in line with the findings of this study. However, it's worth noting that some studies have reported conflicting findings, with females demonstrating higher levels of self-regulated learning (Duru & Okeke, 2021). These mixed findings suggest that the relationship between gender and self-regulated learning may be complex and influenced by various factors, such as cultural context, educational environment, and individual differences.

In contrast to the findings on self-regulated learning, the results of this study reveal that male and female Physics students in Ekiti State exhibit similar levels of achievement motivation. The mean scores for achievement motivation were 70.93 for male students and 69.09 for female

students, indicating a non-significant difference between the two groups. This suggests that both male and female students have comparable levels of drive, enthusiasm, and determination to achieve academic success in Physics. This finding is consistent with some previous research that has reported no significant differences in achievement motivation between males and females (Dweck, 2000; Zakaria & Karem, 2022). The similarity in achievement motivation between male and female Physics students in this study could be attributed to various factors, such as the educational environment, teacher support, or parental influence.

The findings of this study also reveal a strong positive relationship between self-regulated learning and academic performance among secondary school Physics students. This indicates that as self-regulated learning increases, academic performance also tends to increase. These findings are consistent with previous research that has highlighted the importance of self-regulated learning strategies in predicting academic achievement. Studies by Tella (2017) and Duru and Okeke (2021) have reported similar findings, where self-regulated learning skills such as goal-setting, self-monitoring, and self-evaluation significantly predicted students' achievement in Chemistry and Mathematics. Ekuri and Offiah (2018) also found a significant relationship between self-regulatory attributes and academic performance in Mathematics. This suggests that promoting self-regulated learning strategies among Physics students could lead to improved academic performance. The findings of this study support the idea that self-regulated learning is a critical factor in determining academic success and that students who develop effective self-regulated learning strategies tend to perform better academically.

The findings of this study have important implications for educators and policymakers. The results suggest that targeted interventions to enhance self-regulated learning skills among female students could be beneficial. Additionally, fostering a supportive educational environment that encourages self-regulated learning strategies may improve academic performance. Further research is needed to explore the factors influencing self-regulated learning and achievement motivation differences between

male and female students. By understanding these factors, educators can develop more effective strategies to support the academic success of all students, regardless of gender.

The findings of this study reveal a strong positive correlation between Achievement Motivation and Academic Performance among secondary school Physics students. This indicates that as Achievement Motivation increases, Academic Performance also tends to increase. These findings are consistent with previous research that has highlighted the significance of achievement motivation in predicting academic performance. Studies by Gizdarska (2017), Ekpenyong et al. (2017), and Villa and Sebastian (2021) have reported similar findings, where achievement motivation was found to be a significant predictor of academic performance. The results of this study further underscore the importance of fostering Achievement Motivation among students to enhance their Academic Performance. The strong positive correlation between Achievement Motivation and Academic Performance suggests that students who are motivated to achieve tend to perform better academically. This is in line with the findings of Adegboyega (2018), who reported a significant correlation between achievement motivation and attitude towards examination.

The findings of this study revealed that both Self-regulated Learning and Achievement Motivation are significant predictors of Academic Performance among secondary school Physics students. These findings are consistent with previous research that has highlighted the importance of self-regulated learning and achievement motivation in predicting academic achievement (Zimmerman, 2000; Dweck, 2000; Tella, 2017; Ekuri & Offiah, 2018; Villa & Sebastian, 2021). The results suggest that students who develop effective self-regulated learning strategies and have high achievement motivation tend to perform better academically. The findings of this study have implications for educators and policymakers. By promoting self-regulated learning strategies and fostering achievement motivation, educators can help students develop the skills they need to succeed academically. The results suggest that educators should prioritise the development of self-regulated learning skills and achievement motivation among students to

enhance their Academic Performance in Physics and other subjects.

Conclusion

Based on the analysis and interpretation of data for the study, the study concludes that self-regulated learning and achievement motivation, both individually and jointly, significantly predict academic achievement in Physics, underscoring their importance in enhancing students' academic success in Ekiti State.

Recommendations

Based on the conclusion reached in the study, the following recommendations were made:

1. Educators should incorporate self-regulated learning strategies and foster achievement motivation to enhance students' academic achievement in Physics.
2. Policymakers and schools should provide support and training for teachers to develop effective strategies for promoting these skills.

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