Test Anxiety and Academic achievement: A Correlative study among Undergraduate level students in Assam, India

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Abstract:

The present study focuses on the relationship between the test anxiety and academic achievement of undergraduate level students under Dibrugarh university of Assam. It also tries to investigate the level of anxiety between boys' and girls' students. For this purpose a standardized questionnaire constructed by Prof. V.P. Sharma was administered to 120 boys' and girls' students. Pearson's Product moment coefficient-correlation method revealed that there is a significant positive correlation between test anxiety and academic achievement. The Chi-square technique on the other hand revealed no significant difference regarding anxiety level between boys' and girls' students. It is assumed that a moderate anxiety is not harmful whereas extreme level of anxiety is always affective which may lead a student to low performance, stressful, depressive and even suicidal situation. Remedial suggestions to reduce test anxiety of the study are proper care, inspiration and guidance of parents and teachers, moulding study habits, a congenial teaching-learning environment, arrangement of spiritual development and life skill training, coping strategies etc.

Keywords: *Test anxiety, Academic Achievement, Undergraduate students, Correlation.*

I. INTRODUCTION

Education is considered as one of the significant determinants of overall development of a nation. It is the only key which can mold an ordinary human being as a productive human resource. Higher education is the backbone of all kinds of development of a nation. Undergraduate or college education is an indispensable part of higher education. Test and examinations at all stages of education especially at higher education level have been considered an important and powerful tool for decision-making in our competitive society, with people of all ages being evaluated with respect to their achievement, skills and abilities (Rana, R.A. & Mahmood, N., 2010). It is assumed that the high achievers in various tests can contribute a lot towards the development of a society more than that of the low achievers. Sometimes even it is thought that low achievers are the burden for the family, teachers and the society at large. Test anxiety is a multifaceted response to examination situations, comprising a complex interplay of cognitive, behavioral, emotional, and physiological elements. In simple words students with test anxiety have a problem in concentrating on any test. A little bit of nervousness can actually be helpful, making the students feel mentally alert and ready to tackle the challenges presented in an examination. Excessive fear, on the other hand, can make it difficult to concentrate and they might struggle to recall things that have been studied. It has been found that students consistently perceive examination as a source of increase in anxiety and a situation engulfed with uncertainty/unfairness in letting them demonstrate their true achievements (Zollar & Ben-chain, 1990; Spielberger, 1985). The present study intends to explore the relationship between the test anxiety and academic achievement of the students, more particularly the undergraduate level.

I.I. Review of Related Literature

Extensive studies have been conducted on academic achievement and several factors have emerged as critical in academic success. Anxiety pertaining specifically to the anticipation and experience of academic examinations was first flagged as an important aspect of stress researched by Sarason and others in the 1950s (Mandler & Sarason, 1952; Sarason, 1959). They showed that students with test anxiety have a problem in focusing on a particular test. Liebert & Morris (1967) studied deeply on test anxiety among a group of students and found that worry and emotionality are the two major components that exert influence on academic achievement of students. The first refers to worries about evaluation, concerns about the possibility of failing due to past performance. Emotionality refers to a person that experiences autonomic symptoms such as nausea, headache, and increased heart palms that have been caused by the test. Although these two components differ, research has shown that there is a positive correlation between them (Liebert & Morris, 1967; Deffenbacher, 1980). Satake, Eiki and Amato (1995) studied the incidence, correlates and effects of mathematics anxiety on their scholastic achievements of Japanese children, and compared the same with mathematics anxiety among American children. J.C. Cassady and Ronald E. Johnson (2001) studied on cognitive test anxiety and academic performance and found that the cognitive explanations of performance deficits encountered by students will heighten levels of test anxiety. Researchers like Cassady & Johnson (2002); Chapell et al. (2005) & Jing (2007) has shown that there is a negative relationship between anxiety and academic performance. Students with high levels of test anxiety indicate a weak performance not only during class but also on scheduled tests or exams (Chapell et al., 2005).

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Rizwan Akram Rana and Nasir Mahmood (2010) studied on the relationship between Test Anxiety and Academic Achievement and found that a significant negative relationship exists between test anxiety scores and students' achievement scores.

I.II. Rationale of The Study

Undergraduate university students are frequently used as convenient, nonclinical samples in psychological surveys and experiments. In the context of their general experiences of anxiety, it can be assumed that test anxiety is particularly pertinent to this population. Being a teacher of undergraduate level for the last ten years under Dibrugarh University, Assam the investigator has experienced that a good number of students suffer from test anxiety during their examination time whether it is unit test or sessional test or end semester examination. Before entering the examination hall they behave in such a way that the test is just like a never solving problem or burden for them. They are seen mentally stressed, physically unstable and emotionally over excited. Sometimes, it is also experienced that owing to excess fear of exam they forget everything and can't do the exam well and as a result commits suicide. So, it is need of the hour to find out the factors that exert negative impact on the academic performances of the students and adequate remedial measures must be taken so that they are capable of effectively managing test anxiety which would lead them to a better future life. That is why the investigator has selected this crucial problem. It is assumed that the study would reflect the overall scenario of the entire college students of Assam.

I.III. Objectives

The major objectives of the study are-

- To study the levels of achievement and test anxiety along with their correlation of the college students.
- To have a comparative study of test anxiety between the boys' and girls' students.

I.IV. Hypotheses

Based on the above objectives, the following null hypotheses are formulated:

Ho$_1$: There is no significant difference between test anxiety and academic achievement of the college students.

Ho$_2$: There is no significant difference of level of test anxiety between the boys' and girls' students.

I.V. Delimitations of The Study

This study is limited to only under graduate (UG) students of provincialized colleges of two districts of upper Assam (India) namely Sivasagar and Jorhat. Secondly, it is confined to only one correlate of achievement i.e., Test Anxiety. Thirdly, only Arts, Science and Commerce students are considered here as samples. Fourthly, academic achievement of the students is counted based on their results that are safely recorded in the respective college offices.

II. METHODOLOGY

II.I. Method Used in The Study

Descriptive survey method of research was used to conduct the present study. The required data were collected from both the primary as well as secondary sources. The primary data were collected with the help of a standardized psychological tool namely 'Test Anxiety Scale (TAS)' constructed by Prof. V.P. Sharma and also from office records kept by the concerned colleges. On the other hand the secondary data were collected from books, journals, periodicals, seminar proceedings, internet etc.

II.II. Sample

In order to collect the sample, random sampling technique was employed. A total of 120 samples were collected out of which 60 samples were collected from boys' students and rest 60 samples from the girls' students. For this purpose, total 10 nos. of under graduate colleges from both the districts were selected. 12 samples from each college were collected out which 06 samples were boys' and 06 samples were of girls'.

II.III. Tools

In the present study a Questionnaire popularly known as 'Test Anxiety Scale (TAS)' constructed and standardized by Prof. V.P. Sharma, Ex-Professor and Head, Dept. of Psychology, Pt. Ravishankar Shukla University, Raipur (India) was used as a tool. This questionnaire has already been recognized and published by the National Psychological Corporation, Agra. Moreover, a personal data sheet was also used so as to collect the office records.

II.IV. Statistical Techniques

In order to test the null hypotheses formulated for the study, statistical techniques like Mean, Standard Deviation, Skewness, Kurtosis, Product moment co-efficient of correlation (r) etc. were used. Chi-square ($\chi2$) test was employed to test the significance difference of test anxiety between the boys' and girls' students.

III. ANALYSIS AND INTERPRETATION OF DATA

After collecting the data they were classified, tabulated and analyzed in the following ways-

Table-1: Level of Academic Achievement.

Sample (N)	Mean	SD	Skewness	Kurtosis
120	5.12	0.41	0	0.44

From Table-1, it is observed that the mean and standard deviation of academic achievement of the sampled students were 5.12 and .41 respectively. The computed skewness value i.e., 0 indicates that the distribution of academic achievement scores is massed at the middle. On the other hand the computed kurtosis value i.e., 0.46 indicates that the distribution is platykurtic, i.e. the distribution is flatter than the normal distribution.

Table-2: Level of Test Anxiety

Sample (N)	Mean	SD	Skewness	Kurtosis
120	66.02	7.98	-0.55	0.52

From Table-2, it is observed that the mean and standard deviation of test anxiety scores of the sampled students were 66.02 and 7.98 respectively. The computed skewness value i.e., -0.55 indicates that the distribution of the test anxiety scores are skewed negatively or to the left as scores are massed at the high end of the scale. On the other hand the computed kurtosis value i.e., 0.52 indicates that the distribution is platykurtic, i.e. the distribution is flatter than the normal distribution.

Testing H_{o1}: To test the first null hypothesis, Karl Pearson's product moment correlation-coefficient (r) technique was employed and the significance was tested as shown in the table no.-3 given below-

Table-3: Correlation between test anxiety and academic achievement.

Variables		Product-moment correlation-coefficient (r)	Interpretation	
			Significant at 0.05	Significant at 0.01
Academic Achievement	Test anxiety	0.86	High positive correlation	High positive correlation

From Table-3, it is clear that the computed r-value between the test anxiety and academic achievement is 0.86 which was found significant at both 0.01 and 0.05 level. Because the calculated value is greater than the table values and it indicates having a high positive correlation. Thus, the formulated null hypothesis is accepted and it can be concluded that there is a significant positive correlation between test anxiety and academic achievement of the sampled college students.

Testing H_{o2}: To test the second null hypothesis, Chi-square $(x2)$ test was employed and the significance was tested as shown in the table no-4 given below-

Table-4: Comparative study of test anxiety between boys' and girls' students.

Variable/ sample type	Sample	Chi-value	df	Critical value at-	
				0.05	0.01
Boys'	60	4.12	1	5.33	6.27
Girls'	60				

From Table-4, it is observed that the computed chi-value of test anxiety between the boys' and girls' students is 4.12. It was found insignificant at both 0.01 and 0.05 level as the computed chi-value was much lower than the critical values i.e., 5.33 and 6.27 respectively. Thus, the formulated null hypothesis is accepted and it can be concluded that the level of test anxiety between boys' and girls' students are same that exert influence on their academic achievement.

IV. RESULTS AND DISCUSSION

The present study after treatment of data revealed so many aspects regarding test anxiety and academic achievement of undergraduate students in both the districts. It was found that the performances of the students in their different examinations were not so satisfactory. There may be several causes out of which parental apathy, lack of guidance and involvement on the part of teachers, lack of adequate infrastructure facilities; unattractive teaching-learning environment may be highlighted. On the other hand it may be assumed that the students were also equally responsible as it is known to all that willpower is the key factor of any kind of success. The study also revealed that the level of test anxiety of sampled students was not too high or remarkable. It was quite evident from the quantitative analysis of data. It may be due to congenial home environment, proper care taken and guidance provided by the teachers, positive thinking and constructive discussion among the peers etc. According to Begum, Sehnaz (2015), 'lower level of test anxiety may be due to having a positive outlook towards life and career'. The null hypothesis formulated for the first objective in this study was rejected and it was found that there is a significant positive correlation between test anxiety and academic achievement of the sampled college students. It indicates that higher the level of test anxiety, better the academic achievement of the students. In her study Begum, Sehnaz also revealed that 'the students with high test anxiety are more likely to achieve better academically than the students with low test anxiety.' Another major finding of the study is that there is a significant correlation regarding the level of test anxiety between boys' and girls' students that exert influence on their academic achievement. It can be assumed that with the help of parental care, sound learning environment in family, alertness and sympathetic attitude of teachers and such other associative variables, the students can show better performance in the examinations irrespective of sexes and vice versa.

V. SUGGESTIONS AND CONCLUSIONS

Though it is generally assumed that anxiety is one of the most negative emotions that all human beings experience in their life, but a certain level of anxiety is said to be normal when its intensity and character are appropriate. It has useful functions as it increases the person's readiness for prompt and vigorous actions (M. Suvarna Raju, 2013). The major findings found in the present study shows that if the levels of anxiety of the students are effectively managed, it would definitely help them in improving their academic achievement. Therefore adequate remedial measures should be taken by the family, educational institutions and the Government itself. Some of them may be the following –

a. Study habits among the students should be formed from the very early period along with certain kinds of learning skills such as what, why, when and how to study?

b. The family and the colleges should keep an eye towards creating a congenial student-centric environment with sufficient infrastructure facilities so that each and every student may feel comfort, relaxed and secured to learn anything without any hesitation.

c. Low academic achievers should never be ignored. Rather the guardians and the teachers should try to better understand that they need special care and guidance so that they can boost up their level of academic achievement.

d. Constant parental pressure, over expectation of the teachers, unnecessary competitions among the students etc. should never be exercised.

e. Sufficient food, sleep and amusement are the unavoidable elements that may lead the students not only showing good performances in various tests but also help them to be psycho-physically sound person.

f. Spiritual development, coping strategies, meditation, yoga, appropriate aspirations etc. may also help in reducing the high level of anxiety.

VI. SUGGESTIONS FOR FURTHER RESEARCH

The present study brings to light a good number of new areas to be studied by future researchers. The variables and areas that are not covered by this study may be put to test to enlighten the other associated factors. Keeping in view the following suggestions are forwarded for further researcher-

1. This study can be extended to all stages of education i.e., from primary to post graduation level at state and national level.

2. Study can be done on some factors like aspiration, attitude, adjustment and other personality factors to know their effect on anxiety.

3. Comparative study can be undertaken between level of test anxiety and academic achievement of students in District wise and state wise.

4. Studies can be taken up to find out the influence of the environment of home, educational institutions, neighbors and peer groups on the anxiety of the students.

VII. CONCLUSION

In the present study it is established that there is a significant positive correlation between test anxiety and academic achievement of students of undergraduate level particularly in two districts of Assam. In addition to, it is also observed that there is no significant difference of test anxiety between the boys' and girls' students. It proves that a certain level of anxiety is always normal and good for human being. In other words, a moderately anxious person is more apt to be vigilant, cautious and reaction sensitive to slight stimulation (M. Suvarna Raju, 2013). On the other hand, the extremely high test anxiety may lead to low quality performance, depression, suicide etc.(Begum, Sehnaz; 2015). Thus, it can be concluded that adequate remedial measures should be taken to reduce extremely high test anxiety by all- family, teachers and the government with some concrete policies and every counterpart should deeply feel that it is the need of the hour.

VIII. REFERENCES

1. Begum, Sehnaz (2015), *A study on the Level of Test Anxiety of B.A. 2nd Semester Students of Provincialised Colleges of Nalbari Town in Relation to their Academic Achievement*, Res. J. Educational Sci., Vol. 3(5), 10-13

2. Bhadouria, Preeti (2013), *Role of Emotional Intelligence for Academic Achievement for Students*, Res. J. Educational Sci., 1(2), 8-12

3. Bharathi, V.V. (2011), *Anxiety Behaviour in Children*, Discovery Publishing House Pvt. Ltd, New Delhi

4. Bhaskara Rao, (Dr.) Digumarti & Harshitha, Digumarti (2015), *Adjustment of Adolescents* , Discovery Publishing House Pvt. Ltd, New Delhi

5. Cassady J.C. & Johnson, Ronald E. (2002), *Cognitive Test Anxiety and Academic Performance,* Contemporary Educational Psy. , 27(2), 270-295

6. Garret, Henry E (1981), *Statistics in Psychology and Education,* Vakils Feffer and Simonds Ltd.,Bombay

7. Gowdhaman K. & Nachimuthu K. (2013), *Item Analysis of History Achievement Test on Difference Index (DI) in the Criterion Referenced Measurement,* Res. J. Educational Sci., 1(5), 1-8

8. Mouni Suvarna Raju, T.J. (2013), *Anxiety of Student Teachers,* Discovery Publishing House Pvt. Ltd, New Delhi

9. Rana, R.A & Mahmood, Nair (2010), *The Relationship Between Test Anxiety and Academic Achievement*, Bulletin of Edu. and Res., 32(2), 63-74

10. Satake Eiki & Amato (1995) , *Mathematics Anxiety and Achievement among Japanese Elementary School Students,* E.P.M., 55(6), 1000-10079

11. *en.wikipedia.org/wiki/test anxiety,* (retrieved on 23/05/2014)

12. *www.tandfonline.com/doi/abs/10.1080/* 01443410.2011. 625 625.(retrieved on 04/03/2015)