

Test Anxiety and Students' Academic Achievement in Mathematics and English in Amowo–Odofoin Local Government Area of Lagos State, Nigeria

Clifford Moses AMINI
National Open University of Nigeria
amini.clifford@gmail.com

Abstract

This study investigated the effect of test anxiety on students' academic achievement. 175 secondary school students in Amowo-Odofoin Local Government Area of Lagos State participated in the study. Students were asked to respond to the Westside Students' Test Anxiety Scale. The Mathematics and English Scores of their terminal examinations also provided data for analysis. Correlation, regression and ANOVA calculations were used to analyse the data. Results indicate that there were no significant effect of test anxiety on students' academic achievement i.e. test scores are not dependent on students' anxiety level. The study recommends that further investigation be done to determine other factors that could affect students' achievement.

Keywords: Anxiety, Students, Academic Achievement, Mathematics, Lagos, Nigeria.

INTRODUCTION

Test results have become, of recent, a measure of how well a school is doing or how effective a teacher is in his/her subject. This trend is primarily due to an emphasis on the accountability of schools and teachers to increase their students' achievement scores. Most of the time, in Nigeria, public schools have received the butts of attacks, of doing inferior jobs in terms of students' achievements in end of school examinations like NECO, WAEC, SSCE etc. This trend is also similar in the American Public Schools (Valverde & Schmidt, 1997). Valverde and Schmidt (1997) also reported that the trend led to American politicians and education leaders mandating the use of standardized test to hold schools accountable for students' achievement, leading to the "*No Child Left Behind*" (ACLB, Act, 2000). In Nigeria, schools are mandated to carry out periodic continuous assessment test to ensure possible increase in students; achievement scores.

The above trend results in students being anxious about what test would come, from which teacher. This is made worse by the continuous assessment scores, now being considered as part of final assessment for grading for promotion and certification. Are students' achievement affected by anxiety for the test?

Test anxiety is a multidimensional construct that has been defined as "set of phenomenological, physiological and behavioural responses that accompany concern about possible negative consequences or failure on an examination or similar evaluative situation. (Zeidner, 1998). Many theoretical models of test anxiety has been developed over the years including: Zeidner (1997) - The Active Drive Model; Mandler and Sarason (1952) – Cognitive Attention Model; Sarason, (1972), Wine (1971), Skill Deficit Models, Benjamin,

McKeachie, Liu and Holinger (1981), Culler and Holahan, (1980), Kirkland and Hollandsworth, (1980), The Self-regulation Model; Carver and Scheir, (1984), The Self-worth Model, Covington (1992); and The Transactional Model – Spielberger and Vagg (1995). However, there is no single explanatory model that takes into account all the complex factors that promote test anxiety or that are consistent with the majority of text anxiety research.

Scholars seem to have broad agreement that test anxiety is associated with lower academic performances: Zeidner (1998), Hill and Wigfield (1984), extrapolated from literature and estimated that about 25.0% of American Primary and secondary school students suffered lower academic achievement due to test anxiety. Kahan (2008) and Donnelly (2009), had opined that anxiety is a common undeniable phenomenon in human beings that effect their achievement and effectiveness in different situations, an average level of anxiety may be useful in keeping people hardworking and responsible for what they have to do. Zaharakar (2008), also agreed that high level of anxiety threatens individual's mental and physical health and has a negative effect on personal, social, familial, occupational and educational performance. Cheraghian et al. (2008) defined test anxiety as a kind of anxiety which happens when a person is taking a test or is being evaluated by a test administrator, making the test participant to experience a feeling of concern that their achievement are being carefully watched out to be evaluated. Moadeli and Ghazanfari (2005) concluded that a low level of stress is necessary, but it is sometimes so complicated that it limits individual performance in tests and leads to a behaviour disorder or low confidence or poor academic achievement, resulting in individuals hating studying and education because of evaluation and sitting for a test.

Studies also show that an acceptable level of anxiety in students motivates them to work hard and provides them with its positive consequences. It is gratifying to note that nowadays, test anxiety is observed more among students, and that might be due to the role of test in the educational system. Chapel et al. (2005) had claimed that about 10 million students at school and about 15% - 20% of university students in the USA experience test anxiety. Sarason (1978) also posited that test anxiety is a kind of self-preoccupation that is shown with low self-esteem and leads to negative cognitive evaluation, lack of concentration, unpleasant physiological reactions and low proficiency in achievements. Other scholars also found negative correlation of ($p < 0.01$) between test anxiety and students' achievements (Hong & Kartension, 2002; Onyeizugbo, 2010; Abolghasemi, 2008). Cheraghian (2007), however, believed that no relationship has been indicated between test anxiety and students' achievements.

The review of researchers above and the emphasis placed on test by teachers and the continuous assessment systems as part of the final certification and promotion exercises, have tended to emphasize one thing – the importance and prominent role of test in our education system. Do these make students anxious about tests? If it does, how does this affect students' performance in tests? Is there any difference in test anxiety between male and female students? The present study was conducted to resolve these questions, in Amowo-Odofin Local Government Area of Lagos State – Nigeria.

METHODOLOGY

The study adapted the Westside Students' Test Anxiety Scale (Driscoll, 2007) for the research. The Students' Test Anxiety Scale, which is a ten-item question has scales ranging from AT (always true), UT (usually true), ST (sometimes true), SELT (seldom true), and NT (never true). Driscoll (2007), while validating the instrument, established a correlation of $r = 0.49$. A split-half reliability of $r = 0.51$ was however found when the instrument was tested on

50 students of similar age and environment to the actual participants in the present study. One hundred and seventy-five (175) senior secondary students in Amowo-Odofin Local Government Area of Lagos State participated as sample for study out of a population of 3,150 senior secondary school students. The students were made to respond to the Students' Test Anxiety Scale. These students also wrote their terminal Mathematics and English examinations. Only the scores of those who responded to the Students' Test Anxiety Scale were obtained from the subject teachers and used for the analysis.

Table 1: Frequency of Participants

Gender		Frequency	Percent	Valid Percent	Cumulative
Male	1	85	48.6	48.6	18.6
Female	2	90	51.4	51.4	100
	Total	175	100	100	

RESULTS

Table 2: Mean and Standard Deviation of Male and Female Students' Achievement and Anxiety

Gender		Achievement	Anxiety
Male	<i>Mean</i>	11.23	32.79
	<i>N</i>	85	85
	<i>Sd</i>	3.1	7.59
Female	<i>Mean</i>	11.34	31.22
	<i>N</i>	90	90

HO₁ - There is no significant difference between male and female students' test anxiety

Table 3: T-test analysis of male and female students test anxiety

Variables	N	df	Mean	SD	t	(p < 0.05)
Male	85	73	32.79	7.59	1.25	1.65
Female	90		31.22	7.20		

* *not significant*

HO₂ – There is no significant effect of students' test anxiety on their academic achievement. This hypothesis was tested using regression analysis. The results are presented in Tables 4, 5, 6.

Table 4: *Summary of Regression of Students' Test Anxiety and Academic Achievement*

Model	R	R square	Adjusted R Square	Standard Error of Estimate
1	.263	.069	.064	2.83

Table 5: Analysis of Variance (ANOVA) between Students' Test Anxiety and Academic Achievement

Model	Sum of Square	df	Mean Square	F	Sign
Regression	102.96	1	102.96	12.83	.000
Residual	1388.85	173	8.03		
Total	1491.81	174			

a. Dependent Variable: Achievement

b. Predictor (constant): Anxiety

This table indicates that there is no significant effect of test anxiety on students' academic achievement. This means that the variances observed in the test scores are not due to their level of test anxiety.

Table 6: Estimates

Model	Unstandardized Coeff.		Standardized Coeff	t	Sign.
	B	Standard Error	Beta		
1 (constant)	14.59	.92		15.85	.000
anxiety	-.102	.03	-.26	- 3.58	.000

DISCUSSION

It is observed that the participants in this study showed moderate to low level test anxiety. This is similar to the observation of Cheraghian et al. (2008) who observed a 14% no test anxiety participants and 48.7% low test anxiety participants. In the study, Cheraghian et al. (2008) found no meaningful relationship between test anxiety and academic achievement. The present study also found no significant relationship between test anxiety and secondary school students' academic achievement in Amowo-Odofin Local Government Area of Lagos State, Nigeria. Moadeli and Ghazanfari (2003) found similar results. However, Chapell et al (2005) found that test anxiety is associated negatively with GPA at undergraduate and graduate levels, resulting in reduction in GPA. Diversity of results found in different

researches shows that test anxiety in students is caused by different factors. This is the position of Moadeli and Ghazanfari (2004) who believed that different factors such as complicated syllabi, test items, test frequencies, teachers behaviour, discipline, can affect text anxiety of students in universities. It is also clear that the effects of these factors cannot be uniform in all environments. It is pertinent here to also infer that these other factors (apart from text anxiety), can impact student academic achievement. In this study, test anxiety does not show any significant effect on students' academic achievement. This study also indicated that there is no significant difference between male and female students' test anxiety ($t = 1.25$; $p < 0.05 = 1.65$).

CONCLUSION

It is significant to note that there are variations observed in students' test scores, these variations are not due to students' level of test anxiety on academic achievement in Amowo-Odofin Local Government Area of Lagos State, and concluded that there seemed not to be found, any such effect. That means, other factors may be responsible for the variations in test scores. This does not in no invalidate any study result that indicate otherwise. It is therefore recommended that other factors that could affect students' academic achievement be investigated be investigated.

REFERENCES

- Abolghasemi, A. (2008). Test anxiety, cause, evaluation and treatment. *Methodology Research*
- Chapell, M. S., Blanding, Z. B., Silverstein, M. E., Takahashi, M., Newman, B., Gubi, A., & McCann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology*, 97(2), 268.
- Cheraghian, B., Fereidooni-Moghadam, M., Baraz-Pardejani, S., & Bavarsad, N. (2008). Test anxiety and its relationship with academic performance among nursing students. *Knowledge & Health*, 3(3-4), 25-29.
- Donnelly, R. (2009). Embedding interaction within a blend of learner centric pedagogy and technology. *World Journal on Educational*, 1(1), 6-29
- Driscoll, R. (2007). Westside Test Anxiety Scale Validation. *American Test Anxiety Association ERIC*, 6pp.
- Hill, K. T., & Wigfield, A. (1984). Test anxiety: A major educational problem and what can be done about it. *The Elementary School Journal*, 85(1), 105-126.
- Hong, E., & Karstenson, L. (2002). Antecedents of state test anxiety. *Contemporary Educational Psychology*, 27(2), 348-367.
- Kahan, L. M. (2008). The correlation of test anxiety and academic performance of community college students *Pro Quest LLC Journal*. Capella University. Us.
- Mandler, G., & Sarason, S. B. (1952). A study of anxiety and learning. *The Journal of Abnormal and Social Psychology*, 47(2), 166.
- Moadeli, Z., & Ghazanfari-Hesamabadi, M. (2005). A survey on the students' exam anxiety in the Hazratefatemeah College of nursing and midwifery. *Strides in Development of Medical Education*, 2, 65-72.
- Onyeizugbo, E. U. (2010). Self-efficacy and test anxiety as correlates of academic performance. *Educational Research*, 1(10), 477-480.
- Sarason, I. G. (1972). Experimental approaches to test anxiety: Attention and the uses of information. *Anxiety: Current trends in theory and research*, 2, 383-403.

- Spielberger, C. D., & Vagg, P. R. (1995). Test anxiety: A transactional process model. In Spielberger, C. D., & Vagg, P. R. (Eds.). (1995). *Test anxiety: Theory, assessment, and treatment*. (pp 3-14) Washington D.C. Taylor & Francis.
- Wine, J. (1971). Test anxiety and direction of attention. *Psychological bulletin*, 76(2), 92.
- Zeidner, M. (1997). *Test anxiety: The state of the art*. NY. Plenum Press