Test Anxiety, Self Esteem and Academic Performance among Secondary School Students in Cross River State, Nigeria

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Abstract
This study investigated the relationship between Self esteem, test anxiety and students' academic performance among secondary school students in Cross River State Nigeria. To achieve the purpose the study two hypotheses were formulated to guide the study. Literature review was carried out accordingly. Survey research design and stratified random sampling technique were adopted for the study. Test anxiety and Self esteem Questionnaire (TASEQ) and Academic Achievement Test in English Language, Mathematics and Social Studies were the instrument used for data collection. The reliability of the instrument was determined using split half reliability method. The reliability coefficients obtained from the analysis ranges from 0.83 to 0.94 were considered high enough for the instrument to be used for the study. Data collected were analyzed using One-way Analysis of Variance and Pearson Product moment correlation coefficient analytical technique. The findings revealed that, test anxiety and Self esteem directly significantly influenced academic performance. Based on the findings of this study it was recommended that students' self esteem should be raised and sustained. They should also be encouraged not to be unduly anxious over achievement test.

Introduction

Academic performance is an important parameter in measuring success in student. Observations and reports have shown that success or high academic performance has become a herculean task to accomplish by students in recent times.

The decline in the academic performance of students in public examination had been highlighted by Soyinka (1999). When he observed that educational system in Nigeria needed restructuring, he went further to say that "academic standard had fallen drastically, and the quality of graduates being produced by the nation's secondary schools is questionable and subject to re-examination. Poor academic performance of students has been of great concern to educationalists, government and the public in general.

Students' poor performance in public examination in Cross River State has continued to pose a serious concern to government agencies, parents and the students themselves (Essien: 2004: Akpan 2006 & Usoro 2007). As a result of the above, most Jss3 student (from public schools) can neither express themselves in English Language nor solve simple

problem in Mathematics. The worries aggravate school spelling of their names correctly is virtually impossible.

Bowlby (2004) carried out a study to investigate the relationship existing between self-esteem and students' academic performance. Survey Research design was adopted for the study. A total of 1500 street children in India were selected and use for the study. Data collected was analyzed using Pearson Product moment Correlation Analysis. The finding revealed that there exists a significant relationship between self-esteem and student's academic performance.

Hirst (2001) carried out a study of self-esteem to find out the level of self-esteem and personal achievement. The sample consists of 125 students who responded to 180 items that represent 11 facets of self esteem. Analysis of positive self-esteems could achieve far more difficult task than students with low or negative self-esteem. The result clearly showed that the level on self esteem would influence students' achievement. Hirst (2001) found out that IQ correlated 46 with academic self esteem but only14 with general self-esteem measure.

Shepard and Smith (1998) in their study and researches, analyzed 126 studies based on 68,756 persons and came out with the conclusion that there is a positive correlation between self –esteem and academic performance. These studies indicate that individuals who perceived themselves as being responsible for their own achievements tend to excel academically than those who distort reality by attracting their successes and failures to forces outside their innate control. Furthermore, studies have revealed that a child's estimation of himself not only as a person but also as a student can have implication for his academic performance.

In a massive study carried out by Makinwa (1981), 6,000 adult learners were used. He observed that of all the factors in school environment which affect adult learners' academic ability, intelligence and self-esteem showed strongest relationship. He therefore suggested that since self-esteem was the most important factor in educational achievement, changes are required in school according to expressed teaching of adult learners. Omu, Oransaye Faal and Asuquo (1981) in their study of 2,000 high school adult learners supported the existence of positive relationship between self-esteem and academic performance.

In Marsh and Yeung's (1997) study, academic self-esteem, school marks, and teacher rating of achievement were collected in 3 high-school subjects in each of 3 years (N=603). In the structural equation models (SEMs) considered, both school-based performance and academic Self-esteem were measured with multiple indicators for each school subject. SEMs were used to evaluate the effects of prior achievement, and the effects of prior achievement on subsequent academic Self-esteem after controlling for the effects of prior academic self-esteem. Although the effects of achievement tended to be larger and more systematic. There was clear support for both academic self-esteem and achievement effects. Although there was support for this reciprocal effect model for all 3 school subjects, self-esteem effects tended to be larger and more systematic for mathematics than for science and particularly English.

Javier, Sanchez, Doleres and Sanchez (2010) in their study on verifying the degree of association and prediction between Self-esteem and academic performance sampled 245 primary school pupils studying in public or subsidized schools in Almeria in Spain. They found a close relationship between academic self-esteem and measures of academic performance. They thus concluded that total self-esteem and academic self –esteem are good predictors of general performance.

Furthermore, Brookover and Thomas (2010) tested three hypotheses in their study using a sample of 1.050 seventh grade students and a sample of 110 over –achieving and under-achieving students. A significant positive relationship was found between Self-esteem of ability and grade point average, this relationship persisted even when measured intelligence was controlled. Specific self-esteems of ability related to specific areas of academic achievement were found; in some areas these were better predictors of significantly and positively related to the perceived evaluation of significant others. Finally, the researchers agree with the views that one's perception, believe and judgment of himself (self-esteem) influences the way he or she behaves and responds to academic activities and to learning in general.

Khalid and Hasan (2009) carried out a study on 187 purposively selected undergraduates to determine the relationship between anxiety and academic performance and noted that "students with high academic performance have low scores on anxiety and vice versa" Chapel, Blanding, Takahashi, Silverstein, Newman, Gubi, and McCann (2005) in their study to examined the connection between test anxiety and academic achievement discovered that, a negative and significant association exist between test anxiety and academic performance.

Hancock (2001) examined the influence of test anxiety by students and teacher's evaluation practices on students' performance and motivation at post the secondary level. He found statistically significantly results which revealed that "all students, especially students with high anxiety level, performed poorly and were less motivated to learn." Thus, he concluded that, "when students who are particularly test-anxious are exposed to a highly evaluative assessment environment in their educational institution. They perform poorly and are less motivated to perform" (Hancock 2001). A research study conducted by academic performance and found that anxiety exerts a significant stable and negative impact on academic performance measures". Alberto, Brown, Eliason & Wind (1997), based on their research study, concluded that "students conducted a study to explore how anxiety affects students on both numerical and non-numerical tasks in Physics". On the other hand, researchers further discussed "how high anxious students were unable to benefit directly from organized instruction, which ultimately affected their performance in class".

Aderinto (2000) carried out a study to investigate the relationship between anxiety and student academic performance. Ex-post facto research design was adopted for the study. A twenty-item questionnaire was used for data collection. Data collected was analyzed using Pearson product moment correlation statistical technique. Result of the findings revealed that there exists a significant relationship between test anxiety and student academic performance.

In another related study Kwame (2003) carried out a study to investigate the effect of anxiety for need satisfaction on students' academic performance. Four research hypotheses investigated the relationship between the test anxiety of the students and their academic performance. Survey research design was used for the study. The sample of the study was made up of 1500 students selected from 50 secondary schools in Ghana. The main instrument for data collection was a forty-eight item questionnaire constructed by the researcher with the help of two experts in test measurement and Pearson product moment correlation analytical technique. Result of the findings revealed that, "test anxiety of students significantly influences students' academic performance."

Hancock (2001) investigated the effects of students' test anxiety and teacher's

evaluation practices on students' achievement and motivation at post the secondary level. He found statistically significant results which revealed that all students, especially students with high anxiety level, performed poorly and were less motivated to learn. Thus, he concluded that when students who are particularly test-anxious are exposed to a highly evaluative assessment environment in their educational institution, they perform poorly and are less motivated to perform (Hancock, 2001). A research study conducted by Cassady and Johnson (2002) to investigate the effect of anxiety on students' academic performance and found that anxiety exerts a significant stable and negative impact on academic performance and found that anxiety exerts a significant stable and negative impact on academic performance measures. Albero, Brown, Eliason and Wind (1997), based on their research study, concluded that students having high anxiety had significantly lower scores. Oludipe (2009) conducted a study to explore how anxiety affects students' performance levels in the sciences, especially in Physics and concluded that "low test-Rizwan & Nasir anxious students performed better than high anxious students on both numerical and non-numerical tasks in Physics". On the other hand, Schonwettter, (1995: p172) by relating this phenomenon to classroom instruction, the researchers further discussed "how high anxious students were unable to benefit directly from organized instruction, which ultimately affected their performance in class".

It is quite evident from the arguments given above and results of the studies reported that, "test anxiety affects achievement along with other variables such as motivation to learn, ability to benefit from formal instruction and gender". This diversification of effects of test activity lead researchers to think of test anxiety as at bi-dimensional construct (Berk & Nanda, 2006: Chapell et al., 2005: Cassady & Johnson, 2002; Diaz, 2001) with affective and cognitive components. The affective dimension (emotionally) refers to behavioural or physical reactions to testing situation, such as fear, nervousness, and physical discomfort (Hancock, 2001: Pintrinch & Schunk, 1996; Williams, 1994). This high level of emotionality is evident through physiological responses experienced during evaluative situations (Cassady & Johnson, 2002). The cognitive dimension (worry) refers to cognitive concerns about performance, such as worry about the testing situations (Cassady & Johnson, 2002). The cognitive dimension (worry) refers to cognitive concerns about performance, such as worry about the testing situation or negative performance expectations (Humbree, 1988; Morris, Davis & Hutchings, 1981; Depreeuw, 1984). It is the cognitive aspect of test anxiety which has been significantly accounted for declines in academic achievement of adolescents and postsecondary students (Bandlos, Yates, & Thorndike-Christ, 1995; Williams, 1991; Humbree, 1981).

The discussion above has intrigued researchers to investigate test anxiety as a contributing factor in student achievement among Pakistani students in institutions of higher education as it is generally perceived that institutions of higher education in Pakistan have very rigid system of test/examination following having high stakes in students' academic career. The study addressed following questions to pursue the above stated broader objective.

Aderinto (2000) carried out a study to investigate the relationship between anxiety and student academic performance. Ex-post facto research design was adopted for the study. A twenty-item questionnaire was used for data collection. Data collection was analyzed using Pearson product moment correlation statistical technique. Result of the findings revealed that there exists a significant relationship between test anxiety and student academic performance.

In another related study Kwame (2003) carried out a study to investigate the effect of anxiety for need satisfaction on student's academic performance. Four research hypotheses were formulated to guide and direct the study. One of the hypotheses investigated the

relationship between the test anxiety of the students and their academic performance. Survey research students selected from 50 secondary schools in Ghana. The main instrument for data collection was a forty-eight-item questionnaire constructed by the researcher with the help of two experts in test measurement and evaluation. Data collected was analyzed using one-way analysis of variance and Pearson revealed that test anxiety of students significantly influence students' academic performance.

The situation with secondary school students' self-esteem, test anxiety and academic performance in English Language, Mathematics and Social Studies in Cross River State, Nigeria is the concern of this study.

Methodology

The research design adopted for this study was survey research design. The research covers Cross River State of the Federal Republic of Nigeria. The population of 18,699 JSS3 students was involved in the study (Cross River State Secondary Education Board, 2018). Stratified random sampling technique was adopted for the selection of the required sample for this study. Foremost, each of the three educational zones in Cross River State stood as a stratum from which required secondary schools were selected. The sample of this study was 1,040 junior secondary III students (male and female). This was randomly selected from 54 out of 233 secondary schools in the study area. The sample portrayed that from Ogoja Educational zone, 300 students were randomly selected; from Ikom Zone, 320 students, while from Calabar Zone, 420 students were selected. The sample represented about 5.60% of the population of the study. The instruments used for the study were a structured questionnaire titled Self-Esteem and Test Anxiety Questionnaire (SETAQ) and Academic Achievement Tests in English Language, Mathematics and Social Studies. The SETAQ was a 24 items questionnaire constructed by the researchers and aimed at eliciting information from the respondents on the variables of study. The SETAQ consisted of two sections (A. & B). Each section had 12 items each for students' self-esteem and test anxiety respectively. The face validity of the instrument of the study was established by two experts in Guidance and Counselling and two experts in Test, Measurement and Evaluation in Faculty of Education University of Calabar. The reliability was established through the split – half method.

Statement of hypotheses
Hypothesis one
There is no significant relationship between self esteem and academic performance
Dependent Variable: Academic performance in English Language, Mathematics and Social Studies
Independent variable: Self esteem
Statistical technique: Pearson product moment correlation analysis

Hypothesis two
There is no significant influence of test anxiety on students' academic performance
Dependent Variable; Academic performance in English Language, Mathematics and Social Studies
Independent variable: Test anxiety (low, average and high)
Statistical technique: one-way Analysis of Variance (ANOVA)

Presentation of result
Hypothesis one:
There is no significant relationship between self –esteem and academic performance. Pearson product moment correlation coefficient statistical technique was used to test this hypothesis, the result is presented in Table 1

The result in Table 1 revealed that the calculated r-value of 0.32 for students' academic performance in English Language, 0.23 for students academic performance in Mathematics, 0.22 for students academic performance in Social Studies were found to be greater than the critical r-value 0.167 needed for significance at 0.05 level of significance with 1038 degrees of freedom. The result implies that self-esteem significantly relates to students' academic performance in English Language, Mathematics and Social Studies. The positive r-values obtained in this hypothesis revealed that there existed a direct relationship between self-esteem and students' academic performance in all the three subjects. This implies that increase in self-esteem lead to a corresponding increase in students' academic performance. Conversely a decrease in self-esteem will leads to a decrease in students' academic performance.

Table 1:
Pearson product moment correlation of the relationship between self-esteem and academic performance.

Variables	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r-cal
Self –esteem	19601	389533		
Students' performance in English Language	59347	3589169	1139273	0.32*
Students' performance in Mathematics	59093	3630895	1130974	0.23*
'Student' performance in Social Studies	58251	3443133	1111107	0.22*

*$p<0.05$, d.f=1038 critical r=0.167; ns p>.05

Hypothesis two
There is no significant influence of state anxiety on students' academic performance. The main dependent variable in students' academic performance. This was operationalized by academic performance in English Language, Mathematic and Social Studies. Test anxiety was categorized into low, average and high based on students means response score. Students who scored below the mean region were categorized as low, those who scored within the mean region were categorized as average and those who scored above the mean level were categorized as having high test anxiety. Based on these the influence of test anxiety on students' academic performance was computed using the One-Way Analysis of Variance. The results of the analysis are displayed in Table 2

Examination of Table 2 shows that there is significant influence of state anxiety on students' academic performance English Language (F=14.02, p<.05), mathematics (F=10.96, p<.05), and Social Studies (F=9.62, p<.05). The null hypothesis was rejected, and the alternate hypothesis retained because the calculated F-ratio of 14.02; 10.96 and 9.62; were found to be greater than the critical F-ratio of 3.00 given 0.5 alpha level and with 2 and 1037 degrees of freedom. Given the significant F-ratios, a post hoe analysis using the Fishers Least Significant Difference (LSD) multiple comparison test analysis was done. The result of the analysis is displayed in Table 3.

The result presented in Table 3 shows that with regards to the influence of test anxiety on students' academic performance in English Language, student who have low test anxiety had a significant higher mean score for academic performance in English Language than those who had high test anxiety (t=14.28) and average (t=7.01). Similarly, those who had average test anxiety had a significant higher mean score than those who had high test anxiety (t=-8.44). This result means that students who have low test anxiety perform better than those who have average and high-test anxiety.

With regards to the influence of test anxiety on students' academic performance in Mathematics, students who have low test anxiety had a significant higher mean score for academic performance in Mathematics than those who had high test anxiety (t=14.00) and average (t=7.65). Similarly, those who had average test anxiety had a significant higher mean score than those who had high test anxiety (t=-9.28). This result means that students who have low anxiety perform better in Mathematics than those who have average and high-test anxiety

Table 2:
One-way analysis of variance of the influence of test anxiety on students' academic performance in English Language, Mathematics and Social Studies

Performance	State of anxiety	N	Mean	SD
	LOW	186	49.43	12.12
English language	AVERAGE	472	56.83	12.37
	HIGH	382	64.93	12.18
	TOTAL	1040	57.06	12.22
	LOW	186	48.53	12.98
Mathematics	AVERAGE	472	57.18	13.21
	HIGH	382	64.76	12.92
	TOTAL	1040	56.82	13.04
	LOW	186	47.63	14.38
Social Studies	AVERAGE	472	56.76	12.79
	HIGH	382	63.65	12.49
	TOTAL	1040	56.01	13.22

Performance	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
English Language	Between Groups	274.83	2	137.42		
	Within Groups	10167.47	1037	9.80	14.02*	.000
	Total	10442.3	1039			

Mathematics	Between Groups	245.72	2	122.86		
	Within Groups	11621.26	1037	11.21	10.96*	.000
	Total	11866.98	1039			
Social Studies	Between Groups	186.75	2	93.38		
	Within Groups	10062.53	1037	9.70	9.62*	.000
	Total	10249.28	1039			

* significant at. 05; F_2 1044 = 3.00

Table 3:
Fishers multiple comparison (LSD) test analysis of influence of test anxiety on students' academic performance

Students' academic Performance	Test anxiety	low	Average	High
		(n=186)	(n=472)	(n=382)
English Lang.	Low	49.43a	-7.4b	-15.5
	Average	-7.01*c	56.83	-8.1
	High	-14.28*	-9.59*	64.93
			Msw=9.80	
Mathematics	Low	48.53a	-8.65b	-16.23
	Average	-7.65*	57.18	-7.58
	High	-14.0*	-8.44*	64.76
			Msw=11.21	
Social Studies	Low	47.63a	9.13b	-16.02
	Average	-7.56*	57.76	-6.89
	High	-12.99*	-7.92*	63.65
			Msw=9.70	

*Significant at .05
a.   Group means are placed on the diagonal
b.   Differences between group means are placed above the diagonal
c.   Fishers LSD t-value are place below the diagonal

Discussion of findings
        The finding of the first hypothesis revealed that there is significant influence of state anxiety on students' academic performance English Language, Mathematics and Social Studies. This finding corroborates the findings of Hancock (2001) who examined the influence of test anxiety by students and teacher's evaluation practices on students' performance and motivation at post the secondary level. He found statistically significantly results which revealed that "all students, especially students with high anxiety level, performed poorly and were less motivated to learn. Thus, he concluded that, "when students who are particularly test-anxious are exposed to a highly evaluative assessment environment in their educational institution. They perform poorly and are less motivated to perform.

        Kwame (2003) also carried out a study to investigate the effect of anxiety for need satisfaction on students' academic performance. Four research hypotheses investigated the relationship between the test anxiety of the students and their academic performance. Survey research design was used for the study. The sample of the study was made up of 1500 students selected from 50 secondary schools in Ghana. The main instrument for data

collection was a forty-eight-item questionnaire constructed by the researcher with the help of two experts in test measurement and Pearson product moment correlation analytical technique. Result of the findings revealed that, test anxiety of students significantly influences students' academic performance.

The finding of the second hypothesis revealed that there exists a significant relationship between self-esteem and students' academic performance in English language, Mathematics and Social Studies. This finding corroborates the findings of Bowlby (2004) who carried out a study to investigate the existing between self-esteem and students' academic performance and found that there exists a significant relationship between self-esteem and students' performance.

In another related study by Hirst (2001) on level of self-esteem and personal achievements, that is also in line with the finding of this study noted that, "students with positive self-esteems could achieve far more difficult task than students with low or negative self-esteem". The result clearly showed that the level of self-esteem would influence students' achievement.

This finding is also in line with the findings of Ainsworth (2003) who in his study discovered that children who have suffered from child labour lack a sense of self-worth and are not confident in all what they are doing and consequently perform poorly academically.

Conclusion/Recommendation

Based on the research findings, it could be concluded that the test anxiety of students significantly predicts their academic performance in English language, Mathematics and social studies. That is, students with low test anxiety performed significantly better than those with average and high test anxiety. The result also showed that there exists a significant relationship between self-esteem of students and their academic performance in English language, Mathematics and social studies. Based on the findings it was concluded that child early development must not be tempered with as the resultant effect of such maladjustment will have a permanent future development in the child wellbeing.

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