

Investigating the Contribution of Test Anxiety Components in Predicting the Academic Achievement of Female Students of Secondary School in Tehran

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Abstract

Objective: Given the importance of the issue of academic success, it is necessary to identify the factors affecting it and this phenomenon to be controlled. Therefore, this study was conducted to determine the relationship between test anxiety and academic achievement.

Method: This study was a causal-comparative study. The statistical population was all female students of veteran and non-veteran child of secondary school in Tehran. The sample size of 150 people was selected by multi-stage cluster sampling. To measure the independent variable, the Philips Anxiety Inventory was used, and the total average score was used to measure the dependent variable. Data were analyzed by inferential statistics (Pearson correlation coefficient, two-variable regression) and by 19SPSS software. **Findings:** The results indicated that there is a significant relationship between these two variables. Also among predictor variables, the only reaction to stress is a predictor of educational success in students. **Discussion and Conclusion:** Today the effect of test anxiety as an important component in the mental health of the individual is very important and valuable.

Keywords: anxiety, students, fear of assertiveness, uncertainty, stress response, academic achievement

1.Introduction

The prediction of academic performance is one of the key issues of educational psychology [5,3]. Educational performance of students and the study of factors affecting it is an important issue that has allocated the vast majority of research in education and psychology. So that success in education plays an important role in acquiring job opportunities and building the future of the students. In fact, effective education makes communication between the past, the present and the future [1].

Trained human resource in planning, organizing, guidance, monitoring, and control of advanced societies plays an essential role, and the development of each society depends on the existence of educational and optimal programs in it. One of the criteria for the success of the educational system and its main goals is the academic achievement of learners during the training process. Accordingly, specialist groups and psychologists always focus on different aspects of education [7]. According to the definition of academic achievement, it is referred to the amount of school and university education [6]. In each educational program, it is expected by identifying the factors and determining the effectiveness of these factors in academic

achievement; the educational process should be properly designed to enhance academic achievement. Therefore, the effort to discover and explain the variables that determine academic achievement and self-efficacy in students has great importance.

Anxiety, as part of every human being's life, exists in all people at a modest level, in this extent, it is considered as an agreed response, in such a way that it can be said that if there was not anxiety, all of us were slept in our tables [9]. There are many sources of anxiety in a school situation. As a result, we restrict our attention to anxiety that is triggered by situations that are associated with academic achievement at school [2].

Unfortunately, due to the psychological and anxiety disorders in students, each year we see failures and academic failure that these failures may lead to psychosocial incompatibility [8].

People with generalized anxiety disorder experience severe excitement in comparison with those in the control group and have little skill in identifying, describing or regulating negative emotional reactions. These people have more problems in accepting negative attitude and may exhibit more negative emotions than people without this disorder [10].

Studies have been conducted on students' academic achievement and test anxiety. Here are some points: Lin (2003) reported that anxiety was in positive and meaningful relation with success in reading But this wasn't alike in math [4].

Hansen and Demel (2006) reported a study in which the correlation coefficient was calculated between anxiety and standardized test scores of educational success. The results showed that if the level of anxiety increases, performance will be damaged beyond that point [1].

Alpert and Haber (2007) argue that the first explanation raises two distinct anxiety types. Walsh and others (2008) used anxiety test and educational success of Alpert and Haber to study the relationship between anxiety and performance in class exams [11].

With this purpose, the purpose of this paper is to examine the contribution of test anxiety components to predict the academic achievement of secondary school students in Tehran.

So the author tries to answer the following questions,

- Does the exam anxiety have a relation with educational success of students?
- How much is the proportion of exam anxiety in predicting the educational success of student?

2.Method

The present research is applied objectively, regarding descriptive nature is correlation type and regarding method is surveyed. In this research, 150 female students were selected from the secondary school (veteran and non-veteran children) who were selected by multi-stage cluster sampling.

The tool of gathering information is questionnaires; Philips questionnaire is used to evaluate exam anxiety among students. To calculate the internal homogeneity of Philips anxiety test questions, Cronbach's alpha coefficients were calculated separately for each of the subscales and the total score of anxiety (0.91).

The academic achievement is measured by the total average score of students. To analyze the data, Pearson correlation coefficient and linear regression are measured using SPSS software.

3. Findings

Hypothesis 1: anxiety has relation with educational success of normal school children and children of disabled veterans

Table1: results of the correlation coefficient for the relationship between anxiety and academic success

Variables	Martyr's children student	Normal student	Z	Significant level
Fear of assertiveness- educational success	-0.** 51	-0.188	-1.185	-
Exam anxiety- educational success	-0.** 45	-0.** 360	-0.688	-
Uncertainty- educational success	-0.** 61	-0.056	-3.02	0.05
Reaction to stress- educational success	-0.** 55	-0.** 410	-0.805	-
Total anxiety- educational success	-0.** 45	-0.** 315	-1.76	-

**=P<0/01, *=P<0/05

The result of table 1 shows that correlation coefficients which were calculated are significantly lower levels of 0.01 between anxiety and all the subscales of it with educational progress. So it can be concluded that there is a significant negative relationship between anxiety and educational success. Considering that the relationship is negative, thus with increasing anxiety and its subscales, success decreases and vice versa. Hypothesis 2: How much is the proportion of anxiety in predicting the educational success of student?

The stepwise multiple regression analysis was used to predict the educational success of students based on factors of anxiety. Results summary of multiple regression analysis are presented using the stepwise method in Table 2.

Table 2: Summary of significant regression models to predict educational success

Model	Source of changes	Sum of squares	Degree of freedom	R	R ²	F	Significant level
Step one reaction to) (stress	regression	49.908	1	0.501	0.182	19.16	0.001
	remaining	253.245	148				
	total	303.153	149				

Considering that R² is the percent of anxiety factors common variance in predicting educational success and regarding the results of table 2 in reaction regression of step one, approximately 18.2% of the variance alone does predict educational success and given the calculated F is meaningful at less than 0.01, Therefore, the linear regression model is significant and consequently element of the stress reaction is a significant linear predictor in educational success. Due to the significant relation between the predictor variable (stress reaction) and the criterion variable (educational success) the significant results of the model are presented in table format of Regression coefficients in table 3.

Table3: summary of regression coefficient for prediction of educational success

Model	Variable	b	Standard error	Beta	statistics t	Significant level
Step one	Constant	14.765	0.756		18.418	0.001
	Reaction to stress	-0.214	0.032	0.523	5.401	0.001

The results of table 3 show that among the predictor variables only stress reaction can predict the educational success of students. The "t" significant test is significant for regression coefficients of a stress reaction in less than 0.01. Negative regression coefficient indicates a negative relationship between educational success and stress reaction. Due to the non-standardized regression coefficients, Regression equation to predict educational success is:

$$(\text{Stress reaction}) \frac{14}{765} - \frac{0}{214} = \text{educational success}$$

4. Discussion and conclusions

One of the times that anxiety appears to human is during exam time among students. This matter makes them frustrated from lessons and thus causes a failure in education. Anxiety, unlike its nature, is not always the cause of failure, sometimes in some cases, it has reverse results and provides success. There have been conflicting results achieved from the relation between anxiety and educational success. Although most of the results of the studies report a negative relation between anxiety and educational success, there have been studies that show that anxious students cope better.

The results of present study showed that in students of disabled veteran's children calculated the correlation coefficient between anxiety and total subscales of it with educational success is significant in less than 0.01 level. The highest level of correlation is subscale of uncertainty, and the lowest correlation is the subscale of exam anxiety. Also in normal students, the calculated correlation coefficients were significant at the 0.05 level between the subscale of exam anxiety and stress reaction and total anxiety with educational progress. The highest amount of correlation is related to the stress reaction subscale, and the lowest amount of correlation is related to the exam anxiety subscale. Thus, it could be concluded that there is a negative significant relation between anxiety and educational progress. Regarding the negative relation, so with the increase of anxiety and its subscales, the educational progress reduces and vice versa.

The correlations between anxiety and educational progress in students of veteran's children are more than normal students. The results are in agreement with the results of Edwards (2007), Larson (2006), Harrison (2004) research. Educational progress is related to the situation of family, and the prisoner of war fathers and this relation is more on their children. Ultimately, the results of hypothesis test have shown that anxiety in normal students is higher than students of veteran's children and the veteran's children students are scored lower in fear of assertiveness, uncertainty and reaction to stress subscales than normal students. Therefore more efforts should be made to boost their self-confidence and these negative relations can be caused by the family situation and problems of their fathers.

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