

# Self-Concept and Home Support as Correlates of Senior Secondary Students' Academic Performance in Mathematics in Obio-Akpor L.G.A., Rivers State.

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## Abstract

The study examined self-concept and home support as correlates of senior secondary students' academic performance in mathematics in Obio-Akpor L. G. A., Rivers State. Correlational research design was adopted. Three research questions and Three hypotheses guided the study. The population consisted of 36,232 senior secondary school students with sample size of 400 students drawn using Taro Yamane formula. Stratified sampling technique was used to select 10 public secondary schools. The instruments for data collection were self-structured questionnaire titled "Self-Concept Scale, Home Support Scale and Mathematics Performance Test ". Reliability index of 0.79, 0.80 and 0.83 respectively was established using Cronbach Alpha. Pearson's Product Moment Correlation was employed in analysis of research questions and test of hypotheses at 0.05 significant level. Findings revealed that there is significant relationship between self-concept, home support and secondary school students' academic performance. Parents should ensure they provide adequate home support for their children. Self-concept of secondary school students should be built-up.

**Keywords:** Self-Concept, Home Support, Mathematics, Academic Performance.

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## INTRODUCTION

Education is a medium of development of the individual, society and nation as a whole (Asuru, 2014). Notwithstanding the value of education, many factors have been accredited to academic performance of students in examinations or any given task. These factors may erupt from home, school, peers oriented and even from self. Khan, et al., (2019) identified students' ability, interest, home environment, peer's interactions and nature of learning materials from multi-

dimensioned perspective that has significant influence on students' learning as well as their academic performance.

Chohan, (2020), quoting Demo, (1992) stated that self-concept is a set of planned self-attitudes that are relatively established and is a characteristic of an individual. Self-concept is measured as a notable facilitating factor which enables the accomplishment of other required learning, psychological and behavioural outcomes (Marsh, et al., 2018). Many disciplines such as education, science, clinical or social psychology have been involved in self-concept enhancement. Self-concept improvement could be useful to academic, social and health areas (Marsh, 2016), but enhancement interferences should be strengthened by appropriate descriptions and measures of self (Menjares, et al., 2020). Self -concept variables are identified as self -esteem, self -identify, self-perception, self-worth, self-efficacy, self-acceptance, attitude, self – criticism, personal-self, family-self, self-satisfaction, behaviour, physical self, moral ethical self, social self and positive total self.

Students' preference in classifying objects and events in as much as responding to them with assessment uniformity is referred to as students' attitude. Students' attitude also entails one's evidence, admiration, passions, encouragement, and self-esteem conniving an individual's outlook on a certain discipline. Sstudents' academic self-perceptions relate to their fundamental academic motivation and academic self-confidence, which is likely to boost students' engagement and devotion on studies needed to standout in competitive academic environments of modern times (Dogan, 2015). Self-perceptions about oneself as an individual involves the totality of one's self-knowledge which can be differentiated from self-perceptions one has in regards to specific areas or domains in one's life (Marsh & Shavelson, 2018).

Home Support is a combination of biological, physical, social, and psychological factors that make up an environment. Biological factors in the home include human influences, genetic influences, brain chemistry, hormone levels, nutrition, and gender. Physical factors are rooms, basic facilities such as water, shelter, clothes, food and other physical needs of the individuals. Social factors such as sibling's relationship, peers pressure, romantic relationships, organizations and clubs, and sports activities while the psychological factors in home includes the mutual interactions of family members, respect, say in family matters and such other things. Home Support variables are factors such as parental involvement, parental encouragement, parental socio-economic statutes/ financial position of the family, parental level of academic qualifications/ educational status of parents, parental aspirant, parental support, siblings support, nature of family, authority (head of family), and attitude of parents towards children are numerous factors affecting students' academic performance. These comprise the factors considered home environment (Mukama, 2015; Muola, 2020).

Anene (2019) explained that parental involvement in the home has impact on academic performance of a student, affect a person's existence, behaviour and constitutes overall achievements in life. Parent involvement includes all activities that parents involves themselves in at home and at school in addition to positive interest/ attitudes parents have in the direction of their child's education, school, and teacher. Muola (2020) averred that home environment supports or hinders children overall development if their parents are not involved in their

wellbeing. Parents' involvement plays a dominant role and where it is supportive enhances children performances and has positive impacts on child's development. Parental encouragement is an important predictor of achievement motivation of higher secondary students (Maša & Mila, 2017). Parental encouragement is the inspiration or extra-boosting given by the parents to the children for their active involvement in academic life. The impact of a father's/ mother's style of dealing with their children at home has a positive significant relationship with their children's achievement. Under a meta-analysis, including 52 studies, parental encouragement and supportive home environment laid positive influence on educational achievement the black students (Jeynes, 2013). With this outcome, parents should be made aware of how to give proper parental encouragement for the academic excellence of their wards.

Academic performance signifies student's success in meeting educational goals in a particular school environment. This suggests that academic performance is not the potential for learning but preferably the real accomplishment of learning, the knowledge acquired or skill developed in the various school subjects usually described by test scores or marks assigned by the teacher. In school, academic performance is evaluated in a number of ways for consistent classifying student. Knowledge is demonstrated by students by taking written and oral tests, carrying out presentations, submission of homework, partaking in class activities and discussion. Singh, et al., (2017) also maintained that academic performance of students has an obvious impact on the socio-economic development of a country. Similarly, Farooq, et al., (2018), asserted that students' academic performance serves as bedrock for knowledge acquisition and the development of skills. Academic performance as the knowledge added which is evaluated by marks by a teacher and/or educational goals set by students and teachers to be accomplished over a definite period of time (Narad & Abdullah, 2016).

Mathematical skills have long been documented as essential not only for academic success but also for well-organized working in everyday life. Researcher as well as mathematics teacher has observed that most times, students do well in mathematics in their school-based assessment but achieve poorly in external exams (Carey,2017). Considering all these, it is obvious that students' self-concept and Home support has influence on student's performance in mathematics. It is contrary to this background that the researcher examines Self-Concept and Home Support as Correlates to Senior Secondary School Students Academic Performance in Mathematics in Obio-Akpor, Rivers State

### **Research Questions**

To guide the study, the following research questions were formulated:

1. To what extent does students' self-concept relate to their academic performance in Mathematics in Obio-Akpor Local Government Area of Rivers State?
2. To what extent does parental involvement in the education of their children relate to their academic performance in Mathematics in Obio-Akpor Local Government Area of Rivers State?

3. To what extent does parental encouragement in the education of their children relate to their academic performance in Mathematics in Obio-Akpor Local Government Area of Rivers State?

### **Hypotheses**

- H<sub>01</sub>: Students' self-concept does not significantly relate to their academic performance in Mathematics in Obio-Akpor Local Government Area of Rivers State.
- H<sub>02</sub>: Parental involvement in the education of their children does not significantly relate their academic performance in Mathematics in Obio-Akpor Local Government Area of Rivers State.
- H<sub>03</sub>: Parental encouragement in the education of their children does not significantly relate their academic performance in Mathematics in Obio-Akpor Local Government Area of Rivers State.

### **Methodology**

The design for this study was correlational research design. The research was conducted in Obio-Akpor Local Government Area, Rivers State, Nigeria. The population of the study consisted of students in public senior secondary schools in Obio-Akpor L.G.A of Rivers State, is of 36, 232 students. (Source: Rivers State Senior Secondary Schools Board, 2020/ 2021). The stratified sampling technique procedure was used in selecting the sample for the study and 10 public secondary schools in the area under investigation. This technique was used because it reflects the entire population. A sample size of 400 students obtained using Taro Yamen's formula, so the population can be easily accessed.

The instruments for data collection were self- structured questions titled "Self-Concept Scale (SCS)," "Home Support Scale (HSS)" and "Mathematics Performance Test (MPT)". The instrument was designed on modified Likert four-point rating scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) respectively. A test blue print was used to draw the test item for MPT to vary the questions under the curriculum covered which enabled the researcher measure for low and high learning outcome using Bloom's revised version cognitive education taxonomy as shown in the table.

The validation of the instruments was done by three mathematics teachers in senior secondary school, two experts in Measurement and Evaluation in the department of Educational Psychology Guidance and Counselling, Ignatius Ajuru University of Education and the researcher's supervisor while the reliability of the instruments were estimated using the Cronbach Alpha reliability method for internal consistency. The sample for determination of the Cronbach Alpha was 20 from schools that are not part of the study. The result shows that a reliability co-efficients of 0.79, 0.80 and 0.83 were obtained respectively for the Self-Concept

Scale (SSS), Home Support Scale (HSS), and Mathematics Performance Test (MPT) which make the instruments reliable for data collection. The data generated for the study was analyzed using Pearson Product Moment Correlation (PPMC) to answer the research questions and test of the hypotheses at 0.05 significant level.

## Results

### Research Question One

**Table 1: Pearson's Product Moment Correlation Results of students' self-concept and Academic Performance in Mathematics in Obio-Akpor L.G.A.**

Variables	N	$\alpha$	r-value	2-tail (p-value)	Decision
<b>Students' self-concept</b>	400	0.05	0.708	0.018	<b>H<sub>01</sub>: Rejected</b>
<b>Academic performance</b>					

Table 1 of Pearson's Product Moment Correlation result reveals that an r-value of 0.708 with its corresponding p-value of  $0.018 < 0.05$  which is less than the chosen level of significant was gotten. This shows a high positive relationship between Students' self-concept and Secondary School Students' Academic Performance in Mathematics. Since the p-value is less than the significant level, the null hypothesis is rejected. It therefore indicates that Students' self-concept significantly relate to their academic performance.

### Research Question Two

**Table 2: Pearson's Product Moment Correlation Results of parental involvement in the education of children and Academic Performance in Mathematics**

Variables	N	$\alpha$	r-value	2-tail (p-value)	Decision
<b>Parental Involvement</b>	400	0.05	0.704	0.019	<b>H<sub>02</sub>: Rejected</b>
<b>Academic Performance</b>					

Table of Pearson's Product Moment Correlation results reveal an r-value of 0.704 with its corresponding p-value of  $0.019 < 0.05$  which is less than the chosen level of significant was gotten. This shows a high positive relationship between Parental Involvement in the education of children and academic performance of secondary school students in mathematics. Since the p-value is less than the significant level, the null hypothesis is rejected. It therefore indicates that Parental Involvement in the education of children significantly relate to the academic performance of male students in Mathematics.

### Research Question Three

**Table 3: Pearson's Product Moment Correlation Results of Parental encouragement in the education of their children and Academic Performance of Students in Mathematics in Obio-Akpor L.G.A**

Variables	N	$\alpha$	r-value	2-tail (p-value)	Decision
Parental Encouragement	400	0.05	0.721	0.015	<b>H<sub>03</sub>: Rejected</b>
Academic Performance					

Table 3 of Pearson's Product Moment Correlation result reveals an r-value of 0.721 with its corresponding p-value of  $0.015 < 0.05$  which is less than the chosen level of significant was obtained. This shows a high positive relationship between Parental Encouragement in the education of their children and academic performance of students in mathematics. Since the p-value is less than the significant level, the null hypothesis is rejected. It therefore indicates that Parental Encouragement in the education of their children significantly relate to the academic performance of the students in Mathematics.

### Discussion of Findings

The findings in table one, showed that increase in students' self-concept, causes increase in student's academic performance. There is a high positive relationship between students' self-concept and student's academic performance in mathematics where the null hypothesis is rejected since  $p < 0.05$  the chosen level of significant. Hence, there is significant relationship between students' self-concept and student's academic performance in mathematics.

This result is in line with the studies of Boulter (2020) which established that students with high levels of students' self-concept are classified as active learners with fervent desires for learning and problem-solving skills. They have the capability to participate in self-determining learning activities in addition manage their own learning. Flook et al., (2020) also recommended that positive academic students' self-concept have a significant role in student's academic achievement this was also buttressed by Valentine, et al., (2004) who stated that positive students' self-concept of competence is causal of many positive outcomes, including good academic performance. Hence, the relationship between students' self-concept and academic performance are communal in nature, with each touching the other mutually strengthening to the extent that a negative or positive change in one enables a corresponding change in the other. Students' self-concept enables them to be familiar with the basic organization of life besides a vital role in supporting individual's psychological well-being. However, because of what an individual believes about himself/ herself and the importance attach to such beliefs, make them work toward grasping the academic dreams. This could be that one's self concept increases one's zeal to acquire things including academic excellence.

The findings in table two showed that there is a high positive relationship between Parental involvement in the education of their children and academic performance in mathematics. Increase in Parental involvement in the education of their children cause increases

in student's academic performance. It also reveals that the null hypothesis is rejected since  $p < 0.05$  the chosen level of significant. Therefore, significant relationship exists between Parental involvement in the education of their children and student's academic performance in mathematics. This was explained by Anene, (2019) that parental involvement in the home can affect a student's existence, behaviour and constitutes overall achievements in life. This can cause positive rise in students' academic performance because in homes, parents continue to exercises a strong influence over the child's live and its academic performance in the school. Parents' involvement plays a leading role in boosting children performances, has positive impacts on child's development, improves child's confidence, assurance, self-reliance and empower them to be sociable. This self-confidence aids students in developing their adjustment capabilities in different environments which positively influences students' educational performances.

In agreement with the studies of Ralph, (2014) found out that parent-child involvement consistently has a greater effect on student attitudes, behaviours, and achievement than does parent-school involvement. This was supported by Burcu, and Sungur, (2019) who found out that positive parental involvement is an outstanding indicator of students' success in their academics. They additional added that teaching learning process carried out at school is incomplete without parental involvement. Rolf (2017) also acknowledged that lack of parental involvement, parental negligence, and low levels of parent-child relationship as a home support are strong indicators of academic achievement of secondary school students. Similarly, children who are rejected by their parents or who are insufficiently overseen and supervised are at greatest peril of academic success. Parents who take up obligation for children learning result in increasing their children awareness in the studies. Children established diversity of achievement-related out-comes when their parents are energetically involved with their education (Selwyn, et. al., 2011). Parental involvement impacts on children's social, emotional, and character development, increased attendance, reduced suspensions, and reduced high school dropouts. Parents involving in their children academic pursuit will help them to know where and when necessary to play their roles in them.

The findings in table 3 showed high positive relationship between Parental encouragement and academic performance of students in mathematics. Since the p-value is less than the 0.05 significant level, the null hypothesis is rejected. It therefore indicates that Parental encouragement significantly relate to the academic performance of students in Mathematics. Also, the study of Kishor (2014) supports positive and significant relationship between parental encouragement and academic achievement of students in government and private high school (Chowdhury, 2020). This finding was in agreement with the findings of Sharma(2002) who describes the parental encouragement to be positively related to academic achievement. In this 21<sup>st</sup> Century, parental encouragement is one of the aspects of parent treatment patterns that progresses the academic achievement of the students. The parents give assistance and guide them so that the students may not feel discouraged at a particular point of difficulty.

In line with the study, Sudhakar and Nellaiya (2016) supported that parental encouragement is a significant and vital predictor of achievement motivation of higher secondary

students. With this outcome, parents should be aware on how to give an appropriate parental encouragement for the academic excellence of their wards because significant relationship exists between parental encouragement and student's academic performance. This could be that encouragement is a motivational factor in students' academic performance.

## CONCLUSION

Self-concept refers to what an individual think about himself or herself as well as what others feel about the person. In addition, home support also plays important role in the political, social and economic aspects of life of an individual. The researcher, therefore conclude that self-concept and home support significantly relate to the academic performance of students in mathematics in Obio-Akpor Local Government Area of Rivers State.

## RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made;

1. Parents should ensure they provide adequate home support as it yields better academic performance of their children in schools.
2. Teachers should help in building self-concept among secondary school students as it enables them study effectively for academic improvement.
3. There should be free education for secondary school students to enable the students overcome financial challenges which may lead to academic failures.
4. There is need for recruitment of professional and qualified counselling psychologist in secondary schools. As they will not only provide career and vocational guidance but also solving interpersonal difficulties and negative self-concept for academic success.

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