The Impact of Emotional Intelligence on Academic Achievement of Senior Secondary School Students in Lagos, Nigeria

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Abstract
The study investigated the impact of emotional intelligence on academic achievement of senior secondary school students in Lagos, Nigeria. The purpose of the study was to examine the relationship between emotional intelligence and academic achievement among senior secondary school students. A sample of 156 participants randomly selected from three senior secondary schools was used. The schools were randomly assigned to the two treatment conditions (emotional intelligence training techniques) and control group. Questionnaire and achievement test were employed to generate data for the study. Two research hypotheses were formulated to guide the study. The hypotheses were tested using descriptive statistical method, analysis of covariance (ANCOVA) and Pearson product moment correlation coefficient statistics. The study revealed that there is a positive relationship between emotional intelligence skills and academic achievement such that developing emotional intelligence skills of a student will lead to the enhancement of his/her academic achievement. Thus, there is the need to inculcate the development of emotional intelligence skills into the school curriculum. This is considered important because of its impact in improving the academic achievement of students. The findings of this study may assist stakeholders in the education sector in developing a better understanding of the effects of emotional intelligence on the academic achievement of senior secondary school students.
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Keywords: emotional intelligence, academic achievement, interpersonal skills, leadership skills, self-management skills and intrapersonal skills.

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INTRODUCTION
The trend in the academic achievement of secondary school students in Nigeria in the last two decades has become a major source of concern to all stakeholders in the education sector. This is so because of the great importance that education has on the national development of the country. There is a consensus of opinion about the fallen standard of education in Nigeria (Adebule, 2004). Parents and government are in agreement that their huge investment on education is not yielding the desired dividend (Adegbite, 2005). There is mass decline in the achievement of students in both National Examination Council (NECO) and the West Africa Senior Secondary Certificate Examination (WASSCE),(Dawa, Adamu and Olayomi ,2005). The annual releases of Senior Secondary Certificate Examination results (SSCE) conducted by West African Examination Council (WAEC) depicts the problematic nature and generalization of poor secondary school students' achievement in different school subjects especially mathematics and English language among secondary school students (Adesemowo, 2005).

Poor academic achievement is an achievement that is adjudged by the examiner as falling below an expected standard. Academic failure is not only frustrating to the students and the parents, its effects are equally grave on the society in terms of dearth of manpower in all spheres of the economy and polity (Aremu, 2000). Morakinyo (2003) agrees that the falling level of academic achievement is attributable to teacher's non-use of verbal reinforcement strategy. Adegbite (2005) found out that the attitude of some teachers to their job is reflected in their poor attendance to lessons, lateness to school, unsavory comments about student's performance that could damage their ego, poor method of teaching and the likes. Edun and Akanji (2008) asserted that poor academic achievement among our students is usually attributed to the school authority and teachers' attitude to their work.

Oyinloye (2005) attributes the problem of poor academic achievement to low level of emotional intelligence among secondary school students. He believes that "students who lack emotional intelligence show some adjustive challenges or in some ways fail to handle effectively the demands of school work. Such students might be said to have little or no emotional intelligence and may not be capable of attaining personal goals which include high academic achievement." It is apparent that the primary focus of education is academic performance that has been measured using traditional Intelligence tests or other forms of standardized examination, and schools cannot ignore or neglect the development of emotional domains and other personal factors contributing to the success of students (Nelson and Low, 2003).Educators need to build high-achieving,

productive and healthy students, which can be achieved through a balance in the cognitive and emotional domains of learning. On account of this, Epstein (1998) and Le Doux (2002) suggest that both the cognitive and the emotional domains of student's academic development should be the primary goal for educating students. Cherniss (2004) stated the importance of emotional intelligence as necessary to improving performance and psychological well-being in school work. If emotional intelligence skills are developed, strengthened and enhanced, students may demonstrate increased levels of personal, academic and career achievement (Vela, 2003).Emotional intelligence as determined by Nelson and Low (1999) has four major skills dimensions of emotional competencies namely-interpersonal skills, leadership skills, self-management skills and intrapersonal skills.

Emotional Intelligence is perceived as a type of aptitude that involves the ability to monitor one's feelings and that of others, to discriminate among them and to use this information to guide one's feeling and thinking (Salovey and Mayer, 1990).According to Weisenger (1998) emotional intelligence is also defined as " the intelligent use of emotions: one intentionally makes one's own emotion work for one by using them to help guide one's behaviour and thinking in ways that enhance one's result". Emotional intelligence skills enable people to reduce negative stress in their life, build healthy relationships, communicate effectively, and develop emotional health. Emotional safety is important at each stage of development. These same skills and competencies are critical to achieving academic and career excellence in life.

Nelson and Low (2005) identified the need for more effective development of emotional intelligence skills when they stated that: The qualitative, holistic, emotive and subjective experiences of students are critical to healthy growth and development. Emotional development of students does not seem important until behaviour becomes problematic and reported. Familiar examples are under-achievement, bullying, attrition, school violence, absenteeism, substance abuse, lack of motivation and psycho-educational problems. Even though educators are compassionate, specific help is often absent, ineffective or too late. Proactive programmes to identify and develop emotional skills are needed to prevent problematic behaviours and not react to them after the act. Considering the claims of some of these studies that emotional intelligence accounts for more of the exceptional achievements in students (Nelson and Low, 2003; Vela, 2003), the present study sought to determine the role of emotional intelligence in the academic achievement of senior secondary school students.

STATEMENT OF THE PROBLEM

The decline in the academic achievement of secondary school students in Nigeria has been a major source of concern to stakeholders and policy makers in the education sector. Measures taken by the government at various levels to eliminate this problem and improve the academic achievement of students have focused more on improving infrastructure, equipping the schools and providing qualified teachers, may not have produced the desired results.

Poor academic achievement among secondary school students limits their potentials for advancement in career and their ability to compete effectively in an ever increasingly competitive global village. Though the curricula at the secondary school level are designed to address this inherent gap but the importance of students' emotional standard of performance may have been seen to be missing, misunderstood or neglected.
 It is therefore necessary to interrupt the ugly trend of poor academic achievement among secondary students by developing and enhancing their emotional intelligence skills which have been observed to be major determinants of academic achievement because a student may recover from physical pain or injury, but may never recover from the terror and degradation of his or her emotional state.

PURPOSE OF THE STUDY

The primary purpose of this study was to determine the role of emotional intelligence in the academic achievement of senior secondary school students in Lagos, Nigerian. To achieve this purpose it will:
1. Investigate if there is any difference in post-test scores on academic achievement among participants in the experimental groups.
2. Establish whether there is any relationship between emotional intelligence skills and academic achievement among participants in the experimental groups.

HYPOTHESES
1. There is no significant difference in post-test scores on academic achievement of participants in the experimental groups
2. There is no significant relationship between emotional intelligence skills and academic achievement among participants in the experimental groups.

IMPORTANCE OF THE STUDY

The information gathered by the study would assist curriculum experts to review the present educational curriculum with the aim of mainstreaming emotional intelligence skills as core component of senior secondary school curriculum

LIMITATION OF THE STUDY

The study was limited to public senior secondary school three (SS3) students of two Education Districts randomly selected from Lagos state namely District V and VI. The variables considered were academic achievement and emotional intelligence skills which include interpersonal skills, leadership skills, self-management skills and intrapersonal skills.

METHODOLOGY DESIGN

The research design used for this study was quasi-experimental (pre-test/post-test control group design). Quasi-experimental design was used because it is difficult to randomly assign participants to treatment conditions in a natural setting due to the fact that it is not possible to control the influence of extraneous variables.

SAMPLING PROCEDURE

Using stratified random sampling procedure, six intact classes were selected from 12 intact classes in the three secondary schools of the two education districts. A total of 240 participants comprising of both female and male SS3 students were selected by simple random sampling for the baseline assessment of the study .The sample comprised of eighty participants drawn from each of the 3 selected secondary schools in the ratio of forty participants per class. Using the baseline assessment scores, those who had below 50% on the Exploring and developing emotional intelligence skills questionnaire were selected to form the experimental groups with 156 participants. These 156 participants consist of 55 participants in school 1, 51 participants in school 2 and 50 participants in school 3. Schools were randomly assigned to treatment conditions and control group.

INSTRUMENTATION

The research instruments used to obtain relevant data for this study were:
1. Exploring and Developing Emotional Intelligence Skills Questionnaire.
2. Achievement test (in Mathematics, English Language and Biology).

Exploring and Developing Emotional Intelligence Skills Questionnaire

The Exploring and Developing Emotional Intelligence Skills Questionnaire was an adapted version of the original version of the Exploring and Developing Emotional Intelligence Skills Questionnaire (EDEISQ) developed by Nelson and Low 1998 (Stottlemyer, 2002). EDEISQ was adapted for the study to make it more suitable for use in our secondary school setting. The adapted instrument had two main sections:

Section 1: This section obtained from the respondents their personal background data such as, class, gender, school, and identification number.

Section 2: This section was a 130-item scale that measured the respondent's emotional intelligence skills in four major dimensions: interpersonal skill, leadership skill, self-management skill and intrapersonal skill. The questionnaire was scored on a 3-point Likert scale.

Achievement Test

This is a 60-item multiple choice objective tests constructed by the researcher to measure mathematics, English language and biology. It is divided into three sub-sections of 20 questions each on the subject areas. A pilot study using 30 participants was carried out to determine the test-retest reliability index of the instruments .The interval between the first and the second administration was three weeks. The correlation between the two set of scores was determined using Pearson's Product Moment Correlation method. The reliability coefficient was 0.81 and 0.64 respectively, which were deemed high enough given the complexity in human behaviour measurement. The instrument was seen as stable over time and appropriate for use in this study.

Administration of the Instruments

The intervention programme was carried out over a period of 10 weeks. One week each was used for both the pre-test and post-test. The treatments consisted of Emotional learning system and Peer mentoring (emotional intelligence skills training techniques). Participants in the two treatment groups were exposed to one hour thirty minutes of training/discussion once per week for 8 consecutive weeks. The control group did not receive any treatment.

TREATMENT
Programme 1: Emotional Learning System

The aim of this treatment is to use its step-by-step process to help participants become more emotionally reflective and constructive in their thinking. Once an individual becomes emotionally reflective and constructive, the choice of behaviour is positive. The emotional learning system helps individuals to balance their feelings and thoughts to produce intentional behaviours that are called emotional intelligence skills. This system also uses person-centred assessment, reflection, constructive thinking, and skill development lessons to guide student learning. The five-step learning processes are: Step A (Self-Assessment: Explore) which requires that one develops an intentional self-assessment habit. Step B (Self-Awareness: Identify) which involves the process of identifying one's experience and labelling the emotion. Step C (Self-Knowledge: Understand) which involves insight and understanding of an

emotion that allows one to make a choice about behaviours. Step D (Self-Development: Learn) which involves learning various ways to improve one's behaviour and experience positive outcomes. Step E (Self-Improvement: Apply and Model) which requires that one practice emotional intelligent behaviour to achieve personal success.

Programme 2: Peer Mentoring
The objective of Peer mentoring programme is to help both mentors and mentees, develop and advance their interpersonal, leadership, self-management and intrapersonal skills. Peer mentoring is also aimed at increasing participants' self-esteem and self-efficacy. Peer mentoring relationships involve a level of reciprocity and collaborative benefits for the both the mentor and mentee that may be different than in traditional mentoring relationships (Kram, 1985b; Kram & Isabella, 1985; Zachary, 2006). Peer mentoring relationships have the power to be more impactful on students because of the students'

proximity in age with one another (Astin, 1999). Research suggests that peers have a great level of influence over other peers (Newcomb, 1962; Astin, 1999).

PROCEDURE FOR DATA ANALYSIS
The two hypotheses were tested using descriptive statistical method, analysis of covariance (ANCOVA) and Pearson product moment correlation coefficient statistics.The level of significance was determined at 0.05 level.

RESULTS
Hypothesis one in the null form states that there is no significant difference in post test scores on academic achievement of participants in the experimental group. The data was analyzed using Analysis of Covariance statistics and the result of the analysis is as reported in Tables 1, 2 and 3 respectively.

Table 1: Descriptive data on influence of experimental conditions on academic achievement

Group	N	Pre-test $\overline{X}$	SD	Post-test $\overline{X}$	SD	MD
Emotional Learning System	55	27.68	5.92	36.51	5.37	8.83
Peer Mentoring	51	26.97	7.46	30.04	6.06	3.07
Control	50	26.81	6.44	26.22	6.27	0.59

Table 1 shows that adolescents exposed to emotional learning system had the highest post test score mean(X) = 36.51 and SD = 5.37; followed by those exposed to peer mentoring (X = 30.04 and SD = 6.06) while the control group had the least mean score of X = 26.22 and SD = 6.27. To determine whether significant difference in academic achievement exist among the groups, analysis of covariance (ANCOVA) statistics was done. The result of the analysis is as presented in table 2.

Table 2: Analysis of Covariance on influence of experimental conditions on academic achievement

Sources of Variation	Sum of Squares	Degree of freedom	Mean of Squares	F– ratio
Model	4187.64	3	1395.88	53.52
Covariate Exp.	473.92	1	473.92	18.05
Condition Within	1587.1	2	793.55	30.23*
Group	3989.92	152	26.25	
Total	8177.56	155		

*P < 0.05; df = 2 & 152; Critical F = 3.05

From table 2 it could be observed that a calculated F-value of 30.23 resulted as the difference in academic achievement due to experimental conditions. Thus, calculated F-value is significant since it is greater

than the critical value F-value of 3.05 given 2 and 152 degrees of freedom at 0.05 level of significance. This leads to the rejection of the null hypothesis.

Further analysis was done using Fisher's protected t-test to determine which group differs from the other on academic achievement and the trend of the difference. The pair-wise comparison of the group means is as presented in Table 3.

Table 3: Fisher's Protected t – test on difference in academic achievement across groups

Group	Emotional Learning n = 55	Peer Mentoring n = 51	Control n = 50
Emotional Learning System	36.51[a]	-3.82[c]	2.65[c]
Peer Mentoring	6.47[b]	30.04[a]	6.34[c]
Control	10.29[b]	3.82[b]	26.22[a]

[a]Group means are in diagonal, [b]difference in group means are below diagonal, [c]Protected t - values are above the diagonal. P< 0.05

Table 3 shows that participants exposed to emotional learning system significantly have higher academic achievement than those exposed to peer mentoring system (t = -3.82; df = 104; critical t = 1.98; P < 0.05). Participants exposed to emotional learning system significantly have higher academic achievement than the control group (t = 2.65; df = 103; critical t = 1.98; P < 0.05). Again participants exposed to peer mentoring system significantly have

higher academic achievement than the Control group (t = 6.34; df = 99; critical t= 1.98; P < 0.05).

Hypothesis two in the null form states that there is no significant relationship between emotional intelligence skills and academic achievement among secondary school students. The hypothesis was tested using Pearson Product Moment Correlation Coefficient statistics. The result of the analysis is as presented in Table 4.

Table 4: Relationship between emotional intelligence skills and academic achievement   n = 156

Variables	$\bar{X}$	SD	df	Prob.	r-cal.	r-critical
Emotional Int. Skills	160.65	18.39	154	0.05	0.35	0.19
Academic Achievement	30.92	5.9				

P < 0.05 ; df = 154 ; r - cal = 0.35 ; r - crit = 0.19

From the table presented above, the calculated 'r' obtained was 0.35 which is significantly greater than the critical 'r' (r-crit. = 0.19) given 154 degree of freedom at 0.05 level of significance. As a result of this, the null hypothesis was rejected while the alternative hypothesis which states that there is a significant relationship between academic achievement and emotional intelligence skills was accepted.

DISCUSSION
The result of the analysis shows that the emotional learning system group had the highest post-test scores followed by the peer mentoring group, while the control group had the lowest scores. Hence, the null hypothesis was rejected. Further analysis was carried out using Fisher's protected t-test to determine which group differ from the other on academic achievement and the trend of the difference. The pair-wise comparison of the group mean was done and the results showed that participants in emotional learning system group significantly had higher scores in academic achievement than those in peer mentoring and control groups. Again the reason for this outcome is not far-fetched; emotional learning system is a very comprehensive programme of intervention that inculcates emotional intelligence skills that positively impact on the academic performance of participants.
This result is in agreement with that of other researchers which revealed that emotional intelligence skills had a positive influence on retention and students' academic achievement (Abisamra, 2000; Stottlemyer, 2002; Williams, 2004; Aremu, Tella and Tella, 2005; Smith, 2004; Edun and Akanji, 2008; Adeoye and Emeke, 2010).

Report by Aremu, Tella & Tella (2005) on the relationship among emotional intelligence, parental involvement and academic achievement of secondary school students in Ibadan, Nigeria, supports this finding revealing that both emotional intelligence and parental involvement could predict academic achievement. There was also a significant positive relationship between emotional intelligence and academic achievement.

The finding also agree with Parker et al (2005) in their study on academic achievement and emotional intelligence: predicting the successful transition from high school to university. The study was on 1,426 first-year students attending four different universities. Results revealed that academically successful students had significantly higher levels of several different emotional and social competences. These findings suggest that emotional intelligence plays an important role in the academic achievement of students and the successful transition from high school to university.

The result also showed that relationship between emotional intelligence and academic achievement was significant. This led to the rejection of the null hypothesis. The foregoing outcome is not unexpected as it is a trite knowledge that the level of a person's emotional intelligence influences academic ability.
This result supports the findings of other researchers who agree that a significant relationship exists between emotional intelligence and academic achievement   (Abisamra, 2000; Stottlemyer, 2002; Aremu, Tella and Tella, 2005; Edun and Akanji, 2008; Adeoye and Emeke, 2010).

The result aligns with the findings of Edun & Akanji (2008) in a study on the perceived self-efficacy, academic self-regulation and emotional intelligence as predictor of academic performance in junior secondary school and posited that when emotional intelligence was entered into the regression model due to the strength of its relationship with academic performance of students, there was a significant prediction of students' performance. This showed that emotional intelligence alone accounted for 63.7% of the variance in academic performance of students.

Adeoye and Emeke (2010) also corroborated the findings in their work on emotional intelligence and self-efficacy as determinants of academic achievement in English language among students in Oyo state senior secondary schools in which they posited that students exposed to emotional intelligence training performed better in English language achievement test than those in self-efficacy training and control group. Emotional intelligence training had a more significant impact on students' academic achievement.

CONCLUSION AND RECOMMENDATION
On the basis of the findings of this study it is concluded that there is a positive relationship

between emotional intelligence skills and academic achievement such that developing emotional intelligence skills of a student will lead to the enhancement of his/her academic achievement. Therefore, it is hereby recommended that:

❖ Balanced combination of emotional mind and cognitive mind in training secondary school students will facilitate the identification, recognition and development of their emotional skills which will in turn contribute to their personal, academic and career success.

❖ Curriculum experts should develop an affective instructional curriculum that incorporates emotional intelligence skills with the objective of enhancing personal and career success of students.

❖ Inclusion of this education based model – Emotional Intelligence Skills in teacher education at all levels should be explored.

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