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Achievement Goals and Achievement Emotions in Elementary School Students

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Abstract

Background: In academic settings, the goals that students pursue have a significant impact on students' motivation, performance and emotions, a condition known as achievement emotion.
Objectives: The goal of this research is to assess the effect of accomplishment goal on achievement emotion of students.
Patients and Methods: The study comprised 380 elementary students of grades four to six. They completed self-report questionnaires tapping Achievement Goals Questionnaire (AGQ) and Achievement Emotions Questionnaire (AEQ) in the classroom during a school session. All descriptive statistics, regression and confirmatory factor analyses, were performed using SPSS 19.
Results: Simultaneous multiple regression of achievement goals on students' achievement motivation showed that, each of the achievement goals predicts achievement emotions differently. The findings are fully presented in the result section.
Conclusions: The results of this study revealed that achievement goal is a significant factor in predicting achievement emotions. Actually, these results present evidence of the advantages of mastery goals and the disadvantages of performance avoidance goals.

Keywords: Achievement Goal, Achievement Emotion, Students

1. Background

In recent years, achievement goal theory has been the topic of large studies in the field of educational psychology (1). Pekrun et al. defined achievement goals as "Competence-relevant aims that individuals strive for in achievement settings" (cited in Huang (2)). Early achievement goal theorists used a dichotomous framework separated in the mastery-performance distinction (3). The mastery goal was characterized by the increase of competence of a task, and performance goals focused on the proof of competence or ability in relation to others. This dichotomous framework was revised by Elliot (1994) into a trichotomous framework (cited in Huang (2)). In this framework, three goals are distinguished: a mastery goal known as an approach goal that stresses on the achieving competence based on task-based or interpersonal standards. The performance-approach goal is recognized as an approach goal that emphasizes on attaining competence relative to others or normative standards. A performance-avoidance goal is an avoidance goal that is relative to avoiding incompetence relative to others. Finally, the mastery-avoidance goal is represented as an avoidance goal characterized by avoiding failure and misunderstanding to learn, with a performance decline as a measure of incompetence indicated by Elliot and McGregor (4), rendering a 2 × 2 taxonomy of achievement goals (2, 3), a subject of present study.

Achievement goal theory joins achievement orientation goals with academic achievement emotions (2). Achievement emotions are defined as emotions that are directly dependent on achievement outcomes and achievement activities (2, 5). In past research, studies on achievement outcomes emotions have received considerable attention in the literature of educational psychology including emotions that follow failure and success and test anxiety (3, 5). The segregation of activity versus outcome emotions is the object focusing on these emotions. Moreover, both activity and outcome emotions were grouped based on their valence and the degree of activation. Positive emotions known as desirable enjoyment, in terms of valence, can be distinguished from negative emotions including unpleasant anxiety. Psychologically activating emotions such as activating hope, considered as activation, can be differentiated from deactivating emotions known as deactivating hopelessness. Dimensions valence and activation shape the 2 × 2 taxonomy of achievement emotions (5, 6). Pekrun et al. state that enjoyment, anger, and boredom are examples of activity emotions (positive and negative), and pride, hope, shame, hopelessness, and anxiety are examples of positive and negative outcome emotions (3).

1.1. Relationship Between Achievement Goals and Achievement Emotions

1.1.1. Achievement Goals and Positive vs. Negative Affect

Frequently of the studies on achievement goals and achievement emotions suggested that mastery goal was positively associated with students' general positive affect. In contrast, there was no association or sometimes negative relationship between this goal and students' general negative affect (2, 3). On the other hand, the relationship between performance goal and affect has been inconsistent. For example, research showed that performance-approach goal is either positively related or unrelated to both general positive and negative (3). Another research stated that performance-avoidance goal was sometimes related to negative affect and at other times exhibited a null relation (3).

1.1.2. Achievement Goals and Achievement Emotions

Over several past decades, research have found that there are correlation between achievement goals and other academically variables such as academic achievement and achievement emotions (2, 7). For example, studies of the predictive relationship between mastery goals and achievement emotions revealed that, mastery goals were positive predictors of hope, pride, and enjoyment of learning, and negative predictors of anger and boredom. Research showed that performance-approach goals positively predicted pride, whereas performance-avoidance goals negatively predicted shame, anxiety, and hopelessness (2, 3). In this regard, the study of Liu (8) showed that mastery-approach and performance-avoidance goals predict academic boredom while mastery-avoidance and performance-approach goals did not. In his researches, Puente-Diaz (9,10) stated that mastery-approach positively predicts enjoyment and hope, but performance-approach only predicts hope. Moreover, he suggested that task orientation is predictors of pleasant psychobiosocial state. Also, Putwain and Symes (11) and Ntoumanis and Biddle (12) indicated that competence beliefs do not predict test anxiety; however incompetence beliefs positively predict test anxiety. Kavussanu et al. (13) in their study of "The effects of achievement goals on performance, enjoyment, and practice of a novel motor task," expressed that all three goals (mastery, performance-approach and performance-avoidance goals) predict enjoyment. Some studies also showed that task orientation strongly correlate with enjoyment, and positively affect psychological well-being, while ego orientation positively correlate with negative and positive affect, and negative psychological well-being (1, 14-16).

2. Objectives

Across studies (2, 3, 7, 8) there has been incompatible relationship between academic achievement goals and positive and negative effect, an area demanding further studies. According to the foregoing, the goal of this research was to determine the effect of achievement goals on students' achievement emotions. We hypothesized that mastery goals positively predict enjoyment in learning and negatively predict boredom and anger. On the other hand performance-approach goals positively predict pride and hope, while performance-avoidance goals positively predict hopelessness, shame, and anxiety.

3. Patients and Methods

The research used a descriptive-correlative method, and comprised 380 students in grades four to six selected by multi-stage cluster random sampling from different elementary schools of Shiraz. They completed self-report questionnaires including Achievement Goals Questionnaire and Achievement Emotions Questionnaire in the classroom during a 45-minute school session. All descriptive statistics, regression and confirmatory factor analyses, were performed using SPSS 19. The relationships between variables were examined using Pearson product-moment correlations. Also simultaneous multiple regression analysis was performed to investigate the prediction of students' achievement emotions through academic achievement goals.

3.1. Research Tool

Two questionnaires consisting of Achievement Goals Questionnaire (AGQ) and Achievement Emotions Questionnaire (AEQ) were used in the current study.

3.1.1. Achievement Goals Questionnaire (AGQ)

The students' achievement goal orientation was measured using Elliot and McGregor's (2001) achievement goal questionnaire, which comprises four subscales of performance-approach, performance-avoidance, mastery-approach, and mastery-avoidance (4). This scale includes twelve items of which 3 items were devised for each goal. Each item ranges from 1 to 5 (17).

To investigate reliability and validity of AGQ, Elliot and McGregor (4) in a preliminary study of the psychometric properties of the scale showed its adequate reliability and validity. Also, Jowkar et al. (17), in their study, suggested that alpha coefficient for mastery-approach was 0.87, for mastery-avoidance 0.89, for performance-approach 0.84 and for performance-avoidance 0.53. Moreover, the principal components analysis (PCA) was employed to examine

the validity of the scale. The factor analysis confirmed 4 factors and showed that all items were highly loaded on one factor. Also, in this study Cronbach alpha coefficient was calculated, to determine the reliability of the scale. Alpha coefficient for mastery approach, mastery-avoidance, performance-approach and performance-avoidance were 0.80, 0.78, 0.81, and 0.59, respectively. Further, for examining the validity of the scale, principle components analysis was used and the result was desirable.

3.1.2. Achievement Emotions Questionnaire (AEQ)

The learning-related emotions scales of the AEQ were used to assess students' achievement emotions and their emotions prior to the exam. Pekrun et al. made this questionnaire in 2005 (3). The AEQ consists of 196 statements in total, including learning, taking a test and class parts, with 75 items related to learning used in the present study. The items refer to both outcome-related and activity-related emotions. In this scale, the participants were asked to describe their emotions while preparing for the exam in order to measure their emotions. The items estimate eight distinct emotions: a) Positive emotions covering: pride (including 8 items on "I am proud of myself", hope including 5 items on "I feel confident when studying", and enjoyment consisting of 9 items on "I enjoy dealing with the exam material. b) Negative emotions covering: anger including 10 items on "I get angry while studying", boredom indicated by 11 items on "studying for the exam bores me", anxiety presented by 11 items on "I get tense and nervous while studying", shame comprising 11 items on "I feel ashamed", and hopelessness related to 10 items on "I feel hopeless when I think about studying. The participants' response to the items was based on the Likert scoring procedure which was 1 (not at all) to 5 (very much) (18).

Regarding the reliability of the scale, Pekrun et al. (3) calculated Cronbach alpha coefficient, which were 0.85 for pride, 0.85 for hope, 0.83 for enjoyment, 0.88 for anger, 0.85 for boredom, 0.88 for anxiety 0.90 for shame and 0.93 for hopelessness, a scale with adequate validity. In addition, they found the reliability of the scale by Cronbach alpha coefficient for different variables. These values were 0.74 for pride 0.73 for hope, 0.72 for enjoyment 0.78 for anger, 0.76 for boredom, 0.80 for anxiety, 0.82 for shame and 0.85 for hopelessness. As for the validity of the scale, the principle components analysis showed desirable results.

4. Results

Before analyzing the data, descriptive statistic for demographic and study variables was carried out and the results are shown inTables 1 and 2.

The data analysis was then carried out first by calculating correlations between the measured variables. The Pearson correlations between all the measures are shown in Table 3.

As shown above, the results revealed that there were positive and significant correlations between achievement goals and students' achievement emotions. Positive and significant correlations were found between mastery-approach with enjoyment, pride, and hope, but negative correlation between anger and boredom. Positive correlation was observed between mastery-avoidance with enjoyment and negative correlation between hope and boredom. On the other hand, positive correlation was found between performance-approach with pride, as well as positive correlation between performance-avoidance with anxiety, shame, and hopelessness.

Also, simultaneous multiple regression analysis was performed to investigate the prediction of student's achievement emotions by achievement goals. The results showed that among dimensions of achievement goals, "Mastery-approach" was significant and positive predictor of the enjoyment, pride, and hope and negative predictor of all (positive and negative) emotions. In addition, mastery-avoidance positively predicts enjoyment and negatively predicts boredom. Also, performance-approach only predicts pride positively. Finally, performance-avoidance was a significant and positive predictor of the shame, anxiety, and hopelessness. The results are summarized in Tables 4, 5, and 6.

5. Discussion

The goal of this investigation was to explore the impact of achievement goals on achievement emotions among the students. In line with the findings of previous research, the results of multivariate regression analysis showed that, mastery goals were positively related to enjoyment of learning, pride, and hope (positive emotions), and negatively related to negative emotions, but as observed, there are differences between beta coefficients of mastery-approach and mastery avoidance. In other words, the beta coefficients of mastery-approach for positive and negative goals are higher than that of mastery-avoidance. In addition, performance-approach goals were positively related to enjoyment and pride. Otherwise, performance-avoidance goals were positively associated with all negative emotions. In summary, all of the studied emotions were significantly predicted by achievement goals (19).

As mentioned before, the vast majority of these findings are in line with the model predicted by Pekrun et al. (19). According to this model, activity emotions such as enjoyment, anger, and boredom are connected to mastery

Table 1. Descriptive Statistics of Demographic Variables (Gender and Grade)[a]

Gender	Grade			
	Fourth Grade	Fifth Grade	Sixth Grade	Total
Girl	66 (17.37)	71 (18.68)	73 (19.21)	210 (55.26)
Boy	55 (14.47)	70 (18.42)	45 (11.84)	170 (44.74)
Total	121 (31.85)	141 (37.10)	118 (31.05)	380 (100)

[a]Values are expressed as No. (%).

Table 2. Descriptive Statistics of Variables

Variable	Min	Max	Mean (SD)
Achievement goals			
Mastery-approach	2.67	5	4.10 (0.59)
Mastery-avoidance	2	5	3.40 (0.64)
Performance-approach	2	5	3.88 (0.58)
Performance-avoidance	1	4.33	2.55 (0.66)
Achievement			
Enjoyment	2.78	5	4.28 (0.40)
pride	3.38	5	4.42 (0.42)
Hope	3.20	5	4.27 (0.44)
Anger	1	3.10	1.72 (0.45)
Anxiety	1.09	3	1.73 (0.45)
Boredom	1	2.82	1.71 (0.45)
shame	1	4.91	1.75 (0.47)
Hopelessness	1.10	3.20	1.76 (0.45)

goals, to positive outcome emotions including hope and pride to performance-approach goals, and negative outcome emotions such as anxiety, shame, and hopelessness to performance-avoidance goals. Yet, the relationships observed between mastery goals with pride and hopes, and the lack of relationship between performance-approach goals and hope was not anticipated in the past theoretical proposal. In regard to the relationship between mastery goals to both pride and hope Pekrun et al. (19) noted that hope scales of the Achievement Emotions Questionnaire do not explicitly focus on hope as an outcome emotion. This was conceptualized in theoretical model proposed by Pekrun et al. with regard to pride, where the pride items used in this study focused on both self-based pride and task-based pride (19), which may account for the connection between mastery goals with the performance-approach goals.

On the other hand, when oriented toward mastery goals, the relationship between mastery goals with pride and hope shows that students not only focus on ongoing learning activities, but also think prospectively about the outcome to achieve competence, and think retrospectively about their already achieved competence. The relationship between performance-avoidance goals to emotions requires that shame and hopelessness evoked by performance-avoidance goals may themselves prohibit the experiment of pride and hope. Also, because of the aversive nature of task engagement during avoidance goal continuation, it is not surprising that these goals (performance-avoidance goals) facilitate some negative emotions (3).

The general pattern of the state of relationships states the systematic links between the goals of the 2 × 2 taxonomy of achievement goals and the emotions of the 2 × 2 taxonomy of achievement emotions. As to goals, when predicting emotions these results underline the significance of the differences in approach-avoidance and the mastery-performance. Performance-approach goals predicted pride, while performance-avoidance goals predicted shame, hopelessness, and anxiety. Also, regarding emotions, the results signify the importance of differentiating between more specific groups of emotions, over the generic difference between positive and negative affect. For example, the negative emotions such as anger and boredom were connected to mastery goals, while the negative emotions such as shame, hopelessness, and anger were linked to performance-avoidance goals.

Despite significant relationships between achievement goals and achievement emotions, the effect size was not very substantial in some connections. In other words the goals emotions are undoubtedly influenced by a number of factors such as students' social dispositions referred to as motives, self-relevant beliefs reflecting academic self-concepts and situational factors (19). Therefore, it is not rational to hope that achievement goals explain all or most of the differences in students' academic achievement emotions.

Briefly, the results of this research revealed that achievement goal is a significant factor in predicting achievement emotions. More specifically, many scholars have expressed that task involved have a direct posi-

Table 3. Correlations Between Achievement Goals and Achievement Emotions

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Mastery-approach	1											
Mastery-avoidance	0.15[a]	1										
Performance-approach	0.18[a]	0.08	1									
Performance-avoidance	-0.23[a]	-0.06	-0.20[a]	1								
Enjoyment	0.47[a]	0.41[a]	0.21[a]	-0.23[a]	1							
Pride	0.54[a]	0.19[a]	0.25[a]	-0.17[b]	0.81[a]	1						
Hope	0.38[a]	0.17[a]	0.16[a]	-0.18[a]	0.78[a]	0.65[a]	1					
Anger	-0.31[a]	-0.15[a]	-0.17[a]	0.16[b]	-0.58[a]	-0.61[b]	-0.60[a]	1				
Anxiety	-0.10	-0.16[a]	-0.16[a]	0.27[a]	-0.62[a]	-0.62[a]	-0.64[a]	0.97[a]	1			
Boredom	-0.35[a]	-0.27[a]	-0.15[a]	0.14[b]	-0.67[a]	-0.59[a]	-0.59[a]	0.73[a]	0.76[a]	1		
Shame	-0.17[a]	-0.10	-0.14[a]	0.26[a]	-0.58	-0.49[a]	-0.48[a]	0.59[a]	0.60[a]	0.83[a]	1	
Hopelessness	-0.12	-0.13[b]	-0.16[a]	0.25[a]	-0.59[a]	-0.58[a]	-0.61[a]	0.95[a]	0.96[a]	0.72	0.56[a]	1

[a] P < 0.001.
[b] P < 0.01.

Table 4. Model Summary of Multiple Regressions

Model	R	R Square	Adjusted R Square	Std. Error	F	P Value
Enjoyment	0.60	0.36	0.35	0.32	51.61	< 0.001
Hope	0.55	0.30	0.29	0.36	40.27	< 0.001
Pride	0.60	0.36	0.36	0.34	51.88	< 0.001
Anger	0.42	0.18	0.17	0.40	19.90	< 0.001
Anxiety	0.43	0.18	0.17	0.41	21.02	< 0.001
Shame	0.43	0.19	0.18	0.42	21.08	< 0.001
Boredom	0.45	0.20	0.19	0.40	23.86	< 0.001
Hopelessness	0.41	0.17	0.16	0.42	19.12	< 0.001

Table 5. Multiple Regressions of Achievement Goals in Relation to Positive Emotions

Variable	Enjoyment			Hope			Pride		
	B	β	P <	B	β	P <	B	B	P Value
Constant	2.39		< 0.001	2.44		< 0.001	2.14		< 0.001
Mastery-approach	0.26	0.38	< 0.001	0.22	0.29	< 0.001	0.34	0.48	< 0.001
Mastery-avoidance	0.21	0.34	< 0.001	0.16	0.19	< 0.001	0.14	0.21	< 0.001
Performance-approach	0.06	0.08	0.056	0.04	0.05	0.231	0.10	0.14	0.002
Performance-avoidance	-0.06	-0.10	0.081	-0.05	-0.07	0.102	-0.01	-0.01	0.704

Table 6. Multiple Regressions of Achievement Goals in Relation to Negative Emotions

Variable	Anger			Anxiety			Shame			Boredom			Hopelessness		
	B	β	P <	B	β	P <	B	β	P <	B	β	P <	B	β	P Value
Constant	2.89		< 0.001	2.82		< 0.001	2.88		< 0.001	2.97		< 0.001	2.86		< 0.001
Mastery-approach	-0.17	-0.23	< 0.001	-0.17	-0.22	< 0.001	-0.24	-0.30	< 0.001	-0.21	-0.27	< 0.001	-0.18	-0.23	< 0.001
Mastery-avoidance	-0.14	-0.20	< 0.001	-0.15	-0.21	< 0.001	-0.09	-0.12	0.008	-0.15	-0.21	< 0.001	-0.14	-0.19	< 0.001
Performance-approach	-0.06	-0.07	0.108	-0.05	-0.06	0.172	-0.03	-0.04	0.379	-0.04	-0.05	0.291	-0.05	-0.06	0.177
Performance-avoidance	0.05	0.06	0.093	0.13	0.19	< 0.001	0.12	0.17	0.001	0.04	0.05	0.113	0.12	0.17	0.001

tive relationship with positive emotions and negative relationship with negative emotions (20). In other words, as Pekrun et al. (3) have expressed, mastery goals are beneficial. Actually, these results present evidence of the advantages of mastery goals and the disadvantages of performance avoidance goals. Along these lines, Elliott and Dweck (cited in Huang (2)) expressed that when students emphasized a normative standard in pursuing performance goals, this can make them assailable to negative affect. So, parents, counselors, and teachers in the schools should encourage students to pursue mastery goals, and disregard performance avoidance goals.

This research had some limitations that can be used to suggest directions for future studies. First, the goal of this study was to examine the effect of goals on emotions. However, as highlighted in the model of "Goals and positive versus negative affect" proposed by Linnenbrink and Pintrich in 2002 (cited in Pekrun et al. (19)), emotion-based variables may also influence goal adoption. In fact, there may be reciprocal rather than unidirectional interaction between emotions and goals. Thus, in future research such reciprocal links should be investigated using experimental and cross-lagged longitudinal designs.

Second, the emotions that were referred to in this research included the eight significant emotion variables that were focused on and identified in earlier studies (19). But, it is important to consider a broad variety of emotions referred to as social emotions including admiration and contempt in achievement emotion studies.

Third, research not only should connect achievement goals to students' academic emotions per se, but also should link such variables to attempts on regulating these emotions.

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