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# OWNERSHIP MENTALITY AND STUDENTS' ACADEMIC PERFORMANCE IN MATHEMATICS IN PUBLIC SCHOOLS IN RIVERS STATE

**Clifford O. Ugorji (Ph.D.)**
Department of Educational Foundations
Nnamdi Azikiwe University, Awka
ugocliff3@yahoo.com, oc.ugorji@unizik.edu.ng; 08064194862
**&**
**Dr. Felicia King-Agboto**
Department of Statistics,
Captain Elechi-Amadi Polytechnic, Rumuola.
metfelicity@yahoo.com,08035469242
**&**
**Amuche Uju Ezinwa**
Department of Educational Foundations
Nnamdi Azikiwe University Awka
au.ezinwa@unizik.edu.ng, 08066004618

## ABSTRACT
*Ownership mindset is an important factor affecting student learning and has been widely studied. A social science approach was adopted. This study used a correlational research design. Three research questions and three hypotheses guided this study. The population of the study consisted of 1290 students selected from various schools as participants in Rivers State. A sample size of 300 was selected using a stratified random sampling technique. The data collection tool used are Ownership Mentality Questionnaire (OMQ) and Mathematics Performance Test (MPT).The reliability coefficient of this scale was determined by test-retest and the reliability result were found to be 0.72 and 0.82 respectively. The research questions and hypotheses were answered and tested at 0.05. Pearson product-moment correlation was used to analyze and evaluate the significance. The research results show that there is a positive relationship between intellectual ownership and students' mathematics performance, and students with creative thinking will have good mathematics skills. Also, instilling a sense of ownership in students, educators can help them become active participants in mathematics education rather than passive recipients of knowledge. The research recommended that Educators and policymakers should foster a culture of curiosity and inquiry that aims to increase students' confidence, motivation, and belief in their ability to succeed in mathematics.*

**Keywords:** Ownership Mentality, Academic Performance and Mathematics

## Introduction
Freedom of thought of the people, promotion of social harmony, and domestic affairs are guaranteed through education, which is important for the development of the entire nation. The education system of each country is considered as the basic process of forming knowledge, skills, attitudes, and values.

However, since the quality of life of the people living in a country is greatly influenced by the education they receive, it is now necessary to provide the best education to keep up with the rapid changes. Likewise, education is considered an important part of the process of human resource development and skill acquisition as it helps develop character and talent that will contribute to economic growth (Oduro, Okosun & Isabu, 2023). This is because the quality of schools, teachers, and all other resources affect the outcome (student education).

Education is considered one of the most important aspects of an individual, which is why the Nigerian government declared education to be basic, free and compulsory for all citizens in 1999. Individuals and organizations also work together to make the learning process as effective as possible. He said that a student's performance depends on the school environment, which is not only dependent on the type of school but also on the educational resources provided by the school. Through responsibility, participation and personal investment in critical thinking, students can take responsibility for their own learning, engage with the learning content and effectively control their education. This requires students to control their learning environment and goals, participate in their learning and take responsibility for their own learning. Students with a strong sense of ownership demonstrate characteristics such as self-motivation, initiative, persistence, and a strong commitment to learning. They feel ownership of their learning and feel satisfaction in their work. This mindset encourages students to take responsibility for their work, seek help, overcome challenges, and ultimately achieve success. Make decisions at home and cooperate with others in society.

**Innovative Ownership Mentality** refers to an individuals or organizations proactive approach to taking responsibility for innovation, driving creative solutions and treating resources and opportunities as personal investments. This mindset fosters accountability, adaptability and long-term thinking, ultimately leading to sustainable growth and competitive advantages. The mentality fosters creativity, problem-solving, and proactive decision making, ultimately leading to improved productivity, competitiveness, and sustainable growth. It involves pro activeness, accountability, continuous learning, entrepreneurial thinking and resilience.(Dweck,2006)

**Personality Ownership Mentality** according to Renz et al (2023) describes why and how individuals inform their identities by taking ownership. It also means the state in which individuals feel as though a target of ownership such as job or organization is theirs. This concept has gained significant attention in organizational behaviour and psychology due to its impact on employee attitudes and behavior.

**Team Ownership Mentality** refers to the psychological state in which team members collectively feel responsible for the team"s success, tasks, and overall outcomes. This mindset fosters accountability, proactive behaviour, collaboration, and innovation within organizations (Pierce et al.,2001;Avey et al, 2009).Team ownership mentality is a crucial factor in enhancing performance, collaboration ,and organizational resilience. Benefits of fostering team ownership: teams with a strong ownership mindset demonstrate improved productivity and innovation

(Jansen et al,2006),when employees feel ownership, they are more committed and engaged (Avey et al.,2009),ownership fosters trust and cooperation among members (Hulsheger et al.,2009),teams with ownership mentality are more resilient and open to organizational shifts (Teece,2007).

**Concept of Student Academic Performance**

Academic performance is the final assessment of all learning and teaching processes. Academic achievement is the level of success a student has in completing assignments and coursework. Grades, which represent a "score" for each course taken by a student as well as for the entire course, are the most well-known indicator of academic success. Academic achievement is the primary indicator of success in most educational institutions. In this case, success or excellence is determined by how well the student meets the criteria set by the institution itself or by an external testing agency set by the government or an independent agency (Duruji, Azuh & Oviasogiein Okosun & Isabu, 2023). The achievement that the student demonstrates is the student's academic achievement. In other words, achievement after academic activities can be said to be a measure of how much an individual can achieve after studying. Academic performance can be defined as the degree to which an individual performs and understands after learning has taken place (Irogbo, 2002). Anastas (2000) stated that performance is a factor that evaluates the impact of a specific standardized set of experiences, while Aiken (2000) defined performance as the extent to which abilities or talents are realized. She pointed out that it is often seen as something that is only related to classwork. As a result, a student's grades are judged primarily by how well they perform on tests or exams, where achievement is seen as an outcome.

**Aims and Objectives**

The study aims to evaluate ownership mentality and academic performance in mathematics among students in public schools in Rivers State. Specifically, the study seeks to:

1. Determine the relationship between innovative ownership mentality and academic performance in mathematics among students in public secondary schools.
2. Determine the relationship between personality ownership mentality and academic performance in mathematics among students in public secondary schools.
3. Determine the relationship between team ownership mentality and academic performance in mathematics among students in public secondary schools.

**Research Questions**

The following research questions guide the study:

1. What is the relationship between innovative ownership mentality and academic performance in mathematics among students in public secondary schools?
2. What is the relationship between personality ownership mentality and academic performance in mathematics among students in public secondary schools?
3. What is the relationship between team ownership mentality and academic performance in mathematics among students in public secondary schools?

**Hypotheses**

The following null hypotheses were formulated for this study:

Ho1:There is no significant relationship between innovative ownership mentality and academic performance in mathematics among students in public secondary schools
Ho2: There is no significant relationship between personality ownership mentality and academic performance in mathematics among students in public secondary schools.
Ho3:There is no significant relationship between team ownership mentality and academic performance in mathematics among students in public secondary schools.

**Methodology**

This study used a correlational research design. Three research questions and three hypotheses guided this study. The population of the study consisted of 1290 students selected from various schools as participants in Rivers State. A sample size of 300 was selected using a stratified random sampling technique. The data collection tool used are Ownership Mentality Questionnaire (OMQ) and Mathematics Performance Test (MPT). The reliability coefficient of this scale was determined by test-retest and the reliability result was found to be 0.72 and 0.82 respectively. The research questions and hypotheses were answered and tested at 0.05. Pearson product-moment correlation was used to analyze and evaluate the significance.

**Results**

The results of the study were obtained from the research questions answered and the hypotheses tested are presented below

**Research Question One:** What is the relationship between innovative ownership mentality and academic performance in mathematics among students in public secondary schools?

**Hypothesis One**: There is no significant relationship between innovative ownership mentality and academic performance in mathematics among students in public secondary schools.

**Table 1: Pearson product-moment correlation coefficient analysis of parental involvement**

Correlation

| | | Innovative Ownership Mentality | Academic Performance in mathematics |
|---|---|---|---|
| Innovative Ownership Mentality | Pearson correlation | 1 | 0.60 |
| | Sig (2-tailed) | | 0.03 |
| | N | 398 | 398 |
| Academic Performance in Mathematics | Pearson correlation | 0.60 | 1 |
| | Sig (2-tailed) | 0.03 | |
| | N | 398 | 398 |

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

The result showed that a moderate positive relationship of 0.60 existed between innovative ownership mentality and student academic performance in mathematics. The result means that as scores on innovative ownership mentality increase, there is a corresponding increase in students' academic performance in mathematics. The result also

shows that the relationship between innovative ownership mentality and student academic performance in mathematics among public secondary school students is significant at a 0.05 level of significance for a two-tailed test. Since the level p-value (0.03) is less than the alpha level ($p<0.05$), we therefore reject the null hypothesis and conclude that there is a statistically significant relationship between innovative ownership mentality and student academic performance in mathematics among public Secondary Schools in Rivers State.

**Research Question Two**: What is the relationship between personality ownership mentality and academic performance in mathematics among students in public secondary schools?

**Hypothesis Two:** There is no significant relationship between personality ownership mentality and academic performance in mathematics among students in public secondary schools

**Table 2: Pearson product-moment correlation coefficient analysis of Personality ownership mentality**

Correlation

| | Mentality | Personality Ownership in mathematics | Academic Performance |
|---|---|---|---|
| Personality | Pearson correlation | 1 | 0.80 |
| Ownership | Sig (2-tailed) | | 0.00 |
| Mentality | N | 398 | 398 |
| Academic | Pearson correlation | 0.80 | 1 |
| Performance in | Sig (2-tailed) | 0.00 | |
| Mathematics | N | 398 | 398 |

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

The result showed that a high positive relationship of 0.80 existed between personality ownership mentality and student academic performance in mathematics. The result means that as scores on personality ownership mentality increase, there is a corresponding increase in students' academic performance in mathematics. The result also shows that the relationship between personality ownership mentality and student academic performance in mathematics among public secondary school students is significant at 0.05 level of significance for the two-tailed test. Since the level p-value (0.00) is less than the alpha level ($p<0.05$), we, therefore, reject the null hypothesis and conclude that there is a statistically significant relationship between personality ownership mentality and student academic performance in mathematics among public Secondary School students in Rivers State.

**Research Question Three:** What is the relationship between team ownership mentality and academic performance in mathematics among students in public secondary schools?

**Hypothesis Three:** There is no significant relationship between team ownership mentality and academic performance in

mathematics among students in public secondary schools.

**Table 3: Pearson product-moment correlation coefficient analysis of team ownership mentality**

Correlation

| | Mentality | Team ownership | Academic Performance in mathematics |
|---|---|---|---|
| Team ownership Mentality | Pearson correlation | 1 | 0.83 |
| | Sig (2 tailed) | | 0.00 |
| | N | 398 | 398 |
| Academic Performance in Mathematics | Pearson correlation | 0.83 | 1 |
| | Sig (2-tailed) | 0.00 | |
| | N | 398 | 398 |

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

The result showed that a high positive relationship of 0.83 existed between team ownership mentality and student mathematics performance. The result means that as scores in team ownership mentality increase, there is a corresponding increase in students' mathematics performance. The result also shows that the relationship between team ownership mentality and student academic performance in mathematics among public secondary school students is significant at a 0.05 level of significance for the two-tailed test. Since the level p-value (0.00) is less than the alpha level ($p<0.05$), we, therefore, reject the null hypothesis and conclude that there is a statistically significant relationship between team ownership mentality and student academic performance in mathematics among public Secondary School students in Rivers State.

**Discussion of Findings**

**Innovative ownership mentality and Mathematics Academic Performance of public secondary school students.**

The study found a strong positive relationship between innovative ownership mentality and mathematics academic performance among public secondary school students. The study revealed that students with strong ownership mentality-who take personal responsibility for their learning-showed higher levels of academic achievement in mathematics. The findings aligns with Ryan and Deci"s (2000) Self -Determination Theory (SDT) which emphasizes autonomy, competence, and intrinsic motivation as essential for academic success. However, students who viewed mathematics as a personal challenge and took ownership of their learning process demonstrated better problem-solving abilities and higher test scores. Finally, this finding supports Dweck"s (2006) Growth Mindset Theory, which argues that students who believe they can develop their abilities through effort and persistence tend to achieve higher academic success.

**Personality ownership mentality and Mathematics Academic performance of public secondary school students.**

The study found a strong positive relationship between personality ownership mentality and mathematics academic performance among public secondary school students. The study also found that ownership mentality-a student's sense of personality responsibility and intrinsic motivation-significantly improved mathematics performance. The findings is in support with self-Determination Theory (Ryan & Deci,2000),which states that students who take ownership of their learning are more motivated and achieve higher academic success. Another, findings is aligns with Zimmerman (2002) on self-regulated learning who stated that students who actively set goals, monitor their progress ,and adjust their strategies performed better.

**Team ownership mentality and Mathematics Academic Performance of public secondary school students.**

The results showed a strong and high positive relationship between team ownership mentality and mathematics academic performance of public high school students fostered a culture of shared responsibility, collaboration and mutual support; schools can improve student engagement, critical thinking, and motivation in mathematics. The study found that students who worked in teams and shared ownership of learning showed higher engagement, motivation, and academic achievement in mathematics. The findings aligns with Vygotsky''s (1978) Social Constructive theory which emphasize the role of social interaction in cognitive development. Another finding support Gillies (2004) who stated that exposure to different problem-solving strategies within teams helped students develop flexible thinking, reinforcing.

## Conclusion

Based on the results of this study, there is a positive relationship between innovative ownership mentality and students' mathematics performance, and students with creative thinking will have good mathematics skills. It can be concluded that by instilling a sense of ownership in students, educators can help them become active participants in mathematics education rather than passive recipients of knowledge. In addition, by creating supporti ve and inclusive classroom environments, providing personal ized learning experiences, encouraging self-reflection and goal setting, and finally fostering owner ship of mathematics education, we support st udents to take control of their learning, realize their full potential, and achieve academic success in public schools.

## Recommendations

1. Educators and policymakers should foster a culture of curiosity and inquiry that aims to increase students' c onfidence, motivation, and belief in their ability to succeed in mathematics.
2. Schools can create supportive and encouraging learning environments that foster students' self-efficacy and academic success in mathematics.

3. Governments can strengthen partnerships between parents and educators, empower parents to support their children's math learning, and ultimately improve math achievement.

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