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Appraisal of the level of test anxiety among tertiary education students: A case of Alvan Ikoku Federal College of Education, Owerri, Imo State, Nigeria

Nwamuo A. Patience and Ihekwaba N. Chinyere

Department of Education Psychology, Alvan Ikoku Federal College of Education, Owerri, Nigeria.

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ABSTRACT

Test anxiety which implies excessive worry about doing well on a test by students no matter the level can become a major hindrance on test performance and can cause extreme nervousness and memory lapses among other symptoms. This study x-rayed and investigated the level of test anxiety among students in tertiary institutions using Alvan Ikoku Federal College of Education, Owerri, Imo State as a reference point. One research question and three hypotheses were employed. A total of 205 third year students representing ten percent of the population were systematically selected using a ratio of 1:10. Data were analysed and the chi-squared statistic result showed significant dependence of students' level of test anxiety on gender and age cohort but independence on the students' school of study. It is recommended that instructors should counsel students' during instruction on ways of reducing anxiety by preparing well before the test, thereby building self-confidence.

Keywords: Test, anxiety, students, gender, age cohort, counselors, anxiety inducers.

*Corresponding author. E-mail: chiihekwaba@yahoo.com.

INTRODUCTION

Everyone experiences various stresses coming from the outside world, for instance a fight with a loved one, a demanding boss, a difficult course, upcoming test or presentation can be stressors. Everyday stressors can accumulate and take a toll on one's ability to function effectively though what constitute stress differs from person to person. To some, the stressors are but part of human existence and can be withstood without much physical or mental harm or imbalance while to others, the stressors create an internal emotional experience called anxiety, and can be so intense as to have some devastating effect.

The term anxiety is used so widely and is said to be a general feeling of fear and apprehension whereby an individual anticipates some dreadful happening not objectively predictable from his actual circumference (Nwamuo, 2005).

Also, according to Bufka and Barlow (2009), anxiety is an emotional state in which people feel uneasy, apprehensive or fearful. Experience has shown that people usually experience anxiety about events they cannot control or predict or about events that seem threatening or dangerous, like medical emergency, a car accident, divorce, failure or death.

Cooper and Champlin (2008) identified different forms of anxiety as fear, panic attacks and phobia which make one's energy to rise and might result in rapid heart beat, increased pulse rate, sweaty palms etc. Fear, according to them, is less intense and includes everyday anxiety. Panic attacks are more focused and physically intense whereas phobia is fear of a particular object and may result in phobia disorder if not properly checked. Nwamuo (2005) noted that phobia disorder is found in people of all ages and that fear of tests can lead to school phobia.

Test anxiety on the other hand is seen to be a type of performance anxiety, that is, a feeling someone might have in a situation where performance really counts or when the pressure is on to do well. It is defined as a

combination of perceived physiological over arousal feelings of worry and dread, self depreciating thoughts, tension and somatic symptoms that occur during test situations (http://en.wikipedia.org/wiki/test_anxiety).

It is a physiological condition in which students experience extreme stress, anxiety and discomfort during and/or before taking a test. These responses can drastically hinder an individual's ability to perform well and negatively affect his social, emotional and behavioural development and feelings about himself and school.

Text anxiety is prevalent amongst student populations of the world and is more evident in the developing countries where the learning environment is poor and learning facilities are almost non-existent. More so, in Nigeria, test anxiety among students heightens with government efforts at stamping out examination malpractices which have been the bane over the years. Government established exam ethics commission saddled with the responsibility of going round schools and colleges to teach students the best global acceptable practices in writing examinations, a law was also promulgated introducing twenty one (21) years imprisonment for proven cases of examination malpractice for both teachers and students. Examination bodies on their part had introduced various measures and examination formats aimed at reducing examination malpractice to a minimum. Furthermore, all schools and colleges at all levels are mandated to introduce internal checks to examination malpractices in their various colleges. These checks have resulted in students' expulsion or even withholding of students' certificates in very severe cases. These measures coupled with the current global decrease in the reading culture of present day students are most likely to create a high level of anxiety in students especially when writing tests or examinations.

It is true that everyone feels a little nervous and stressed before any test. Bufka and Barlow (2009) reiterate that a mild to moderate amount of anxiety is normal and even beneficial as it can motivate people to prepare for an upcoming event and can help keep them focused on the task ahead while too little or too much anxiety can cause problems especially social maladjustment. Investigating the levels of test anxiety among tertiary education students is therefore imperative since the level of anxiety one feels before a test can be so strong that it interferes with his concentration or performance.

Statement of the problem

Test anxiety is a fear about one's ability to perform in a testing situation. Presently, in the face of the use of many electronic technology driven devices and facilities of various categories that have continued to distract young people especially undergraduates from reading and studying hard, coupled with poor academic performances of students over the years and their restiveness during examinations, it becomes imperative to ascertain the extent to which test anxiety is contributory to the students physical and social adjustment while writing examinations.

Studies have shown that persons who are high in text anxiety tend to perceive evaluative situations as personally threatening and are usually tense, apprehensive, nervous and emotional aroused (Speilberger, 2012). Other studies indicate that the above worry reactions contribute to performance decrements on cognitive intellectual tasks (Kendra, 2012).

What therefore are the levels of test anxiety of students of Alvan Ikoku Federal College of Education, Owerri? Could the level of test anxiety be dependent on gender, age cohorts (21 to 25 and 26 to 30) or school of study of students?

Purpose of the study

The study aims at specially ascertaining:

i) The level of test anxiety among students.
ii) If the level of test anxiety among students depends on gender.
iii) If the level of test anxiety among students depends on age cohort.
iv) If the level of test anxiety among students depends on their school of study.

Significance of the study

Test anxiety can be a real problem to individuals that they cannot get over the nervousness to focus on test questions and put in their best. The physical symptoms of test anxiety may include fidgeting, muscle tension, sleeping problems, headache or even increased heartbeat, sweating, nausea or dizziness some of the times.

Many students think that going to class is all it should take to learn and do well on tests but there is much more to learning than just hoping to catch everything up in class. Thus, students will recognize the importance of good study habits and other learning skills that are acquired over time with regular study.

Teachers and instructors will identify the various symptoms of test anxiety that manifest during test and should be able to provide adequate counseling as remedy.

Parents and other stakeholders in education will be sensitized of the need to provide a conducive environment for students' learning, one devoid of distractions and anxiety inducers.

Research question

1. What is the level of test anxiety among students?

Hypotheses

Hypothesis 1 (Ho_1)

The level of test anxiety among students does not significantly depend on gender ($\alpha = 0.05$).

Hypothesis 2 (Ho_2)

The level of test anxiety among students does not significantly depend on their age cohort (21 to 25, 26 to 30) $\alpha = 0.05$.

Hypothesis 3 (Ho_3)

The level of test anxiety among students does not significantly depend on their school of study.

Theoretical and empirical review of the study

Anxiety is defined by Cassady (2010) as the psychological mechanism whereby the current intensification of a dangerous drive results in the elicitation of defenses. It is common knowledge that the world today is full of stressors that make various demands on people. The demands have so increased the coping mechanisms of man that those who are unable to cope become maladjusted and are vulnerable to experience fear and anxiety even at any little provocation. This fear according to Nwamuo (2005) may take the form of flight or fight to defend or preserve self, or it may be a perceived danger such as fear of persons or events like examination or taking tests. Such anxiety is characterized by feelings of uncertainty and helplessness whereby the individual senses danger but cannot clearly define and is also unable to identify what action to take in order to handle the danger. Mandler and Serason in 1952 developed the theory that anxiety present in testing situations is an important determinate of test performance. They reiterated that individuals who become highly anxious during tests typically perform more poorly on tests than low test anxious persons, especially when tests are given under stressful evaluative conditions as is usually the case with post secondary examinations in Nigeria. It is painful, uncomfortable and intimidating to experience test anxiety since one's natural fight or flight response is triggered, sensitivity is sharpened and can become an obstacle to performance.

The feelings of forgetfulness or drawing a blank are developed because of anxiety produced interference between relevant responses and irrelevant responses generated from the person's anxious state. A low anxious test taker is able to focus greater attention on tasks required of them while taking the test, while a high anxious test taker is focused on their internal self and the anxiety they are feeling and as such students with high test anxiety are unable to focus their full attention on the test. Researchers like Putwain et al. (2010) found that a low academic self concept was associated with higher worry and tension about their abilities to do well on a test. This points to the fact that a student's meta-cognitive belief plays an important role in the maintenance of negative self beliefs. A person's belief about their own competencies is a form of self knowledge, which plays an important role in analyzing situations that might be threatening. When a person has feelings of low competence about their abilities they are likely to anticipate negative outcomes such as failure, under certain conditions. The cognitive component of test anxiety is widely believed to have a negative impact on test performance through occupying working memory space. When a student is worrying about failing the test or not having the correct answer to a question, they are using up valuable working memory space in the brain. This leaves less space for the working memory to remember facts and concepts that were learned (Cassady and Johnson, 2001). They emphasize that working memory plays an important role in most of what people do on a daily basis though the amount of working memory a person has varies among individuals and often predicts how well they will perform in activities that are imperative for academic success.

Further investigation, however, revealed that under pressure majority of high powered students were found to panic and switch to the shortcuts that low power students normally use. It can be said that the text anxiety feeling experienced by students takes up valuable working memory space, preventing them from accessing their full problem solving approaches. Such experiences when intense, can lead to anxiety maladjustment or disorder.

Spielberger (2012) identified two major components of test anxiety as: (a) worry which arises due to one's cognitive concerns about the consequences of failure, and (b) emotionality reactions of the autonomic nervous system that are evoked by evaluative stress; while Nwamuo (2005) identified anxiety disorder in adults to include panic disorder, agoraphobia or social disorder, phobic disorder, obsessive compulsive disorder, generalized anxiety disorder and post traumatic stress disorder. This is important since symptoms of test anxiety can range from moderate to severe. Students who exhibit moderate symptoms are still able to perform relatively well on exams while students with severe anxiety will often experience panic attacks or any form of the aforementioned disorder and will manifest an unrealistic irrational fear of disabling intensity at its core.

Empirically, a 20 item Test Attitude Inventory (TAI) developed and used by Spielberger (2012) to reflect examination situations amongst students in post secondary education shows that students who are high in test anxiety tend to perceive evaluative situations as personally threatening and are often tensed, apprehensive, nervous and emotionally aroused in test situations. Moreover, the negative self centered worry cognitions which they experience distract their attention and interfere with concentration during examinations. Research indicates that these worry reactions contribute to the performance decrements of test anxious students on cognitive intellectual tasks.

Another survey conducted by Bufka and Burlow (2009) on students aged between 15 and 30 showed that individuals who experience an abnormally high amount of anxiety often feel overwhelmed, immobilized and unable to accomplish any task at hand, and noted that anxiety results from a combination of biological, psychological and social factors. This manifest in symptoms like headache, stomach upset, feeling of fear, feeling of dread, shortness of breath, sweating, pacing or fidgeting, crying, racing thoughts and blanking out.

What causes text anxiety?

All anxiety is a reaction to anticipating something stressful but test anxiety is when a student excessively worries about doing well on a test, this can affect the body and the mind. De Phil et al. (2011) opined that when one is under stress, the body releases the hormone adrenaline, which prepares it for danger. This is actually what causes the physical symptoms experienced such as sweating, a pounding heart and rapid breathing which might be mild or intense depending on individual body make up.

The Anxiety Disorder Association of America (ADAA) identified a variety of variables that cause test anxiety to include:

a) Anxiety, attention or obsessive compulsive disorders.
b) Perfectionist tendencies and unrealistic expectations.
c) Negative self esteem, self statements and criticism.
d) Poor motivation, lack of confidence and procrastination.
e) Inadequate study and test taking skills.
f) Poor prior testing performance.
g) Pressure from peers, family and teacher.
h) Unfavourable testing environments.
i) Invalid flawed and timed tests and
j) Ineffective teaching.

Reducing test anxiety

High test anxiety among students can become a major hindrance on test performance and can cause extreme nervousness and memory lapses but can be reduced with the following tips:

1) Be well prepared for the test we study in advance.
2) Be organized – space out your studying over a few weeks or days and continually review class materials.
3) Maintain positive attitude while preparing for test and during the test.
4) Develop good test taking skills – read questions thoroughly, answer simple ones first and then go back to complete more difficult ones.
5) Study relaxed, breathe slowly and remove any outside pressure.
6) Stay focused – concentrate on test not on other students and avoid any form of malpractice.
7) Stay healthy – get enough sleep the night before, eat healthy and exercise (Kendra, 2012).

The above list though not exhaustive if followed have been proved to be more effective in enhancing academic performance and reduce test anxiety to the barest minimum thereby checking students' restiveness.

METHODOLOGY

The study is a case study which employed the use of a test anxiety meter to determine the level of test anxiety among students.

The population consisted of all the third year degree students of the five schools of the college with a total population of about 2050 students.

Only 205 respondents, representing ten percent of the population were randomly sampled using the systematic approach. 41 students each were systematically selected from each of the five schools using a ratio of 1:10.

The instrument for data collection was a modified form of the test anxiety meter developed and used by Cooper and Champlin (2008). The items of the meter which originally had five (5) points ranging from very low to very high, was modified to only three (3) points of high, moderate and low. The original meter have consistently been used and was found to have a high reliability. However, the reliability of the modified meter used in this study was established using Cronbach alpha. The meter was run or trial tested on an equivalent sample of 20 students to obtain an index of 0.72. This indicates a high measure of the internal consistency of the items.

Students' responses of true or false to the 12 items were analysed and categorized into high, moderate or low. Chi-squared statistics was then used to ascertain any significant dependence of the students' anxiety level on gender, age cohort and school of study at $\alpha = 0.05$.

RESULTS

Research question 1

What is the level of test anxiety among students?

From Table 1, it can be seen that 90 out of 205 respondents have high anxiety, representing 44% of the sample, 75 respondents have moderate anxiety representing

Table 1. Level of test anxiety among students.

Anxiety level	No. of students	Percentage (%)
High	90	44
Moderate	75	36
Low	40	20
Total	205	100

Table 2. X^2 table of significant dependence on gender.

O	E	O – E	$(O – E)^2$	$\frac{(O – E)^2}{E}$
26	37.3	-11.3	127.69	3.42
37	31.1	5.9	34.81	1.12
22	16.6	5.4	29.16	1.72
64	52.7	11.3	127.69	2.42
38	43.9	-5.9	34.81	0.79
18	23.4	-5.4	29.16	1.25
		0		10.76

36% while only 40 respondents have low anxiety, representing 20%.

Hypothesis one (Ho_1)

The level of test anxiety among students does not significantly depend on gender (α = 0.05).

Hypothesis 1 is tested using chi-squared statistics of significant dependence and the X^2 outcome obtained is as shown in Table 2.

From Table 2, the chi-squared (X^2) calculated value is 10.76 while the table value at 2 degrees of freedom and α = 0.05, is 5.991. Since the calculated X^2 value of 10.76 is greater than the table value of 5.881, we reject the null hypothesis and accept that the level of test anxiety among students is significantly dependant on gender.

Hypothesis two (Ho_2)

The level of test anxiety among students does not significantly depend on their age cohort (α = 0.05).

Hypothesis two was also tested using chi-squared (X^2) statistics of significant dependence and the result is given in Table 3.

The calculated X^2 value from Table 3 is 6.1 while the table value at 2 degrees of freedom and an error level of 0.05 is 5.991. The X^2 calculated value of 6.1 is greater than 5.991, the table value so we reject the null hypothesis and accept that the level of test anxiety among students is significantly dependent on their age cohort.

Table 3. X^2 table of significant dependence on age cohort.

O	E	O – E	$(O – E)^2$	$\frac{(O – E)^2}{E}$
73	75.5	-2.5	6.25	0.08
62	55.7	6.3	39.69	0.71
28	31.8	-3.8	14.44	0.45
22	19.5	2.5	6.25	0.32
8	14.3	-6.3	39.69	2.78
12	8.2	3.8	14.44	1.76
		0		6.1

Table 4. X^2 table of significant dependence on school of study.

O	E	O – E	$(O – E)^2$	$\frac{(O – E)^2}{E}$
16	14.6	1.4	1.96	0.134
12	11.9	0.1	0.01	0.000
6	7.5	-1.5	2.25	0.300
17	16.7	0.3	0.09	0.005
14	13.7	0.3	0.09	0.007
8	8.6	-0.6	0.36	0.042
17	17.2	-0.2	0.06	0.002
14	14.0	0.0	0.00	0.000
9	8.8	0.2	0.04	0.005
21	21.5	-0.5	0.25	0.012
17	17.6	-0.6	0.36	0.020
12	10.9	1.1	1.21	0.111
17	18.0	1.0	1.00	0.056
15	14.8	0.2	0.04	0.003
10	9.2	0.8	0.64	0.070
		0		0.767

Hypothesis three ($H0_3$)

The level of test anxiety among students does not significantly depend on their school of study (α = 0.05).

The hypothesis is also tested using the chi-squared statistics of significant dependence and the outcome is given in Table 4.

Table 4 shows calculated X^2 value to be 0.767, while the X^2 value at 8 degrees of freedom at 0.05 error level is 15.51. Since the calculated X^2 value of 0.767 is less than the table X^2 value of 15.51, we accept the null hypothesis that the test anxiety level among students is not significantly dependent on their school of study.

DISCUSSION

The analysis indicated that a higher number of the

respondents had high anxiety compared to those with moderate and low anxiety. This high anxiety level is identified by Lyness (2010) to interfere with students concentration and/or performance while Speilberger (2012) purports that such students are often apprehensive, nervous and emotionally aroused and are more likely to be involved in examination malpractices to make up for the anxiety. Researchers suggest from independent studies that between 25 to 40% of students experience test anxiety (Cassady and Johnson, 2001; Ikebuna, 2013; Okeke, 2010). This percentage range aligns with the result of this study which indicated that 44% of the respondents have high anxiety. The researchers are of the view that students who experience anxiety tend to be easily distracted during a test, experience difficulty with comprehending instructions and have trouble recalling relevant information. Thus, the identified high level of text anxiety exhibited by the respondents in this study must serve as a watch and call to prompt action by the school management instructors and academic counsellors.

The findings also showed that the level of test anxiety among students of the institution under investigation significantly depended on gender and age cohort but independent on the school of study. The significant dependence on gender may not be unconnected with the research findings by the National Institute of Mental Health as pointed out by Adeoye and Issah (2010) where it was reported that 70% of women had depressive symptoms due to emotional instability arising from hormonal changes. It was also noted that one in ten women suffer from serious depression which results in sex related difference in cognition, temperament and social behaviour; this becomes evident easily with any form of anxiety.

In the same vein, the significant dependence of test anxiety level on age cohort corroborates assertion that younger students are highly involved with the operation and manipulation of high technology devices like computers, mobile telephones, internet facilities etc. that take up much of their time that they have little or no time to read and prepare for tests. Corroborating the above claim, Nwamuo (2005) reiterates that environmental factors have a tremendous influence on students anxiety level though she pointed out that genetic predispositions reveals a higher influence, meaning that anxiety and even anxiety disorder are two or three times more prevalent among children whose parents have anxiety and/or anxiety disorder. The independence of test anxiety level of students on their school of study goes to show that the students are exposed to the same experiences in the society and are affected equally no matter their course of study as Okeke (2010) purports that the antisocial behaviour among students have tremendously increased in intensity and magnitude in recent years and seem to cut across youth groups irrespective of tribe, religion or class and suggests that the rising trend be eliminated in the society.

It can be inferred that anxiety can be reduced if students are conscious of the stressors and avoid them. All hands must therefore be on deck.

RECOMMENDATIONS

The following recommendations were made:

1. Teachers, instructors and academic counselors should counsel students during instruction on ways of reducing anxiety by preparing well before any test thereby building self confidence.
2. All stakeholders in education, school management, parents and teachers should provide enabling environment for study, through provision of basic infrastructure and learning materials.
3. The youthful energy of students should be meaningfully utilized by designing various programmes to keep them meaningfully engaged through school period.
4. Anxiety inducers should be avoided as much as possible especially for the female students.

Conclusion

Most students experience some level of anxiety during examination. However, when such anxiety affects academic performance, it has become a problem. Students should be made to continually review their personal situation and skills by developing good study habits and strategies, design effective time management, be prepared ahead of time and approach all examinations with confidence. As much as one should expect some form of anxiety before any test, it should be a reminder to do one's best and should be managed for success rather than become a habit that will turn into a major hindrance on test performance.

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