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Self-efficacy, Achievement Motivation, and Academic Procrastination as Predictors of Academic Performance

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The purpose of this study was to determine the relationship between academic self-efficacy, achievement motivation, and academic procrastination with academic performance, and investigate predictive validity of them with academic performance and interaction of them with gender to academic performance. To achieve this aim, samples of 200 students (100 males and 100 females) were selected by multi-stage cluster sampling from high schools of Orumieh. All participants were asked to complete Lay's academic procrastination scale, Herman's achievement motivation scale, and self-efficacy scale. The data were analyzed using mean standard deviation, *t*-test, and regression analyses. The result of multiple regression analysis reveals that academic self-efficacy is the best predicator and academic procrastination inversely is a significant predictor of academic performance. Also, extra result of *t*-test reveals that there is no significant difference between the mean score of girls and boys in academic procrastination (T = 0.47, P = 0.640) and academic self-efficacy (T = 0.29, P = 0.730). Furthermore, There is a significant difference between boys and girls, in terms of the level of achievement motivation (T = 2.06, P = 0.040) and academic performance (T = 2.66, P = 0.009).

Keywords: self-efficacy, achievement motivation, academic procrastination, academic performance, gender

Introduction

Academic Performance

Academic performance is one of the top priorities for schools. It is the outcome of education, and it refers to the extent to which a student, a teacher, or an institution has achieved their educational goals. There are two traditional indicators of academic performance, namely, grades and highest level of educational attainment. These two indicators are arguably the most important to educators, students, their parents, and those people who make public policy decisions.

Academic performance is commonly measured by examinations or continuous assessment, but there is no general agreement on how it is best tested or which aspects are the most important.

The educational psychology literature decisively indicates that the psychological variables have an important role in academic performance (Ackerman, Chamorro-Premuzic, & Furnham, 2010). Recent studies on school children (Deary, Strand, Smith, & Fernandes, 2007) and university students (Rohde & Thompson, 2007) have confirmed this.

Some psychological factors play an important role to promote or decline academic performance, such as self-efficacy, achievement motivation, and academic procrastination. So, it is very important to recognize that

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and use them to improve the academic performance of students.

Self-efficacy

A growing body of literature supports the relationship between students' self-efficacy beliefs for academic tasks and their academic performance. Some researchers (Paul & Gore 2006; Lilian, 2012) have investigated the role that academic self-efficacy beliefs play in predicting college success. They suggested that a positive relationship could be observed between these two variables. For example, in a study conducted in Spain (Valle, 2009), the researcher studied the relationship between university students' self-efficacy for performance and learning and their effort regulation. It was found that when students possessed a higher self-efficacy, they were more likely to put more efforts into their academic studies. Self-efficacy is commonly defined as the belief in one's capabilities to achieve a goal or an outcome. It affects every area of human endeavor, by determining the beliefs a person holds regarding his or her power to affect situations, thus, strongly influencing both the power a person actually has to face challenges competently and the choices a person is most likely to make (Luszczynska & Schwarzer, 2005). Self-efficacy is the measure of one's own competence to complete tasks and reach goals (Ormrod, 2006). Self-efficacy refers to the judgments of a person's capabilities, and it is a capability to carry out the actions needed to succeed in a task. It is one of the strongest factors predicting performance in domains as diverse as sports, business, and education. Klassen, Krawchuk, and Rajani (2008) believed that self-efficacy strongly influences our task, choice, level of effort, persistence, and resilience. In academic settings, self-efficacy is a strong predictor of performance (Klassen et al., 2008). Vuong, Brown-Welty, and Tracz's (2010) study examined the effects of self-efficacy on academic success with a sample of 1,291 college sophomores recruited from five of the 23 California state university campuses. These investigators showed that self-efficacy beliefs had a significant and positive effect on the academic achievement of students. Adeyemo's (2007) study with a sample of 300 students who are in their first or second year at the University of Ibadan, Nigeria, demonstrated that academic self-efficacy had a significant and positive effect on academic achievement.

Theory of self-efficacy lies at the Center of Bandura's Social Cognitive Theory, which emphasizes the role of observational learning and social experience in the development of personality. This theory says that there are three factors that influence self-efficacy—behaviors, environment, and personal/cognitive factors. They all affect each other, but the cognitive factors are the most important. Self-efficacy developing from mastery experiences in which goals are achieved through perseverance and overcoming obstacles and from observing others succeed through sustained effort (Bendura, 1977). High self-efficacy can affect motivation in both positive and negative ways. The concept of motivation is used in many different disciplines to analyze the "what and why" (Deci & Ryan, 2000) of human action.

Gender differences with regard to perceived self-efficacy expectations and academic performance represent an important issue in educational research. This may affect enrolment for college courses, career choices, and the use of knowledge in future work settings. Busch's (1995) study on 154 undergraduate students (77 males and 77 females) of Business Administration in a Norwegian college, indicated that female students had significantly lower self-efficacy in computing and marketing and higher self-efficacy in statistics than male students, and there was no significant gender difference in academic performance. Abesha (2012) examined the effect of sex of the students on their academic self-efficacy and academic achievement and found out that sex of the students had a significant effect on their academic achievement, favoring male students (i.e., explained 9.1%

of the variance in the academic achievement of students).

Achievement Motivation

Another key to understand academic performance maybe is achievement motivation. Motivation has received much attention from many researchers with different psychological and philosophical perspectives in different fields of study, especially psychology and education, due to its significant effect on students' learning, persistence, and academic achievement.

It is obvious that students who are not motivated to succeed will not work hard. In fact, several researchers (Tucker, Zayco, & Herman, 2002) have suggested that only motivation directly affects academic performance; all other factors affect achievement only through their effect on motivation. Ahmad and Rana (2012) found out that motivation influences academic performance of college students. Academic motivation is close to the term "motivation to learn". Obviously, it is also part of academic learning. Hall (as cited in Akinsola, Adedeji Tella, & Adeyinka Tella, 2007) believed that there is a need to motivate pupils so as to arouse and sustain their interest in learning mathematics. Akinsola, Adedeji Tella, and Adeyinka Tella examined the effect of achievement motivation on academic achievement and learning outcomes in mathematics with a sample of 450 (260 males and 190 females) secondary school students in Nigeria. This investigator reported that students who had higher achievement motivation scored significantly high scores on a mathematics achievement test compared to their counterpart students with lower achievement motivation. Intellectual ability and achievement motivation were associated positively with academic success (Busato, Prins, Elshout, & Hmaker, 2000). One study in Malaysia showed a significant and positive correlation between students' achievement motivation and their academic achievements (Mahyuddin, Elias, & Noordin, 2009).

Onete, Edet, Udey, and Ogbor (2012) examined the relationship between 750 first year education students' achievement motivation and their academic performance. They indicated that neither students' academic performance motivation nor students' social achievement motivation had any significant influence on education students' academic performance. Akinsola, Adedeji Tella, and Adeyinka Tella (2007) showed that gender difference was significant when impact of motivation on academic performance was compared in male and female students in Nigeria. Faruk (2011) studied the role of academic motivation and academic self-efficacy on academic procrastination with 774 students in Turkey. Their study results showed a low relationship between academic procrastination and self-efficacy. The study of Nisa, Noureen, and Naz (2011) revealed that achievement motivation and self-concept are significantly related to academic performance and significant gender differences were discovered, which were in favor of girls. They suggested that teachers must use motivational strategies to involve students in academic activities for improving their grades. Shekhar and Devi's (2012) study was carried out on 80 undergraduate students of various colleges from Jammu region, revealing no significant difference between the achievement motivation of male and female college students.

Academic Procrastination

The third key to understanding academic performance is academic procrastination. Procrastination is considered as one of the most serious problems in daily life and educational settings in modern societies. Studies throughout history showed that it has been a damaging disaster for individuals at least from three thousand years ago (Steel, 2007). Procrastination is the tendency to put off an activity to a latter time or to the last possible minute under one's control, or even not to do it at all (Gafni & Geri, 2010). Steel (2007) defined "procrastination" as "a prevalent and pernicious form of self-regulatory failure that is not entirely understood".

Academic procrastination is a pervasive and potentially maladaptive behavior for many universities and college students, it often results in feelings of psychological distress (Solomon & Rothblum, 1984, as cited in Binder, 2000). Academic procrastination seems to be prevalent in academic settings where students tend to delay their tasks without valid excuses and submit their assignments until the last minute before the deadlines. The cognitive component of procrastination involves the discrepancy between intentions and actual behavior. Al-Attiyah's (2010) study on 538 Qatari primary students revealed that 30-40% of the students consider procrastination as a critical problem that hinders their personal and functional balance. Howell and Watson (2007) examined the relations between procrastination, achievement goal orientations, and learning strategies on 170 undergraduate students. They showed that procrastination related negatively to a mastery-approach goal orientation. Akinsola, Adedeji Tella, and Adeyinka Tella's (2007) study on 150 students in the department of mathematics and mathematics education students in a university of Ibadan found that the subjects, with low procrastinators, perform better than the moderate and the high procrastinators. Sepehrian and Lotf (2011) showed that problem-oriented coping style, inversely, is a significant predictor of academic procrastination. And, there was no significant difference between boys and girls, as far as the level of academic procrastination concerns. In another study, Sepehrian and Hosaeinzadeh (2012) proposed a structural modeling analysis of the relationship between coping styles with academic procrastination in students. Their proposed structural model on 157 undergraduate students showed that task-oriented coping style had a negatively effect on academic procrastination and anxiety was a significant predictor of academic procrastination. Another result of their study revealed that perfectionism could not significantly predict academic procrastination. There was not any significant difference on academic procrastination scores with regard to academic field. Onwuegbuzie's (2004) study on 135 graduate students revealed that academic procrastination resulting from both fear of failure and task evasiveness, which was related significantly to worth of statistics, interpretation anxiety, test and class anxiety, computational self-concept, fear of asking for help, and fear of the statistics instructor.

Socio-demographic variables, such as gender and age might have a great impact on procrastination. Balkis and Duru (2009) indicated that procrastination significantly differed by gender, and it was negatively related to academic achievement. Özer, Demir, and Ferrari (2009) argued that male students reported more procrastination on academic tasks than female students. Significantly, more female students than male students reported greater academic procrastination because of fear of failure and laziness; male students reported more academic procrastination as a result of risk-taking and rebellion against control than female students did. Some of the studies revealed that males are more procrastinators than females (Senécal, Koestner, & Vallenard, 1995). Yong (2010) found out that male students procrastinated more than female students on writing term papers. But, Akinsola, Adedeji Tella, and Adeyinka Tella's study (2007) reported equal level of academic procrastination between male and female students, and it also had an impact on their academic achievement. And the results of Şirin's (2011) study on 774 students showed that the levels of academic procrastination did not differ in terms of gender.

Methodology

Objective

Regarding the above-mentioned studies, the purpose of this study was to determine the relationship between academic self-efficacy, achievement motivation, and academic procrastination with academic performance, and investigate the predictive validity of them with academic performance and interaction of

them with gender to academic performance.

In order to achieve these goals, the following hypotheses were devised and tested:

(1) Self-efficacy, achievement motivation, academic procrastination, and gender are meaningful predicators of students' academic performance in university;

(2) There is a meaningful difference between girls and boys who study at university regarding academic self-efficacy;

(3) There is a meaningful difference between girls and boys who study at university regarding achievement motivation;

(4) There is a meaningful difference between girls and boys who study at university regarding academic procrastination;

(5) There is a meaningful difference between girls and boys who study at university regarding academic performance.

Participants

The statistical population of the present descriptive-correlation study included all of the students studying in pre-collage of Orumieh city during the academic years of 2011-2012. The participants of the study were 200 students (100 males and 100 females) studying in pre-collage, they were randomly selected by multi-stage cluster sampling from different schools.

Instrument

In this study, Lay's academic procrastination inventory, Herman's achievement motivation scale, and self-efficacy scale were used to gather data.

Lay's academic procrastination inventory. This scale was designed by Lay (1986; as cited in Sirois, 2007) to measure the tendency of students' procrastination in their academic tasks and includes 20 questions. This scale individually or in groups can be conducted. Sirois (2007) reported the internal homogeneity of this criterion by using alpha in a sample of 254 persons to be 0.90. In the present study, the reliability of this scale was 0.787, 0.718, and 0.768 for all samples, female samples, and male samples respectively.

Herman's scale of achievement motivation. This questionnaire was made by Herman in 1970. The first questionnaire consisted of 92 questions distinguishing people of high achievement motivation from those of low achievement motivation on the basis of 10 characteristics. Herman found out that these 10 characteristics were on the basis of his previous researches, and he chose them as basis and guidelines of his questions. After testing and analyzing the questions and calculating the correlation of each question with the whole questions, 29 ones were selected as the optimal questionnaire for achievement motivation (Houman, 2009).

Khazaei, Esmaeilpoor, and Eslami (2012) used the two methods of alpha—Cronbach and retest after three weeks to measure the equilibrium which he obtained 0.82 and 0.85 respectively. Pouratashi, Rezvanfar, and Mokhtarnia (2013) reported Cronbach alpha equal to 0.86. In the present study, the reliability coefficient was 0.728, 0.749, and 0.708 for all samples, female samples, and male samples respectively.

Self-efficacy scale. The self-efficacy scale (a = 0.89) consisted of nine items regarding perceived competence and confidence in performance of class work (e.g., "I expect to do very well in this class", "I am sure that I can do an excellent job on the problems and tasks assigned for this class", and "I know that I will be able to learn the material for this class") (Pintrich & Groot, 1990). The test can be administered to both individuals and groups. In the present study, the reliability coefficient was 0.829, 0.819, and 0.810 for all

samples, female samples, and male samples respectively.

Procedure

The study was conducted in high schools. All participants were asked to complete Lay's academic procrastination scale, Herman's achievement motivation scale, and self-efficacy scale. They were also given adequate instructions on how to respond to the questions. The respondents were also assured that their participation in the study was voluntary and their responses would remain confidential and be used for research purpose only.

The data were analyzed using mean, standard deviation, *t*-test, and regression analysis.

Results

In order to analyze the data and test the hypotheses of the study, the descriptive indices of variables (mean, *SD* (standard deviation), skewness, and kurtosis) have been presented in order to check the normal distribution of the data. Skewness and kurtosis indices suggest the normality of data distribution.

The correlations between academic procrastination, achievement motivation, and self-efficacy with academic performance were calculated using Pearson's correlation coefficients (see Table 1).

Table 1

Correlation Between Academic Procrastination, Achievement Motivation, and Self-efficacy With Academic Performance

Variable	All		Female		Male	
	R	R^2	*R*	R^2	*R*	R^2
Academic procrastination	-0.30 **	0.09	-0.33**	0.05	-0.19	0.04
Academic self-efficacy	0.41**	0.17	-0.42**	0.18	0.42**	0.18
Achievement motivation	0.25**	0.06	0.31**	0.17	0.19	0.04

Note. * P<0.005, ** P<0.001.

According to the results (see Table 1), there is a significant correlation between academic procrastination (R = -0.30), achievement motivation (R = 0.25), and self-efficacy (R = 0.41) with academic performance.

A multiple regression analysis was carried out to find which of the variables predicts academic performance. Results of the analysis have been summarized in Table 2.

Table 2

Summary of Regression Analysis of Academic Performance According to Variables

Predictor variables	*B*	*SE*	*Beta*	*T*	*P*	*F*	*P*	*R*	R^2	Adjusted *R* square	*SE*
Constant	11.97	1.170		10.22	0.000	22.59	0.000	0.53	0.32	1.27	22.59
Academic self-efficacy	0.11	0.015	0.42	7.08	0.000						
Academic procrastination	-0.31	0.008	-0.23	-3.73	0.000						
Academic motivation	0.03	0.009	0.21	3.44	0.001						
Gender	0.40	0.186	0.13	2.14	0.034						

Table 2 illustrates the results of regression of academic self-efficacy, academic procrastination, and academic motivation on academic performance.

The result of multiple regression analysis revealed that academic self-efficacy (*Beta* = 0.42, $P < 0.000$) was the best predicator and academic procrastination (*Beta* = -0.31, $P < 0.000$) inversely is a significant predictor of academic performance (see Table 2). The explanation of 32% variance of academic performance

by academic self-efficacy, achievement procrastination, academic motivation, and gender indicates that there are some other factors which have roles in predicting academic performance, which have not been investigated in this research.

For examination of 2-5 hypotheses with regard to condition of homogeneity of variances on the base of Levene's *F*, *t*-test was used for data analysis (see Table 3).

Table 3

T-test Scores of Female and Male Students in Academic Self-efficacy, Academic Procrastination, Academic Motivation, and Academic Performance

Variables	*N*		*M*		*SD*		*T*	*P*	*F*	*P*
	Female	Male	Female	Male	Female	Male				
Academic self-efficacy	100	100	45.82	46.11	5.86	6.15	0.29	0.730	0.57	0.43
Academic procrastination	100	100	49.57	50.18	8.98	9.49	0.47	0.640	0.17	0.68
Academic motivation	100	100	60.83	62.73	6.21	6.81	2.06	0.040	0.72	0.40
Academic performance	100	100	18.12	17.55	1.44	1.55	2.66	0.009	1.50	0.22

Table 3 illustrates how female and male respondents rated themselves on the items of the academic self-efficacy, academic procrastination, academic motivation, and academic performance.

The result of *t*-test revealed that there is no significant difference between the mean scores of girls and boys in academic procrastination ($T = 0.47$, $P = 0.640$) and academic self-efficacy ($T = 0.29$, $P = 0.730$). There was a significant difference between boys and girls, in terms of the level of achievement motivation ($T = 2.06$, $P = 0.040$) and academic performance ($T = 2.66$, $P = 0.009$).

Discussion

As mentioned above, the aim of the present research was to examine the relationship between self-efficacy, achievement motivation, and academic procrastination with academic performance.

The results from multi-variable regression indicated that academic self-efficacy had a significant and positive direct effect on the academic performance of students. These findings are similar with the findings of many previous international studies (Vuong et al., 2010; Valle, 2009). The findings of numerous previous studies conducted in universities (Paul & Gore, 2006; Lilian, 2012), which reported a significant and positive effect of academic self-efficacy on academic performance. In addition, the present findings are consistent with many previous international studies (Klassen et al., 2008; Adeyemo, 2007). The current findings are in agreement with Bandura's (1997), which demonstrated that academic self-efficacy had a significant and positive effect on the academic performance of college/university students. There is an evidence that self-efficacious students participate more readily, work harder, persist longer, and have fewer adverse emotional reactions when they encounter difficulties than those who doubt their capabilities. Findings suggest that academic self-efficacy is an affective factor to predict academic performance. Self-efficacy is one component of Social Cognitive Theory, a learning theory which identifies determinants governing thought, motivation, and human action. Self-efficacy beliefs are mediated through a variety of processes (cognitive, motivational, affective, and selective), which translate them into specific actions or behaviors (Bandura, 1997, as cited in Habel, 2009). There is little doubt that academic self-efficacy is central to success in a range of performance areas. Higher academic self-efficacy is strongly associated with improved performance. In addition, findings resulted from multi-variable regression show any meaningful relationship between achievement motivation and academic performance ($P \leq 0.001$).

The current findings are in support of many previous international studies (Ahmad & Rana, 2012; Busato et al., 2000; Onete et al., 2012; Tucker et al., 2002; Nisa et al., 2011; Mahyuddin et al., 2009), which documented that achievement motivation had a significant and positive effect on the academic achievement of students in higher education institutions. Individuals with high achievement motivation have the capacity to set high personal and achievable goals, they are concerned for personal achievement rather than the rewards of success. In addition, achievement motivation, especially academic motivation orients students toward learning and understanding, developing new skills and cognitive strategies for solving problems, and leads to focus on self-improvement using self-referenced standards, because academic motivation enables students to set achievement goals, and thus, students work hard and exert maximum efforts to achieve those goals. Both female and male students who perceived themselves as having higher achievement motivation were found to have higher academic achievement when compared with their counterparts who described themselves as having lower achievement motivation. Thus, these could be the reasons why achievement motivation has a significant and positive effect on the academic achievement of students. The results of Pearson's correlation coefficient revealed that there is a significant negative correlation between academic procrastination and academic motivation and also results of multiple regression demonstrated that procrastination inversely is a significant predictor of academic performance. The findings are supported by findings of previous researches (Sepehrian & Lotf, 2011; Howell & Watson, 2007; Akinsola, Adedeji Tella, & Adeyinka Tella, 2007).

The result of *t*-test related to the second hypothesis of the research showed that there was no significant difference between boys and girls, in terms of the level of academic self-efficacy ($T = 0.29$, $P = 0.730$). This finding does not agree with the research results of Busch's (1995), in which female students had significantly lower self-efficacy than male students. Also, the present findings do not consistent with Abesha's findings (2012), who reported that male students had significantly lower self-efficacy than female students. These different results may be due to differences in measurement instruments and culture.

The result of *t*-test related to the third hypothesis of the research showed that there was significant difference between boys and girls in terms of the level of achievement motivation ($T = 2.06$, $P = 0.040$). The findings of this study support existing research (Akinsola, Adedeji Tella, & Adeyinka Tella, 2007; Nisa et al., 2011) in those females scored significantly higher than males in the area of achievement. This finding disagrees with the research results of Shekhar and Devi (2012), which documented that there was no significant sex difference in achievement motivation of students.

The result of independent *t*-test related to the forth hypothesis of the research showed that there was no significant difference between boys and girls in terms of the level of academic procrastination. The results of this study are in conformity with the researches of Sirin (2011), but disagree with the research results of Sepehrian et al. (2012), Özer et al. (2009), Steel (2007), and Yong (2010), in which reported that there was a meaningful difference between boys and girls in terms of the level of academic procrastination. These different results may be due to differences in time preferences for studying courses and exams.

The independent *t*-test was applied to compare the mean scores of males and females academic performance, females significantly showed higher mean scores on academic performance in comparison to males. Most studies show that, on average, girls do better in school than boys. Girls get higher grades and complete high school at a higher rate compared with boys (Jacobs & Osgood, 2002). One probable explanation for the gap in the academic achievement between female and male students could be a consequence of childhood sex-role socialization patterns. But Abesha (2012) showed that male students had higher academic

achievement compared to their female counterparts.

Conclusions

The findings of this study would also help students know and understand that their own personal characteristics (i.e., academic self-efficacy, achievement motivation, and academic procrastination) have significant roles in their academic performance, and consequently, enable them to take timely measures to promote their academic self-efficacy and achievement motivation and reduce academic procrastination, and thereby, improve their academic performance. The need for developing students' self-efficacy in school is essential for improving academic outcomes. This study is recommended to improve efficacy and motivation in male students, who need to pay more attention to.

On the limitations of this research, it can be said that this research was only conducted in Orumieh with the high school students. So, it is impossible to generalize the findings to students of other schools of the country. In spite of the mentioned limitations and according to the findings, the present research is recommended that future research studies the relationship between academic procrastination with other variables.

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