# Emotional Intelligence as Determinants of Student's Achievement in Basic Science in Akwa Ibom State North West Senatorial District Nigeria

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***Abstract***

*The main purpose was to find out the predictive power of emotional intelligence on students' achievement in Basic Science. two research questions and their corresponding hypotheses were formulated to guide the study. The study adopted correlational research design. The population of the study was 23,294 JS2 students from 92 government secondary schools in Ikot Ekpene Senatorial District, The sample size of the study was 1,164 students. Multi-stage sampling technique was used for selection of local governments and schools for the study. Emotional Intelligence Inventory (EII) and Basic Science Achievement Test (BSAT) were used for data collection. Data were subjected to descriptive statistical analysis. Coefficient of determination scores were used to answer the convertible research questions and hypotheses. The results revealed that stress management was more independently, statistically significant on students` achievement with 88.651 predictive value while Self expression was the least independent significant predictor with -2.225 predictive value. It was concluded that the predictive power of Emotional Intelligence on students` achievement in Basic Science was statistically significant with .884 predictive value. Based on the findings, it was recommended that State government should organize seminar and workshop for teachers in Ikot Ekpene Senatorial District to enable them understand the concept of emotional intelligence in order to build their own emotions and that of the students. Also, principals should encourage team work in the school system by involving teachers and students in the decision-making process of the school thereby helping them express their emotions.*

***Keywords:*** *Emotional intelligence, self expression, stress management, Basic-Science and students' achievement*

## INTRODUCTION

Lately, there have been concerns about the influence on academic achievement among Students in learning institutions from pre-school to tertiary level. Some Studies have revealed that socio-economy, motivation, peer relationships, teacher-student relationships, parental engagement, personality traits, emotional intelligence, self expression and stress management influence academic achievement. Many people are curious about how student's self expression and stress management (SS) might help them learn and perform better in school. The notion has prompted some researchers to investigate and uncover other characteristics that may contribute to success and , inter personal relationship and decision making appear to play more roles. Self expression stress management have gotten a lot of attention in academics. It is rapidly becoming acknowledged as a measure of overall success across multiple areas, according to (Babli, Rashmi and Sapna, 2013). Studies on intelligence measurement have focused on cognitive intelligence while overlooking non-cognitive elements, the most significant of which are , emotional intelligence (Al-Rfou, 2012). Hence, a new idea known as , self expression and stress management emerges (Mayer and Salovey, 1996) Emotional intelligence is a key indicator of academic achievement, as benefits include the ability to cooperate with team mates to solve difficult problems, as well as simply enhancing positive attitude towards learning. On the other hand, when emotional intelligence is lacking, it might lead to negative attitude which might result in conflicts with colleagues and cause others to develop negative attitude which might not foster academic achievement. Self expression and stress management involves students` empathy and social responsibility. (Kiruki and Orodho, 2015). Emotions play a role in everything people do, including their actions, decisions, and judgments. Emotionally intelligent people are aware of this, rather than being controlled by their emotions, their thinking manages them.Low and Nelson (2015) opined that self expression and stress management are critical to a student`s health and academic success. Emotionally intelligent students are better with the hard and challenging college experience. Those who can lead a successful academic life can concentrate and achieve well to operate better as a team, work under pressure, and contribute to productivity and achievement. Based on this, the researcher investigates the domains of emotional intelligence as predictors of students' achievement in basic science. Basic science is a tool for development and productivity in a nation. The development of a nation is a measure of its development in the area of science. Knowledge of science and technology is also a requirement in all countries and people globally due to the many challenges that people are faced with (Kiruki and Orodho, 2015). The basic technology has become a dominant power development indicator. Science is the basis of modern-day technology break-through. It is a search for evidence to answer questions or solve problems that ultimately promote academic achievement (Agbaje and Alake, 2014). Intelligence is one of the most prized possessions a person can have. It is a fundamental concept that has become a convenient evaluative expression (Nwadinigwe and Azuka-Obieke, 2012). Recently, intelligence has passed through the laboratories of many psychologists, who find a definition and explanation for the term. For example, singers are described as having intelligent voices,

footballers as having intelligent feet, and horses as running intelligent races (Nwadinigwe and Azuka-Obieke, 2012). People use the term in their daily language in a way that suggests that there is agreement about what intelligence is, but Psychologists cannot agree at all. Shamsaei, Yousefi and Sadeghi (2016) argue that the most intelligent people have not agreed on how to define intelligence. Some experts like Mayer and Salovey describe it as the capacity to adapt and learn from experiences. Some still argue that intelligence includes characteristics such as creativity and self expression (Shamsaei, Yousefi, & Sadeghi 2016). In a nutshell, some psychologists see intelligence as a single aptitude, while others see it as representing a cluster of aptitudes or mental capacities (Durgut, Gerekan & Pehlivan, 2013). Intelligence is a word that is socially constructed; different cultures and groups see it as being whatever attributes bring success within that group (Sternberg 2021). A working definition would encompass academic and non-academic, and be applied to people of all social and cultural backgrounds. In addressing these issues, contemporary research on intelligence has opened new dimensions that make the definition of intelligence more comprehensive. Durgut, Gerekan and Pehlivan (2013) asserted that intelligence comprises learning and adaptive abilities; the ability to understand and control oneself; practical problem-solving ability; verbal and social competencies. It is the ability to learn from experience, apply knowledge to solve problems, and adapt and survive in a different environment. Sternberg (2021) suggested intelligence encompasses a greater variety of abilities. Emotional intelligence is a construct that has to do with the evaluation and suppression of emotions experienced by oneself and the ability to understand and regulate such emotions. According to Adigwe (2015), emotional intelligence is an individual ability to perceive, integrate and understand in a manner that enables him/her to facilitate his/her thought processes and promotes personal growth and development. It is that part of the human spirit which motivates people to perform and gives them the energy to demonstrate behaviors such as intentionality, persistence, creativity, impulse control, social deftness, compassion, intuition, and integrity (Kapp, 2012). It is a cross-section of interrelated emotional and social competencies and facilitators that determine how effectively one understands and expresses himself, understands others and relates with them, and copes with daily demands and pressures (Bar-on, 2006). Individuals' knowledge and overall intelligence must be augmented by the ability to understand, perceive and regulate emotions (Brackett, &Geher, 2006). Self expression is a domain of emotional intelligence that needs to be studied because various studies found that inter-personal relationship determines students` achievement in basic technology (Bonaccio & Reeve, 2010). The students' feelings of whether they are adequately prepared for an examination and the expression of low self-efficacy and incompetence could predict failure in the academic achievement of the students. Subsequently, lack of self expression, striving for flawlessness, and setting excessively high-performance standards or“maladaptive perfectionism” and low scores in emotional stability (or neuroticism) (Bonaccio & Reeve, 2010) could be indicative of a lack of self-perfection and expression. Self-expression describes students` inclination to openly communicate and proclaim perceptions, observations, and feelings irrespective of what third parties think (Agrawal and Teotia, 2015). Multi-Health System (2011) describes self-expression as emotional expression, assertiveness and independence. Students can freely express their feelings verbally or nonverballyThere has been growing disaffection concerning students` achievement in Basic Science. Some students look at Basic Science as a difficult subject, especially when it involves practical work; others get scared by its volume of contents and concepts.Psychological constructs like inter-personal

relationship and decision makingaffect students' achievement in basic science, hence their weak achievement in public examinations.

The specific objectives are to:

1. Determine the predictive power of self expression on students `achievement in Basic science

2. Ascertain the predictive power of stress management on students `achievement in Basic Science.

The following null hypotheses were formulated and tested at a 0.05 level of significance to guide the conduct of the study.

1. The predictive power of self expression on students` achievement in Basic science was not statistically significant.

2. The predictive power of stress management on students` achievement in Basic science was not statistically significant.

The findings of this study would be beneficial when published to the teachers, students, School guidance counsellors, educational administrators, and parents The results would Enable the teachers to understand that if students' self expression and stress management are guided by their strengths and weaknesses could influence their academic achievement in Basic science. The findings would benefit the students, schools guidance counsellors, and parents in solving Basic science problems. Finally, it would be significant for Educational administrators to provide a relationship between inter-personal relationship and decision makingon students`achievement, thereby modifying appropriate teaching approaches that can improve teachingand learning exercises in the secondary school curriculum and for further research.

## METHOD

The study was correlational research conducted in public secondary schools in Ikot Ekpene Senatorial District of Akwa Ibom State. The population comprises all the junior secondary two students in the area. There are 92 government secondary schools in the Senatorial

District. The total of JSS 2 students was 23294 (Akwa Ibom State Secondary Education Board, 2022). Multi-stage sampling technique drew the sample. In the first stage, a simple random sampling technique was used in drawing three local government areas from 10. The second stage was drawing three schools from local government areas through purposive sampling. Finally, a simple random sampling technique was used to select 150 JSS2 students and above from each local government area. A sample of 1164 (582 male and 582 female) students were selected.

Two instruments were used for data collection. They are emotional intelligence inventory (EII) and Basic science achievement test (BSAT). The SEI was adapted from Bar-Ons` emotional quotient

inventory youth version, The Bar-Ons` SSI comprises two sections, A and B. Section A contains the demographic data of the respondents, while section B consists of domains of inter-personal relationship and decision making divided into two clusters. Cluster A sought information on inter-personal relationship and B sought information on decision making. Each cluster has 12 items and a

total of 24 items instruments were adopted from items of Bar–Ons`SSI rated on a 4-point Likert scale of strongly agree (SA, 4), agree (A, 3), disagree (D, 2) strongly disagree (SD, 1). A basic science achievement test was used. The test contains 40 multiple-choice items with response options of A, B, C and D with only one correct option. Each correct response attracts a score of 1 mark, while no attracts a zero (0) score. The total obtainable score is 40 marks. Three experts, one from the Department of Educational Psychology, University of Nigeria, Nsukka, another expert from the Department of Science Education Akwa Ibom State University, and the third expert from Measurement and Evaluation from the Akwa Ibom State University scrutinized and validated the instruments for data collection. To determine the reliability of the instruments, SSI and BSAT were trial tested with 30 JSS2 students from some schools in the senatorial district that were not part of the study. Table of specifications for content validity; Cronbach Alpha method determined the reliability of SEI. The reliability

coefficient of inter-personal relationship and decision making were 0.71 and 0.75, respectively. The overall

reliability for ID was 0.78, considered reliable for the instrument by the researcher. On the other hand, the reliability of the Basic science achievement test using the estimate of internal consistency and the Split-Half methods determined a coefficient of 0.95.

The researchers sought permission from the Principals of the selected schools to use their students and the Basic Science teachers as research assistants for research purposes. The strategy ensured effective administration and recovery of the instruments administered. They allowed each respondent visited some minutes to respond to the items before retrieving the Completed questionnaire. The questionnaires were returned on the spot. The total number Collected was 1164 out of 1200 administered in all the schools. The data were analyzed using Regression and coefficient of determination, while multiple regression analysis tests the null Hypotheses at a 0.05 level of significance.

## RESULTS AND DISCUSSION

Table 1: Regression analysis of Self expression on students` achievement in Basic Science

| Variable | N | r | R-Square | Adjusted R Square |
|---|---|---|---|---|
| Self expression | 1164 | .229 | .053 | .052 |
| Students` Achievement | | | | |

Predictors: (Constant) Self expression

Data in Table 1 show the R and $R^2$ for the strength of the correlation and coefficient of determination between self expression and students` Achievement in Basic Science .This is shown by R value of .229 and $R^2$ of .053 .The $R^2$ value of .052* which is the coefficient of the determination indicates that self expression contributes only 5.2% to the variations in students`

achievement. This further indicates that inter personal relationship to an extent predict students` achievement in Basic Science.

Table 2 Regression analysis of self expression on students` achievement in Basic Science

| Source of Variance | Sum of Square | df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Regression | 1176.776 | 1 | 1176.776 | 64.434 | 0.000 |
| Residual | 21222.03 | 1162 | 18.263 | | |
| Total | 22398.807 | 1163 | | | |

R=.229, $R^2$=.053*
*Significant at 0.05 level of significance

The information in Table 2 show that the relationship between self-expression and students' achievement is statistically significant at 0.05 level of significance (F=64.43; p=0.000, R=0.229, $R^2$ = 0.053*), This mean that the criterion could be predicted by the predictor variable thereby justifying the regression analysis presented in Table 4.2. Hence the null Hypothesis which states that the predictive power of self-expression on students` achievement in Basic science was not be statistically significant is rejected at 0.05 level of Significance

Table 3 Regression analysis of stress management on students` achievement in Basic Science

| Variable | N | r | R-Square | Adjusted R Square |
|---|---|---|---|---|
| Stress management | 1164 | 0.93 | 0.883 | .882 |
| Students` Achievement | | | | |

Predictors: (Constant) Stress management

Entries in Table 3. Show r and $R^2$ value of 0.93 and .883 the coefficient of determination indicates that stress management contributes only 88% to the variations in students` achievement. This further indicates that Stress management predicts students` achievement in Basic Science.

Table 4 Regression analysis of Stress management on students` achievement in Basic Science

| Source of Variance | Sum of Square | df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Regression | 19768.805 | 1 | 19768.805 | 8734.347 | 0.000 |
| Residual | 2630.002 | 1162 | 2.263 | | |
| Total | 22398.807 | 1163 | | | |

R=.939, $R^2$=.883*
*Significant at 0.05 level of significance

The result in Table 4 reveals that stress management is a significant independent predictor of students` achievement in Basic Science (F=8734.34; p=0.000 R=.939, $R^2$=0.88), Hence the null Hypothesis that says that the predictive power of stress management on students` achievement in Basic science was not be statistically significant is rejected at 0.05 level of significance.

## CONCLUSION AND RECOMMENDATIONS

The study investigated the predictive powers of self expression and stress management on students' achievement in Basic Science from 92 government secondary schools in Akwa Ibom State North West (Ikot Ekpene) Senatorial District. It was correlational research. Based on the results, the predictive power of self-expression and stress management on students` achievement in Basic Science was statistically significant. Based on the findings, it recommends the following:

1. There should be training and re-training of students and guidance counselors on the different aspects of self expression and stress management in the school through seminars and conferences by the state government.

2. School administrators and teachers should be properly informed on the importance of self-perception and expression among students.

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