



JOURNAL OF SCIENCE EDUCATION AND RESEARCH (JSER)

Vol. 8 (1); 2026

ISSN ONLINE: 3092-9253



**Editor in-Chief
PROF. PATRICK C. IGBOJINWAEKWU**

JOURNAL OF SCIENCE EDUCATION AND RESEARCH (JSER)
VOL.8 (1); 2026

**JOURNAL OF
SCIENCE
EDUCATION AND
RESEARCH
(JSER) 8 (1); 2026**

JOURNAL OF SCIENCE EDUCATION AND RESEARCH (JSER)
VOL.8 (1); 2026

© (JSER)

ISSN Online: 3092-9253

Published in February, 2026.

All right reserved

No part of this journal should be reproduced, stored in a retrieval system or transmitted in any form or by any means in whole or in part without the prior written approval of the copyright owner(s) except in the internet

Printed in Nigeria in the year 2026 by:



Love Isaac Consultancy Services (Publication Unit)
No 1 Etolue Street, Ifite Awka, Anambra State, Nigeria
+234-803-549-6787, +234-803-757-7391

EDITORIAL BOARD

Editor-in-Chief

Prof. Patrick C. Igbojinwaekwu

Editors

Prof. F.A. Onwioduokit	University of Uyo, Uyo, Akwa-Ibom State, Nigeria
Prof. Bennett I. Ado	Federal University, Otuoke, Bayelsa State, Nigeria
Dr. JohnBosco O.C. Okekeokosisi	Federal College of Education (Tech) Asaba, Delta State, Nigeria
Dr. Emmanuel C. Nwigboji	Alex Ekwueme Federal University Ndufu Alike, Ebonyi State, Nigeria
Dr. Chris O. Obialor	Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
Dr. Susan E. Umoru	Taraba State University
Dr. Loveline B. Ekweogu	Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
Dr. Odochi I. Njoku	Federal College of Agriculture, Ishiagu, Ebonyi State, Nigeria

Consulting Editors

Prof. Abdulhamid Auwal	Federal University Kashere, Gombe State, Nigeria
Prof. Marcellinus C. Anaekwe	National Open University of Nigeria
Dr. Peter I.I. Ikokwu	Nwafor Orizu College of Education Nsugbe, Anambra State, Nigeria

EDITORIAL

Journal of Science Education and Research (JSER) is a peer-reviewed published Bimonthly. It aimed at advancing knowledge and professionalism in all aspects of educational research, including but not limited to innovations in science education, educational technology, guidance and counselling psychology, childhood studies and early years, curriculum studies, evaluation, vocational training, planning, policy, pedagogy, human kinetics, health education and so on. JSER publish different types of research outputs including monographs, field articles, brief notes, comments on published articles and book reviews.

We are grateful to the contributors and hope that our readers will enjoy reading these contributions.

Prof. Patrick C. Igbojinwaekwu
Editor-in-Chief

TABLE OF CONTENTS

Academic Burnout as Predictors of Secondary School Students' Academic Achievement in Biology in Anambra State Okoli, Josephine Nwanneka, Arinze, Eucharika Chinwendu	1
Biology Teachers' Computer Anxiety and Digital Literacy as Correlates of Utilization of Digital Tools in Secondary Schools in Anambra State Egolum Obianuju Evelyn, Akachukwu Ebele Esther, Nzeakor Onyinyechukwu Jennifer	16
Teaching Experience and Academic Qualifications as Correlates of Pedagogical Content Knowledge of Biology Teachers in Anambra State Prof. J. N. Okoli, AsoanyaChidimma Vivian	32
Achievement Motivation and Self-Concept as Correlates of Interest and Academic Achievement in Mathematics among Senior Secondary School Students in Anambra State Prof Nonye Ngozi Achufusi, Edochie Valentine Chikeluo	50
Academic Procrastination and Self-Esteem as Correlates of Secondary School Students' Academic Achievement in Biology in Enugu State Prof. J.N Okoli, Philomena Ngozi Nweke	70
Effect of Problem Based Learning Approach on Academic Achievement of Secondary School Students in Physics in Awka Education Zone Prof N.N Achufusi, Blessing Ada Ojukwu	94

JOURNAL OF SCIENCE EDUCATION AND RESEARCH (JSER)
VOL.8 (1); 2026

**ACADEMIC PROCRASTINATION AND SELF-ESTEEM AS CORRELATES OF
SECONDARY SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT IN BIOLOGY
IN ENUGU STATE**

¹Prof. J.N Okoli, ²Philomena Ngozi Nweke

²ngoziinweke1997@gmail.com

^{1,2}Nnamdi Azikiwe University Awka, Anambra State, Nigeria

Abstract

This study investigated on academic procrastination and self-esteem as correlates of secondary school students' academic achievement in biology in Enugu State. The study was guided by three research questions and three null hypotheses. A correlational survey design was adopted to examine the degree and direction of relationships among the variables without manipulating them. The population comprised 12,934 SS2 Biology students in 188 secondary schools in Enugu State. A sample of 600 students was selected using a multi-stage sampling procedure involving stratified, simple random, and proportionate sampling techniques across three education zones. Data were collected using adapted standardized instruments: the Academic Procrastination Scale (APS) and the Rosenberg Self-Esteem Scale (RSES). Students' academic achievement in Biology was determined using their mean scores for one academic year obtained from school records. The instruments were validated by three experts from Nnamdi Azikiwe University, and reliability was established using Cronbach's Alpha, yielding coefficients of 0.82 for APS and 0.92 for RSES, indicating high internal consistency. Data were analyzed using Pearson Product Moment Correlation and multiple regression analysis at a 0.05 level of significance. The findings revealed that academic procrastination had a significant negative relationship with students' academic achievement in Biology, while self-esteem showed a significant positive relationship with academic achievement. Furthermore, the joint contribution of academic procrastination and self-esteem significantly predicted students' academic achievement in Biology. The null hypotheses were rejected where $p \leq 0.05$. Based on the findings, it was recommended that school counselors and teachers should implement intervention programmes aimed at reducing academic procrastination while promoting positive self-esteem among students. Workshops on effective study habits, emotional regulation, and confidence-building strategies should be organized to enhance students' academic performance in Biology. The study provides empirical evidence useful for educators, school administrators, and policymakers in designing targeted strategies to improve academic outcomes.

Keywords: Academic Procrastination, Self-Esteem, Academic Achievement

Introduction

Education serves as the bedrock of societal transformation and individual empowerment, providing the necessary framework for intellectual, economic, and social development. In Nigeria, education is structured to foster national unity, instill core values, and equip learners with skills essential for personal and collective progress. However, despite its critical role, the Nigerian education system continues to grapple with challenges such as inadequate infrastructure, teacher shortages, and fluctuating academic performance, particularly in science-related disciplines (Ajayi & Ekundayo, 2019).

Science education, as a subset of the broader educational system, occupies a central position in national development due to its capacity to cultivate scientific literacy, innovation, and problem-solving skills among students (Nwanze & Okoli, 2021). The ability of students to engage meaningfully with scientific concepts not only enhances their cognitive development but also prepares them for careers in medicine, engineering, biotechnology, and environmental conservation fields that are crucial for Nigeria's technological and economic advancement. Science education encompasses various domains, including Biology, Chemistry, Physics, Earth Sciences, integrated Science, Environmental Science, Mathematics and Computer Science.

Biology within the domain of science education stands out as a fundamental subject that bridges the gap between abstract scientific theories and real-world applications (Mbaegbu, Osuafor & Akachukwu, 2020). Biology education enables students to understand life processes, ecological interactions, and the principles of heredity, making it indispensable for addressing global challenges such as disease prevention,

food security, and climate change (Akachukwu & Okoli, 2023). Despite its importance, students' achievement in Biology in Nigerian secondary schools, particularly in Enugu State, has been inconsistent, with many learners underperforming in standardized examinations such as the West African Senior School Certificate Examination (WASSCE).

The academic performance of students in Biology in the West African Senior School Certificate Examination (WASSCE) has shown concerning fluctuations between 2020 and 2024, with pass rates (A1-C6) ranging from 72.60% to 79.80.% and failure rates (D7-F9) remaining persistently high at 20.20.% to 27.40%. The performance dropped strongly in 2024 to 72.60%, exposing systemic weaknesses including inadequate teaching resources, insufficient teacher training, and student difficulties with core Biology concepts. These consistent shortcomings highlight deeper problems such as poor teaching methods, lack of laboratory infrastructure, and weak foundational knowledge, exacerbated by stark rural-urban disparities where urban schools with better resources outperform their rural counterparts. To address these issues, comprehensive reforms are needed, including greater investment in science education, enhanced teacher training, and innovative teaching approaches to improve both engagement and accessibility. Without such systemic changes, the goal of achieving better Biology outcomes and developing scientifically competent graduates across West Africa especially in Nigeria and Enugu state in particular, will remain unattainable. This persistent fluctuation in achievement raises critical concerns about the underlying factors that hinder optimal learning outcomes in Biology. Previous studies have examined external variables such as teaching methods and resource availability, there is according to Edeh, Okeke and Onyisi (2020), a growing

recognition that psychological and behavioural factors such as academic procrastination and self-esteem play a significant role in shaping students' academic success.

Academic procrastination refers to the intentional delay or postponement of academic tasks despite knowing that such delays may result in negative consequences (González-Brignardello & Elvira Paniagua, 2023). It is a self-regulatory failure that impedes timely engagement with assignments, studying, project work, or exam preparation, often leading to stress, poor performance, and reduced academic achievement (Muliani, Imam & Dendiawan, 2020). Unlike general procrastination, which may involve the deferral of everyday tasks, academic procrastination is specific to educational contexts and according to Kim, Fernandez and Terrier (2017) especially dominant among students who struggle with task aversiveness, fear of failure, or low self-efficacy. The behaviour is not merely a time management issue but a complex psychological phenomenon influenced by cognitive, emotional, and behavioural factors. Procrastinators often intend to complete tasks but delay them repeatedly, usually opting for short-term mood repair or more pleasurable alternatives. According to the Temporal Motivation Theory (TMT) proposed by Steel (2007), procrastination results from a combination of task aversion, impulsiveness, low expectancy (belief in success), low value (perceived importance of the task), and long delay (time until reward). In academic settings, students might procrastinate because they feel overwhelmed, lack interest in the subject, or doubt their ability to succeed, all of which contribute to avoidance behaviours.

Empirical research has shown that academic procrastination is often associated with lower academic performance, increased stress, anxiety, and reduced well-being

(Batool, 2020; Brando-Garrido, Montes-Hidalgo, Limonero, Gómez-Romero & Tomas-Sánchez, 2020). It has also been linked with poor study habits, disorganization, and dysfunctional beliefs about perfectionism and competence. For instance, students who are perfectionists may delay tasks because they fear not meeting excessively high standards, while those with low self-esteem may avoid tasks to protect themselves from perceived failure. In the context of Biology education at the secondary school level, academic procrastination can manifest in students delaying study for tests, postponing practical reports, or cramming before exams, all of which undermine meaningful learning and retention. Given the cumulative and conceptual nature of Biology, consistent study and engagement are essential. However, procrastinators often fail to build this foundation, leading to poor comprehension of key topics and underachievement in assessments.

Academic procrastination has also been identified as a major impediment to effective learning. In the context of Nigerian secondary schools, procrastination manifests in various forms, including last-minute cramming, incomplete assignments, and poor time management (Akpur, 2020). This behaviour is particularly detrimental to effective learning of Biology concepts, where mastery of complex concepts such as genetics, physiology, and ecology requires consistent study and reinforcement. When students habitually postpone learning activities, they deprive themselves of the opportunity to engage in deep learning, resulting in superficial understanding and poor retention (Balkis & Duru, 2017). Literature shows that procrastination is very common among science students, with many attributing their delayed study habits to distractions such as social media, household chores, and extracurricular engagements (Batool, 2019). The consequences of this behaviour extend beyond poor grades;

chronic procrastination has been linked to heightened stress, diminished self-efficacy, and increased susceptibility to test anxiety, a psychological condition that further exacerbates academic struggles (Adimora, Nwakaego, & Nwokenna, 2017).

Self-esteem is an individual's overall subjective evaluation of their own worth or value. It reflects how much you appreciate, approve of, value, or like yourself across different areas of life. Self-esteem according to Rosenberg (1965) plays a moderating role in academic achievement. Students with high self-esteem are more likely to approach academic challenges with resilience, persistence, and a growth mindset, whereas those with low self-esteem may exhibit avoidance behaviors, self-doubt, and reduced motivation (Ekeng & Bassey, 2018). In the context of Biology education, self-esteem influences students' willingness to engage with difficult concepts, participate in class discussions, and seek help when needed. Empirical studies conducted have demonstrated that students with higher self-esteem tend to perform better in science subjects, as their confidence enables them to tackle complex problems without succumbing to fear or discouragement (Okafor & Okoli, 2020; Muratbekova, 2025). Conversely, students with low self-esteem often internalize academic setbacks as reflections of their inherent inadequacies, leading to disengagement and declining performance (Rithanya & Shalini, 2020, Britwum, Amoah, Acheampong & Adjei, 2022). Given the interconnectedness of self-esteem, procrastination, and test anxiety, it becomes imperative to examine how these factors collectively influence academic achievement which is a measurable outcome of learning, reflected in examination scores, grades, and standardized test results. Existing studies have explored these variables in isolation, there is a lack of research on their combined impact on Biology achievement among secondary school students

in Enugu State. This study seeks to bridge this gap by providing a comprehensive analysis of how academic procrastination and self-esteem interact to shape students' performance in Biology.

Statement of the Problem

The ideal objective of secondary school Biology education is to cultivate profound conceptual understanding, foster practical applications, and equip learners with scientific literacy essential for national development goals through sustained study, proactive examination preparation, and psychological resilience. In contrast to this ideal, secondary school students in Enugu State face persistent performance fluctuations and widespread conceptual difficulties, as evidenced by low pass margins and high failure rates in the West African Senior School Certificate Examination (WASSCE, 2020–2024).

Emerging literature in educational psychology indicates that non-cognitive, psychological, and behavioural predictors strongly dictate student outcomes, pointing directly to the independent variables such as academic procrastination and self-esteem as a critical gap in knowledge. Consequently, this study seeks to resolve this identified research gap by investigating how these psychological variables can jointly or independently predict the relationships among academic procrastination, test anxiety and academic achievement in Biology among secondary school students in Enugu State.

Purpose of the Study

The purpose of this study is to determine the relationship between academic procrastination and self-esteem as correlates of secondary school students' academic

achievement in biology in Enugu State. Specifically, the study sought to determine the:

- 1 Relationship between academic procrastination and students' academic achievement in Biology;
- 2 Relationship between self-esteem and students' academic achievement in Biology;
- 3 Relationship between academic procrastination, self-esteem and students' academic achievement in Biology;

Research Questions

The following research questions guided the study.

1. What is the relationship between academic procrastination and students' academic achievement scores in Biology?
2. What is the relationship between self-esteem and students' academic achievement scores in Biology?
3. What are the relationship between academic procrastination, self-esteem and students' academic achievement scores in Biology?

Hypotheses

1. There is no significant relationship between academic procrastination and students' academic achievement in Biology
2. There is no significant relationship between self-esteem and students' academic achievement in Biology
3. There is no significant relationship between academic procrastination, self-esteem and students' academic achievement scores in Biology.

Methods

This study adopted a correlation survey research design to examine the relationships among academic procrastination, self-esteem, and academic achievement in Biology among secondary school students in Enugu State. The design was considered appropriate because it enabled the researcher to investigate relationships among variables without manipulating them, allowing for the identification of patterns and associations within a natural educational setting. The study was conducted in Enugu State, Nigeria, a region recognized for its strong educational structure and diverse student population across urban, semi-urban, and rural areas. The population comprised 12934 SS2 students offering Biology in public secondary schools during the 2024/2025 academic session. A sample of 600 SS2 Biology students was selected using a multi-stage sampling procedure. Stratified sampling was used to group schools according to three education zones, simple random sampling was employed to select fifteen schools, and proportionate sampling was used to select forty students from each school. The instruments used for data collection included the Academic Procrastination Scale (APS) and the Rosenberg Self-Esteem Scale (RSES). The Academic Procrastination Scale measured students' tendencies to delay academic tasks such as assignments and examination preparation using a modified four-point Likert scale. The Rosenberg Self-Esteem Scale assessed students' self-worth and self-acceptance using ten items with responses ranging from strongly agree to strongly disagree. Students' academic achievement was measured through Biology results obtained from teachers' records, and yearly mean scores were computed. The research instruments, study objectives, research questions, hypotheses, and scope were validated by three lecturers from Nnamdi Azikiwe University. Validation

focused on language clarity, relevance of items, sentence structure, and suitability for the target population. Their comments and recommendations were incorporated into the instruments. The reliability of the instruments was established using Cronbach's Alpha. Pilot testing was conducted with 40 SS2 Biology students outside the study sample. Reliability coefficients obtained were 0.82 for the Academic Procrastination Scale and 0.92 for the Rosenberg Self-Esteem Scale, indicating good internal consistency. For data collection, six trained research assistants supported the researcher and Biology teachers in administering the instruments. Students completed the questionnaires on-site, and Biology achievement records were obtained with school permission. Completed instruments were collected immediately and merged with students' academic records for analysis. Data analysis was conducted using Pearson Product Moment Correlation and multiple regression analysis to examine relationships among variables. All hypotheses were tested at a 0.05 level of significance.

Results

Research Question 1: What is the relationship between academic procrastination and students' academic achievement scores in Biology?

Table 1: Pearson r on academic procrastination and students' academic achievement in Biology

Source variation	of N	Procrastination	Achievement	r ²	Remark
AP	600	1.00	-0.500	0.250	Moderate relationship negative
Biology Achievement	600	-0.500	1.00	0.250	Moderate relationship negative
Adjusted r ² = 0.249 (24.9%)					

Data presented in Table 1 shows the correlation between students' Academic Procrastination and their academic achievement in Biology. The result revealed that there is a Moderate negative relationship between students' Academic Procrastination scores and their academic achievement scores in Biology ($r = -0.500$ N = 600). This reveals that as Academic Procrastination increases, academic achievement reduces.

Research Question 2: What is the relationship between self-esteem and students' academic achievement scores in Biology?

Table 2: Correlation Analysis of Self-Esteem and Students' Academic Achievement in Biology

Source variation	of N	Selfesteem	Achievement	r ²	Remark
self-esteem	600	1.00	0.392	0.154	Moderate relationship positive
Biology Achievement	600	0.392	1.00	0.154	Moderate relationship positive
Adjusted R ² = 0.153					

Data presented in Table 2 shows the correlation between students' self-esteem and their academic achievement in Biology. The result revealed that there is Moderate positive relationship between students' self-esteem scores and their academic achievement scores in Biology ($r = 0.392$ $N = 600$). This reveals that self-esteem increases, academic achievement increases.

Research Question 3: What are the relationship between academic procrastination, self-esteem and students' academic achievement scores in Biology?

Table 3: Multiple Regression Analysis of Academic Procrastination and Self-Esteem on Students' Academic Achievement

Model	R	R ²	AdjustedR ²	Unstandardized coefficients (B)	Std. Error
Constant				3.241	0.210
Academic Procrastination and Self-Esteem	0.58 ^a	0.336	0.334	-0.245(AP)0.392(SE)	0.038

a. Dependent Variable:: Achievement in Biology (AB)

b. Predictor (Constant), Academic Procrastination and Self-Esteem (AP and SE)

Table 3 shows that R value of 0.58 indicates a moderately strong joint relationship between academic procrastination and self-esteem with students' academic achievement in Biology. The regression model $R^2 = 0.336$, shows that the predictors jointly accounted for 33.6% of the variance in students' Biology scores which is a correlate of Academic procrastination and self-esteem, If a student procrastinates but

has high self-esteem, the Self-Esteem (+0.392) helps pull the score up, while Procrastination (-0.245) pulls it down.

H₀₁: There is no significant relationship between academic procrastination and students' academic achievement in Biology?

Table 4: Significance relationship between academic procrastination and students' academic achievement in Biology.

Source of variation	N	Procrastination	Achievement	P-Value	Decision
Academic Procrastination	600	1.00	-0.500	0.000	Reject H ₀
Achievement	600	-0.500	1.00		

Table 4 shows the relationship between secondary school students' Academic Procrastination and their academic achievement in biology.

The table shows the relationship between secondary school students' academic procrastination and their academic achievement in Biology. The result shows a correlation coefficient of $r = -0.500$, indicating a moderate negative relationship between academic procrastination and academic achievement in Biology. This implies that as academic procrastination increases, students' academic achievement in Biology tends to decrease.

Since the p-value (0.000) is less than the alpha level of 0.05, the null hypothesis is rejected. Therefore, there is a significant relationship between secondary school students' academic procrastination and academic achievement in Biology.

H0₂: There is no significant relationship between self-esteem and students' academic achievement in Biology?

Table 5: Significance relationship between self-esteem and students' academic achievement in Biology.

Source of variation	N	self-esteem	Achievement	P-Value	Decision
self-esteem	600	1.00	0.392	0.001	Reject H ₀
Achievement	600	0.392	1.00		

Table 5 shows the relationship between secondary school students' self-esteem and their academic achievement in Biology. The result shows a correlation coefficient of $r = 0.392$, indicating a moderate positive relationship between self-esteem and academic achievement in Biology. This implies that as students' self-esteem increases, their academic achievement in Biology also tends to increase. Since the p-value (0.001) is less than the alpha level of 0.05, the null hypothesis is rejected. Therefore, there is a statistically significant relationship between secondary school students' self-esteem and their academic achievement in Biology.

H0₃: There is no significant relationship between academic procrastination, self-esteem and students' academic achievement scores in Biology.

Table 6 : Significance relationship between self-esteem and students' academic achievement in Biology.

Source of variation	N	self-esteem	Achievement	P-Value	Decision
self-esteem	600	1.00	0.392	0.001	Reject H ₀
Achievement	600	0.392	1.00		

Table 6 shows the relationship between secondary school students' self-esteem and their academic achievement in Biology. The result shows a correlation coefficient of $r = 0.392$, indicating a moderate positive relationship between self-esteem and academic achievement in Biology. This implies that as students' self-esteem increases, their academic achievement in Biology also tends to increase. Since the p-value (0.000) is less than the alpha level of 0.05, the null hypothesis is rejected. Therefore, there is a statistically significant relationship between secondary school students' self-esteem and their academic achievement in Biology.

Discussion

The finding of the study revealed that there was a moderate negative relationship between academic procrastination and students' academic achievement in Biology ($r = -0.500$). This implies that an increase in academic procrastination leads to a decrease in students' achievement in Biology. The result further showed that the relationship was statistically significant since the null hypothesis was rejected ($p < 0.05$). This finding suggests that students who habitually delay academic tasks, assignments, and study activities are likely to perform poorly in Biology. This may be because procrastination reduces effective study time and leads to poor preparation for classroom activities and examinations.

The finding agrees with the study conducted by Nwadinobsi, Anyamene, and Nwafor (2023), who reported a significant negative relationship between academic procrastination and

students' academic achievement among secondary school students in Anambra State. Similarly, Farooq, Shah, and Amin (2024) found that academic procrastination negatively affected academic performance among university students in Pakistan. The present finding is also consistent with the studies of Rshaid and Jaradat (2025), Chetri (2025), and Mallika and Sima (2025), who all found that increased procrastination significantly reduced students' academic performance. The agreement among these studies indicates that procrastination remains a major psychological barrier to students' academic success across different educational levels and geographical locations.

Furthermore, the finding of the study showed a moderate positive relationship between self-esteem and students' academic achievement in Biology ($r = 0.392$). This implies that students with higher levels of self-esteem are likely to perform better in Biology than those with lower self-esteem. The hypothesis result showed that this relationship was statistically significant ($p < 0.05$). This suggests that students who possess confidence in their abilities and maintain positive perceptions about themselves tend to demonstrate stronger motivation and persistence toward academic activities.

This finding is consistent with the findings of Gilber (2023), who reported a positive relationship between self-esteem and academic engagement among secondary school students. Similarly, Okenyi, Ngwoke, and Aneke (2024) found that self-esteem significantly predicted students' Mathematics achievement in Enugu State. The result also agrees with Litty, Jisa, Sonia, and Anjana (2024), Gidado, Apeh, and Akinjobi (2025), Ifedioramma and Anyamene (2025), and Ejide and Onwuasoanya (2025), who all found significant positive relationships between self-esteem and academic achievement. The agreement with previous studies suggests that self-esteem serves as an important psychological factor that enhances students' academic performance.

Similarly, academic procrastination and self-esteem jointly showed a moderately strong relationship with students' academic achievement in Biology ($R = 0.58$, $R^2 = 0.336$). Together, these variables explained 33.6% of the variance in students' achievement. While academic procrastination negatively affected achievement, self-esteem positively influenced students' performance. This suggests that high self-esteem may help reduce the negative effect of procrastination on students' academic outcomes.

Conclusion

This study concluded that academic procrastination and self-esteem are important psychological factors influencing students' academic achievement in Biology. The findings revealed that academic procrastination had a significant moderate negative relationship with students' academic achievement in Biology, indicating that increased procrastination reduces students' academic performance. Students who delay academic responsibilities and study activities are more likely to perform poorly because such behaviors reduce adequate preparation and effective learning time.

The study also established that self-esteem had a significant moderate positive relationship with students' academic achievement in Biology. This implies that students with higher levels of confidence and positive self-perception are more likely to demonstrate improved academic performance due to increased motivation, persistence, and active engagement in learning activities.

Furthermore, the study concluded that academic procrastination and self-esteem jointly influenced students' academic achievement in Biology. Together, these variables accounted for a considerable proportion of the variation in students' achievement, indicating that both factors play significant roles in determining students' academic outcomes. Therefore,

reducing procrastination and enhancing students' self-esteem can contribute positively to improving academic achievement in Biology.

Recommendations

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

1. School counselors and teachers should organize seminars, workshops, and guidance programmes aimed at helping students develop effective time management and study habits to reduce academic procrastination.
2. Teachers should provide regular academic support and monitoring to encourage students to complete assignments and academic tasks promptly.
3. Parents and teachers should create supportive environments that build students' confidence and encourage positive self-beliefs in order to improve their self-esteem.
4. School guidance counselors should design intervention programmes that strengthen students' self-esteem and promote positive attitudes toward learning.

References

- Abdulkadir, A.O., Solomon, B.T., Mohammed, A.S., Gulma, K., Haruna, S. and Faruna, L. (2019). Relationship between self-esteem and students' academic performance among some selected federal government colleges in North-West Zone of Nigeria. *Global Scientific Journal*, 7(10), 42–60.
- Acosta-Gonzaga, E. (2023). The effects of self-esteem and academic engagement on university students' performance. *Behavioural Science*, 13, 348. <https://doi.org/10.3390/bs13040348>
- Adene, F.M., Adimora, D.E. and Offordille. (2020). Self-esteem and social competence as correlates of behaviour problems among primary school pupils. *The Educational Psychologist*, 12(1), 328–337.
- Ajayi, I.A. and Ekundayo, H.T. (2019). Challenges facing the Nigerian education system: A critical analysis. *Journal of Educational Research and Reviews*, 7(1), 1–12.
- Akachukwu, E.E. and Okoli, J.N. (2023). Cognitive engagement as a predictor of secondary school students' academic achievement in Biology in Onitsha Education Zone. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, 7(1), 133–138.
- Akpur, U. (2020). The effect of procrastination on academic achievement: A meta-analysis study. *International Journal of Educational Methodology*, 6(4), 681–690.
- Anierobi, E., Nwachukwu, C., Okika, L. and Nwanna, U. (2024). Study habits and academic procrastination as correlates of academic performance of secondary school students in Awka, Anambra State. *UNIZIK Journal of Educational Management and Policy*, 6(1), 11–17.
- Atalayin, Ç., Balkıs, M., Tezel, H. and Kayrak, G. (2018). Procrastination and predictor variables among a group of dental students in Turkey. *Psychology, Health and Medicine*, 23(6), 726–732.

- Balhara, A. and Mittal, P. (2022). Impact of academic procrastination on academic achievement of secondary school students. *International Journal of Creative Research Thoughts*, 10(2), 489–496.
- Balkis, M. and Duru, E. (2017). Gender differences in the relationship between academic procrastination, satisfaction with academic life and academic performance. *Electronic Journal of Research in Educational Psychology*, 15(1), 105–125.
- Batool, S.S. (2019). Academic achievement: Interplay of positive parenting, self-esteem, and academic procrastination. *The Australian Psychological Society*, 72, 174–187.
- Brando-Garrido, C., Montes-Hidalgo, J., Limonero, J.T., Gómez-Romero, M.J. and Tomas-Sábado, J. (2020). Academic procrastination in nursing students: Spanish adaptation of the Academic Procrastination Scale-Short Form (APS-SF). *Enfermería Clínica (English Edition)*, 30(6), 371–376.
- Britwum, F., Amoah, S.O., Acheampong, H.Y. and Adjei, E. (2022). Self-esteem as a predictor of students' academic achievement in colleges of education. *International Journal of Learning and Teaching*, 14(1), 43–54.
- Calonia, J.T., Doller, G.H., Mesias, M.D., Palutao, L.C. and Linas, L.S. (2023). Investigating academic procrastination and its implication for academic achievement in an online learning setting. *International Journal of Innovative Research in Science Engineering and Technology*, 8(7), 608–614.
- Chetri, K. (2025). Relationship between academic procrastination and academic performance of undergraduate students. *International Journal for Research Trends and Innovation*, 10(4), 339–345.
- Chonge, H. and Achwang'a, S.M. (2019). Self-esteem and academic performance in Mathematics: A focus on Eldoret West, Kenya.
- Dunlosky, J., Rawson, K.A., Marsh, E.J., Nathan, M.J. and Willingham, D.T. (2013). Improving students' learning with effective learning techniques: Promising directions

- from cognitive and educational psychology. *Psychological Science in the Public Interest*, 14(1), 4–58.
- Edeh, F.G. (2019). *Causes and consequences of low self-esteem and poor academic achievement among secondary school students in Orumba South Local Government Area of Anambra State* (Unpublished degree project). Nnamdi Azikiwe University, Awka.
- Ejide, B. and Onwuasoanya, O. (2025). Relationship between self-esteem and academic achievement among public secondary school students in Anambra State. *International Journal of Innovative Psychology and Social Development*, 13(2), 313–321.
- Farooq, A., Shah, T. and Amin, F. (2024). Academic procrastination and academic performance among conventional and online learners: Understanding role of learners' characteristics. *Journal of Educators Online*, 21(3), 12–19.
- Gidado, B.K., Apeh, H.A. and Akinjobi, F.N. (2025). Relationship between self-esteem and academic achievement of senior secondary school students in North-Central Nigeria. *Asian Journal of Education and Social Studies*, 51(2), 99–110.
- Gilber, A.L. (2023). Self-esteem as correlate of academic engagement among public secondary school students in Anambra State. *Journal of Educational Innovation*, 13(3), 34–41.
- González-Brignardello, M.P. and Sánchez-Elvira Paniagua, Á. (2023). Dimensional structure of MAPS-15: Validation of the Multidimensional Academic Procrastination Scale. *International Journal of Environmental Research and Public Health*, 20(4), 3201.
- Goroshit, M. (2018). Academic procrastination and academic performance: An initial basis for intervention. *Journal of Prevention and Intervention in the Community*, 46(2), 131–142.
- Güngör, A.Y. (2020). The relationship between academic procrastination, academic self-efficacy, and academic achievement among undergraduates.

- He, S. (2017). A multivariate investigation into academic procrastination of university students. *Open Journal of Social Sciences*, 5, 12–24.
- Ifedioramma, D.C. and Anyamene, A.N. (2025). Relationship between secondary school students' self-esteem and their academic achievement in Edo State. *Journal of Guidance and Counselling Studies*, 9(1), 44–57.
- Kariuki, M.N. (2021). Relationship between self-esteem and students' academic performance based on gender in secondary schools in Tharaka-Nithi County, Kenya. *International Journal of Education and Research*, 9(3), 17–32.
- Kim, K.R. and Seo, E.H. (2015). The relationship between procrastination and academic performance: A meta-analysis. *Personality and Individual Differences*, 82, 26–33.
- Kim, S., Fernandez, S. and Terrier, L. (2017). Procrastination, personality traits, and academic performance: When active and passive procrastination tell a different story. *Personality and Individual Differences*, 108(1), 154–157.
- Klingsieck, K.B. (2019). Procrastination: When good things don't come to those who wait. *European Psychologist*, 18, 24–34.
- Kuftyak, E. (2022). Procrastination, stress and academic performance in students. *ARPHA Proceedings*, 5, 965–974.
- Litty, T., Jisa, J., Sonia, K.L.S. and Anjana, R. (2024). Correlation between self-esteem and academic achievement among students of a selected nursing college in Mangaluru. *Journal of Health and Allied Science*, 15(1), 132–135.
- Liu, J. (2024). Academic procrastination of high school students as a product of low self-esteem: A mediation role of general self-efficacy. *Communications in Humanities Research*, 40, 116–125.
- Mamah, I.M., Nnadi, U.U., Ezeugwu, I.J., Ezeudu, F.O., Eze, J.U. and Ugwuanyi, C.S. (2022). Self-esteem as a predictor of science students' academic achievement in Enugu State, Nigeria: Implication for educational foundations. *Webology*, 19(3), 3340–3353.

- Mbaegbu, C.S., Osuafor, M.A. and Akachukwu, E.E. (2020). Effect of sequential usage of three teaching methods on academic achievement of secondary school students in Biology in Onitsha Education Zone. *IOSR Journal of Research and Method in Education*, 10(2), 49–56.
- McCloskey, J.D. (2011). *Finally, my thesis on academic procrastination*. Faculty of the Graduate School, University of Texas at Arlington.
- Muliani, R., Imam, H. and Dendiawan, E. (2020). Relationship between stress level and academic procrastination among new nursing students. *The Malaysian Journal of Nursing*, 11(3), 63–67.
- Muratbekova, A. (2025). The relationship between self-esteem and academic achievement among female students at Almaty Management University. *International Journal of Behavior Studies in Organizations*, 12, 1–7.
- Nwadinobsi, V.N., Anyamene, A.N. and Nwafor, G.C. (2023). Academic self-efficacy and academic procrastination as correlates of secondary school students' academic achievement in Anambra State. *Journal of Guidance and Counselling Studies*, 7(1), 16–29.
- Nwanze, A.C. and Okoli, J.N. (2021). Path-analysis of factors affecting academic achievement of tertiary education students in Chemistry in Delta State. *African Journal of Science, Technology and Mathematics Education (AJSTME)*, 6(1), 75–88.
- Odofin, T. (2022). Influence of family socio-economic status on students' academic achievement in Delta Central Senatorial District, Delta State. *Journal of the Nigerian Academy of Education*, 16(1), 1–11.
- Okafor, B.I. and Okoli, J.N. (2020). Predicting secondary school students' interest in Biology using emotional intelligence, self-efficacy and self-esteem. *International Journal of Innovative Research and Advanced Studies (IJIRAS)*, 7(3), 41–51.

JOURNAL OF SCIENCE EDUCATION AND RESEARCH (JSER)
VOL.8 (1); 2026

- Okenyi, E.C., Ngwoke, A.N. and Aneke, A.O. (2024). Predicting achievement in Mathematics: A correlational study of self-esteem among pupils in Enugu State, Nigeria. *International Journal of Studies in Education*, 20(1), 1–9.
- Okoli, J.N. and Okoye, P.O. (2025). Cognitive distortions as a predictor of students' achievement in Biology in Colleges of Education in Anambra State. *UNIZIK Journal of STM Education*, 8(1), 1–16.
- Rithanya, T. and Shalini, E. (2025). A study on self-esteem and academic performance of school-going adolescents. *International Research Journal of Modernization in Engineering Technology and Science*, 7(3), 2–4.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rshaid, A.M.B. and Jaradat, A.K.M. (2025). Academic procrastination in high school students: An exploratory study. *Journal of Posthumanism*, 5(5), 501–508.
- Solomon, L.J. and Rothblum, E.D. (1984). Procrastination Assessment Scale–Students (PASS). In J. Fischer & K. Corcoran (Eds.), *Measures for Clinical Practice* (pp. 446–452). New York: The Free Press.
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, 133(1), 65–94.
- Subon, F., Unin, N. and Sulaiman, N.H.B. (2020). Self-esteem and academic achievement: The relationship and gender differences of Malaysian university undergraduates. *IAFOR Journal of Psychology and the Behavioural Sciences*, 6(1), 43–54.
- Sun, T. and Kim, J.-E. (2023). Academic procrastination as a mediator between learning environment and academic performance. *Learning: Research and Practice*.
- Xu, S. (2021). Academic procrastination of adolescents: A brief review of the literature. *Psychology and Behavioral Sciences*, 10(6), 198–208.
- Zheng, L.R., Atherton, O.E., Trzeniewski, K. and Robins, R.W. (2020). Are self-esteem and academic achievement reciprocally related?