

SELF-ESTEEM AS A CORRELATE OF ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS IN AWKA EDUCATION ZONE OF ANAMBRA STATE

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Abstract

This study investigated self-esteem as a correlate of academic achievement of secondary school students in Awka Education Zone, Anambra State. Three research questions guided the study, and three null hypotheses were tested at the 0.05 level of significance. A correlational research design was adopted. The population for the study consisted of 5,268 Senior Secondary School Two (SS II) students, while the sample consisted of 540 students selected through a multi-stage sampling procedure. The instrument used was the Hare Self-Esteem Scale (HSS) with reliability coefficients of 0.74. Pearson Product Moment Correlation was used to analyze the data. The results showed that self-esteem has a high positive significant correlation with students' achievement in Mathematics for both genders. The study concluded, among others that secondary school students' self-esteem is highly related to their academic achievement in Mathematics. It was recommended, among others that school counsellors should provide guidance services that focus on students' emotional well-being, self-esteem, and strategies for managing academic pressure.

Keywords: self-esteem, correlate, academic achievement, students, education zone.

INTRODUCTION

Education is a human-centred process that enables individuals and societies to transform and shape a better future (UNESCO, 2021). From early childhood through adulthood, education plays a vital role in shaping individuals' intellectual, emotional, social, and moral capacities (UNESCO, 2021). Historically, education has evolved from basic survival instruction in early human societies to complex systems that promote scientific inquiry, cultural awareness, technological advancement, and democratic values (Encyclopaedia Britannica, 2026). It is considered both a right and a necessity in contemporary societies, as enshrined in international declarations and national policies (Universal Declaration of Human Rights, 1948).

The importance of education cannot be overstated. Education is a powerful tool for empowerment, a means of reducing inequality, and a catalyst for economic growth and social

mobility. According to the United Nations (2015), education serves as a way out of poverty and a stepping stone to opportunity and dignified living, with broad impacts on health, income, and economic development. Educated individuals are more likely to contribute positively to their communities, participate in civic activities, and make informed decisions that enhance their quality of life. Moreover, education fosters critical thinking, creativity, and innovation skills that are essential in an ever-evolving global landscape. UNESCO (2015) underscores that education transforms lives and is central to sustainable development by building resilience, promoting gender equality, and equipping learners with the skills needed for today's challenges. Education is not merely the transfer of information from teacher to learner; it is a transformative process that nurtures the mind and character of individuals, enabling them to function effectively and responsibly in society (UNESCO, 2021). Its significance extends beyond personal success to the broader aim of building sustainable, just, and prosperous societies (United Nations, 2015). Within the educational process, learners' results are commonly assessed through academic achievement (Organisation for Economic Co-operation and Development OECD, 2016).

Academic achievement refers to the measurable performance outcomes of students in areas such as literacy, numeracy, science, and other academic disciplines. It is often assessed through standardized tests, examinations, classroom assessments, and other performance metrics. These achievements not only reflect the cognitive development of learners but also signal the extent to which educational goals and curriculum objectives are being met. Succinctly, Ozuome, Oguzie, Mokwelu and Anyamene (2020) described academic achievement as the yardstick with which educational outcomes are measured. According to Steinmayr, Meißner, Weidinger and Wirthwein (2014), academic achievement represents performance outcomes that indicate the extent to which a learner has accomplished specific goals that were the focus of instructional activities, and is commonly measured through examinations and assessments that reflect mastery of curriculum standards. Academic achievement depicts students' scholastic ability and attainment, which signifies the overall level of knowledge they have acquired in school, a subject or a learning situation (Oguzie, Nwokolo, Mokwelu & Ezunu, 2019).

Within the education system, academic achievement serves multiple purposes. It provides essential feedback for instructional improvement and curriculum evaluation (Jerrim & Sims, 2019), supports accountability mechanisms at institutional and policy levels (Musset, 2015), and reinforces students' confidence and motivation, which are essential for lifelong learning (Wang, Degol & Henry, 2019). Academic achievement is strongly associated with long-term social and economic benefits. Students who perform well academically are more likely to pursue higher education, gain meaningful employment, and contribute positively to national development (Organisation for Economic Co-operation and Development; OECD, 2012). High levels of academic achievement contribute to the broader goals of education by equipping students with the critical thinking, problem-solving, and communication skills necessary for responsible citizenship and meaningful participation in the workforce. Academic achievement, particularly in foundational subjects like mathematics, serves as a vital indicator of this transformation. Achievement in mathematics is especially significant because it encapsulates critical thinking, analytical reasoning, and problem-solving competencies, thereby reflecting both cognitive development and the effectiveness of the

educational system in equipping learners with skills necessary for individual advancement and national development (Psacharopoulos & Patrinos, 2018).

Mathematics is a fundamental discipline concerned with numbers, patterns, structures, and logical relationships, providing a systematic means of understanding and interpreting the world. In modern education, it extends beyond basic computation to include mathematical literacy, which involves the ability to formulate, apply, and interpret mathematics in real-life contexts, thereby enhancing informed decision-making and problem-solving skills (Organisation for Economic Co-operation & Development, 2023). Mathematics also plays a critical role in cognitive development by fostering logical reasoning, analytical thinking, and the capacity to solve complex problems, which are essential competencies for academic success and lifelong learning (Weber & Melhuish, 2022). Furthermore, it serves as a foundation for scientific, technological, and economic advancement, as strong mathematical competence is associated with improved employability, productivity, and national development outcomes (Organisation for Economic Co-operation and Development, 2024). Therefore, proficiency in mathematics is not only a key indicator of academic achievement but also an essential skill for effective participation in a modern, knowledge-driven society.

Recent statistics from West African Examination Councils (WAEC) shows notable improvement in mathematics achievement. In the 2023 West African Senior School Certificate Examination (WASSCE), 62.23 % of candidates obtained credit-level passes (grades A1–C6) in mathematics. This figure increased to 66.86 % in 2024, representing a 4.63 percentage point improvement (WAEC, 2024). This upward trend is particularly significant given that performance in other core subjects declined over the same period, highlighting mathematics as an area of academic resilience and progress. This improvement in mathematics achievement has important implications for the broader goals of education. High levels of achievement in mathematics suggest that students are increasingly gaining mastery of analytical and logical reasoning skills, which are transferable across disciplines and valuable in the labour market. These skills enhance learners' capacity for innovation, informed decision-making, and active participation in societal development objectives that are central to the mission of education in the 21st century (UNESCO, 2020).

The rise in Mathematics achievement in the 2024 West African Senior School Certificate Examination (WASSCE) presents a noteworthy development in Nigerian education. Among several factors that may explain this trend, peer competition stands out as a key motivational driver. This is supported by Mawak and Odulum (2024), whose study revealed that peer-driven strategies such as peer assessment significantly improved students' attitudes and performance in Mathematics. Their findings suggest that structured peer involvement fosters a healthy sense of academic rivalry, which contributes meaningfully to higher achievement levels in Mathematics among senior secondary school students.

Mathematics is inherently competitive due to its problem-solving nature, objectivity in scoring, and visibility of outcomes. Unlike essay-based subjects that may be subjectively graded, Mathematics provides clear and immediate feedback. This binary evaluation encourages students to measure their progress against that of others, fostering a culture of benchmarking and competition. As Iwuanyanwu (2016) notes, Mathematics is often perceived

by students as “a status subject,” where high achievement signals intelligence and academic competence. This perception intensifies the desire to excel, which require strong self-esteem.

Self-esteem, which is central to students’ academic behaviour, is an individual’s overall subjective evaluation of their worth, which influences their confidence, motivation, emotional well-being, and performance, particularly in achievement-related contexts like academics (Baumeister, Campbell, Krueger & Vohs 2022). According to Nwokolo and Oguzie (2021), self-esteem is the belief, perception and opinion people have about themselves which influence their behaviours and consequently affects their performance and achievements in life. Oguzie, Obi, Nnadi, Nwobi and Okpala (2023) viewed self-esteem as student’s belief, attitude and opinion about themselves which in-turn influences their behaviours to themselves and others. Experiencing failure in school is one reason children may have trouble building and/or maintaining positive self-esteem. When students experience failure in school, they usually receive negative feedback and hear about the things they did not do well. As a result, they feel less sure of themselves and their abilities and may not feel motivated to try things that are hard for them (Cunningham, 2017).

Research consistently shows that high self-esteem correlates positively with academic achievement, especially in cognitively demanding subjects like Mathematics (Okafor, Obi & Oguzie, 2018). Students with strong self-worth tend to set higher goals, persist longer through difficulties, and recover more effectively from failure. Akinade and Adediran (2018) found that self-esteem was a strong predictor of academic success in Mathematics among Nigerian secondary school students, particularly when students were exposed to peer-led (competitive) activities. Their study concluded that students with higher self-esteem were more receptive to competitive academic settings, viewing challenges as opportunities rather than threats.

Despite these established findings, variations in academic outcomes across different educational contexts suggest that the influence of self-esteem and peer competition may not be uniform across all regions and school environments. While existing studies provide useful insights, there is still a need to examine how these dynamics operate in specific local contexts. In view of this, personal observation indicates that Anambra State has earned a national reputation for academic excellence in competitive activities especially in mathematics, with several zones producing schools that consistently excel at both state and national levels. However, a striking concern emerges when one considers the Awka Education Zone. In the last decade, no government-owned school within this zone has been recognized for outstanding academic achievement. The few schools that have achieved visibility in Awka Education Zone are predominantly mission-owned or private.

This disparity raises pressing questions as to why has the State Capital, the expected model of academic leadership, lagged behind? Could this gap be attributed to inadequate facilities, limited opportunities to showcase academic excellence, poor participation in competitions, or perhaps deeper psychological issues such as low student self-esteem? However, there is a paucity of recent empirical studies on peer competition and self-esteem relating to academic achievement in mathematics among school adolescents in Awka education zone. Due to this persistent problem and gap in the existing studies, the researchers were motivated to investigate self-esteem as a correlate of academic achievement in Mathematics among secondary school students in the Awka Education Zone.

Purpose of the Study

The general purpose of this study was to investigate self-esteem as a correlate of academic achievement in Mathematics among secondary school students in Awka Education Zone of Anambra State. Specifically, the study determined the:

1. Relationship between self-esteem and academic achievement in mathematics of secondary school students in Awka Education Zone.
2. Relationship between self-esteem and academic achievement in mathematics of male secondary school students in Awka Education Zone
3. Relationship between self-esteem and academic achievement in mathematics of female secondary school students in Awka Education Zone.

Research Questions

The study was guided by the following research questions:

1. What is the relationship between self-esteem and academic achievement in mathematics of secondary school students in Awka Education Zone?
2. What is the relationship between self-esteem and academic achievement in mathematics of male secondary school students in Awka Education Zone?
3. What is the relationship between self-esteem and academic achievement in mathematics of female secondary school students in Awka Education Zone?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant relationship between self-esteem and academic achievement in mathematics of secondary school students in Awka Education Zone.
2. There is no significant relationship between self esteem and academic achievement in mathematics of male secondary school students in Awka Education Zone.
3. There is no significant relationship between self-esteem and academic achievement in mathematics of female secondary school students in Awka Education Zone.

METHODS

The study adopted correlational research design. A correlation design according to Brainna (2023), is a type of research design that looks at the relationships between two or more variables. Correlation studies are non-experimental, which means that the researcher does not manipulate or control any of the variables. According to Nworgu (2015), correlation research is a type of research that examines the statistical relationship between two or more variables without manipulating them. A correlational design was considered appropriate for this study because it used data collected to establish the relationship between self-esteem and academic achievement of public secondary school students in Mathematics in Awka Education Zone in Anambra State. The design was suitable because it enabled the researchers to determine the influence of the independent variable (i.e. self-esteem) on the dependent variable (academic achievement). This study was conducted in Awka Education Zone of Anambra State, Nigeria.

The population was made up of 5,268 (2385 males and 2883 females) senior secondary class two (S S2) in the government owned secondary schools in Awka Education Zone. The sample size was made up of 540 senior secondary school SS II students in Awka Education Zones (10% of the population). Multi-stage sampling procedure was adopted in this study. The instrument used to collect data for this study was the Hare Self-Esteem Scale (HSS) was

developed by B. R. Hare (1985) and revalidated by Nwokolo and Oguzie (2021). Hare (1985) conducted a test-retest reliability analysis on the Student Self-esteem which yielded a coefficient of 0.74 indicating acceptable consistency for measuring self-esteem in Nigerian secondary schools. The administration of the instrument was conducted using a direct delivery approach. In this method, copies of the inventory and instrument were personally distributed by the researchers to the selected SS2 students after obtaining permission from the designated school authorities. Data collected were analyzed using Pearson Product-Moment Correlation Coefficient with the aid of statistical package for Social Sciences (SPSS) Version 25.

RESULTS

Table 1: Pearson r on students' self-esteem and their achievement in Mathematics

Source of Variation	N	Self-esteem r	Achievement r	Remark
Self-esteem	524	0.00	0.74	High positive relationship
Achievement	524	0.74	0.00	

Table 1 indicated that there is high positive relationship of 0.74 between self-esteem and academic achievement in Mathematics of the secondary school students.

Table 2: Pearson r on self-esteem and the male students' achievement in Mathematics

Source of Variation	N	Male Self-esteem r	Male Achievement r	Remark
Male Self-esteem	241	0.00	0.73	High positive relationship
Male Achievement	241	0.73	0.00	

In table 2, it was observed that there is high positive relationship of 0.73 between self-esteem and academic achievement in Mathematics of male secondary school students in Awka Education Zone.

Table 3: Pearson r on self-esteem and the female students' achievement in Mathematics

Source of Variation	N	Female Self-esteem r	Female Achievement r	Remark
Female Self-esteem	283	0.00	0.76	High positive relationship
Female Achievement	283	0.76	0.00	

Data in table 3 showed that there is high positive relationship of 0.76 between self-esteem and academic achievement in Mathematics of female secondary school students in Awka Education Zone.

Table 4: Significant of Pearson r on the students' self-esteem and their achievement in Mathematics using probability table of r

N	cal. R	Df	Pvalue	Cal.pvalue	Remark
524	0.74	523	0.05	0.00	S

S = Significant

In table 4, it was observed that at 0.05 level of significance and 523df, the calculated $r_{0.74}$ has pvalue 0.00 which is less than the critical pvalue 0.05. Therefore, the first null hypothesis is rejected. This signifies that there is significant relationship between self-esteem and academic achievement in Mathematics of the secondary school students.

Table 5: Significant of Pearson r on the male students' self-esteem and their achievement in Mathematics using probability table of r

N	cal. R	Df	Pvalue	Cal.pvalue	Remark
241	0.73	240	0.05	0.00	S

S = Significant

Data in table 5 indicated that at 0.05 level of significance and 240df, the calculated $r_{0.73}$ has pvalue 0.00 which is less than the critical pvalue 0.05. Therefore, the fourth null hypothesis is rejected. This signifies that there is significant relationship between self-esteem and academic achievement in Mathematics of the male secondary school students.

Table 6: Significant of Pearson r on the female students' self-esteem and their achievement in Mathematics using probability table of r

N	cal. R	Df	Pvalue	Cal.pvalue	Remark
283	0.76	282	0.05	0.00	S

S = Significant

Table 12 revealed that at 0.05 level of significance and 282df, the calculated $r_{0.76}$ has pvalue 0.00 which is less than the critical pvalue 0.05. Therefore, the sixth null hypothesis is rejected. This signifies that there is significant relationship between self-esteem and academic achievement in Mathematics of the female secondary school students.

DISCUSSION OF FINDINGS

The findings of this study showed that there is high positive significant relationship between students' self-esteem and their academic achievement in Mathematics. This indicates that an increase in the self-esteem of secondary school students will result to an increase in their Mathematics achievement scores. This finding agrees with the finding of previous researchers such as (Akinade & Adediran, 2018; Okafor, Obi & Oguzie, 2018), who reported that self-esteem significantly correlated with students' academic achievement in Mathematics. A plausible explanation for the consistency between previous studies and the present study is that self-esteem enhances an individual's confidence irrespective of age, thereby facilitating improved achievement. Students with high self-esteem are more likely to challenge themselves and strive for higher achievement, even in subjects often perceived as difficult, such as mathematics. This suggests that high self-esteem is positively associated with increased academic achievement in mathematics.

Another finding of this study revealed a high positive significant relationship ($r = 0.73$) between self-esteem and academic achievement in Mathematics among male secondary school students in Awka Education Zone. This indicates that male students with higher levels of self-esteem tend to achieve higher scores in Mathematics. The strength of this relationship suggests that self-esteem is an important correlate of academic achievement among male students.

This finding supports the reports of Okeke and Iwuchukwu (2025) and Bada, Umar and Jimoh (2021), who identified a significant positive correlation between self-esteem and academic achievement among male secondary school students. The researchers observed that higher self-esteem is associated with improved academic outcomes. Similarly, Nwachukwu and Ugwuegbulam (2023) reported that male students with high self-esteem demonstrated better academic performance.

One possible explanation for the alignment between the present finding and previous studies is that high self-esteem enhances male students' motivation, self-confidence, and academic persistence in Mathematics. Male students with high self-esteem are more likely to develop positive self-awareness, set academic goals, and demonstrate confidence in solving mathematical problems, which ultimately improves their academic achievement.

Furthermore, the finding of this study revealed that there is a significant relationship between self-esteem and academic achievement in Mathematics among female secondary school students in Awka Education Zone. The result showed that the calculated r of 0.76 with a p -value of 0.00 at 0.05 level of significance led to the rejection of the null hypothesis. This implies that self-esteem has a strong positive relationship with academic achievement in Mathematics among female students. This finding suggests that female students with higher self-esteem are more likely to perform better in Mathematics than those with lower self-esteem.

Previous studies such as Baumeister and Vohs (2018) and Nwachukwu and Ugwuegbulam (2023) are consistent with the present finding, which implies that high self-esteem among female students may promote emotional stability and reduce academic anxiety, thereby enhancing academic achievement. This finding is also in agreement with Maina, Umar and Ibrahim (2021), who conducted a correlational study to investigate the relationship between self-esteem and academic achievement among 300 senior secondary school students in Gashua, Yobe State, Nigeria. The result of their study revealed a statistically significant positive correlation between self-esteem and academic achievement.

Conversely, the present finding does not align with the study conducted by Okeke and Iwuchukwu (2025), who examined gender differences in the relationship between self-esteem and Mathematics achievement among 305 senior secondary school students in Anambra State, Nigeria. Their study revealed that the correlation between self-esteem and Mathematics achievement was stronger among male students than female students. Regardless of the inconsistencies, which could be attributed to differences in the instruments used for data collection, high self-esteem has been shown aligning with the present study to mitigate fear of failure and anxiety, particularly among female students. This, in turn, enables them to confront and engage with subjects that are often perceived as difficult.

Recommendations

In the light of the findings of this study, the following recommendations were made:

1. Mathematics teachers are encouraged to consider students' self-esteem when planning instructional and assessment activities. Creating a classroom atmosphere that supports confidence, participation, and positive self-perception could help students engage better during competitive academic tasks.
2. School counsellors are encouraged to provide guidance services that focus on students' self-esteem.
3. School administrators are encouraged to organize workshops, seminars, and in-service training for teachers on constructive management of low self-esteem.
4. Parents and guardians should provide emotional support, encouragement, and positive reinforcement at home. A supportive home environment is important for fostering healthy self-esteem, which is closely related to students' academic performance.

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