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THE INFLUENCE OF TEST ANXIETY ON ACADEMIC PERFORMANCE OF AGRICULTURAL STUDENTS

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Abstract

The society is requiring that the labor force continually gain new knowledge to remain productive. Formal schooling plays an important role in the development of labor forces and enhancement of economic growth. Academic performance of students is one of the most important pieces of information used by employers in decision making as a signal of individuals' ability. The main purpose of this study was to investigate the influence of test anxiety on academic performance of agricultural students. The statistical population included senior students of agricultural colleges in Iran. A sample of 116 students was selected by using random sampling method. Data were collected by use of a questionnaire. Students' grade point average at the completion of the junior academic year was applied to measure academic performance of students. The validity of questionnaire was established by an experts' panel consisting of faculty members at colleges of agriculture in Tehran University. Instrument reliability was established by calculating Cronbach's alpha coefficient. Data were analyzed by the use of descriptive and inferential statistics such as frequency distribution, percentage, correlation coefficient and t-test. In applying these statistical techniques, SPSS/win software was applied. The result of correlation analysis revealed that students' test anxiety mean score was negatively and significantly correlated with academic performance of agricultural students.

Keywords: Academic performance, test anxiety, agricultural students

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1. Introduction

Anxiety is a phenomenon that people frequently encounter in their life. Anxiety can be described as a feeling of uneasy suspense (Rachman, 2004). Researchers have provided a classification of this phenomenon into different sub-categories such as test anxiety.

Test taking can become a major source of stress, especially when test scores serve as a key factor to future opportunities and career pathways (Peleg & Klingman, 2002). Test anxiety can be described as physiological, emotional, and cognitive responses created by stress experienced during the evaluation. Test anxiety involves the unpleasant experience of worry in situations where the individual feels he/she is being evaluated (Dusek, 1980). This sense has a negative effect on students' attitudes toward courses (Hall Brown et al., 2005). According to Sarason (1975), highly anxious individuals tend to perceive evaluative situations as unpleasant and threatening to self-esteem. Eysenck and Calvo (1992), Hong and Karstensson (2002) and Mulvenon (2005) found that test anxiety would be lead to lower test scores.

Comparisons between males and females have revealed consistent gender differences in test anxiety levels, with female students scoring higher than males (Zeidner & Nevo, 1992; Chapell & Benjamin Blanding, 2005).

The agricultural sector is facing a range of challenges such as population growth (Connors et al., 2004) which needs not only more food but also desires more variety and nutritious food. As agriculture is based on the advanced science and technologies, demand for eligible and competent labor forces is increasing in the sector (Okutsu et al. 2004). Thus, fundamental focus of agricultural development policy-makers must be oriented toward providing the empowered and developed human resources. Trained and skilled labor forces have pivotal role in labor productivity as a major component of agricultural development (Hunt, 2000). Formal schooling plays an important role in the development of labor forces and economic development (Krueger & Lindahl, 2001).

In an achievement-oriented society, exams are widely used to evaluate students and applicants for access to labor markets (Nie et al., 2011). As test scores are so important for academic and career development, students are naturally under pressure to achieve high test scores. Hence, test anxiety has become a universal experience in the society (Stankov, 2010). Since academic performance of students is one of the most important pieces of information used by employers in decision making as a signal of individuals' ability (Barkley & Forst, 2004), the main purpose of this study was to investigate the influence of test anxiety on academic performance of agricultural students. The special objectives of the study were:

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- Identifying agricultural students' test anxiety;
- Analyzing correlation between agricultural students' academic performance and test anxiety;
- Identifying factors influencing agricultural students' test anxiety.

2. Materials and Methods

2.1. Population and sample

The statistical population of this study included senior students in Colleges of agriculture at selected Universities of Iran (N= 2956). A sample of 116 students (by using Cochran's formula) was randomly selected, using proportional random sampling method.

2.2. Instrumentation

The instrument used to collect data was a questionnaire. The first section of questionnaire contained demographic characteristics of respondents and the remaining sections consisted questions related to research objectives. Test anxiety scale was derived from items comprising the motivation part of "the Motivation Strategies for Learning Questionnaire" (Pintrich et al., 1991). The test anxiety scale aimed to measure the degree of test anxiety manifested by the subjects. Academic performance of agricultural students was measured by grade point average (GPA) at the completion of the academic year.

2.3. Data analysis

Data were analyzed descriptively and inferentially using SPSS (Statistical Package for Social Science) for Windows, version 11.5. The descriptive statistics included frequencies, percentages, and mean, while inferential statistics included t-test, correlation coefficients, and multiple regression analysis.

3. Results

3.1. Demographic information of respondents

About 43.1% of the respondents were male and 56.9% were female. Respondents were on average 23 years old. More than half of the respondents (53.4%) were in dormitory and

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46.6% ived with their family. The findings revealed that about 38.8 percent of the respondents spent 5 to 10 hours on studying for important tests.

3.2. Agricultural students' test anxiety

As shown in Table 1, the test anxiety mean score of agricultural students was 15.32 of a maximum possible score of 25. It is recognizable that the students had mid-level of test anxiety.

Agricultural students' test anxiety scores were compared by gender. It was found that the female students' test anxiety mean score was significantly higher than the male students' test anxiety mean score (Table 1).

Table 1. Means and t-test of agricultural students' test anxiety scores by gender

	Total		Gender				
Variable			Male	Female			
	N	Mean	n	Mean	n	Mean	t-Value
Test anxiety	116	15.32	50	14.48	66	15.96	-2.218**
Note: Raw scores are based on a maximum possible score of 25, *: p<.05							

3.3. Agricultural students' academic performance by test anxiety

Fig 1. presents students' grade point average by the score of test anxiety. Correlation analysis for probabilistic relationship was used to test the following hypothesis,

H0: There is no correlation between grade point average (GPA) of students and the score oftest anxiety.

H1: There is correlation between grade point average (GPA) of students and the score of testanxiety.

The Pearson correlation was -0.313 ($p<0.01$), indicating that H0 was rejected. Hence, it can beconcluded that GPA and test anxiety were negatively correlated.

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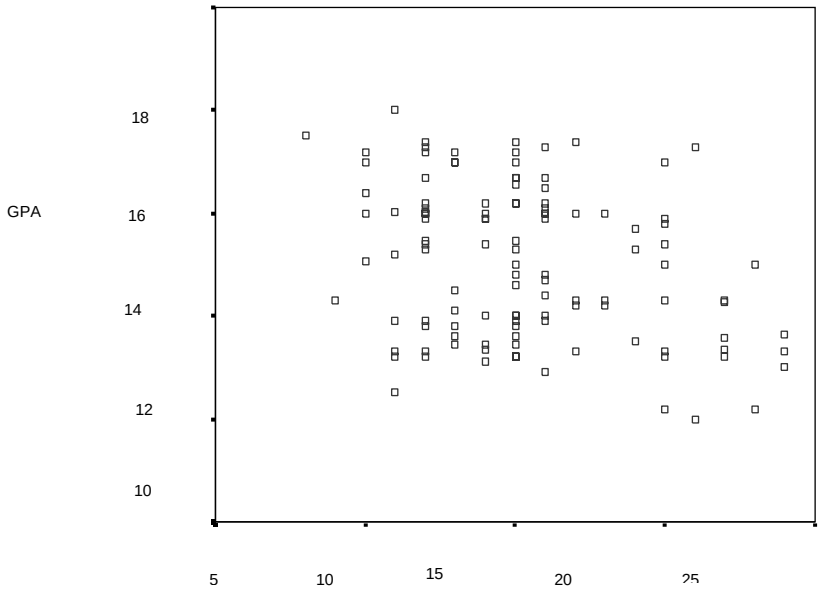

Figure 1. Students' GPA by the score of test anxiety

3.4. Factors influencing agricultural students' test anxiety

Correlation for independent variables and the score of test anxiety are presented in Table 2. It is recognizable that competitive climate in classes and encourage students according to grade point average were positively and significantly correlated with the score of test anxiety. In contrast, there were negative and significant correlations between use of different exams for evaluating students' academic performance, concentrate on real and internal motives for learning, counsel students on educational matters with test anxiety.

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Table 2. Correlation analysis between independent variables and the score of agricultural students' test anxiety

Independent variable	Label	r
Age	Age	-0.096
Competitive climate in classes	ComCli	0.186*
Use of different exams for evaluating students' academic performance	DiffExm	-0.191*
Concentrate on real and internal motives (instead of score) for learning	IntMot	-0.401**
Encourage students according to grade point average	EncGPA	0.259**
Counsel students on educational matters (e.g. how to control their text anxiety	CouEdu	-0.214*

* p< .05; ** p< .01

In order to explain variation in the extent of agricultural students' test anxiety, a multiple regression analysis was conducted. Among independent variables that have significant correlation with the dependent variable, concentrate on real and internal motives for learning, counsel students on educational matters, and encourage students according to grade point average had entered to regression equation by three steps. Considering the results shown in the Table 3, regression equation in standard situation will be as follow:

$$Y= \text{constant} +B1X1 + B2X2 + B3X3 \quad (1)$$

Table 3. Regression analysis to explain variation in the score of agricultural students' test anxiety

Description	Label	Unstandardized coefficients	Standardized coefficients	t	Sig.
		B	Beta		
Constant		18.78		13.54	0.000
Concentrate on real and internal motives (instead of score for learning	IntMot	-0.97	-0.359	-4.48	0.000
Counsel students on educational matters (e.g.how to control their anxiety)	CouEdu	-0.92	-0.276	-3.46	0.001
Encourage students according to grade point average	EncGPA	0.73	-0.276	3.25	0.002

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Equation (1) shows that (Y) is used as dependent variable which representing the extent of testanxiety, (X_i) is independent variable and (B_i) is the coefficient of independent variable. Consequently, final equation of regression is:

Y = 18.78 - 0.97 IntMot - 0.92 CouEdu + 0.73 EncGPA

4. Conclusion and Recommendations

The findings showed that the female students' test anxiety mean score was significantly higherthan the male students' test anxiety mean score. This is what happened in the study conducted by Chapell and Benjamin Blanding (2005). Chapell and Benjamin Blanding study also indicated gender differences in test anxiety levels, with female students scoring higher than males. The findings revealed that the score of test anxiety is negatively and significantly correlated with the grade point average (GPA). This result is accordant to the result of Eysenck and Calvo (1992) and Mulvenon (2005). Since test anxiety reduces students' academic performance, it is recommended that agricultural students' test anxiety be determined and also, educational counselors at agricultural colleges provide useful information about methods to control test anxiety. Engaging in positive self-talk and making an effort to relax periodically during the test are some strategies which students can use for coping with test anxiety. Since test anxiety has many adverse effects on the accurate evaluation of students' academic performance, it is imperative that faculty members pay attention to new alternatives for evaluating students. It is recommended that faculty members familiarize students with the exam format and the type of rating system, which Alcala (2002) also cited in his study**.**

According to the findings, concentrate on real and internal motives (instead of score) for learning had the most negative effect on students' test anxiety. It is quotable that intrinsic motivation refers to students' motivation to work on a task for its own sake (Schunk et al., 2008). Students who are intrinsically motivated have self-determination about their educational path. Those students choose tasks that enhance their learning (McKeachie, 2002). Accordingly, it is recommended that faculty members avoid sole reliance on final exam for evaluating students learning.

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