



## INFLUENCE OF SECONDARY SCHOOL STUDENTS' SELF-ESTEEM ON THEIR PERFORMANCE IN MATHEMATICS IN ENUGU STATE

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### ABSTRACT

*This study aimed at determining the influence of secondary school students' self-esteem on their performance in mathematics in Enugu State. The research design adopted in the conduct of this investigation was Expost-Facto or Causal Comparative Research Design. Five research questions and four hypotheses guided the study. The area covered in this study was Enugu state of Nigeria consisting of six education zones. A sample of 1526 secondary school students was used in the study. The following instruments were used for data collection: Students' Self-esteem Scale (SSES) and Students' Mathematics Performance Form (SMPF). These instruments were developed by the researcher and validated by three research experts. The following reliability coefficients were obtained for the instruments; .82 for SSES and .74 for SMPF obtained using Cronbach's Alpha method. Research question 1 was answered using simple percentage while research questions 2, 3 and 4 were answered using mean and standard deviation. Hypotheses were tested using z-test statistic. Major findings of the study revealed that 31.8% of the students had implicit high self-esteem, 22.4% had explicit high self-esteem, 27.2% had implicit low self-esteem while 18.6% had explicit low self-esteem. It was recommended among other things that Parents and teachers should encourage secondary school students to adopt high self-esteem so as to improve their performance in mathematics.*

**KEYWORDS:** Secondary School Students, Self-Esteem, Performance, Mathematics

### INTRODUCTION

Self-esteem refers to a person's overall sense of his or her **value** or worth. It can be considered a sort of measure of how much a person "values, approves of, appreciates, prizes, or likes him or herself" (Ment, 2015). Ment added that self-esteem is quite simply one's attitude toward oneself. Ment described it as a "favourable or unfavourable attitude



toward the self". Self-esteem reflects an individual's overall subjective emotional evaluation of their own worth. It is the decision made by an individual as an attitude towards the self, (Stevenson, 2015). Stevenson hinted that self-esteem encompasses beliefs about oneself, (for example, "I am competent", "I am worthy"), as well as emotional states, such as triumph, despair, pride, and shame. Self-esteem is attractive as a social psychological construct because researchers have conceptualized it as an influential predictor of certain outcomes, such as happiness, satisfaction in marriage and relationships, criminal behaviour and academic achievement in school subjects such as mathematics and others. Self-esteem can apply specifically to a particular dimension (for example, "I believe I am a good writer and feel happy about that") or a global extent (for example, "I believe I am a bad person, and feel bad about myself in general"). Psychologists usually regard self-esteem as an enduring personality characteristic ("trait" self-esteem), though normal, short-term variations ("state" self-esteem) also exist.

Austin (2014) has some concerns about openly accepting self-esteem as part of positive psychology. Austin worried that people live in the world where self-esteem is injected into a person's identity, not caring in how it is done, as long as the image of "confidence" is obtained. Austin expressed the following: I am not against self-esteem, but I believe that self-esteem is just a meter that reads out the state of the system. It is not an end in itself. When you are doing well in school or work, when you are doing well with the people you love, when you are doing well in play, the meter will register high. When you are doing badly, it will register low. Austin makes a great point, as it is important to take his words into consideration when looking at self-esteem. Self-esteem and positive psychology may not marry quite yet, so it is important to look at what research tells us about self-esteem before we construct a rationale for it as positive psychology researcher, coach, or practitioner. Kuntu (2014) presented self-esteem as a ratio of a person's perceived success in a certain domain to the importance the person attaches to success in that domain. Self-esteem may also be defined as an associative network containing all of the associations between the concept of self and self-describing attributes, (Ibeji, 2015). This definition of self-esteem is in line with Abiola (2014) who pointed out that self-esteem is one's rating of one's worth. Roberts (2014) saw self as an affective or emotional component that consist of positive and negative self-dimension of the self that includes feelings or worthiness, prides



and discouragement. According to Roberts self-esteem is favourable or unfavourable attitude towards the self and this also is in line with the view of Nuhu (2015) who saw self-esteem as the perception of self-worth or the extent to which a person values, prizes or appreciates himself.

Self-esteem has been ranked as among the most important aspects of self-development since evaluation of personal competencies affect emotional experiences, future behaviours and psychological adjustments. Consequently, self-esteem can influence secondary school students' academic performance as well as other behaviors. Self-esteem maybe influenced by culture, childrearing practices and interactions with parents and teachers. Adams (2014) classified self-esteem into two, namely high and low self-esteem. Individuals graded as having high self-esteem generally have positive opinions about themselves. There are certain characteristics that distinguish how high someone's self-esteem is. Examples of these characteristics are being open to criticism, acknowledging mistakes, being comfortable with giving and receiving compliments, and displaying a harmony between what one says, does, looks, sounds, and moves (Hazel, 2014). Hazel maintained that people with high self-esteem are unafraid to show their curiosity, discuss their experiences, ideas, and opportunities. They can also enjoy the humorous aspects of their lives and are comfortable with social or personal assertiveness. The positive psychology movement has brought high self-esteem into the spotlight. We now know more about what high self-esteem looks like and how it can be cultivated. We know that people with high self-esteem: appreciate themselves and other people. Enjoy growing as a person and finding fulfillment and meaning in their lives are able to dig deep within themselves and be creative. Make their own decisions and conform to what others tell them to be and do only when they agree. See the word in realistic terms, accepting other people the way they are while pushing them toward greater confidence and a more positive direction can easily concentrate on solving problems in their lives. Have loving and respectful relationships. Know what their values are and live their lives accordingly. Speak up and tell others their opinions calmly and kindly, and share their wants and needs with others. Endeavor to make a constructive difference in other people's lives (Roberts, 2014).

People with high self-esteem have been reported to firmly believe in certain values and principles and are ready to defend them even when finding oppositions. They feel more



secure enough to modify their beliefs in height of experience. High self-esteem can be implicit or explicit. Implicit high self-esteem refers to a person's disposition to evaluate himself positively in a spontaneous or unconscious manner while explicit high self-esteem refers to a more conscious and flexible positive self-evaluation. Rauf (2014) stated that there are some simple ways to tell if you have high self-esteem. According to Rauf, you likely have high self-esteem if you: act assertively without experiencing any guilt, and feel at ease communicating with others. Avoid dwelling on the past and focus on the present moment. Believe you are equal to everyone else, no better and no worse. Reject the attempts of others to manipulate you. Recognize and accept a wide range of feelings, both positive and negative, and share them within your healthy relationships. Enjoy a healthy balance of work, play, and **relaxation**.

Accept challenges and take risks in order to grow, and learn from your mistakes when you fail. Handle criticism without taking it personally with the knowledge that you are learning and growing and that your worth is not dependent on the opinions of others. Value yourself and communicate well with others without fear of expressing your likes, dislikes, and feelings. Value others and accept them as they are without trying to change them. Based on these characteristics, Rauf (2014) can come up with some good examples of what high self-esteem looks like. Imagine a high-achieving student who takes a difficult exam and earns a failing grade. If she has high self-esteem, she will likely chalk up her failure to factors like not studying hard enough, a particularly difficult set of questions, or simply having an "off" day. What she doesn't do is conclude that she must be stupid and that she will probably fail all future tests too. Having a healthy sense of high self-esteem guides her toward accepting reality, thinking critically about why she failed, and problem-solving instead of wallowing in self-pity or giving up.

Those graded as having low self-esteem maintain negative beliefs about themselves. Low self-esteem can result from various factors, including genetic factors, physical appearance or weight, mental health issues, socioeconomic status, significant emotional experiences, peer pressure or bullying (Adams, 2014). According to Adams a person with low self-esteem may show some of the following characteristics: heavy self-criticism and dissatisfaction, hypersensitivity to criticism with resentment against critics and feelings of being attacked, chronic indecision and an exaggerated fear of mistakes, excessive will to



please and unwillingness to displease any petitioner, perfectionism, which can lead to frustration when perfection is not achieved, neurotic guilt, dwelling on or exaggerating the magnitude of past mistakes, floating hostility and general defensiveness and irritability without any proximate cause, pessimism and a general negative outlook, envy, invidiousness, or general resentment, sees temporary setbacks as permanent and intolerable conditions. Additionally, Adams hinted that individuals with low self-esteem tend to be critical of themselves. Some depend on the approval and praise of others when evaluating self-worth. Others may measure their likability in terms of successes: others will accept themselves if they succeed but will not if they fail. Low self-esteem can be implicit or explicit. Implicit low self-esteem refers to a person's disposition to evaluate himself negatively in a spontaneous or unconscious manner while explicit low self-esteem refers to a more conscious and flexible negative self-evaluation. All efforts by educators and researchers to ascertain how students' self-esteem influence their performance in mathematics have yielded conflicting findings. Hence, the need for more studies such as this present one on this vital issue.

### **PURPOSE OF THE STUDY**

The purpose of this study was to determine the influence of secondary school students' self-esteem on their performance in mathematics in Enugu State. Specifically, the study sought to;

- i. identify the prevalent self-esteem types among students in the sampled secondary schools in Enugu state
- ii. ascertain the influence of implicit high self-esteem on secondary school students' performance in mathematics in Enugu state
- iii. examine the influence of explicit high self-esteem on secondary school students' performance in mathematics in Enugu state
- iv. find out the influence of implicit low self-esteem on secondary school students' performance in mathematics in Enugu state
- v. verify the influence of explicit low self-esteem on secondary school students' performance in mathematics in Enugu state



## **RESEARCH QUESTIONS**

The following research questions guided the study.

1. What are the prevalent self-esteem types among students in the sampled secondary schools in Enugu state?
2. What is the influence of implicit high self-esteem on secondary school students' performance in mathematics in Enugu state?
3. What is the influence of explicit high self-esteem on secondary school students' performance in mathematics in Enugu state?
4. What is the influence of implicit low self-esteem on secondary school students' performance in mathematics in Enugu state?
5. What is the influence of explicit low self-esteem on secondary school students' performance in mathematics in Enugu state?

## **HYPOTHESES**

The following hypotheses were tested at .05 significant level;

1. The influence of implicit high self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.
2. The influence of explicit high self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.
3. The influence of implicit low self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.
4. The influence of explicit low self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.

## **METHODOLOGY**

The research design adopted in the conduct of this investigation was Expost-Facto or Causal Comparative Research Design. Five research questions and four hypotheses guided the study. The area covered in this study was Enugu state of Nigeria consisting of six education zones. A sample of 1526 secondary school students was used in the study. The sample was drawn from 12 secondary schools randomly drawn from the six education zones of Enugu state, two schools from each zone.



The following instruments were used for data collection: Students' Self-esteem Scale (SSES) and Students' Mathematics Performance Form (SMPF). These instruments were developed by the researcher and validated by three research experts. The following reliability coefficients were obtained for the instruments; .82 for SSES and .74 for SMPF. Students' Self-esteem Scale (SSES) was used to elicit the individual students' self-esteem while Students' Mathematics Performance Form (SMPF) was used to gather the students' mean mathematics scores using their immediate past annual result. Research question 1 was answered using simple percentage while research questions 2, 3 and 4 were answered using mean and standard deviation. Hypotheses were tested using z-test statistic.

## RESULTS

### Research Question 1

What are the prevalent self-esteem types among students in the sampled secondary schools in Enugu state?

**Table 1:** Percentage of each self-esteem type among students in the sampled secondary schools

Self Esteem	n	Percentage (%)
Implicit high	485	31.8
Explicit high	342	22.4
Implicit low	415	27.2
Explicit low	284	18.6
<b>Total</b>	<b>1526</b>	<b>100</b>

From table 1 above, 31.8% of the students had implicit high self-esteem, 22.4% had explicit high self-esteem, 27.2% had implicit low self-esteem while 18.6% had explicit low self-esteem.

### Research Question 2

What is the influence of implicit high self-esteem on secondary school students' performance in mathematics in Enugu state?



**Table 2:** mean mathematics performance scores of with students' implicit high self-esteem

Gender	n	Mean	Standard Deviation
Male	205	66.5	1.33
Female	280	68.3	1.36

From table 2 above, male students with implicit high self-esteem had a mean mathematics performance score of 66.5 with standard deviation of 1.33 while their female counterparts had a mean mathematics performance score of 68.3 with standard deviation of 1.36.

### Research Question 3

What is the influence of explicit high self-esteem on secondary school students' performance in mathematics in Enugu state?

**Table 3:** mean mathematics performance scores of with students' explicit high self-esteem

Gender	n	Mean	Standard Deviation
Male	122	81.6	0.41
Female	220	80.2	0.38

From table 3 above, male students with explicit high self-esteem had a mean mathematics performance score of 81.6 with standard deviation of 0.41 while their female counterparts had a mean mathematics performance score of 80.2 with standard deviation of 0.38.

### Research Question 4

What is the influence of implicit low self-esteem on secondary school students' performance in mathematics in Enugu state?

**Table 4:** mean mathematics performance scores of with students' implicit low self-esteem

Gender	n	Mean	Standard Deviation
Male	183	46.1	2.44
Female	232	47.0	3.01

From table 4 above, male students with implicit low self-esteem had a mean mathematics performance score of 46.1 with standard deviation of 2.44 while their female counterparts had a mean mathematics performance score of 47.0 with standard deviation of 3.01.



### Research Question 5

What is the influence of explicit low self-esteem on secondary school students' performance in mathematics in Enugu state?

**Table 5:** mean mathematics performance scores of with students' explicit low self-esteem

Gender	n	Mean	Standard Deviation
Male	161	41.1	5.21
Female	123	40.8	5.19

From table 5 above, male students with explicit low self-esteem had a mean mathematics performance score of 41.1 with standard deviation of 5.21 while their female counterparts had a mean mathematics performance score of 40.8 with standard deviation of 5.19.

### Hypothesis 1

The influence of implicit high self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.

**Table 6: z-test analyses for hypothesis 1**

Group	n	$\bar{x}$	SD	z-calculated	z-critical	Remark
Male	205	66.5	1.33	0.78	1.96	Not significant (Do not reject hypothesis)
Female	280	68.3	1.36			

From table 6, z-calculated (0.78) is less than z-critical (1.96). Hence, indicating that, at .05 significant level, the mean mathematics performance scores of the two groups (male and female) do not differ significantly. Consequently, hypothesis one is not rejected as stated, implying that the influence of implicit high self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.

### Hypothesis 2

The influence of explicit high self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.



**Table 7: z-test analyses for hypothesis 2**

Group	n	$\bar{x}$	SD	z-calculated	z-critical	Remark
Male	122	81.6	0.41	0.62	1.96	Not significant (Do not reject hypothesis)
Female	220	80.2	0.38			

From table 7, z-calculated (0.62) is less than z-critical (1.96). Hence, at .05 significant level, the mean mathematics performance scores of the two groups (male and female) do not differ significantly. Hence, hypothesis two is not rejected as stated, implying that the influence of explicit high self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.

### Hypothesis 3

The influence of implicit low self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.

**Table 8: z-test analyses for hypothesis 3**

Group	n	$\bar{x}$	SD	z-calculated	z-critical	Remark
Male	183	46.1	2.54	0.30	1.96	Not significant (Do not reject hypothesis)
Female	232	47.0	3.01			

From table 8, z-calculated (0.30) is less than z-critical (1.96). Implying that at .05 significant level, the mean mathematics performance scores of the two groups (male and female) do not differ significantly. Therefore, hypothesis three is not rejected as stated, implying that the influence of implicit low self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.

### Hypothesis 4

The influence of explicit low self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.



**Table 9: z-test analyses for hypothesis 4**

Group	n	$\bar{x}$	SD	z-calculated	z-critical	Remark
Male	161	41.1	5.21	0.55	1.96	Not significant (Do not reject hypothesis)
Female	123	40.8	5.19			

From table p, z-calculated (0.55) is less than z-critical (1.96). This indicates that, at .05 significant level, the mean mathematics performance scores of the two groups (male and female) do not differ significantly. Thus, hypothesis four is not rejected as stated, implying that the influence of explicit low self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.

### SUMMARY OF FINDINGS

Findings of this study can be summarized thus;

1. 31.8% of the students had implicit high self-esteem, 22.4% had explicit high self-esteem, 27.2% had implicit low self-esteem while 18.6% had explicit low self-esteem.
2. Students with explicit high self-esteem had the highest mean mathematics performance score.
3. The mean mathematics performance scores of the students with different self-esteem types in the sampled secondary schools in Enugu state differed significantly.
4. The influence of various types of self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly.

### DISCUSSION

Findings of this study indicated that that 31.8% of the students had implicit high self-esteem, 22.4% had explicit high self-esteem, 27.2% had implicit low self-esteem while 18.6% had explicit low self-esteem. Also students with explicit high self-esteem had the highest mean mathematics performance scores while students with explicit low self-esteem had the lowest mean mathematics performance scores. Moreso, test of hypotheses showed that the influence of various types of self-esteem on male and female secondary school students' performance in mathematics in Enugu state do not differ significantly. These findings have serious implications. Foremost, self-esteem refers to a person's overall sense of his or her value or worth. It can be considered a sort of measure of how much a person "values,



approves of, appreciates, prizes, or likes him or herself” (Ment, 2015). Ment added that self-esteem is quite simply one’s attitude toward oneself. Ment described it as a “favourable or unfavourable attitude toward the self”. Self-esteem reflects an individual's overall subjective emotional evaluation of their own worth. It is the decision made by an individual as an attitude towards the self, (Stevenson, 2015). Self-esteem is attractive as a social psychological construct because researchers have conceptualized it as an influential predictor of certain outcomes, such as academic achievement, happiness, satisfaction in marriage and relationships, and criminal behaviour. It is therefore worrisome when students adopt low self-esteem that the mean or bring low the worth or value of their persons and negatively influence their performance in a core subject such as mathematics.

The negative influence of low self-esteem on secondary school students’ performance in mathematics spells doom for the students, their parents and the future of the entire nation, Nigeria. This is because mathematics is not just a pre-requisite for progress through the educational system; it is also a tool for educating the mind. Mathematics develops the habit of precise and logical thought, it is used for thinking about and facilitating the learning of all other subjects, it gives the individual a fuller understanding of the world around him and this understanding can be applied to solving his day to day problems. Consequently, students who perform low in mathematics are likely to constitute nuisance to the society.

## RECOMMENDATIONS

Consequent upon the findings of this study, the following recommendations are deemed necessary;

1. Parents and teachers should encourage secondary school students to adopt high self-esteem so as to improve their performance in mathematics.
2. Secondary school teachers should endeavor to ascertain their student’s self-esteem so as to handle their individual differences adequately.

## REFERENCES

- Adams, T. (2014) Adolescents Self-esteem: An overview. *Journal of Psychology*, 6(1), 313-328. <http://www.edu.org.com>.
- Abiola, H. (2014). Factors inhibiting Students Self-esteem. *Journal of Psychology*, 5(2), 290-315. <http://www.edu.org.com>.



Austin, T.A (2014). Adolescent Attachment, Peer Relationships and School Success in University of Virginia USA. *American Psychological Journal* 17(8) 1104-1123.

[www.psychoworld.org](http://www.psychoworld.org)

Ibeji, R.C (2015). Self-esteem and academic achievement of urban and rural adolescents in anaras Hindu University. *Asian Journal of Interdisciplinary Research in Education*. 10(3) 922-937. <http://www.ajire@bhu.edu.net>

Hazel, Y. (2014). *Challenges of Parenthood*. New Delhi: Bandura publishing company Inc.

Kuntu, E. (2014). *Challenges of Parenting*. Nairobi: Zenith press.

Ment, O. (2015). *Extra Ordinary parents*. Oxford: University press.

Rauf, A.M. (2014). Peer Groups as a Context for the Socialization of Adolescents Motivation, Engagement, and Achievement in School. *Educational Psychologist*, 35, 101 – 112.

Stevenson, W. (2015). *Problems and Prospects of Growth and Development*. Pretoria: Top quality press.