

## **Research Article**

# **Self Concept and Academic Performance In Mathematics Among Secondary School Students In Ekiti –State**

**Samuel Olufemi Adebule**

Faculty of Education, Ekiti State University, Ado Ekiti , Nigeria .

### **\*Corresponding author**

Doctor Samuel Olufemi Adebule

Email: [doctorolufemiadebule@yahoo.com](mailto:doctorolufemiadebule@yahoo.com)

---

**Abstract:** This study investigated self-concept and academic performance of students in Mathematics to confirm their relationship. The study also found out whether location of school influenced self-concept of students. A Sample of 400 students drawn from four Local Government Areas of Ekiti State was used. The stratified random sampling technique was employed to cater for both urban and rural students. A – 25 item instrument called Student Self- Concept Inventory (SSCI) was used. Two hypotheses were tested using Pearson Product Moment Correlation and t-test statistics. The results of the findings showed that self – concept did not influence academic performance of students. It was recommended that parents, teachers and school counselors should not rate academic performance of students based on their self- concept

**Keywords:** Ekiti State, academic performance, Mathematics, students

---

## **INTRODUCTION**

Every nation of the world depends on education as an important vehicle of change and development. Nigeria being no exception stated in the National Policy in Education (1998) that all her citizens will have access to free education knowing fully well that education is the means of bringing about a democratic society, united and self reliant nation that is filled with great and dynamic economy[1].

There is a general consensus about the importance of Mathematics in the technological development of any nation. This fact is acknowledged by the time and efforts devoted to the teaching and learning of Mathematics in the schools today [2]. The training of technical experts and scientific researchers that would effect technological transformation of any nation depends largely on Mathematics and other scientific background. According to Emovon [3] and Kuku [4] a nation's technology is as good as her science and hence as her Mathematics. Also Jegede [20] said science based education has always been an index of technological growth and hence socio- economic recognition of nations throughout the world.

However, the performance of students at both internal and external examinations left much to be desired [5]. So many reasons have been adduced to these. According to Adeyanju [6] most studies in education focused on what goes on in the classroom while neglecting other important factors such as the

socio- psychological factors. The way an individual learns is not only affected by classroom work and situation but these are other factors which determine what, why and how individual learns. The combination of proximal and distal factors ought to be considered but little or no consideration is given to the distal factors like the socio- psychological variable such as self- concept, study habit, attitude, dialect, gender, home and family types, peer group, parental socio – economic status and others which exert dominant influence on all facets of life of an individual.

According to Onocha [7] mans educational aspirations and accomplishment are projected by the psycho- social variable in his environment. These variables in take unique positions in human beings since they are necessary for understanding human overt and covert actions, potentialities and their performances in the cognitive affective and psychomotor domains of education. Dialect

Bakare [8] and Gbore [9] expressed academic performance as that behaviour exhibited by a person that is noticeable after undergoing a programme of instruction in a school. The programme could be a course work, syllabus or scheme of work for a particular class, over a period of time. Also Akinboye [10] claimed that some factors that influence academic performance of students are heredity, environment, time and some that are resident in the student, the family, the school and the society. Those factors resident in the

student include physical, health, truancy, emotional problem personality factors, poor study habit, self – concept, continued failure, lack of basic cognitive skills and examination strategies or restiveness.

Self concept is concerned with all that an individual thinks he is, what he thinks he can do and how best he can do it. According to Hassan [11] and Gbore [9], it is a sort of self-perception, which can be high (positive) or low (negative).

Also, Akinboye [10] viewed self-concept as self esteem, an identify, self-perception and self – worth, self- efficacy and self –acceptance. While Adeyanju [6] described self -concept as consisting of beliefs, hypotheses and assumptions that an individual has about himself. Marsh [12] identified self – concept variables as self – criticism, identity, personal –self, family –self, self – satisfaction, behaviour, physical self, moral ethical self, social self and positive total self.

There is however a general opinion among researchers and that achievement related to success and failures do influence self-concept through various means. It is against this background that this study investigated self –concept and academic performance of Senior Secondary School students in Mathematics at in Ekiti State.

**General Questions**

The following general questions were raised for the study-

1. What is the level of academic performance of the students in Mathematics?
2. Will self-concept influence academic performance of students in Mathematics?
3. What is the nature of self –concept of the secondary school students?

**Research Hypotheses**

The following hypotheses were generated and tested at 0.05 level of significance.

1. There is no significance relationship between self – concept and academic performance of students in Mathematics
2. There is no significant difference between the self –concept of rural and urban students in relation to Mathematics

**METHODOLOGY**

The research design used in the study is descriptive of the correlational type. This was to explore the relationship between the variables used in the study. The population consisted of all senior secondary school students in Ekiti state. A sample of 400 students from four Local Government Areas was drawn using the stratified random sampling techniques to cater for urban and rural students. The Student Self – Concept Inventory (SSCI) instrument used was a – 25

item adapted from the Adolescent personal Data Inventory (APDI) designed by Akinboye [13]. Also a Profound was used to collect the average mathematics scores of the students for the first, second and third term examinations for 2009 session. The content and face validities were ensured by subjecting the adapted instrument to thorough scrutiny by experts in Test and Measurement and Guidance and Counseling. During the process inappropriate and ambiguous items were discarded. To ensure the reliability of the instrument, a test-retest method was used. The instrument was administered twice with an interval of two weeks to a group of 25 Senior School Students who were not part of the sample used for the study. The two set of scores were correlated using the Pearson Product Moment Correlation. A coefficient of reliability  $r = 0.811$  was obtained, which was found to be very high. The data generated were analyzed using frequency count, percentages, correlation and student t-test

**RESULTS**

**Question 1: What is the level of academic performance of the students in Mathematics ?**

The data collected on question one were analyzed as presented on table 1

**Table 1 : Level of academic performance of students in mathematics**

Level	F	Percentage
Below average	140	25
Average and above	260	75
Total	400	100

Table 1 shows that one hundred and forty students (140 ) representing 25% scored below average while two hundred and sixty students (260 ) representing 75% scored average and above in mathematics which can be termed a very high performance.

**Question 2 :- What is the nature of self concept of the students?**

**Table 2 : Frequency count and percentages of nature of self concept of secondary school students.**

Variable	F	Percentages
Negative self concept	120	30
Positive self concept	280	70
Total	400	100

**Question 3: Will Self-Concept influence academic performance of student in mathematics?**

**Table 3; Influence of self-concept on student's academic performance in mathematics**

Self concept	Acad. Perfm. F	Below average	Average and above Acad. Perf.	%	Total
Low	40	33.3	80	66.7	120
High	100	36.0	180	64.0	280
Total	140		260		400

The result on table 3 shows that 40 (33.3% ) of the students with low self concept scored below average while 80 (66.7%) of the students with low self concept scored creditably well. On the other hand, 100 students (36% ) with high self concept scored below average while 180 (64% )of the students with high self concept scored high.

This finding attests to the fact that self concept might not influence students academic performance in mathematics.

**Testing of Hypotheses**

**Hypothesis one**

There is no significant relationship between self-concept and academic performance of student in mathematics.

**Table 4: Pearson product moment correlation summary of Self-Concept and Academic performance of students in Mathematics.**

Variable	N	r-cal	r-table
Self - concept	400	0.162	0.195
Academic performance	400		

P > 0.05 (Result not significant)

Table 4 reveals their r calculated value = 0.162, is less than the r- table value = 0.195 at 0.05 level of significance. Since r table > real, the hypotheses earlier stated are not rejected. Thus, self – concept is not significantly related to the academic performance of students in Mathematics.

**Hypothesis Two**

**These is no significant difference between the self – concept of rural and urban students into Mathematics**

**Table 5 Students t-test summary of school location and students' self -concept.**

Location	N	-X	SD	df	t-cal	t-table
Rural	200	160.9	30.5	398	5.054	1.96
Urban	200	175.5	27.2			

**P < 0.05 ( Significant Result )**

The analysis on table 5 shows that the calculated value of t = 5.054 while the t – table value = 1.96. Since the t – table value < t calculated value, the hypothesis is rejected. Thus, there is a significant difference between the self – concept of rural and urban students in Mathematics.

**DISCUSSION AND CONCLUSION**

The result of findings of this study agrees with Alawiye [14] who found out that these were differences of self –concept levels among school children across grade levels and nationality in a study of self –concept of children in grade two, four, six and eight schools in Ghana and Gambia. This finding of this study also support Odoemelum [15] and Iwuyi [16] that categorized self –concepts into very low, low and high in their research studies.

Also the result of finding on hypothesis one which states that there was no significant relationship between self –concept and academic performance is in consonance with Tamunomana [17] that a negative relationship was found to exist between academic performance and physical self – concept.

However, the findings contradict the work of Okoye [15] and Ayoku[18], which stressed that self – concept influences students' academic achievement and mental health. The authors submitted that a child who is always made to believe that he is incompetent or never to do well will accept this picture of himself to operate incompetently and that names given to children on their formation of self –concept have influence on them. Also, Zimmerman [19] showed in his study that the unique ways that an individual perceives, evaluates and constructs the self, including self – conception of ability are relevant to his academic performance.

The result of findings further revealed that students' self – concept was significantly influenced by the location of schools. This was in agreement with Adeyanju[6] who stated that students from urban schools had high self – concept as against their counterparts from rural schools who had low self – concept. This stemmed from the fact that students from urban schools are more exposed to modern technology than those from the rural schools.

It can be concluded that school location is a major determinant of self – concept of students and that self – concept did not influence students' academic performance.

**Recommendations**

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

1. The parents, teachers and school counselors should not rate students' academic performance on the self – concept of students

2. Teachers especially Guidance counsellors should encourage students from rural schools to develop high self – concept like their counterparts from urban schools so as to face the reality of future challenges.
3. Parents should be more committed to their children’s education and well being so as to enhance the development of positive self – concept.

#### REFERENCES

1. National Policy on Education. Federal Ministry of Education Odoemelam A.L. (1995) A handbook on pupil’s behaviour Inventories and scales (PBIS); Manual for users of PBIS, Okigwe, Fasman communications. 1998.
2. Adebule SO; Development and Validation of an anxiety rating scale in Mathematics for Nigeria Secondary School, Unpublished Ph.D Thesis, University of Ado –Ekiti, 2004.
3. Emovon E; A Speech at the Launching of African Mathematical Science Foundation, Ikeja Lagos, 1987.
4. Kuku AO; A speech at the launching of African Mathematical Science foundation, Ikeja Lagos. 1987.
5. Adebule SO; Relationship between parents socio- economic status and students academic performance in science subject. A Journal of Education, 2006; 5(1):139 –146.
6. Adeyanju PF; Self – Concept, Study Habit and Academic Performance in Social Studies among Secondary Student in Oyo State. An unpublished in M.Ed Thesis, University of Ado Ekiti. 2006.
7. Onocha SM; Patterns of relationship between home, school factors & pupils learning outcomes in Bendel State. An unpublished Ph.D Thesis University of Ibadan. 1991.
8. Bakare GM; Some Psychological correlation of academic performance and failure, University of Ibadan Press Ltd. 1993.
9. Gbore LO; Cognitive Entry characteristic, study Habits and self concept as predictors of Academic performance of University under graduate. An unpublished Ph.D Thesis University of Ado-Ekiti. 2006.
10. Akinboye JO; How to study and pass important examination. A psychological Approach. Ibadan, Maritime printers. 1980.
11. Hassan EM; Anxiety, Self – Concept and Academic performance differential b/n single & double parents students in Oyo State Nigerian Journal of counseling & Applied psychology, 2004; 2(1):29- 39.
12. Marsh HW; Academic self – concept. Theory measurement and Research psychological perspective on the self, 1993; 4:59- 98
13. Akinboye JO; Adolescent Personal Data Inventory (APDI) Oke Ado Ibadan, Maritime Printers , 1976.
14. Alawiye O; The self – concept of children and the perception of Parents and Teachers from schools in Ghana and Gambia, Dissertations Abstract International, 1986; 48(1).
15. Okoye AN ; Psychology of Effective Learning, Ibadan U.I Press. 1981.
16. Iwuyi VBC; Self – concept scales, Owerri, Joe Mankpas press, 1996.
17. Tamunomana J; Self-concept & Academic performance of student I school in P/H Oweri Climes Printers. 1996.
18. Ayoku MU; The Concept and nature of self – concept .A psychological counseling perspective, Oweri, Lasen Nigeria Ltd. 1998.
19. Zimmerman BT; A social cognitive views of self regulated Academic learning Journal of Educational Psychology, 1989; 81:329-339.
20. Jegede BA; Non cognitive correlation of Senior School Achievement in physics. Journal of Science teachers Association of Nigeria STAN, 1984; 22 (2):78-88.