The Relationship between Achievement Goals and Academic Success: The Investigation of Mediating Role of Academic Self-efficacy

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Abstract

The main goal of this paper was to identify the relationship between achievement goals and academic self-efficacy with academic success. It was attempted to investigate the mediating role of academic self-efficacy in the relationship between achievement goals with academic success. The sample of this study comprised 220 participants, in different ages including both men and women. The instruments used were the achievement goals orientations contained 14 items (Midgley et al., 2000), the 8-item academic self-efficacy (Pintrich et al., 1991) and student's academic success: Grade Point Average (GPA). The results indicated that the mastery goals, performance-approach goals and self-efficacy had a significant relationship with academic success. The results showed that self-efficacy has the facilitative role in the relationship between mastery goals and performance-approach goals for academic success and mastery goals and self-efficacy could be strongly effective in the motivating strategies for enhancing learning.

Keywords: achievement goals, academic self-efficacy, academic success

Introduction

Researchers in the field of educational psychology have investigated a number of variables related to academic performance. Two variables that have attracted the attention of researchers more are achievement goals and self-efficacy. The present study seeks to examine the achievement goals and self-efficacy in relation to academic success. Academic success in this research refers to academic performance which is assessed by Grade Point Average (GPA) in the Iran. GPA is accounted based on the academic subject areas and over the semesters, and thereby provides a fairly robust measure of success in the universities.

The first variable in this study is achievement goals. Achievement goals are the types of outcomes that students pursue in their learning environments (Dweck, 1986). these results show the sustained benefits of favorable goal profiles beyond effects of cognitive ability and background characteristics (Hornstra, Majoor, & Peetsma, 2017) There are two main types of achievement goals: mastery goals and performance goals (Dweck & Leggett, 1988). Mastery goals orient students to focus on learning and to gain mastery over the content, and they have been linked to adaptive outcomes such as strong self-efficacy, good metacognition, and good performance. People with mastery goals seek challenging tasks and strive under difficult situations. When faced failure, they respond with 'solution-oriented instructions', as well as sustained or increased positive affect and sustained or improved performance (Elliot & Dweck, 1988) they persist in the face of difficult events, seek challenging activities, and have high intrinsic motivation (Ames, 1992; Dweck, 1986).

Performance goals encourage students to focus on scoring better than others or to avoid the appearance of the incompetency (Dweck & Leggett, 1988). Students with performance goals strive to demonstrate their abilities and avoid negative judgments of competence and they have low intrinsic motivation (Anderman, & Midgley, 1997; Peetsma, & van der Veen, 2013). They evade challenges and obstacles, and prefer simple tasks in which success is guaranteed. When confronting the challenging tasks, they may react in a number of ways: withdraw due to the risk of failure, demonstrate negative affect, make negative ability

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attributions, and report decreased interest in the task. Research suggests that goal orientations may exist independent of each other, allowing students to adopt multiple goals simultaneously, such as an orientation towards the mastery of information as well as striving to perform well on a test (Pintrich, 2000). Students may adopt only one goal, or both goals with one being a primary goal and the other being a secondary goal. Dweck and Leggett (1988) proposed that "the goals individuals are pursuing create the framework within which they interpret and react to events" (p. 256). Mastery goals create a framework in which inputs and outputs provide information about one's learning and mastery, whereas performance goals create a framework in which inputs and outputs are interpreted in terms of one's ability and his adequacy (Elliot, & Murayama, 2008). As a result, achievement goal theory has undergone a number of theoretical advances. Elliot and his colleagues have proposed a trichotomous framework of achievement goals that further divides into performance goals approach and avoidance goals (Elliot & Church, 1997; Elliot & Mcgregor, 2001). In this framework, three types of achievement goals are posited: mastery goals that focus on the development of competence, performance -approach goals that focus on having favorable judgments of competence, and performance-avoidance goals that focus on avoiding unfavorable judgments of competence (Elliot & Church, 1997; Elliot & Mcgregor, 2001). The validity and utility of this trichotomous framework of achievement goals have been demonstrated for middle school and college level students in North America. In addition, Alkharusi (2010) suggests that the applicability of the trichotomous framework of achievement goals across cultures has been the focus of attention for many Asian researchers and psychologists (e.g., Lau & Lee, 2008(a,b); Tanaka, & Ysmauchi, 2006).

The second variable in this study is the concept of self-efficacy or a person's belief in his or her ability to succeed in the specific situations. Self-efficacy is a concept drawn from Bandura's (2001) broad theory of the person, which posits that human achievements depend on the reciprocal interactions of the person's behavior, personal factors (or self), and environmental conditions. Self-efficacy is one of the personal factors and is defined as "the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 20). Self-efficacy beliefs should be relevant for understanding academic outcomes because self-efficacy leads to specific behaviors and motivations that can encourage or discourage effective performance. Self-efficacy is concerned with people beliefs in their capabilities to produce given

attainments, which stated that human achievement depends on interactions between one's behaviors, personal factors and environmental conditions. Self-efficacy beliefs influence task choice, effort, persistence, resilience, and achievement (Nasiriyan, Azar, Noruzy, Dalvand, 2011). In briefly, self-efficacy is said to have a measure of control over individual's thoughts, feelings and actions. A number of concepts are sometimes confused with self-efficacy, including academic self-concept, outcome expectations, perceived control (or sense of control), and self-esteem. Self-efficacy has been found to have an impact on the academic performance (Rosen, Glennie, Dalton, Lennon, & Bozick, 2010). Furthermore, the reviewed studies also indicated that it can be improved, thus making this a worthy area of further research and investment.

Pajares (1996) demonstrated that general measures of academic self-efficacy can be good predictors of more general or aggregated academic achievement. But, in general, the best predictors of specific academic performances will be self-efficacy beliefs about those specific academic problems. Those with higher self-efficacy are proposed to have higher aspirations, stronger commitments to their goals, and recover more quickly from setbacks than those lower in self-efficacy (Fast et al., 2010). Manavipour and Saeedian (2016) showed that self-efficacy could predict intrinsic motivation (McGeown et al., 2014), subjective well-being (Kord, & Mehdi Pour, 2018) cognitive engagement (Walker, Greene, & Mansell, 2006), emotional and physical wellbeing (Hochhausen et al, 2007), and sexual activity (Steinke, Wright, Chung, & Moser, 2008).

The demonstrated importance of self-efficacy in academic achievement has provoked widespread interest in specific factors that affect a student's self-efficacy beliefs. ncreased self-efficacy can be used to enhance subjective well-being and improve life satisfaction. As the same way, kord, and Mehdi Pour (2018) suggested in order to promote mental health and subjective well-being pay attention to self-efficacy.

While a positive relationship between mastery goals and self-efficacy has been widely established (Akın, 2012; Ames & Archer, 1988; Dweck & Legett, 1988), the relationship between self-efficacy and performance goals is less clear. Some studies cite a weak positive relationship between self-efficacy and performance goals whereas other studies report a negative relationship (Wolters, 1998) or no relationship (Ford, Smith, Weissbein, Gully, & Salas, 1998). Mastery goals also show a strong relationship

to performance compared to performance goals (Button, Mathieu, & Zajac, 1996).

Therefore, the present study examined the relationship between achievement goals, self-efficacy, and academic success and it is based on the hypothesis that the relationship between goals and academic success is fully mediated by self-efficacy. This means that mastery goals and performance goals may be related to academic success through self-efficacy. Thereby, students with mastery goals are predicted to have good self-efficacy, and this leads to academic success. Similarly, students with performance goals are expected to have poor self-efficacy, which translates to poor academic results. The present study also examines whether self-efficacy, mastery and performance goals are predictors of academic success.

This area of research was selected because it has not been investigated before, so it contributes to the existing wealth of knowledge on the achievement goals and self-efficacy in relation to academic success. Achievement goals are typically assessed using a sample of students in the elementary and secondary schools and not in the universities. Therefore, another reason for doing this study was to contribute to the existing educational psychological research on university students which led to make a comparison between the elementary and secondary students and the university students. This area of research is also important because the relationships among the achievement goals, self-efficacy, and performance could be used to provide training programs to teach students self-efficacy beliefs and also the importance of achievement goals.

Method

Participants

The present study included 220 university students who were selected by multistage cluster-random sampling method from Islamic Azad University of Mahabad. The participants were 118 (35.2%) men and 102 (64.8%) women, ages ranged from 19 years to 46 years (M = 24.84, SD = 3.72).

Instruments

The original English version of all current study measures translated into Farsi using back-translation technique in order to guarantee the equivalence between two languages.

Goal orientation scale

The measure of achievement goals orientations contained 14 items from Patterns of Adaptive Learning Scales (Midgley et al., 2000). In original version, the items measured students' adoption of mastery (5 items), performance-approach (5 items), and performance-avoidance (4 items) goals on a 5-point Likert scale ranging from 1 (not all true) to 5 (very true). Midgley et al. (2000) reported internal consistency reliabilities of .85, .89, and .74 for mastery, performance-approach, and performance-avoidance goals as indicated by Cronbach's alpha, respectively. In the current study, Cronbach's alpha coefficients of three subscales have been found .83, .84, respectively and .87 for overall score.

Self-efficacy

Self-efficacy subscale of Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, García, & McKeachie, 1991) was used to assess self-efficacy. This scale contains 8 items, which are rated academic self-efficacy for Learning and Performance for College students (Pintrich et al, 1991). Participants responded to each item on a 7-point scale ranging from strongly disagree (1) to strongly agree (7). This subscale also is a strongly reliable measure, with Cronbach's alpha coefficient of .93 (Pintrich et al., 1991). In the current study, Cronbach's alpha coefficient of the Self-efficacy subscale of MSLQ has been found to be .89.

Demographics sheet

The third section was a demographics and performance measure where students provided demographic information about age, gender, ethnicity, and academic year in school as well as their college GPA.

Procedure

This study employed survey methodology. Participants were informed that the purpose of the experiment was to understand the learning process. After students were told about the aim of the research, they were asked to respond to a questionnaire packet that included measures goal orientation scale, a self-efficacy measurement, and a demographics sheet that also asked for their college GPA and the scale of the GPA since GPA can be measured based on different scales. All participants completed the same survey.

Data were analyzed in SPSS V.21 (IBM Corp., 2012). Descriptive and inferential analyses were performed. In order to explore the relationship among Achievement Goals, Academic Success and the

Mediating Role of Academic Self-efficacy, Pearson's correlations were used to understand the associations between dependent, independent and mediator variables. The mediation model was tested through PROCESS using a bootstrap of 5000 resamples (Hayes, 2012).

Findings

Table 1 presents descriptive statistics for the variables. Descriptive statistics is the first step in any quantitative analysis as it provides information on the distribution of scores, average scores (i.e., mean scores), and it also helps to identify any anomalies in the data. The data in this study were normally distributed and had no

problems with skewness (scores clumping towards one end of the scale) or kurtosis (scores gathering in the middle of the scale).

According to Table 1, Participants' mean mastery goals was 17.34 (SD=11.43), mean performance-approach goals was 11.62 (SD=8.85), mean performance-avoidance goals was 8.55 (SD=6.95), mean self-efficacy was 38.45 (SD=10.68), and mean College GPA was 14.25 (SD=4.87). as the same way, skewness and kurtosis indexes is between ±1, which indicates the desirability of the distribution of variables for performing parametric analyzes (Tabachnick, & Fidell, 2007).

Table 1.
Statistical indexes (n=220)

Variables	Mean	SD	skewness	kurtosis
1.mastery goals	17.34	11.43	.24	-.91
2.performance-approach goals	11.62	8.85	.35	.77
3.performance-avoidance goals	8.55	6.95	.93	.35
4.self-efficacy	38.45	10.68	-.20	.75
5.College GPA	14.25	4.87	.05	.13

Table 2.
Correlations between Achievement Goals subscales, Academic Success, and Academic Self-efficacy (n=220).

Variables	1	2	3	4	5
1.mastery goals	1.00	-	-	-	-
2.performance-approach goals	.23*	1.00	-	-	-
3.performance-avoidance goals	-.19	.42*	1.00	-	-
4.self-efficacy	.75**	.17	.09	1.00	-
5.College GPA	.32**	.28*	.12	.65**	1.00

* P < 0.05, ** P < 0.01

Next, correlations were computed between mastery goals, performance-approach goals, performance-avoidance goals, self-efficacy, and Academic Success.

Table 2 shows the inter-correlations of the variables. Correlations show the extent to which one set of scores change with another set of scores. Positive correlations indicate that two sets of scores increase together or decrease together. Negative or inverse correlations suggest that as one set of scores increases, the other set of scores decreases. In this study, mastery and performance-approach goals correlated weakly (r = .23, p< .01) suggesting that mastery and performance-approach goals are somewhat independent of each other and students high in mastery goals are not likely to be high or low in performance-approach goals.

It is observed that mastery goals were related negatively and weakly to performance-avoidance goals (r = -.19, p > .01). As expected, mastery goals correlated strongly with self-efficacy (r = .75, p < .01) compared to performance-approach goals (r = .23, p < .01) and to performance-avoidance goals (r = -19, p > .01).

This indicates that students with high self-efficacy also have strong mastery goals whereas students with performance-approach, and performance-avoidance goals may or may not have high self-efficacy (i.e., there is no strong relationship between p performance-approach, and performance-avoidance goals and self-efficacy). Mastery and performance-approach goals have a modest correlation with GPA (r = .32, p < .01) (r = .28, p < .01) whereas performance-avoidance goals don't correlate significantly with GPA (r = .12, p > .01). This means

that to a weak extent, students with strong Mastery and performance-approach goals also have good GPAs whereas we cannot infer anything about GPAs from students with strong or weak performance -avoidance goals. Finally, self-efficacy is correlated strongly with GPA (r = .65, p < .01) suggesting that students with high self-efficacy also have strong GPA.

The next analysis conducted was a regression analysis. Regression analyses typically follow significant correlations and are used to determine the extent to which GPA can be predicted from mastery goals, performance-approach / avoidance goals, and

self-efficacy. The utility of regression lies in its future use. For example, if self-efficacy is a strong predictor of GPA, then we can typically predict GPAs of students who complete the same self-efficacy scale before they enter university, assuming that self-efficacy remains stable. Regression is also used to examine mediation where one variable has an influence on another variable through a mediating variable.

Regression analyses examined the mediation effects of self-efficacy in the relationship between achievement goals and academic success.

Table 3.
Stepwise multiple regression analysis showing prediction of GPA by three components of Achievement Goals and self-efficacy (n=220)

Variables	B	SE B	β	R	R^2	Adjusted R^2	F
Step 1	17.34	11.43	.38	.32	.102	.102	41.32**
mastery goals							
Step 2							
mastery goals	19.82	11.02	.43	.51	.260	.257	44.30**
performance-approach goals	11.62	8.85	.22				
Step 3							
mastery goals	22.36	13.28	.48	.63	.367	.350	51.45**
performance-approach goals	10.05	8.86	.20				
self-efficacy	18.68	10.47	.34				

* P < 0.05, ** P < 0.01.

Finally, the linear regression analyses were performed to observe the contribution given by achievement goals and self-efficacy to the prediction of Academic Success. Results of the regression analyses showed that academic success was positively predicted by mastery goals (β=.38, p<.001 and β=.20, p<.001) and According to Table2, mastery goals entered the equation first, explaining 10.2% of the variance in predicting GPA (R²=10.2, adjusted R²=10.2, F=41.32, p<.01). Entering mastery goals and performance-approach goals in the second step accounted for 26.00% of the variance in predicting GPA (R²=26.00, adjusted R²= 25.7, F=44.30, p<.01). At the third step, self-efficacy entered to be another significant predictor of GPA, explained .36.7% of the variance (R²=36.70, adjusted R²= 35.0, F=51.45, p<.01). The standardized beta coefficients revealed that mastery goal (β=.38, p<.01), performance-approach goal (β=.22, p<.01), and self-efficacy (β=.34, p<.01) were positive predictors, of GPA. Moreover, mastery goals had the largest contribution to predict self-efficacy. Therefore, the results of linear regression analyses suggest that mastery, performance-approach goals and self- efficacy with the exception of performance-avoidance goals might play a crucial role

in the prediction of academic success of students. Likewise, the mastery goals and performance-approach can predict self-efficacy well (β=.38, p<.0001 and β=.24, p<.001). This means that mastery and performance-approach goals influence academic success directly as well as indirectly through self-efficacy which supports a partially mediated model for mastery goals rather than a fully mediated model.

Discussion and Conclusion

The present study examined the relationship between achievement goals, self-efficacy, and academic success, focusing on the mediating role of Academic self-efficacy. Statistical analyses showed that mastery and performance-approach goals and self-efficacy had relationship with academic success. This means that there is no relationship between performance-avoidance goals and academic success. These results are in line with studies (Ames, 1992; Butler, 1993; Button, Mathieu, & Zajac, 1996; Dweck, 1986; Gold, 2010; Huy, 2014; Hornstra, Majoor, & Peetsma, 2017; Pintrich, 2000) which have emphasized that students with mastery goals are more likely to have good self-efficacy, and thereby, they are better learners than

students with performance-avoidance goals. Students' self-efficacy creates change in their achievement goals and students with high self-efficacy adopt mastery and performance- approach goals while those low in self-efficacy tend to prefer performance-avoidance goals (Liem, Lau & Nie, 2008). Likewise, the findings showed that among the components of trichotomous framework of achievement goals just mastery goals and performance-approach goals were related to GPA performance whereas performance-avoidance goals were unrelated to it. This result is in line with some studies (Elliot & Mcgregor, 2001; Alkharusi, 2010) suggesting that students with the intent to comprehend information tend to be more successful in their academic performance. Students who just seek to perform well on a test without understanding the information or avoiding the appearance of incompetence do not necessarily have good performance.

Another critical finding is self-efficacy is also related to academic success and students with good self-efficacy have good GPAs. Mastery goals influence GPAs through self-efficacy as students with mastery goals may have superior self-efficacy skills and strategies that they use to master the information; the use of superior self-efficacy eventually leads to enhanced GPA. This result is supported by other studies (Rosen, Glennie, Dalton, Lennon, & Bozick, 2010; Kord, & Mehdi Pour, 2018; Nasiriyan, Azar, Noruzy, Dalvand, 2011; Walker, Greene, & Mansell, 2006). These studies found that self-efficacy are able to predict GPAs in positive directions Because self-efficacy is concerned with people beliefs depends on interactions between one's behaviors, personal factors and environmental conditions and influence task choice, effort, persistence, resilience, and achievement. Self-efficacy is a construct for a measure of control over individual's thoughts, feelings and actions. In particular, self-efficacy appears to invoke the employment of various metacognitive strategies and resources that are indispensable for academic performance. Thus, high self-efficacy certainly fosters the ability to perseverance, which conducive to a higher GPA. Students with performance-avoidance goals may not enjoy the fruit of academic success even though they strive to perform well. Students should be encouraged to adopt a mastery approach to learning, because the results showed that Students who tend to be driven by performance-avoidance goals may benefit from training related to mastery goals and self-efficacy. One drawback of the study is the use of GPA which is a measure of academic success and not necessarily a measure of learning. GPA measures the performance in the classes rather than the extent of

learning. Consequently, conducting a similar study with learning measures rather than GPA (which is a performance measure) may be insightful. Participants had to complete the survey to fulfill class requirements and so this study uses a convenience sample rather than a truly random sample. Finally, students in the classes may have performance-approach and performance-avoidance goals since they have to do well to pass their classes.

These students may strategically use performance-approach and performance-avoidance goals to meet performance needs whereas they may use mastery goals in settings where the outcome is learning and not good GPAs. Future research could examine environments where more emphasis is placed on learning and applying learned information.

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