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The Role of Achievement Motivation and Test Anxiety in Predicting Students' Self-handicapping and Procrastination

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Abstract

The aim of the present study was to determine the role of the achievement motivation and test anxiety in predicting students' self-handicapping and procrastination. The method was descriptive-correlational, and the statistical population included all young students of the University of Applied Sciences and Technology of East Tehran; who were studying in one of the faculties of this university in the academic year of 2017-2018. The Cochran's sample size estimation formula was used to determine the sample size, which were 340 people. The sampling was done on a basis of a random multi-step way. Edward E. Jon's self-efficacy scale, Herman's motivated progress, Solomon's and Rathblum's procrastination, and Sarason's test anxiety were used in the study in order to collect the data. The SPSS 24 and Pearson correlation and canonical correlation methods were used to analyze the data. The findings showed that predicting the variable of procrastination based on test anxiety variables and achievement motivation is significant ($p<0.0001$ and $F=245/951$), and predicting the variable of self-handicapping based on the variables of test anxiety and achievement motivation was significant, too ($P<0.0001$ and $F=1190/904$). It seems that increasing the achievement motivation and reducing the test anxiety is a key factor in reducing procrastination and self-handicapping.

***Keywords*:** Achievement motivation, procrastination, self-handicapping, test anxiety

Introduction#

Procrastination is a very common phenomenon, although indeed we all make delays, but some people make it their routine. Estimates show that 80 to 95 percent of learners are involved in procrastination (Ellis & Knaus, 1977; O'Brien, 2002). Nearly 75% of learners consider themselves to be procrastinators (Potts, 1987), and approximately 50% of procrastinators are persistent and problematic (Day, Mensink & O'Sullivan, 2000; Haycock, 1992; Micek, 1982; Onwuegbuzie, 2009 & Salomon et al., 1984). Academic procrastination behavior has also been defined as postponing the academic duties with irrational reasons (Senecal & Jalien Guay, 2003), which sometimes cause irreparable damages due to their negative consequences which has been one of the topics of interest to experts in recent years (Hosseini Nasab & Lotfollahi, 2013). Academic procrastination is associated with self-regulation, academic self-efficacy, and low life satisfaction (Kandemir, 2014). Procrastinators postpone preparation for the test to the last minute, so they experience severe anxiety during the test. They also report low self-esteem due to experiencing high levels of anxiety and depression (Lai & Silverman, 1996; quoted in Fathi, Fathi Azar, Badri, & Mirnsab, 2015).

Various factors have been identified in relation to the factors affecting academic procrastination (Sepehrian, 2011), among them anxiety and social oriented perfectionism (Sheikhi, Fathabadi & Heidari, 2013) are worth mentioning. In addition, it has been showed that various factors play role in formation of

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procrastination, including motivational deficiencies and arousal characteristics (Steel, 2007).

In addition to, one of the avoidant behaviors which leads to the reduction and destruction of academic performance is self-debility. The term self-handicapping has been considered in psychology since 1960. Berglas and Jones (1978), pioneers in this field, defined self-debility as any kind of action or practical context that allows a person to attach any kind of failure into external factors, as an excuse, and to credit any kind of success into internal factors, in order to gain honor. In fact, the self-debilitate person refuses to take responsibility for his or her failures and presents himself or herself as a victim of the situation not a victim of his or her disability (Koldtiz & Arkin, 1982).

There are some motivations behind self-handicapping acts, such as the desire to present a positive self-image which undermines one's performance (Rhodewalt & Vohs, 2005). According to Uysal and Knee (2012), self-handicapping increases the short-term self-esteem, but it takes high and long-term costs for self-debilitated people.

Self-handicapping and academic performances affect each other. Therefore, it is obvious that if a person does not try consciously and intentionally and postpones his study until the last minute and spends the night before the test in vain, he will show poor performance during the test session (Thompson, Richardson & Barber, 2009).

The importance of measuring self-handicapping is that it enhances so destructive and inefficient behaviors in students and it lead to so problems (Seyyed Salehi & Delavar, 2015). However, there are many different types of behaviors and emotions that are known to cause self-debilities, such as drug consumption, lack of learning, test anxiety, social anxiety, lack of effort and practice, excuses, negligence, and so on which may weaken the performance (Lee, Kelly, & Edward, 2006).

Test anxiety is a form of mental occupation that often leads to negative cognitive assessment, lack of concentration, undesirable physiological reactions, and academic failure. Therefore, a person with test anxiety can be described as a person who knows the subject matter, but the severity of her anxiety prevents her developing his or her knowledge during the test .Test anxiety as a scientific concept and structure refers to a set of perceptual, physiological, and behavioral responses that are associated with concerns about the negative consequences or possible failure of a test or similar assessment situations (Burka & Yuen, 1983).

This excitement is characterized by a feeling of tension, anxiety and arousal of the autonomic nervous system (Mehrabizadeh, 2000). Test anxiety threatens students' mental health and affects their educational performance, talent development, personality development, and social identity, and is one of the most pervasive and problematic phenomena among students which might have negative impacts on their academic achievements and optimal performances.

Another variable that is closely related to procrastination and self-handicapping is the achievement motivation. The structure of achievement motivation plays an important role in students' academic achievements (Guay, Rattlelle, Roy, & Litalien, 2011). Researchers have described the achievement motivation as a person's attempt to get success or to feel comfort in performing their tasks (Acharya & Joshi, 2009). In fact, it can be said that motivation shows the reasons for people's behavior and determines why they act in a certain way. From the psychologists' point of view, how much people are politically, socially, and scientifically motivated depends on the motivation behind their activities (Tella, 2007). Motivation is an internal factor that forces a person to act and arises the needs of the individual (Trofino, 2000) and is an indicator of students' cognitive, emotional, and behavioral indices (Tucker & Zayco Herman, 2002). With academic motivation, students find the necessary mobility to complete a task, achieve a goal, or achieve a certain degree of competence in their work successfully; so that they can achieve the necessary success in learning and academic improvements ultimately (Rio, 2006). In terms of upbringing, motivation is both a goal and a mean. As a goal, we ask students to be interested and motivated in a variety of scientific and social topics. Therefore, all their curriculum and activities are related to the emotional aspects and have motivational goals, for example, motivation is a prerequisite for learning as a psychological preparation (Seif, 2006).

Psychologists believe that students' motivation for learning is motivated by factors such as self-confidence, concentration, hard work and perseverance in doing difficult tasks, the desire to continue studying in the hours after the class, and choosing tasks that require effort (Radal, Sarrazin, Legrain, & Wild, 2010). In fact, through motivation, students are motivated to complete their academic assignments to achieve specific goals and levels of expertise, skills, and success with high-motivated, energetic, purposeful, sensible, and stable behaviors. Such students engage in difficult academic activities and work hard to learn (Amrai, Elahi Motlagh, Azizi, & Pahon, 2011).

Considering the problems that students experience, in academic procrastination and self-handicapping, in the field of education, also considering the possibility

of effectiveness of achievement motivation and defeating the test anxiety; it is suggested to intake the role of achievement motivation and test anxiety to predict the students' self-handicapping and procrastination based on the research background, and lack of research in this field was the encouraging issue.

Method

The research method is descriptive-correlational.

Participants

The statistical population includes all young students of University of Applied Sciences and Technology in East Tehran Branch, who have studied in one of the faculties of this university in the academic year of 2017-2018, which were 2765 people, according to the statistical data obtained from the university. To estimate the sample size, the Cochran's sample size estimation formula was used and therefore 340 students were selected as sample size which equals (18-25 years old).

Instruments

The tools of this research included*:*

Self-handicapping Scale

The main scale of self-handicapping was designed by Edward E. Jones in 1979; but Jones and Rhodewalt developed a 25-item form of this scale in 1982, which is well-suited for data collected from various samples (Rhodewalt, 1990). The scoring of the items of this scale is of the Likert type and is done using a five-point spectrum from completely disagreeing (score 1) to completely agreeing (score 5). Rhodewalt obtained Cronbach's alpha coefficient of 0.78 and the retest coefficient of one month equal to 0.74, in order to maintain this scale. Cronbach's alpha coefficient was 0.79 and the retest rate was 0.74 per month, with increasing the sample size, which indicates the reliability and validity of the scale (Rhodewalt, 1990). The reliability of this scale has been reported in Hosseinian and Niknam research (2010), with an acceptable level and the stability of the scale has been established by retesting within a month. Also, these researchers calculated the validity of the scale by the internal consistency method and calculated the coefficient of 0.70 for the whole test. In addition, the data collected in different samples indicate convergent and divergent narrative validity (Asgharnejad, 2003).

Achievement Motivation

In this study, to measure the motivation for making progress, the Herman's educational questionnaire (Shokrkon et al., 2002) was used, which was including 25 items. Herman used the structural validation method to determine the validity of the test, in which the validity index included the talent scores and the PMT (Prestatie Motivate Test) test scores. The correlations obtained with this method were significant at the level of 0.05. The final form of this questionnaire has 92 items that are semi-finished sentences, and the options offered for each item vary between 4 and 6 options. The high score in this questionnaire indicates the motivation for high progress. In Shokrkon and others (2002) the correlation coefficient between the achievement motivation test and the Gizli achievement motivation test for girls was 0.23 and for boys was 0.01 and the calculation was 0.16 for all the subjects and its reliability coefficient was 0.72 to determine the validity of the results.

Questionnaire for Procrastination

This scale was developed by Solomon and Rathblum in 1984 and contains 27 items. The way the score was scored in this study was using the Likert scale, in which never = 1, rarely = 2, occasionally = 3, most often = 4, and always = 5. In a study conducted by Solomon and Rathblum (1984), the reliability of the academic procrastination scale was obtained using Cronbach's alpha method of 0.64. Also, these researchers have reported the validity of this scale through internal consistency using Cronbach's alpha of 0.84. Jokar and Delavarpour (2007) determined the validity of this scale in the sample of students, using factor analysis and correlation of each item with the total score. The value of Kaiser Mayer Ulkein was also reported to be 0.88. Also, the certificates have been reported with a total test score at the desired and significant level**.**

Anxiety Assessment Test

This questionnaire was developed by Sarason (1977). This scale is a short questionnaire in which the subject must answer 'yes' or 'no' to each item within 10 to 15 minutes; it is based on a self-reporting method and was achieved through the psychological states and experiences of the individual before and during and after the examination. The higher a person's score on this questionnaire, the greater the test anxiety. The validity and reliability of this questionnaire have been measured in several studies and have been obtained with alpha Cronbach's coefficient of 88% and internal

similarity of 95% and standard validity is equal to 72%, which is generally acceptable and can be obtained in similar studies. Through Biabangard (2007), this questionnaire has 37 items that can be answered with 'yes' or 'no' replies. To score a Sarason Anxiety Questionnaire, you must give a score of 1 to questions 3, 15, 26, 27, 29, 29 and 3 if they have been replied by 'no'; and you must also give a score of 1 for 'yes' replies to the other questions. Anxiety would be tested by summing the answers up. The higher the score, the more anxiety there is**.**

Procedure

The sampling method in this study was random and multi-staged, that is, at first, Tehran was divided into four regions of north, east, west and south, according to the variables related to economic and social bases, and then a region was selected as the sample using the simple random sampling method. After selecting the region, the researcher referred to each of the faculties of the University of Applied Science and Technology during a week and provided the questionnaire to the students randomly**.**

Findings

Table 1 presents the indicators of the tendency towards the center and the distribution related to the research variables**.**

Table 1.
Indicators of Tendency to the Center and Distribution of the Research Variables

	Mean	Standard Deviation	Maximum	Minimum
Achievement Motivation	68.10	6.03	83	54
Test Anxiety	9.38	4.06	18	2
Procrastination	52.61	10.75	78	29
Self-handicapping	65.16	10.25	90	38

Table 2.
Correlation between Research Variables

	Procrastination	Self-handicapping
Achievement Motivation	-0.405**	-0.167**
Test Anxiety	0.320**	0.236**

P<0/05* p<0/01**

According to the results of the Table 2, the correlation between test anxiety and students' self-handicapping was 0.236, which was significant at the level of 0.01. Also, the correlation between test anxiety and students' procrastination was 0.32. The correlation between students' achievement motivation and self-handicapping was -0.167 and the correlation between students' achievement motivation and procrastination were -0.405, which was significant at the level of 0.01**.**

Table 3.
Multiple Correlation Coefficient and Procrastination Explanation Coefficient

R	R^2	Modified R^2	Estimated standard error
0.385	0.148	0.142	11.73

According to Table 3, the multiplicity coefficient of multiple correlation of procrastination with the variables entered in the regression equation is 0.385 and its multiplier coefficient is 0.148, which shows that about 15% of the variance of procrastination by the input variables is explained to the model.

Table 4.
The Results of Significant Regression of Procrastination by Test Anxiety, Achievement Motivation

Effect	Sum of Squares	Degree of Freedom	Average Squares	F	Meaningfulness
Regression	664.088	2	3432.044	24.951	0.0001
Left Over	39476.67	287	137.549		
Total	46340.76	289			

According to the F statistics seen in Table 4 (p<0.0001 and F = 24/951 = 951), predicting the variability of procrastination based on test anxiety variables is the motivation for significant progress. In the following, the multiple correlations between the variables and the explanatory coefficient are presented**.**

Table 5.
Standardized and Non-standardized Variables of Procrastination Variable based on the Variables of Test Anxiety and Achievement Motivation

Model	Non-standardized Variables B	Standard Error	Standardized Variables Beta	t	Meaningfulness
stable	61.958	8.936		6.933	0.000
Test anxiety	0.402	0.166	0.114	2.414	0.016
Achievement Motivation	-0.459	0.163	-0.110	-2.661	0.014

Table 5 shows that the test anxiety variable is able to predict procrastination in the standard unit (0.114B) of variance in a positive and meaningful manner. The variable of achievement motivation is able to predict procrastination in the standard unit (-0.01 = 110B) of variance in a negative and meaningful way.

Table 6.
Multiple Correlation Coefficients and Debilitation Coefficient

R	R^2	Modified R^2	Estimating the Standard Error
0.277	0.077	0.070	11.646

According to above table, the multiplicity correlation coefficient of procrastination with the variables entered in the regression equation is 0.277 and its multiplicity coefficient is 0.077, which shows that about 8% of the variance of procrastination by the input variables was explained to the model**.**

Table 7.
Results of the Significance of Self-Regression of Self-handicapping based on the Test Anxiety, Achievement Motivation

Effect	Sum of Squares	Degree of Freedom	Mean of Squares	F	Meaningfulness
Regression	3229.228	2	1614.614	11.904	0.0001
Left Over	38926.13	287	135.631		
Total	42155.36	289			

According to the observed F statistics (p<0.0001 and F = 11/904), predicting the self-handicapping variable based on the test anxiety variables, achievement motivation is significant.

Table 8.
Standardized and Non-standardized Variables of Self-handicapping Variable based on the Test Anxiety variables and Achievement Motivation

Model	Non-standardized Variables B	Standard Error	Standardized Variables Beta	t	Meaningfulness
stable	12.899	2.237		5.767	0.000
Test anxiety	0.121	0.030	0.063	4.112	0.008
Achievement Motivation	-0.214	0.059	-0.169	-3.646	0.001

Table 8 shows that the test anxiety variable is able to predict self-handicapping variance positively and significantly in the standard unit (B = 0.063). And the variable of achievement motivation is able to predict in the standard unit (0.169B = -) of self-handicapping variance in a negative and meaningful way.

Table 9.
Results of Focal Solidarity Analysis of the Relationship between Test Anxiety Collection and Achievement Motivation with Collection of Self-handicapping and Procrastination

Collection	Special Amount	Focal Solidarity	Lambda Wilkes	F	DF_1	DF_2	Meaningfulness
1	0.240	0.44	0.804	16.467	4	572	0.0000
2	0.003	0.054	0.997	0.839	1	287	0.3600

As shown in Table 9, Lambda Wilkes is used to test this null hypothesis that there is no residual match between the two sets after extracting the previous fundamental variables (if any). In order to test the significance of F values, the following column is presented. The value of F is for the first set (16/1677) and the second set (0.839) and the independent and dependent variables at the level of 0.01 are significant. Therefore, according to these findings, it can be concluded that there is a significant set (first set) of independent and dependent variables in the data. The ratio of the first set is 0.44. The meaning of this coefficient is equal to the coefficients of simple correlation (Pearson). The sum of focal correlations is equivalent to the specific value that represents the value of the explained variance of a fundamental variable by other fundamental variables. Thus, the first set of test anxiety and achievement motivation explains 24%.

Discussion and Conclusion

Significant results of regression show that predicting the variability of procrastination based on test anxiety variables, achievement motivation and self-handicapping is significant. The results of this research are in accordance with the results of Valizadeh, Ahadi and Heidari et al. (2016), Atadokht, Mohammadi and Basharpour (2015), Sepehrian (2013), Mouratidis, Michou and Aelterman (2017), Steel and Tamadoni (2012) Saracaloglu, Dincer and Gerceker (2018), as well as Custer (2016).

To explain the predictability of procrastination based on the variable of self-handicapping, it can be said that people with strong beliefs about their abilities show more effort and perseverance in performing tasks than those who are skeptical about their abilities. When students feel empowered to do their homework, they are better able to organize their curriculum. The consequences of feeling high ability and order in the assigned tasks are to achieve academic success, which leads to an increase in students' intrinsic motivation to have a positive feeling and more interest in the field of study and affairs which leads a better learning (Stuank & Steel, 2011).

To explain the predictability of procrastination based on the variable of achievement motivation, it can be said that students who are purposeful and insistence on reaching the progress show less procrastination and their aim leads them to be more organized and they are more interested in their field of study. Students who are more achievement motivated are more likely to acquire mastery and skill in academic subjects and enjoy a high level of intrinsic motivation, and high intrinsic motivation directly leads them to reduce procrastination (Katz, Eilot & Nevo, 2013; Valizadeh et al., 2016).

To explain the predictability of procrastination based on the variable of test anxiety, it can be claimed that people with severe fear of failure anxiety and people who have unrealistic expectations involve in

such groups of people. Therefore, these people are pessimistic about the future and therefore delay their activities many times; however, the fear of their failure increases without doing homework. This fear of failure causes them to worry that others will humiliate them and have a negative evaluation about them (Yerdelen, Caffrey & Kllassen, 2016). This creates a vicious cycle in which procrastination causes anxiety and, consequently, anxiety causes procrastination. Our results show that test anxiety predicts the procrastination which is justifiable so that literature found that test anxiety is caused by low self-esteem (Sary, Bilek & Celik, 2017; Yoon & Kwon, 2015) which as domestic literature (Farhadi et.al, 2005; Omidi, Akbari & Jedi Arani, 2011) showed most of students have low self-esteem in our country which maybe come from social and family situation of students, and as Bandura (1986) pointed out low self-esteem is related to procrastination.

Also, the results of regression show that predicting the variable of self-handicapping based on test anxiety variables, achievement motivation and significant negligence are significant. The results of this research are aligned with the researches of Ghazi, Hassanvandi and Ghadmapour (2017), Alaei, Alaei and Ghadmapour (2017), Ildrim and Demir (2019), Laki, Shokri and Sepah Mansour (2017), Mishizaki (2017) and Valizadeh et al. (2016)**.**

To explain the predictions of self-handicapping out of test anxiety, it can be said that learners who are skeptical of their abilities resort to the use of self-handicapping strategies to compensate for the lack of the progress. Also, a person who is experiencing test anxiety experiences a lot of stress in the exam situation, and because they focus on the negative aspects of the stressful situation and avoid confrontation with the challenge, they resort to depression as a behavior and avoid taking individual responsibilities in that situation (Alipour Birgani et al., 2011). Our results could be explained so that as we refer previously, self-esteem of our country students is low and the students with low self-esteem think that they may fail to do their tasks (Kuhi & Mohammadi Motahari, 2018), so that they try to preserve their self-esteem and they choose the situations in which their success is attributed to their abilities and their failure to external factors.

To explain self-handicapping predictions on the basis of achievement motivation, it can be said that motivated progress has caused people to use their maximum power to achieve the goal and to be able to continue to achieve a high level of efficiency. It is obvious that there is such a dynamic interaction between the subcommittees of self-efficacy and the achievement motivation. When a person is not afraid of failure and plans to achieve the goal, she considers her ability to adjust the plans and hopes for her success according to scheduled arrangements and finally she guides her steps in achieving the goals by having them under control which always has the great achievement motivation; because the mentioned factors have a direct relationship with achieving success and successful experiences are necessary factors in developing the motivation (Bahrami & Abbasianfard, 2011).

Our results showed that achievement motivation could predict self-handicapping. It could be explained that achievement motivation in our country is influenced by various factors that literature (Salehi et.al. 2010; Bakshande Bavarsad et.al, 2015) address it and conclude that our country employment situation and lack of job prospect and others lead to low achievement motivation that as our study results, it could predict self-handicapping.

To explain the prediction of self-handicapping due to the procrastination, it can be claimed that self-esteemed students show less procrastination in order to their organized academic affairs and resources and time management, they waste less energy and use resources more optimally and they are more purposeful. On the other hand, low self-handicapping and orientation of students' skills lead to more organization of affairs and curriculum and more organization of materials leads to less procrastination. Doubt about one's ability has a direct and negative effect on procrastination. People who are more hesitant about doing things and studying are more likely to be procrastinating, and because they start late and have a lot of wasted time, they end up with as a procrastinated person (Valizadeh et al., 2016).

The results of this study was different from others in that most of researches address high school students and most of them study effective factors on procrastination and self-handicapping. In addition to, our study could enhance literature through investigating four variables which are very important variables among students, in particular, the students of Universities such our sample which is a non-public University.

In line with the research results, it is suggested that workshops be held by health administrators in connection with psychological interventions to reduce students' emotional problems such as procrastination, test anxiety, etc., as well as to promote motivation and progress goals in universities and counseling centers. It is possible to take pivotal treatment towards a health-oriented approach and save on the high cost of health care.

One of the limitations of this research was that the research is limited to the city of Tehran and that the present research was limited to the sample of students of the University of Applied Sciences and Technology of East Tehran. Therefore, it is suggested that other studies be conducted in different cities so that the possibility of generalizations to other cities would not be considered as a limitation. It is also recommended that similar researches to be evaluated in other groups as with different components.

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