



Research Paper

Relationship between Test Anxiety and Academic Achievement Among Senior Secondary School Students In Federal Capital Territory, Abuja, Nigeria

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Abstract

The study investigated the relationship between test anxiety and academic achievement among senior secondary school students in Federal Capital Territory, Abuja, Nigeria. The descriptive survey research design was adopted for the study. A sample of 380 respondents from a population of 33,505 which comprised of all the S.S.2 senior students in Federal Capital Territory was used. A self-structured instrument titled Students' Anxiety Scale (SAS) on a 4-point rating scale was adopted for the study. The test re-tests reliability yielded an index of 0.91. Seven research questions and four hypotheses were formulated for the study. The Pearson's Product Moment Correlation Coefficient was used in testing the relationships, while *t*-test and analysis of variance were used in testing the significant difference between two and more groups. The finding from the study revealed that the academic achievement of senior secondary school students in the Federal Capital Territory, Abuja Nigeria is above average. The research also indicates an inverse correlation between test anxiety levels and academic achievement of students in the Federal Capital Territory, Abuja. It was further discovered that there was no disparity in test anxiety levels between rural and urban senior secondary school students. The study recommends that efforts should be made to reduce test anxiety among senior secondary school students, and that there is need for government and other stakeholders to manage test anxiety exhibited among the senior secondary schools, enlighten and check on the students regularly for possible signs and immediate remedies.

Keywords: Test anxiety, academic achievements, secondary school

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I. Introduction

Education provides skills and techniques designed to improve human competence. Many countries in the world view education as a good investment for national development because it is expected to produce the required quality and quantity of human resources for the economic growth using the right mix of inputs. The quality of functional education depends on the academic achievement of the students at all stages of education, be it basic, post basic or tertiary.

Education is the instrument for human development (Federal Republic of Nigeria, 2013). It is a process by which a person acquires necessary skills, abilities, attitudes and other forms of behaviour that will enable the individual to be useful to himself and contribute positively to the society in which he lives.

Education is a highly needed social service in every country, especially a developing nation like Nigeria (Okeke, 2014). Education is an indispensable tool for personal and social developments. It provides us the opportunity for holistic growth and development. It is an activity as well as a process from instinctive behaviour to human behaviour.

In all the stages of education right from basic to tertiary education, the post basic stage (senior secondary stage), is the most important stage because, this stage provides the base for further education. Senior Secondary education is meant for children between the ages of 14 and 16 years in Nigeria. Federal Republic of Nigeria (FRN, 2013) defines Senior Secondary education as the education children receive after a successful completion of ten years of Basic Education and passing the Basic Education Certificate Examination (BECE) and Junior Arabic and Islamic Studies Certificate Examination (JAISE). Its broad objectives as contain in the FRN (2013) are to;

- a) Provide holders of the Basic Education Certificate and Junior Arabic and Islamic Studies Certificate with opportunity for education of a higher level, irrespective of gender, social status, religious or ethnic background.
- b) Offer diversified curriculum to cater for the differences in talents, disposition, opportunities and future roles.
- c) Provide trained manpower in the applied Sciences, technology and commerce at sub-professional grades;
- d) Provide entrepreneurial, technical and vocational job-specific skills for self-reliance, and for agricultural, industrial, commercial and economic development;
- e) Develop and promote Nigerian Languages, art and culture in the context of world's cultural heritage;
- f) Inspire students with a desire for self-improvement and achievement of excellence;
- g) Foster patriotism, national unity and security education with emphasis on the common ties in spite of our diversity and;
- h) Raise morally upright and well-adjusted individuals who can think independently and rationally, respect the views and feelings of others and appreciate the dignity of labour.

To achieve the stated objectives, the academic achievement of the students' needs to be tested.

In all levels of education, the senior secondary level is the most important level because, this level provides the base for further education. The future of every student depends on this level. In this level, the students take series of external examination/test that can assist them progress to the next stage of education which is the tertiary stage. At this point, the students face the challenge of dealing with anxiety. Anxiety is not unique to adolescents only but is one among a variety of common unpleasant emotional experience that every human being encounters in different proportions at one time or another in life.

However, the effects of anxiety on an individual may vary depending on its interaction with the task achievement process. Low to moderate anxiety is often deemed beneficial as it enables the body to discharge energy equivalent to the task at hand. High anxiety on the other hand, may be devastating because it excites the body system above normal functioning capacity, and impacts negatively on task achievement.

It has been noted that between 25 to 40 percent of students' experience test anxiety (Cassady, 2011) students who experience high level of test anxiety are more likely to perform poorly academically (Gosh, & Das 2013).

Many adults and all school children are tested at various times in their lives. School teacher uses test to identify student with the characteristics needed for promotion or placement in various classes. Likewise, employer's personnel departments use test also to identify individuals with the characteristics needed for specific jobs within their organization.

The term "test" is the particular types of assessment to reinforce learning and to motivate students by giving a task or a set of tasks. Walter (2012), defined test as a deliberate tendency to find out the level of interest, knowledge, skill, and achievement on a given task. Bulus and John (2018) defined a test as a set of standardized questions or inventories administered to an individual for the purpose of measuring or obtaining quantitative information about several aspects of the individual's behaviour. Many psychologists use the term measurement or evaluation rather than test as a way to suggest the scope of the field.

American Psychological Association, (2014) defined anxiety as a psychological and physiological state characterized by physical, emotional, cognitive, and behavioural components. Anxiety according to Bouras and Holt (as cited in Okpo, 2018) means trouble; in either presence or absence of psychological stress, anxiety can create a feeling of fear, worry, uneasiness, and death. It is a normal response to stress. It may help an individual to cope with the demands of life but in excess it may be considered as anxiety disorder (National Institution of Mental Health 2018). According to Robin (2012) anxiety is a global problem affecting mainly children and adolescents. In America, anxiety is the most common illness and approximately 40 million adults have anxiety disorders. Cherkas-Julkowski, Groebel and Kuffer (as cited in Okpo, 2018), pointed out that there is a general increase of test anxiety for students of upper academic class. They further highlighted that increase in competition within a reference group with relatively high academic standard leads to higher levels of test anxiety. Shafiq, Erum and Muhammad (2021) revealed that there is a negative relationship between test anxiety and academic achievement.

Test anxiety affects people of all ages who have to be evaluated, assessed, and graded on their abilities or achievements (Lufi, Okasha, & Cohen, 2014). It is when anxiety is in its severe form that some students experience genuine problem in academics. Their minds go blank, they experience the shakes, their hands go numb, and they suffer from a number of sudden disabilities associated, with anxiety during examination. Heather and April (2019) reported that anxiety can occur because of stress, affecting learning and memory and affecting academic achievement negatively. According to Kaplan and Saddok' (2018), an optimal level of stress can enhance learning ability and improve academic achievement. From all indication test anxiety appears to be a force confronting student.

1.1. STATEMENT OF THE PROBLEM

Assessment of learning outcomes among students is one of the most important aspects of education. Test anxiety can significantly impact students' ability to concentrate during examinations, leading to reduced focus and attention on the test questions. This lack of concentration can result in errors and lower academic achievement. The anxiety and stress experienced before and during exams can impair cognitive functioning, making it difficult for students to demonstrate their true knowledge and abilities. When under stress, students may experience difficulties retrieving information from their memory, leading to gaps in knowledge and lower academic achievement.

The fear of failure and negative self-talk can create a self-fulfilling prophecy, where students perform poorly because they believe they will fail. This lack of self-confidence can hinder academic achievement and overall success. The fear and stress can lead to time pressure, causing them to rush through questions or spend excessive time on a single question. This can result in incomplete answers or an inability to complete the exam within the allocated time, affecting their overall academic achievement.

If test anxiety persists over time, it can have long-term consequences on academic achievement. Students may develop a negative attitude towards learning and become disengaged from their studies, impacting their overall educational trajectory and future opportunities. The researcher foresees that there must be some definite cause of test anxiety among students. It is therefore important that a study be conducted to establish the extent to which test anxiety affects students' academic achievement in FCT. It is on this premise that the researcher is inspired to carry out a study on test anxiety and academic achievement among senior secondary school students in Federal Capital Territory, Abuja.

1.2 RESEARCH QUESTIONS

The following research questions guided the study:

1. What is the level of test anxiety among senior secondary school students in the FCT?
2. What is the academic achievement of senior secondary students in the FCT?
3. What is the relationship between test anxiety level and academic achievement of senior secondary students in the FCT?
4. What is the difference between male and female secondary school students in level of test anxiety in FCT?
5. What is the difference between students in urban and rural locations in the level of test anxiety of senior secondary students in the FCT?
6. What is the difference in the level of test anxiety among senior secondary school students in the FCT on the basis of age?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

H₀₁: There is no significant relationship in the mean achievement score of students' test anxiety and academic achievement of senior secondary school students in FCT.

H₀₂: There is no significant difference between male and female students test anxiety in the senior secondary school in FCT.

H₀₃: There is no significant difference between urban and rural students in test anxiety level of senior secondary students in the FCT.

H₀₄: There is no significant difference in the level of test anxiety among senior secondary school students in the FCT on the basis of age.

II. METHODOLOGY

2.1 RESEARCH DESIGN

The descriptive survey research design was adopted for this study. The descriptive survey research design according to Nworgu in Anochie (2019) is one in which a group of people or items is studied by collecting and analyzing data from only few people or items considered to be representative of the entire group. Also, Adelman (2002) notes that descriptive survey research design is a plan or blue print that involves studying a group of people or items by collecting and analyzing data from only a few people or items (sample) considered to be representative of the entire group. It is therefore deemed appropriate for the study in view of the fact that the study is designed to extrapolate the outcome of the research from the sample to a broader population.

2.2 POPULATION OF THE STUDY

The population of this study comprised of all SSII students in Government Senior Secondary Schools in the Federal Capital Territory, Abuja. The Area Councils in FCT will be represented in the following order;

Abaji - 1,839, AMAC - 12,400, Bwari - 7,766, Kwali - 2,518, Kuje - 3,115, Gwagwalada - 5,867 making it a total of 33,505 (FCT Secondary Education Board, 2023).

2.3 SAMPLE SIZE AND SAMPLING PROCEDURE

This study used a stratified proportionate sampling method to select the respondents from 6 Senior Secondary Schools in the FCT for this study. The study further decided to select 380 students from the 6 secondary schools based on Krejcie and Morgan (1970) table of sample specification. The study finally used a purposive sampling technique to select the 380 respondents cut across 6 locations and subject-based – according to Nworgu in Anochie (2019) purposive sampling technique is a type of sampling technique whereby specific elements which satisfy some pre-determined criteria are selected.

2.4 INSTRUMENTATION

The instrument used to collect data for this study were questionnaire. A 35 - item, self-structured instrument titled “Students’ Anxiety Scale (SAS)” were used for data collection. The questionnaire is structured along a four-point scale which consisted of two sections.

Section A: contained items on Demographic Data of the respondents, while Section B: contained research statements. To determine the validity, the questionnaire, it was given to three experts in the Faculty of Education, University of Abuja for validation.

To ascertain the reliability of the instrument, pilot test was conducted to determine its reliability for this present study. A pilot test was conducted using 20 SSII students in Government Secondary School Suleja in Niger State. The students that participated in the pilot test will not participate in the main study. Cronbach Alpha method of reliability test was used to measure the consistency of the instrument which gave a reliability index of 0.91. The instrument was judged reliable for the study.

III. RESULTS

Research Question 1

What is the level of test anxiety among senior secondary school students in the FCT?

Table 1: The level of test anxiety among senior secondary school students of senior secondary students in the FCT
N=380

S/N	Items	Mean	Std Dev	Decision
1	I feel confident and relaxed while taking tests	2.65	.93	Agreed
2	While taking examination I have an uneasy, upset feeling	2.56	1.03	Agreed
3	Thinking about my grade in a subject interferes with my work on tests	2.48	1.04	Disagreed
4	I freeze up on important examinations	2.52	1.02	Agreed
5	During examinations I find myself thinking about whether I will ever get through school	2.75	.97	Agreed
6	The harder I work at taking a test, the more confused I get	2.80	.99	Agreed
7	Thoughts of doing poorly interfere with my concentration on tests	2.60	.98	Agreed
8	I feel very jittery when taking an important test	2.21	1.00	Disagreed
9	Even when I'm well prepared for a test, I feel very nervous about it	2.53	.92	Agreed
10	I start feeling very uneasy just before getting a test paper back	2.50	.90	Agreed
11	During tests I feel very tense	2.31	.96	Disagreed
12	I wish examinations did not bother me so much	2.76	.97	Agreed
13	During important tests I am so tense that my stomach gets upset	2.32	.97	Disagreed
14	I seem to defeat myself while working on important test	2.17	1.00	Disagreed
15	I feel very panicky when I take an important test	2.61	1.05	Agreed
Sectional Mean		2.52	0.98	

As shown in table 1 was the level of test anxiety among senior secondary school students in the FCT, with a Sectional Mean of 2.52. From the analysis above, it was revealed that overaverage of the respondents agreed with all items in table 1 except item 3,8,11,13 and 14 which was rejected, and which is in line with the decision rule that 2.50 and above be accepted and below be rejected. The sectional mean for the items in respect of the level of test anxiety among senior secondary school students in the FCT which was 2.52 is (greater than 2.5 midpoint on a 4-point Likert scale), indicating that there is test anxiety among senior secondary school students in the FCT. This indicates that factors such as students being panicky when they take an important test,

the harder they work at taking a test, the more confused they get amongst others were some of the impact of the level of test anxiety among senior secondary school students in the FCT.

Research Question 2

What is the academic achievement of senior secondary students in the FCT, Abuja Nigeria?

Table 2: Academic achievement of senior secondary students in FCT, Abuja Nigeria

N=380			
	Minimum	Maximum	Average Score
Mathematics	22.00	92.00	61.00
English Language	13.00	97.00	60.85
National Value	16.00	91.00	55.14
Academic Achievement	29	76.00	56.03

As shown in table 2 was the result of the academic achievement of senior secondary school students in FCT. The minimum score in mathematics was 22.00, while the maximum score was 92.00 with the average score of 61.00. This implies that the students score in Mathematics was above average. The students score in English Language has the minimum of 13.00, maximum of 97.00 and average score of 60.85. This also indicated that the students score in English Language was above average.

The minimum students score in National Value was 16.00, the maximum score 91.00 with average score of 55.14. This implies that the students score in National Value was within and above average.

The academic achievement of senior secondary students in the FCT is minimum of 29.00, maximum of 76.00 and average of 56.00. The average score of 56.03 was above 50 midpoints which implies that overall academic achievement of students is above average. To further answer the remaining research questions, the research questions were translated to hypotheses and tested.

Hypotheses

H₀₁: There is no significant relationship in the mean achievement score of students’ test anxiety and academic achievement of senior secondary school students in FCT.

Table 3: Pearson Product Moment Correlation test of relationship between the students’ test anxiety and academic achievement of senior secondary school students in FCT

Variables	N	r-cal	P-value	Decision
Test anxiety and Academic Achievement	380	-.003	.962	Not Rejected

As shown in table 3 was the analysis carried out to test the correlation between students’ test anxiety and academic achievement of senior secondary school students in FCT. The computed correlation coefficient showed that there is no significant relationship between students’ test anxiety and academic achievement of senior secondary school students in FCT. The r-value of -.003 indicates a negative relationship. The probability value (p-value) is 0.962 which is more than 0.05 level of significance, it is concluded that there is no statistical relationship between test anxiety and academic achievement and the relationship is by chance, therefore the null hypothesis was not rejected.

H₀₂: There is no significant difference between male and female students test anxiety in senior secondary schools in FCT.

Table 4: t-test on the difference between male and female students in test anxiety in senior secondary schools in FCT

Gender	Number	Mean	S. D	t-value	Df	Sig(2-tailed)	Decision
Male	213	3.03	.469	2.608	298	.259	Significant
Female	167	2.97	.502				

As shown in table 4 was the analysis carried out to test the difference between male and female students in test anxiety among senior secondary school students in FCT. The mean score for male students was 3.03 and a standard deviation of .469 while the mean score for female students was 2.97 and a standard deviation of .502.

With significant values of .259 (more than the 0.05 level of significance), the hypothesis that says that there is no significant difference between male and female students in test anxiety in the senior secondary school in FCT, is therefore, not rejected and concluded that there is no statistical difference between male and female students in test anxiety in senior secondary schools in FCT.

H03: There is no significant difference between urban and rural students in test anxiety level of senior secondary students in the FCT.

Table 5: t-test on the difference between urban and rural students in test anxiety level of senior secondary students in the FCT, Nigeria

Location	Number	Mean	S. D	t-value	Df	Sig(2-tailed)	Decision
Rural	162	2.51	.51	-.418	381	.676	Significant
Urban	218	2.53	.54				

As shown in table 5 was the analysis carried out to test the difference between rural and urban students in test anxiety level of senior secondary school students in the FCT. The mean score for rural students was 2.51 and a standard deviation of .51 while the mean score for female students was 2.53 and a standard deviation of .54. With significant values of .676 (greater than the 0.05 level of significance), the hypothesis that says that there is no significant difference between rural and urban students in test anxiety level of senior secondary students in the FCT is therefore, not rejected and concluded that there is no statistical difference between rural and urban students in test anxiety level of senior secondary students in the FCT, Nigeria.

H04: There is no significant difference in the level of test anxiety among senior secondary school students of senior secondary students in the FCT on the basis of age.

Table 6: One-way ANOVA for the difference in the level of test anxiety among senior secondary school students of senior secondary students in the FCT on the basis of age

Age Range	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	1.599	2	.800	3.190	.042	Significant
Within Groups	95.476	298	.251			
Total	97.075	380				

As shown in table 6 was the analysis carried out to test the difference in the level of test anxiety among senior secondary school students in the FCT on the basis of age. The sum of squares was 1.599 while within groups was 95.476. With the significant values of 0.042 (less than the 0.05 level of significance), the hypothesis that says that there is no significant difference in the level of test anxiety among senior secondary school students of senior secondary students in the FCT on the basis of age is, therefore, rejected and concluded that students differ significantly in test anxiety among senior secondary school students in the FCT on the basis of age.

IV. DISCUSSIONS OF FINDINGS

The findings revealed that there is test anxiety among senior secondary school students of senior secondary students in the FCT, Abuja Nigeria. Most students in the study area are anxious whenever they want to write any important exam. In a similar study, Shafiq, Erum and Muhammad (2021) the scholars found a negative relationship between test anxiety and academic achievement. The study of Udofia, Mumuni, Topohozin & Abidogun (2020) found test anxiety among students. Despite the test anxiety, the academic achievement of senior secondary school students in FCT, Abuja, Nigeria, is above average. This indicates that these students are performing well academically compared to their peers. It's important to consider the various factors that may contribute to this above-average achievement, such as quality of education, teacher effectiveness, student motivation, and other educational resources available to the students in the region.

The study found a negative statistical relationship between test anxiety and academic achievement among senior secondary school students in FCT, Abuja, Nigeria. This suggests that higher levels of test anxiety are associated with lower academic achievement in these students. It's important to consider strategies and interventions that can help alleviate test anxiety and support students in achieving academic success. Further research into the specific factors contributing to test anxiety and its impact on academic achievement in this

context would be beneficial. Shafiq, Erum and Muhammad (2021) conducted similar study in Pakistan and also found a negative relationship between test anxiety and academic achievement.

The study found that there is no statistical difference between male and female students in test anxiety in the senior secondary schools in FCT, Nigeria. This suggests that both male and female students experience similar levels of test anxiety in this context. Further research could explore potential reasons for this lack of gender difference in test anxiety and its implications for student achievement and well-being. This is in line with Engbreton and O' Brien in Okpo(2018) who in their two simultaneous studies found out that, negative relationship existed between test anxiety and academic achievement. This negative relationship was observed to be higher for the females than for the males.

The findings of the study revealed that there was no statistical difference in test anxiety levels between rural and urban students among senior secondary students in the FCT, Nigeria. This indicates that both rural and urban students experience similar levels of test anxiety in this context. Further exploration of the factors contributing to test anxiety and its impact on students from different backgrounds could provide valuable insights for educational interventions and support strategies. Udofia, Mumuni, Topohozin and Abidogun (2020) agreed with this finding that location does not affect test anxiety.

The study found significant differences in test anxiety levels among senior secondary school students in the FCT based on age. This suggests that age plays a role in determining the levels of test anxiety experienced by students in this context. Further investigation into the specific age groups that may be more prone to test anxiety could provide valuable information for tailoring interventions and support strategies to address these issues. Omotere (2011) on a similar study argued that combined factors of age, sex and test anxiety influences students' participation in examination.

V. CONCLUSIONS

The study concluded that there is test anxiety among senior secondary school students of senior secondary students in the FCT, Abuja Nigeria, however, the level of test anxiety is not strong enough to limit academic achievement below average. The increase in test anxiety over time will decrease academic achievement because of the negative relationship between both variables.

VI. RECOMMENDATIONS

Emanating from the findings of this study, the following recommendations are made:

1. Efforts should be made to reduce test anxiety among senior secondary school students of senior secondary students in the FCT, Abuja Nigeria, through collective efforts of all stake holders.
2. Since the academic achievement of senior secondary school students in the FCT, Abuja, Nigeria, is above average, it is recommended that efforts should be made to sustain the academic achievement and improve the present achievement.
3. This study recommends that since an inverse correlation was identified between test anxiety levels and academic achievement among senior secondary school students in the FCT, Abuja, Nigeria, more effort should be made reduce test anxiety in order to increase academic achievement.
4. Any attempt to reduce test anxiety should be done for all genders because no statistical gender-based variance in test anxiety levels among senior secondary school students in the FCT, Nigeria.
5. Since location is not a criterion for test anxiety, students of all genders should attempt to reduce test anxiety should be in rural and urban senior secondary school students in the FCT, Nigeria.

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