

CORRELATES OF TEST ANXIETY AMONG SECONDARY SCHOOL STUDENTS

Okwori, Sunday, A, and Ihwakar, F. Terna

Abstract

Test anxiety is a major problem among secondary school students. It is on this basis that this study was carried out to determine the correlates of test anxiety among Secondary School Students with a view to helping them perform better in subsequent test and examinations. Towards this end, the student anxiety scaled (SAS) was developed and validated. The psychometrics of the instrument were also determined. Research questions and hypotheses based on the purpose of the study were formulated to guide the study. The study was conducted in Vandeikya Education Area Zone of Benue State. This sample size for the study was 400 (201 males and 199 females) drawn from the four Schools. The SAS developed by the researchers was the instrument for data collection. The Finding shows that the instrument is valid and reliable. The data collected were analysed using descriptive statistics, Pearson moment correlation, point Biserial correlation and ANOVA. The major findings indicated that there is a significant effect of gender, academic achievement level, class of study and location on test anxiety of students.

Background and Problem of Study

Anxiety is a major problem among students in our educational institutions today. It affects students' achievement in an examination (Denga 1987). It is common to belief that poor performance of students in tests or examinations have often been blamed on teachers. Teachers also are accused oi inefficiency and lack of dedication to duty. Some parents too, wonder why the why their children perform below expectations in examinations. This implies that there are factors other than teacher and intelligence that would affect a child's performance. Test anxiety has been identified as one of such factors.

Anxiety, generally has no singly accepted definition. Many experts inferred it in some ways. Gilbert (1994) and Clock (1967), explained anxiety to be an unpleasant emotional state which consists of feeling of tension, apprehension, nervousness, worry and activation of the automatic nervous system which gives rise to psychological manifestation such as sweating, trembling, restlessness and changes in heart-rate.

Similarly, Cider, Geothais, Kavanugh and Solomon (1993), regarded anxiety as the most common stress, emotions and described an anxious person as worried, apprehensive and powerful. They identified the various symptoms of anxiety, which include feeling tensed, nervousness, spells of panic and feeling that familiar things arc strange.

Prevalence of test anxiety (Denga, 1987; Ogonna, 1993), have been reported in our schools. Denga, envisaged that students who get pre-occupied with worries and task-irrelevance thoughts about the test especially, during the testing period, will not perform creditably to the best of their abilities because their attention have become polarized between worries and thinking our answers to the question.

On the relationship between test anxiety and academic achievement, it is evident that certain personality characteristics correlate negatively with intellectual performance measure. It would, therefore, seem important to take this correlation into account in some way in evaluating student. John and Kenneth (1982), while confirming the relationship between test anxiety and academic achievement observe that high test anxious subjects made more errors and thus performed less than low test anxious individuals.

Directives of the Study

The purpose of this study are lo determine specifically:

1. The causes of test anxiety among secondary school students.
2. The test anxiety levels of students.
3. The relationship between test anxiety and gander, class of study, academic achievement

- and school location.
4. The effect of gender, school location, class of study and academic achievement on the secondary school students.

To achieve these objectives the following research questions and hypotheses were formulated to guide the study.

Research Questions

1. What is the internal consistency of the students' anxiety scale (SAS)?
2. To what extent is the SAS factorially valid?

Research Hypotheses

1. There is no significant relationship between the students' academic achievement and their test anxiety.
2. There is no significant relationship between students' gender and their test anxiety.
3. There is no significant relationship between the students' class of study and their test anxiety.
4. There is no significant relationship between the school location and students' test anxiety.
5. The factors academic achievement, gender, class of study and school location has no significant effect on the secondary school students' test anxiety.

Design of the Study

This study combined descriptive, correlational and ANOVA nature of the study is reflected in research design. The descriptive nature of the study is reflected in presentation of the psychometric properties of the students' anxiety scale dealing with internal consistency and factorial validity. Correlational and ANOVA research designs are also adopted because they aim at discovering the relationships and effects of the variables on performance.

Population and Sample of the Study

The population of the schools for this study consisted of all secondary schools in Vandeikya Area Education Zone of Benue State. However, the focus was on the target population of junior secondary two (JS2) and senior secondary two (SS2) in education zone of the state. The choice of two classes of JS2 and SS2 for the study was based on Sarason's (1957), assertion of relationship between U-st anxiety and class level. The JS2 represented the low class; and SS2 for the high-class level. Students in JS2 and SS2 with long exposure to testing situation both at their primary and secondary school levels stand a good chance of indicating whether they are prone or not to test anxiety. There are 22 Secondary School in the zone.

Therefore, using a proportional technique, 4 schools were sample: two from the urban and two from the rural area. Random sampling was used to select the two schools from the urban and two rural. On the whole, a total of 400 students (male 201; female 199) were drawn from the 4 schools used for the study.

Instrumentation

The instrument for this study is the student's anxiety scale (SAS), which was developed and validated by the researchers. The scale has two parts. The first part was on personal information, which enables the researchers to know the class and gender of the student.

The second is the students' anxiety questionnaire for which respondent indicated the degree or magnitude a particular item statement affects of applies to him/her.

The stages involved in the development and validation of the students' anxiety scale is as described below:

Firstly, a literature search was undertaken to identify relevant issues from previous studies on students' anxiety and academic performance.

Secondly, there were consultations with the experts in the fields of Guidance and counseling, psychology and test and measurement in the Benue State University, Makurdi and University of Jos to give their expert judgment on the adequacy and comprehensiveness of items as well as the clarity, of expression used. To do this effectively, the judges were provided with the purpose of study and research questions/hypotheses. Thus, with the initial item of 50, it was only 25 that survived for the study.

Awtunde, Ugodulunwa, Ozoji (1997), confirmed that content validity makes the instrument to be a representative of the universe of the trait being measure. Towards this end, the validity of the instrument was obtained by subjecting the instrument to factorial analysis. The factor analysis was done using the statistical package for social sciences at the university of Jos, Computer Centre. The analysis was based on the varimax rotation (Orthogonal) option. This was used to establish the factorial validity of the SAS.

The reliability analysis was carried out using Cronbach alpha method to establish the internal consistency of the scale. The results of the analyses are presented in the result section of this paper. An official permission was obtain from the principal of schools designed for the study and solicited students to rate themselves on a 5-point scale of Strongly Agree (SA); Agree (A) Disagree (D); Strongly Disagree (SD) and Undecided (U). Each student was to indicate his/her degree of agreement of disagreement with the statements. The researcher collected, the rating and scored them according to the prescribed procedure.

Results

The data collected were analysed according to 'the research questions and hypotheses that guided the study.

The Results of the Analyses are Presented on Tables Below:

Table 1: Internal Consistency of the Student anxiety Scale

Instrument	No. of Items	Coefficient Alpha
Student anxiety scale	25	0.79

Table 1 indicates that the internal consistency of students' anxiety scale was 0.79. The reliability coefficient established for the scale is moderately high and this indicates the homogeneity of its items. This indicates that the scale is reliable.

Table 2: Varimax Rotated Factor Matrix for the Students' Anxiety Scale

Item	Fact ors													Factorial complex ity	Com muna lity
		1	2	3	4	5	6	7	8	9	10	11	12		
1.	.168	.308	.338	.060	.050	.325	.225	.312	.322	.025	.002	.014		6.126	.637
2.	.128	.059	.400	.254	.277	.277	.219	.315	.068	.289	.331	.130		7.659	.752
3.	.382	.033	.061	.039	.080	.046	.035	.650	.091	.381	.167	.140		2.998	.737
4.	.093	.220	.129	.083	.017	.057	.041	.727	.023	.064	.009	.023		1.362	.619
5.	.048	.018	.589	.818	.230	.026	.023	.015	.192	.150	.145	.080		2.194	.757
&.	.177	.703	.275	.088	.114	.585	.070	.221	.183	.135	.145	.080		2.194	.757
7.	.260	.531	.275	.088	.144	.585	.070	.221	.183	.135	.145	.010		3.489	.750
8.	.171	.011	.745	.043	.119	.091	.074	.347	.147	.111	.030	.154		1.978	.802
9.	.028	.725	-.006	.049	.107	.115	.041	.236	.007	.068	.069	.030		1.379	.802
HL.	.031	.050	.75	.065	.801	.058	.122	.051.	.092	.071	.075	0.91		1.199	.703
11.	.211	.098	.105	.679	.393	.067	.012	.123	.120	.093	.238	.087		2.657	.804
12.	.131	.025	0.14	.177	.055	.062	.067	.134	.019	.824	.03	.102		1.151	.804
13.	.107	.096	.101	.017	.097	.092	.869	.028	0.42	0.58	.005	.023		1.151	.811
14.	.526	.286	.125	.104	.114	.218	.257	.091	.041	.017	.142	.322		4.095	.646
17?	.431	.143	.371	.081	.386	.054	.331	-.176	0.78	.086	.081	.144		5.212	.646
10.	.026	.020	.255	.220	.415	.031	.136	.038	.527	.019	..245	.180		3.887	.679
17.	.698	.107	.016	.111	.164	.016	.078	.008	.066	.148	.27	.007		1.566	.679
18.	.041	.057	.650	.109	.270	.051	.038	.184	.200	.102	.027	.117		2.043	.619
19.	-.007	.104	.025	.094	.095	.037	.039	.014	.020	.195	.156	.841		1.297	.807
20.	.215	.086	.071	.029	.046	.124	.057	.088	.073	.038	.808	.176		1.410	.779
21.	.182	.051	.032	.026	.020	.017	.016	.042	.886	.046	.176	.030		1.194	.859
22	-.683	.235	.129	.034	.233	.018	.218	.044	.257	.078	.014	.135		2.235	.715
23.	.190	.078	.019	.066	.167	.082	.268	.467	.360	.179	.488	.059		4.637	.774
24.	.071	.217	.063	.049	.127	.815	.070	.133	.090	.002	.214	.080		1.516	.823
ELJCI v.iluc	4.452	1.842	1.772	1.434	1.332	USfi	1.21!	1.212	1.041	1.021	1011	0.846			
... Value	17.H	7.4	7.1	5.7	5.3	5	4.8	4.5	4.2	4.1	4	3.45			

Table 2 shows that, twelve factors were identified as underlying the students' anxiety scale and their loadings. The factor loading indicates correlations between the SAS items and the factors.

Item 14, 17 and 22 loaded heavily on factor 1. Items 6, 7 and 9 loaded heavily on factor 2. Items 8 and 18 loaded heavily on factor 3. Items 5 and 11 loaded heavily on factor 4. Also, item 10 on factor 5. Items 7 and 25 loaded heavily on factors on factor 6. Items 3 and 4 loaded heavily on factor 8. Items 21, 12 and 20 loaded heavily on factor 12. A total of 22 items were retained and 3 discarded.

The communality values of the items are all high (that is, greater than 5). Since all the communality values are quite high, the 12 factors can be considered to be important in the underlying factors for students'

test anxiety.

The factorial complexity values indicate that 12 of the 25 items are factorially pure while (the remaining 13 items are factorially complex. This shows that some of the factors are related.

The eigen values are the sum of squares of the loadings of each item for each of the identified factor. The amount of variance accounted for by each of the factors is usually obtained by dividing the eigen value of each factor by the number of variables or items.

Factor I accounted for 17.8% of the total variance while factor 12 accounted for only 3.4% of the variable in the students test anxiety score. The 12 factors accounted for 73.3% the total variance in students' test anxiety.

Hypothesis 1

There is no significant relationship between the students' academic achievement and their test anxiety score.

Table 3: Relationship Between Academic Achievement and Test Anxiety Score Using Pearson Product Moment Correlation

Academic achievement TA Score	Correlation	Court	T-value	Z- value	P- value	95% lower	95% upper
	-.242	400	20.319	-4.909	<.0001	-.332	-.147

Df = 398: t-table or critical (0.05) is 1.658

There is therefore a negative relationship between academic achievement and test anxiety.

Hypothesis 2

There is no significant relationship between students' gender and their test anxiety

Table 4: Result of Analysis of Relationship Between Test Anxiety and Gender

Gender	Statistics X n	S rpb	Significant	
Male	61.11	201	-.269	20.44
Female	67.16	199		<.05
Total	400			

Df=398: t-table is 1.980

There is therefore a negative relationship between students' gender and their test anxiety.

Hypothesis 3:

There will no significant relationship between the students' class of study and their test anxiety

Table 5: Result of Analysis of Relationship Between Test Anxiety and Class of Study

Class os	Statistics X	S	n	rpb	Significant t- value level'
SS2	62.869	11.261	200	-.111	19.96
JS2	65.375		200'		< 05
Total	~		400		

Df = 398: t-table for 2-tailed test (0.05) is 1.980

The result shows that there is a relationship between students' class of study and their test anxiety.

Hypothesis 4:

There is no significant relationship between the school location and the students' anxiety.

Table 6

School location	Statistics X	S rpd	n	Significant t-value level
Urban	60.82	11.261	200	-.29341
Rural	67	42	200	20.575
Total	400			<.05

Df = 398; t-table or critical value (0.05) 1.980

There is a significant relationship between school location and the students' test anxiety.

Table 10: ANOVA Result of the Effect of Location on Test Anxiety

Source of variation	Df	Sum of squares	Means squares	f- value	p-value
Location	1	4356.00	4356.00	37.490	<. 0001
Residual	398	46244.240	116.192		
Total component variance		21.119			

The analysis indicated that there is a significant effect of location on test anxiety. Urban students are less test anxious than the rural students.

There is therefore, a significant effect of gender, academic achievement level, class of study and location on test anxiety of students. The tables 7, 8, 9 and 10 confirmed to this statement.

Discussion

The internal consistency of the students' anxiety scale (SAS) is very high. The high reliability indicates the degree of homogeneity of its items and lends credence to their validity. This implies that the scale is suitable for assessing the anxiety level of secondary school students.

The factor analysis result of the SAS shows that twelve factors were identified as underlying the students' anxiety scale and their loadings. The twelve factors are fear of exam, worries about what others will say, worry about performance in examination, brain block, dislike for exams, worry about performance by parents, worry about performance even after examination, fear of failure, make mistakes due to tension, fear consequence of failure. Shaking of voice cancellation and finally breathing is faster than usual.

Hence, the SAS was found to be factorially valid. They are considered to be important in the underlying factors for students' test anxiety.

It was also found that there is a negative relationship between academic achievement and test anxiety. This means that high academic achievements have low-test anxiety and vice versa. On whether there is any significant relationship between students' gender and their test anxiety, it was found that girls are more test anxious than boys and girls because of their feminine nature are afraid of test and affects their performance. It is therefore, advisable for teachers to involve in actions that reduce test anxiety among female students in schools.

The possible reason may be (hat females with low academic achievement than males have higher test anxiety.

Furthermore, there is a revelation that low academic achievement levels are more test-anxious than the high. This reveals that low academic achievers are afraid of test than the high. Classroom teachers should be aware of this so as to know how to talk about tests.

Finally, there is a significant effect of location on test anxiety. Urban students are less test-anxious than the rural ones. This goes a long way to say that urban students perform academically better than the rural ones. This finding is consistent with the assertion by Durojaiye (1976) that environment affect most of the behaviour characteristics shown in different penalty traits. This implies that environmental fathers affect the teaching and learning conditions.

Recommendations

The researchers therefore, recommend the following measures to teachers in the classroom and other policy makers in educational practices to enhance the product of our education.

1. Firstly, some factors that create excessive test anxiety in testees should be reduced.
2. Testees have to be reassured that the test will be for improving their learning.
3. Do not talk unnecessarily before the test because you well-intended remark may merely increase anxiety toward the test.
4. The need for training of more Psychometricians in appropriate university faculties/department to improve on the standardization of the tests.
5. Teachers should cultivate the development of positive attitude in their students since disposition of positive attitude towards a subject or activity help the individual perform better.

Conclusion

This study was carried out to determine the correlates of test anxiety among secondary school students. There abound serious problem of test anxiety, which affect students in secondary schools. The findings indicated that low academic achievement level; female students, junior secondary students and rural ones are worst affected. Therefore, the recommendations of this research will help both classroom teachers and the policy makers in our educational sector.

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