

SOCIAL INTELLIGENCE AND SELF EFFICACY AS CORRELATES OF ACADEMIC ACHIEVEMENT IN MATHEMATICS AMONG SECONDARY SCHOOL STUDENTS IN ABIA STATE, NIGERIA

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Abstract

The study investigated social intelligence and self-efficacy as correlates of academic achievement in Mathematics among secondary school students in Abia State, Nigeria. The study adopted a correlational research design. Three research questions were raised and three hypotheses were formulated at 0.05 level of significance to guide the study. The population of the study comprised 3,287 SS1 students drawn from 248 public senior secondary schools in the seventeen (17) Local Government Areas (L.G.As) encompassing the three education zones that make up Abia State. A sample size of 357 students was selected from the population using accidental sampling technique. One researcher developed instrument titled “Social Intelligence and Self -Efficacy Scale” (SISES) was used together with the continuous assessment “Mathematics Test Scores” (MTS) of the students to carry out this study. The instruments were validated by experts in Measurement and Evaluation and Mathematics. The instrument had reliability coefficient of 0.87 determined using test re-test method. The collected data was analyzed using Pearson's product moment correlation. The result of the study revealed that: self-regulation, self-awareness and mastery of experience all had high positive relationship with academic achievement in Mathematics. The researcher made some recommendations among which were that; Self regulation techniques such as self punishment, self instruction, self monitoring, thought stopping technique and turtle technique should be by students improve their self regulation as it has far reaching positive relationship with their academic achievement in Mathematics.

Keyword: Social Intelligence, Self –Efficacy, Academic Achievement, Mathematics

INTRODUCTION

Mathematics is an aspect of science that deals with structure, order and relations. Mathematics as a subject of instruction is essential and existential in our contemporary society. It holds the potency of making individuals to apply mathematical knowledge, skills and values to daily problems and hence develop the individuals to a level that they are intellectually and economically stable (Anyakoha, 2016). Recently, there has been a frequent report on the decline on students' academic achievement in Mathematics in Nigeria. This has become an issue of worry to many due to the great role Mathematics education plays in technological and national development (Popola, 2012). The study seeks to unravel how social intelligence and self-efficacy are correlates of academic achievement in Mathematics among secondary school students in Abia State, Nigeria. The components

of social intelligence and self-efficacy that were studied include; self-regulation, self awareness and mastery of experience.

Self-regulation is the ability to control oneself, it borders on exercising restraints over impulses. S2ahranavard, Miri, & Salehiniya (2018) investigated the relationship between self-regulation and educational overall performance in students and found that there is a significant correlation between self-regulation and academic overall performance among students of Payame Noor University, whereas it is not enormous for public college students. Self-awareness is the knowledge an individual has about his strength and limitations in relation to his environment. Oba-adenuga, Ezeribe, Oba-adenuga (2022) investigated the relationship between self-awareness and task performance in selected private universities in Ogun State, Nigeria and found among other things that self-awareness had huge relationship with project overall performance ($r(296) = 0.833, p < 0.05$). Based on the result of the study, it was consequently endorsed that the control of private universities have to train their instructional body of workers to gather the talents associated with self-awareness as a radical understanding of oneself is a critical determinant of self-efficacy for improving non-public overall performance.

Mastery of experience is the degree to which an individual has mastered his/her learning experiences. Toheed and Ali (2019) examined effects of mastery learning model on academic achievement of secondary school students in Mathematics. The result revealed that the overall performance of the scholars' experimental group was better than the ones of the control groups. It was concluded that mastery of learning experience improved educational achievements of students in city and rural regions of district Mardan. Until now, only few studies have been conducted on this regard. It is against this background that the researcher conducted the study.

Statement of the Problem

Mathematics is considered as a necessary part of general education all over the world. It features prominently in the school system from primary to secondary levels. In Nigeria, Mathematics is a core subject for students going through the formal education process. Unfortunately, the subject seems to be disliked by most students at the secondary school level; there has been public outcry and complaints over students' poor achievement in Mathematics in external examinations such as general certificate examination and senior school certificate examinations (GCE/SSCE). Researchers have identified; lack of adequate instructional materials, learners' negative attitudes towards Mathematics, Mathematics teacher's nonchalant attitudes and their boring teaching methodology and lack of Mathematics -English-Concepts comprehension among the students and the teachers. There is a need to address the under achievement in Mathematics as it affects students' academic prospects in internal and external examinations, impedes their sense of reasoning, handicaps their numerical abilities, promotes examination malpractice and culminates into the production of educated illiterates in our society. The likely correlates of poor academic achievement in Mathematics may be understood better from the points of view of students' social intelligence and self-efficacy given that the students in question are unique configuration of forces operating within environments which are uniquely

configured as well. Therefore, the researcher deemed it necessary to conduct a study on social intelligence and self-efficacy as correlates of academic achievement in Mathematics among secondary school students in Abia State.

Purpose of the Study

The aim of the study was to investigate social intelligence and self-efficacy as correlates of academic achievement in Mathematics among secondary school students in Abia State, Nigeria.

Specifically, the study sought to:

5. Determine the extent to which self regulation relate to academic achievement in Mathematics among secondary school students in Abia State;
6. Investigate the extent to which self-awareness relate to academic achievement in Mathematics among secondary school students in Abia State;
7. Examine the extent to which mastery of experiences relate to academic achievement in Mathematics among secondary school students in Abia State;

Research Questions

The following questions guided the conduct of the study:

1. To what extent does self-regulation relate to academic achievement in Mathematics among secondary school students in Abia State?
2. 2To what extent does self-awareness relate to academic achievement in Mathematics among secondary school students in Abia State?
3. To what extent do mastery of experiences relate to academic achievement in Mathematics among secondary school students in Abia State?

Hypotheses

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

1. There is no significant relationship between self- regulation and academic achievement in Mathematics among secondary school students in Abia State.
2. There is no significant relationship between self-awareness and academic achievement in Mathematics among secondary school students in Abia State.
3. There is no significant relationship between mastery of experience and academic performance in Mathematics among secondary school students in Abia State.

Methods

The study adopted a correlational design. The study was conducted in Abia State. The population of the study was 3,287 public senior secondary school (SS1) students' drawn from 248 senior secondary schools in the seventeen (17) Local Government Areas (L.G.As) encompassing the three education zones that make up Abia State (Ministry of Education, Abia State, 2023). The sample of the study consisted of 357 (11%) of public senior secondary school (SS1) students in Abia State. Abia State has three education zones among which are: Umuahia, Ohafia and Aba education zones. A total of 119 (SS1) students

were selected from three schools in each education zone, making it a total of 357 secondary school students. The SS1 students were used for the study owing to the fact that they are in an adjustment class that serves as the foundation senior secondary school. The accidental sampling technique was used to select the sample for the study. The instrument for data collection was one researcher developed instrument titled: "Social Intelligence and Self-Efficacy Scale" (SISES). The instrument: "Social Intelligence and Self-Efficacy Scale" (SISES) was validated based on face and content validity by experts in Measurement and Evaluation and Mathematics. The reliability coefficient of the instrument was determined to be .87 using test re-test method. The Continuous Assessment Mathematics test scores of the students was deemed reliable enough for the study as it was a summation of the students assignment scores, midterm test scores and third term test scores in Mathematics. The research questions and hypotheses were answered and tested using Pearson's product moment correlation statistics while the r coefficients was subjected to critical probability value at 0.05 alpha level of significance with regard to the null hypotheses. All data was subjected to analysis using statistical package for social science.

Results

Research Question One: To what extent does self-regulation relate to academic achievement in Mathematics among secondary school students in Abia State?

Hypothesis One: There is no significant relationship between self-regulation and academic achievement in Mathematics among secondary school students in Abia State.

Table 1: Pearson's Product Moment Analysis of the extent to which Self-regulation Relate to Academic Achievement in Mathematics among Secondary School Students in Abia State

| | | Correlations | |
|-------------------------------------|---------------------|-----------------|-------------------------------------|
| | | self-regulation | academic achievement in Mathematics |
| self-regulation | Pearson Correlation | 1 | .858* |
| | Sig. (2-tailed) | | .013 |
| | N | 357 | 357 |
| academic achievement in Mathematics | Pearson Correlation | .858* | 1 |
| | Sig. (2-tailed) | .013 | |
| | N | 357 | 357 |

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

Table 1 above shows the extent to which self-regulation relate to academic achievement in Mathematics among secondary school students in Abia State. An overview of the table revealed that there exists a correlation coefficient of .858 between the two variables. This

evinced that self-regulation has a high positive relationship with the academic achievement of the students in Mathematics. The table further revealed that the existent relationship between the two variables has a p-value of .013 which is below the critical p-value of 0.05. The null hypothesis therefore is not accepted. The implication is that the extent to which self-regulation relates to the academic achievement of the students in Mathematics is statistically significant.

Research Question Two

To what extent does self-awareness relate to academic achievement in Mathematics among secondary school students in Abia State?

Hypothesis Two: There is no significant relationship between self-awareness and academic achievement in Mathematics among secondary school students in Abia State.

Table 2: Pearson Product Moment Analysis of the extent to which Self-awareness Relate to Academic Achievement in Mathematics among Secondary School Students in Abia State

| | | Correlations | |
|-------------------------------------|---------------------|----------------|-------------------------------------|
| | | self-awareness | academic achievement in Mathematics |
| self-awareness | Pearson Correlation | 1 | .944** |
| | Sig. (2-tailed) | | .001 |
| | N | 357 | 357 |
| academic achievement in Mathematics | Pearson Correlation | .944** | 1 |
| | Sig. (2-tailed) | .001 | |
| | N | 357 | 357 |

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2 above shows the extent to which self-awareness relates to academic achievement in Mathematics among secondary school students in Abia State. An overview of the table revealed that there exists a correlation coefficient of .944 between the two variables. This evinces that self-awareness has a high positive relationship with the academic achievement of the students in Mathematics. The table further revealed that the existent relationship between the two variables has a p-value of .001 which is below the critical p-value of 0.05. The null hypothesis therefore is not accepted. The implication is that the extent to which self-awareness relates to the academic achievement of the students in Mathematics is statistically significant.

Research Question Three: To what extent do mastery of experiences relate to academic achievement in Mathematics among secondary school students in Abia State?

Ho3: There is no significant relationship between mastery of experiences and academic achievement in Mathematics among secondary school students in Abia State.

Table 3: Pearson Product Moment Analysis of the extent to which Mastery of Experiences Relate to Academic Achievement in Mathematics among secondary school students in Abia State

| | | Correlations | |
|-------------------------------------|---------------------|------------------------|-------------------------------------|
| | | Mastery of experiences | Academic achievement in Mathematics |
| Mastery of experiences | Pearson Correlation | 1 | .940** |
| | Sig. (2-tailed) | | .002 |
| | N | 357 | 357 |
| Academic achievement in Mathematics | Pearson Correlation | .940** | 1 |
| | Sig. (2-tailed) | .002 | |
| | N | 357 | 357 |

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3 above shows the extent to which mastery of experiences relate to academic achievement of students' in secondary school Mathematics in Abia State. An overview of the table revealed that there is exists of correlation coefficient of .940 between the two variables. This evince that mastery of experiences has a high positive relationship with the academic achievement of the students in Mathematics. The table further revealed that the existent relationship between the two variables has a p- value of .002 which is below the critical p- value of 0.05. The null hypothesis therefore is not accepted. The implication is that the extent to which mastery of experiences relate to the academic achievement of the students in Mathematics is statistically significant.

Discussion

The result of the finding revealed that self-regulation has a high positive relationship with academic achievement in Mathematics among secondary school students in Abia State. This is explicable because self-regulation is characterized by being reserved, calculative, having high self-control, meticulous and serious. The result of the study consolidates that of Sahranavard et al. (2018) which revealed that there is a significant correlation between self-regulation and academic overall performance among students of Payame Noor University. The finding of hypothesis one revealed that that the extent to which self-regulation is related to the academic achievement of the students in Mathematics is statistically significant.

The finding of the result also revealed that self awareness has a high positive relationship with the academic achievement of the students in Mathematics. Self-awareness creates an enabling environment needed for high academic achievement to flourish. This result of this study improves the frontiers of knowledge pertaining to the

findings of Oba-adenuga et al. (2022) which revealed that self-awareness has huge relationship with project overall performance ($r(296) = 0.833, p < 0.05$). The finding of hypothesis two revealed that the extent to which self awareness is related to the academic achievement of the students in Mathematics is statistically significant.

The findings of the result further revealed that mastery of experiences has a high positive relationship with the academic achievement of the students in Mathematics. What this means is that the more students master learning experiences, the higher their academic achievement in Mathematics. This consolidates the findings of Toheed and Ali (2019) which revealed that mastery of learning experience improved educational achievements of students in city and rural regions of district Mardan. The finding of hypothesis three revealed that the extent to which mastery of experiences is related to the academic achievement of the students in Mathematics is statistically significant. The mastery of experience in Mathematics is decisive therefore and should be prioritized. The students need to upgrade their psychomotive development in Mathematics from guided response to mechanism and complex overt response.

Conclusion

Based on the findings of the study, the researcher concluded that self- regulation endears students to excel in Mathematics. Self-awareness enhances the academic achievement of the students' in Mathematics while mastery of experiences is akin to high academic achievement in Mathematics among the students.

Recommendations

The researcher recommended as follows:

1. Self regulation techniques such as self punishment, self instruction, self monitoring, thought stopping technique and turtle technique should be by students improve their self regulation as it has far reaching positive relationship with their academic achievement in Mathematics.
2. Aptitude tests, Socratic dialogue and orientation toward meaning should be used by teachers to enhance the self-awareness of the students in relation to their academic performance in Mathematics.
3. Teachers should organize extramural classes for the students to enable them master their Mathematical studies.

REFERENCES

- Anyakoha, C. I. (2016). Single parenting as correlate of academic performance of students in unity secondary school in south east geo-political zone in Nigeria. *Journal of Contemporary Research on Parenting*, 5(2), 7-15.
- Anyakoha, C. I., & Anyanwu, G. A. (2016). The relationship between academic goal orientation and the academic achievement of school-aged children. *Journal of Home Economics Research*, 7(5), 242-247.

- Oba-adenuga, O. A., Ezeribe, S. N., & Oba-adenuga, M. A. (2022). Relationship between self-awareness and task performance in selected private universities in Ogun State, Nigeria. *KIU Journal of Social Sciences*, 8(3), 123-130.
- Popoola, A. D. (2012). On the density-profile slope of scholastics. *Journal of Scholastic Development*, 5(9),1-7.
- Sahranavard, S., Miri, M. R., & Salehiniya, H. (2018). The relationship between self-regulation and educational performance of students. *Educational Health Promotion*, 7(5), 154-170.
- Toheed, L., & Ali, A. (2019). Effects of mastery learning model on academic achievement of secondary school students in mathematics. *European Journal of Educational Research*, 4(4), 232-238.

