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**RELATIONS BETWEEN GOAL ORIENTATIONS, ACADEMIC
AND TEACHER SELF EFFICACY IN PREDICTING
ACHIEVEMENT**

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Abstract

The fundamental aims of education are learning and achievement. In education, students are expected to learn the academic content and demonstrate an acceptable level of performance. In this respect, motivation is a crucial factor on academic performance and learning of students. Recent theories on academic motivation are based on cognitive aspects compared to drive or reinforcement based earlier explanations. The aim of the study was to investigate the relationships between goal orientations, academic self-efficacy, and teacher sense of efficacy and the predictive roles of these variables on pre-service teachers' academic achievement. The participants of the study were 636 pre-service teachers from the Elementary Mathematics Education, Social Science Education, Primary Education and Foreign Language Education Departments at Istanbul University. The sample was composed of 352 males and 275 females. Eleven participants provided no gender information. In the data collection phase, 2X2 Goal Orientations Scale (Akın, 2006), Academic Self-efficacy Scale (Owen & Froman, 1988) and Teacher Self-efficacy Scale (Tschannen-Moran & Woolfolk-Hoy, 2001) were used. In the quantitative analysis, significant relations were identified between the goal orientations, academic self-efficacy and teacher self-efficacy of pre-service teachers. The regression analysis demonstrated that pre-service teachers goal orientations, academic self-efficacy and teacher sense of efficacy had predictive roles on their academic achievement.

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1. Introduction

1.1. Problem

Academic motivation has been considered as an important component of education and different theories were proposed to explain it. Achievement Goal Theory is a contemporary cognitive theory in explaining academic motivation (Elliot, 2005; Kaplan & Maehr, 2007). Accordingly, it has been argued that achievement goals are cognitive representations related to success and these representations determine acts of people in a performance situation (Linnenbrink & Pintrich, 2001). These cognitive schemas, which are composed of academic achievement goals and scripts to reach these goals, are called goal orientations (Dweck, 1986; Elliot, 1999). In this theory it is claimed that, students have different reasons (different goal orientations) for engaging academic tasks. Therefore, students' goal orientations influence how they approached an academic activity and what they learned in that activity (Stipek, 2002). Goal orientations determine and direct the cognitions, affect and behaviors of students in a learning task (Yeung & McInerney, 2005).

In goal theory literature, goal orientations have been classified under different names (e.g. Ames, 1992; Dweck, 1986). In this study and commonly in the literature, goal orientations classified as "learning goals" and "performance goals", according to the categorization of Dweck and Leggett (1988). Learning goals focus on competence development and the achievement explained by effort. So, students who have a learning goal orientation emphasize the worth of task and they aim to understand and be competent on the subject (Ames, 1992). Learning goal orientation is associated with self-efficacy, persistence, challenge seeking, self-regulated learning and positive mood (Dweck & Leggett, 1988; Elliot, 1999; Kaplan & Maehr, 2007).

In performance goal orientation, students focus on own ability and self-worth and in an academic situation they are motivated to demonstrate own competence to others (Elliot, 1999; Pintrich, 2000a, Pintrich, 2003). In learning a new subject, students who have performance goal orientation aim to be successful than other students or at least not to get lower results than others and avoid seeming incompetent (Pintrich, 2000a; Pintrich, 2000b). Compared to the positive relationships between learning goal orientation and positive variables such as self-efficacy, persistence and effort; the relations between performance goal orientation and motivation, affect regulation, use of effective cognitive strategies and performance may be less positive (Ames, 1992; Dweck & Leggett, 1988; Elliot & Moller, 2003; Pintrich, 2000b).

In the literature, depending on some inconclusive findings on the relationships between performance goal orientation and several motivational variables, performance goal orientation construct reviewed (Elliot, 1999; Elliot & Moller, 2003) and Elliot (1999) theoretically redefined performance goal orientation according to "approach-avoidance" distinction. In approach condition people focus on achievement whereas in avoidance people focus not to failure. Accordingly, in performance-approach condition people motivate to be successful than others and they desire to be evaluated as higher achievers by others. As for the performance-avoidance condition, people prefer to avoid performance situations since they do not want to be evaluated underachiever or incompetent when compared to others' performance (Pintrich, 2000a; 2000b).

Students who have performance-avoidance orientation reported more negative experiences related to academic achievement or wellbeing (Elliot & Sheldon, 1997). Besides, although positive correlations reported between academic achievement and performance-approach goal orientation, in case of an academic failure students with performance-approach orientation would have the risk of replacing approach orientation with avoidance orientation (Kaplan & Middleton, 2002). Following the theoretical distinction in performance goal orientation, learning goal orientation was proposed to be two-dimensional: learning-approach and learning-avoidance orientations (Elliot, 1999; Elliot & Trash, 2001). Learning-approach orientation was related to positive variables such as self-efficacy, effort, and persistence in challenging tasks; however in learning-avoidance orientation students show perfectionism and they report avoiding new learning experiences due to fear of not being able to achieve on an academic task properly, forgetting previous knowledge or learning incorrectly and making mistakes (Akin, 2006; Kaplan & Maehr, 2007).

Self-efficacy is a motivational construct that has been proposed by Bandura (1986) in the frame of Social Cognitive Theory. According to that theory, self-efficacy belief, being a core construct, is defined as "...beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments." (Bandura, 1997, p.3). Bandura (1997) states that self-efficacy belief influences choice, effort, persistence and anxiety experienced in the face of challenging goals. According to Bandura (1997), social cognitive theory defines individuals as proactive and self-regulating in terms of behavioral adaptation. This adaptation is established by the concept of reciprocal determinism, which defines human functioning in a dynamic interaction between environmental, behavioral, and personal influences (Bandura, 1997; Pajares, 2005).

Academic self-efficacy is a personal belief related to performance of oneself on successfully attaining the goals in a learning situation (Schunk, 1991). Academic self-efficacy played a significant role on students' achievement related cognition, affect and action (Bong, 2001; Schunk & Pajares, 2002). Studies consistently report positive relations between learning goal orientation; yet there are inconsistencies on the relationship between performance goal orientation and self-efficacy (Hsieh, Sullivan, & Guerra, 2007; Elliot & Moller, 2003). In some studies positive correlations reported between performance approach orientation and self-efficacy (Bong, 2001; Skaalvik, 1997), whereas some reported no relations (Pajares, Britner, & Valiante, 2000). However, the relation between performance-avoidance orientation and academic self-efficacy was consistently negative (Elliot, Shell, Henry, & Maier, 2005).

Teacher self-efficacy can be defined as self belief of teacher on influencing the performance of student (Tschannen-Moran & Woolfolk-Hoy, 2001). Teacher self-efficacy was associated to academic success (Henson, 2001) and academic motivation (Midgley, Feldlaufer, & Eccles, 1989). Notably, Bandura (1997) declared that teachers high in teacher self-efficacy create high quality learning environments, whereas low self-efficacy teachers could not effectively support cognitive development of students since they demonstrated lower performance on designing effective in-class activities. Additionally, teachers' low self-efficacy influence their stress, burnout and job involvement levels (Pajares & Schunk, 2002).

Teacher self-efficacy was related to teachers' motivation for academic activities. Personal goal orientations teachers implied from their early school experiences as students, affect their current goal orientations in teaching (Chiang, 2004). Besides, teachers have the major role on determining the

prevalent goal structures in the classroom as well as academic self-efficacy levels of students (Wolters & Daugherty, 2007). Therefore, these motivational constructs (goal orientations and self-efficacy levels) are possibly closely related to student achievement.

1.2. Purpose of The Study

Motivational constructs such as students' goal orientations, academic self-efficacy beliefs, academic climate created by teachers, goal structures play crucial roles in learning and achievement. Pre-service teachers are a special group of people, who are in their formal education already have a perspective of academic motivation as students and also they have been building their professional perspective as teachers and begin to construct their teacher self-efficacy beliefs during their formal education.

In the current study, academic motivation of candidate teachers was investigated through the lens of achievement goal theory. In this respect, the relationships between goal orientations, academic self-efficacy, and teacher sense of efficacy and predictive roles of these variables on pre-service teachers' academic achievement were examined. In other words, the relations between motivational beliefs and cognitive representations of pre-service teachers that were developed during early years of education as students and their competence beliefs that have been developing during their professional education were scrutinized. Additionally, the predictive roles of these three variables on actual achievement or performance were examined.

1.3. Research Questions

The research questions of the study were as follows:

1. Were there significant relations between goal orientations, academic self-efficacy, teacher self-efficacy and academic achievement of pre-service teachers?
2. Were academic achievement levels of pre-service teachers predicted by their goal orientations, academic self-efficacy and teacher self-efficacy?

2. Methods

2.1. Participants

The participants of the study were 636 pre-service teachers from the different departments of education faculty at Istanbul University. Three hundred fifty two females (56%) and n=275 (44%) males participated in the study. Eleven participants provided no gender information. The participants were attending to Elementary Mathematics Education (22 %, n=143), Social Science Education (23%, n=144), Primary Education (22%, n=142) and Foreign Language Education (33%, n=207) Programs in the academic year of 2008.

2.2 Measures

2X2 Goal Orientations Scale was developed based on four dimensional goal orientations; learning-approach, learning-avoidance, performance-approach, performance-avoidance (Akin, 2006). The questionnaire was composed of 26 statements about goal orientations that students were asked to rate on a 5-point Likert scale (1, never and 5, always). The Cronbach alpha (α) internal consistency scores for 4 dimensions were learning-approach .92, learning-avoidance .97, performance-approach .97 and performance-avoidance .95.

College Academic Self-Efficacy Scale-CASES, was originally developed in English by Owen and Froman (1988); and Kemer (2006) standardized the Turkish version. The scale was composed of 33 items. The Cronbach alpha (α) internal consistency scores for the original version and Turkish version were reported .90- .92 and .87, respectively.

Teacher Self Efficacy Scale was originally developed by Tschannen-Moran and Woolfolk-Hoy (2001) and adapted by Çapa, Çakıroğlu and Sarıkaya (2005) in Turkish. The scale was composed of 24 items in three subscales to measure “Efficacy for Students Involvement”, “Efficacy for Instructional Strategies” and “Efficacy for Classroom Management”. The Cronbach alpha (α) internal consistency scores for three subscales were reported .82, .86, .84, respectively and for the total score was .93.

Besides, academic achievement was evaluated as Grade Point Average (GPA).

3. Results

First, in the analysis, the relations among goal orientations, academic self-efficacy and GPA were calculated. As it is shown in Table 1, there were statistically significant relations between goal orientations, academic self-efficacy scores and GPA. That is, the correlations coefficients were reported ranging between $r = -.219$ and $.585$ and significant at the $p < .01$.

Table 1. Correlations between goal orientations, academic self-efficacy and GPA

	1	2	3	4	5	6
1. Academic self-efficacy	1					
2. Learning-approach	,585(**)	1				
3. Learning-avoidance	,169(**)	,291(**)	1			
4. Performance-approach	,076	,037	,304(**)	1		
5. Performance-avoidance	-,219(**)	-,111(**)	,385(**)	,540(**)	1	
6. GPA	,320(**)	,316(**)	,243(**)	,055	-,001	1

*Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed), N=636 (for 1-5), N=449 (for 6)

Second, Pearson correlations were calculated between goal orientations and teacher self-efficacy scores. Statistically significant relations were revealed (Table 2).

Table 2. Correlations between goal orientations, teacher self-efficacy

	1	2	3	4	5	6	7
1. Learning-approach	1						
2. Learning-avoidance	,291(**)	1					
3. Performance-approach	,037	,304(**)	1				
4. Performance-avoidance	-,111(**)	,385(**)	,540(**)	1			
5. Eff. Classroom management	,443(**)	,158(**)	,042	-,098(*)	1		
6. Eff. Instructional strategies	,469(**)	,134(**)	,032	-,089(*)	,776(**)	1	
7. Eff. Student involvement.	,526(**)	,145(**)	,043	-,118(**)	,810(**)	,822(**)	1

*Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed), N=636

Third, significant correlations were found between academic self-efficacy, teacher self-efficacy and GPA. Academic self-efficacy was significantly correlated with all subscales of teacher efficacy and GPA, except for *efficacy for classroom management* subscale scores of pre-service teachers (Table 3).

Table 3. Correlations between academic self-efficacy, teacher self-efficacy, and GPA

	1	2	3	4	5
1. Academic self-efficacy	1				
2. Eff. Classroom management	,433(**)	1			
3. Eff. Instructional strategies	,456(**)	,776(**)	1		
4. Student involvement.	,477(**)	,810(**)	,822(**)	1	
5. GPA	,320(**)	,085	,173(**)	,138(**)	1

*Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed), N=636 (for 1-4), N=449 (for 5)

Finally, predictive roles of goal orientations, academic self-efficacy and teacher efficacy on GPA were investigated. Multiple regression equation was computed as the GPA was outcome measure and the predictors were goal orientations, academic self-efficacy and teacher self-efficacy. The three predictors were simultaneously entered into regression equation. Academic self-efficacy, learning-avoidance goal, learning-approach and efficacy for instructional strategies significantly predicted GPA $F(4, 444) = 21.263, p < .001, R^2 = .153$.

4. Conclusions

In the present study; the relations between goal orientations, academic self-efficacy, teacher self-efficacy and the achievement levels of pre-service were investigated. Additionally, the predictive roles of goal orientations, academic self-efficacy, and teacher self-efficacy on academic achievement were scrutinized. Initially, it was revealed that academic self-efficacy was positively correlated with learning goals yet negatively correlated with performance-avoidance goal orientation. In the literature, positive relations were reported between academic self-efficacy and learning (-approach) (Hsieh et al., 2007; Kaplan & Maehr, 1999,) and performance-approach orientations (Elliot & Church, 1997; Skaalvik, 1997)

and negative correlations were revealed between academic self-efficacy and performance-avoidance orientation (Elliot & Church, 1997; Skaalvik, 1997).

Students with learning goal orientations, in learning, consider feedbacks as necessities for development. Therefore their academic self-efficacy belief strengthens (Kaplan & Maehr, 2007). Enhanced self-efficacy positively affects academic performance and well-being; students with high levels of academic self-efficacy engage in challenging learning activities. They prefer challenging goals and they persist even in the face of failure (Pajares, 2005). These students attribute failure to lower effort. However, students with low self-efficacy attribute failure to permanent personal factors (e.g. lower intellectual ability) and every failure reminds them about their inefficiencies (Pajares & Schunk, 2002). In the light of these arguments, the findings propose that any psychosocial interventions aiming to enhance academic motivation should consider the interrelated two cognitive representations (goal orientations and self-efficacy) together.

Secondly, similar to the relations between academic self-efficacy and goal orientations, learning goals were positively and performance-avoidance goals were negatively correlated with teacher self-efficacy levels. Previously, Butler (2007) reported that there was not a significant relation between teaching competence and teachers' goal orientations. Learning goal orientations and performance-avoidance goal orientation of primary school pre-service teachers were stronger than their performance-approach orientations (Perry, 2007). In this study, similar to academic self-efficacy, significant relations between goal orientations and teacher efficacy were reported except for performance-approach orientation. Beghetto (2007) supports this finding and states that by the raise of the number of pedagogical courses in the professional formal education of teachers, performance-approach orientation was reduced. This phenomenon can be explained by the improvement of teacher self-efficacy belief and learning goal orientation due to the raise of professional content knowledge.

Additionally, as expected, a significant positive relation was found between academic self efficacy and teacher self-efficacy. Students who were academically efficacious were also feeling competent in the profession. In the case of candidate teachers, academic achievement was an important outcome of both academic self-efficacy and teacher self-efficacy. Similar to the findings in the relevant literature, academic achievement was positively associated with learning goal orientations (Kaplan & Maehr, 1999; Pintrich, 2000b), academic self efficacy (Chemers, Hu, & Garcia, 2001) and negatively correlated with performance-avoidance orientation (McGregor & Elliot, 2002). Previously, the positive role of academic self-efficacy (Narciss, 2004) and learning-approach orientation (Hsieh et al., 2007; Young, 2007) and no role of learning-approach on academic achievement (Elliot & McGregor, 2001) were reported. Besides, the role of learning-avoidance is inconclusive in the literature (Kaplan & Maehr, 2007; Pintrich, 2000a; 2000b). Also, for the predictive role of teacher self-efficacy studies are very limited (e.g. Jablonski, 1995). In the current study, fifteen percent of the variance of academic achievement (GPA) of pre-service teachers was explained by learning goal orientations, academic self-efficacy and teacher sense of efficacy for instructional strategies. In formal education, due to the accumulation of the knowledge on professional issues (Beghetto, 2007) academic and teacher self-efficacy enhance and pre-service teachers adopt learning goals compare to performance goals (Perry, 2007).

The current study has provided evidence for predictive roles of three interrelated factors on pre-service teachers' achievement. Indeed, achievement of pre-service teachers may be considered related

being students and becoming future teachers at the same time. So for them, self-confidence, persistence, effort, seeking for new challenging tasks determine success as a student or a teacher. Achievement goal theory argues that, to reform schools (Linnenbrink, 2004), personal goal adoptions may be changed by effectively manipulating classroom goal structures. In this respect the crucial role belongs to the teachers' and teacher educators'. In teacher education, the curriculum should be designed for fostering academic self-efficacy, teacher self-efficacy, and adoption of adaptive goal orientations for pre-service teachers. Specifically educational psychology courses may familiarize pre-service teachers on how these motivational constructs function in their academic lives.

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