Hacettepe University Graduate School of Social Sciences

Department of Psychology

Master of Science in General Psychology

PERCEIVED CLASSROOM ENVIRONMENT, SOCIODEMOGRAPHIC BACKGROUND, AND ACHIEVEMENT GOALS AS PREDICTORS OF STUDENTS' ACADEMIC STRIVING

Ayşe Nur Demircioğlu

Master's Thesis

Ankara, 2016

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ACCEPTANCE AND APPROVAL

The jury finds that Ayşe Nur Demircioğlu has on the date of 17th June 2016 successfully passed the defense examination and approves her Master's Thesis titled "Perceived Classroom Environment, Sociodemographic Background, and Achievement Goals as Predictors of Students' Academic Striving".

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Ayşe Nur Demirciioğlu

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ABSTRACT

Demircioğlu, Ayşe Nur. *Perceived Classroom Environment, Sociodemographic Background, and Achievement Goals as Predictors of Students' Academic Striving*, Master's Thesis, Ankara, 2016.

Classroom learning environment is considered to create the framework within which students are striving for success and research has shown that a competitive learning environment is less adaptive than a classroom environment where strivings for mastery and learning are encouraged. Yet, this core finding has not been extensively tested in Turkey where there is a lot of competition in the high school classroom. The main purpose of this thesis was to investigate perceived mastery versus competitive learning environment relates to better learning strategies; also, whether achievement goals would mediate the relation between perceived classroom goal structures and socioeconomic status of family on the one hand and academic achievement and learning striving on the other hand. To address these questions, a cross-sectional design was used in which participants were 369 students (181 males; 178 females; 10 students did not report their gender) from high school in Ankara, Turkey. Hierarchical regression analyses revealed that perceived mastery-approach goal structures predicted positively mastery-approach goals, which in turn predicted positively challenge-seeking and negatively challenge-avoidance. Also, perceived performance goal structures predicted positively performance-approach goals and performance-avoidance goals with the latter being in turn negative predictors of challenge-seeking and positive predictors of challenge-avoidance. Interestingly, performance-approach goals were positive predictor of grades, even after controlling for mid-year grades. These results suggest that a mastery climate is conducive to better learning strategies while a competitive climate is riskier because although it may lead to the endorsement of performance-approach goals and in turn to better performance, it may lead as well to endorsement of performance-avoidance goals and in turn to less adaptive learning strategies. These results are further discussed from the perspective of the Achievement Goal Theory, followed by the limitations of the study and suggestions for future studies.

Key Words

classroom goal structures, achievement goals, learning striving, academic achievement

ÖZET

DEMİRCİOĞLU, Ayşe Nur. *Öğrencilerin Akademik Mücadelesinin Yordayıcıları Olarak Algılanan Sınıf Ortamı, Sosyodemografik Özellikler ve Başarı Hedefleri,* Yüksek Lisans Tezi, Ankara, 2016.

Sınıf öğrenme ortamı, öğrencilerin başarı için mücadele ettikleri bir ortam olarak düşünülebilir ve yapılan çalışmalar rekabetçi bir sınıf ortamının öğrenme ve yeterlilik için mücadele etmenin desteklendiği bir sınıf ortamından daha az uyumsal olduğunu göstermektedir. Ancak bu temel bulgu özellikle liselerde rekabetin çokça bulunduğu Türkiye'de henüz test edilmemiştir. Bu tez çalışmasının asıl amacı, algılanan sınıf ortamının öğrenme stratejileriyle ilişkili olup olmadığını test etmek; ayrıca başarı hedeflerinin bir yandan algılanan sınıf ortamı ve ailenin sosyoekonomik durumu, öte yandan öğrencinin akademik başarısı ve öğrenme stratejileri arasında aracılık edip etmediğini test etmektir. Bu sorulara cevap bulmak amacıyla, Ankara'da bulunan liselerde 369 öğrenciye (181 erkek, 178 kız, 10 kişi cinsiyet belirtmedi) ulaşılarak kesitsel bir çalışma yapılmıştır. Hiyerarşik regresyon analizlerin sonuçlarna göre, algılanan öğrenme-odaklı sınıf ortamı öğrenme-odaklı başarı hedefini pozitif olarak yordamaktadır. Öğrenme-odaklı başarı hedefi ise zorluklarla mücadeleyi pozitif olarak yordarken, zorluklardan kaçınmayı negatif olarak yordamaktadır. Aynı zamanda, algılanan performans-odaklı sınıf ortamı performans-yaklaşma ve performans-kaçınma odaklı hedefleri pozitif olarak yordamaktadır. Performans-kaçınma hedefi ise zorluklardan kaçınmayı pozitif olarak yordarken, zorluklarla mücadeleyi negatif olarak yordamaktadır. İlginçtir ki, 1.dönem notları kontrol edildiğinde, performans-yaklaklaşma odaklı hedefler akademik başarıyı pozitif olarak yordamaktadır. Bu sonuçlar işaret etmektedir ki, rekabetçi sınıf ortamı daha riskli iken öğrenme odaklı sınıf ortamı daha iyi öğrenme stratejilerine yol açmaktadır. Çünkü rekabetçi sınıf ortamı performans-yaklaşma odaklı hedefe, o da akademik başarının artmasına yol açmasına ragmen rekabetçi ortam aynı zamanda performans-kaçınma odaklı hedefe, o da düşük akademik başarıya ve daha az uyumsal öğrenme stratejilerine yol açabilir. Çalışmanın

sonunda, bu bulgular başarı hedefi kuramı çerçevesinde tartışılmıştır. Daha sonra çalışmanın sınırlılıkları ve gelecek çalışmalar için öneriler sunulmuştur.

Anahtar Sözcükler

Sınıf ortamı, başarı hedefleri, öğrenme stratejileri, akademik başarı

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CHAPTER 1

INTRODUCTION

School achievement and striving concern, not only students but also their parents, their family, and the society in general. Indeed, school achievement plays a key role in students' lives, especially in Turkey, because in the long term it can shape their future life, well-being, and adjustment (Chen, Rubin & Li, 1997). In other words, the more successful a student is, the more likely he or she is to get a better job, earn more money, attain higher social status, and live a better life. Although there are many critical exams which students have to pass during school life, the most crucial one is the university entrance exams that students take at the end of the high school. Because this exam determines students' future, the period of high school years represent an important, and stressful period of both students' and their families lives.

Despite the importance of high school one may wonder why some students are more motivated to achieve at high schools whereas others are not as much motivated. Most likely, factors such as socioeconomic status of family (as reflected for example through parents' education level and family income), classroom environment, attitudes of teachers, learning striving or students' personality characteristics can play important roles in determining students' motivation (Eccles, 2004; Meece, Anderman & Anderman, 2006). Furthermore, students' goals and motivation may dramatically change across time (Eccles & Midgley, 1989). These changes may result from changes in the academic environment of the school, in students' social perceptions, or developmental changes (Anderman & Anderman, 1999). For example, some studies have examined motivational changes during elementary and middle school years. Eccles and Midgley (1989) indicated that classroom environment (students' perception of motivation regarding to classroom environment) in middle school as compared to elementary school puts less emphasis on intrinsic motivation (i.e., to study because it is fun, challenging and interesting) and more on grades. This may make students more prone to adopt performance goals (aim of outperforming others) in middle schools. Findings of many studies supported their claim in the framework of Achievement Goal

Theory. For example, Midgley, Anderman and Hicks (1995) showed in their study that elementary school teachers put more emphasis on mastery goals (aim of developing competence) than what middle school teachers do. In another study, conducted by Anderman and Midgley (1997), it was investigated how students' perceptions of classroom environment change across transition from elementary to middle school. Students reported that their classroom environment was more mastery focused in elementary school, while it was more performance focused in middle school.

As mentioned above, many researchers examined students' perception of classroom environment and how they relate to elementary and middle school students' achievement goals. However, we know less about how Turkish adolescents perceive the learning environment of their classroom and how their perceptions are related to the achievement goals they endorse because there have been only a few studies which examined this issue in the Turkish educational system. To shed some light on this issue, this thesis was relied on the Achievement Goal Theory on and on a sample of high school students in Turkey. Seemingly, high school is perhaps the most stressful period in students' school lives (Eskin, Ertekin, Harlak, & Dereboy, 2008).

The Achievement Goal Theory has been developed to put forth the factors that determine students' motivation (Elliot, 2005). Although there are many articles, especially in US and Western countries, which investigate the relation between motivation and academic achievement in the framework of Achievement Goal Theory there is a dearth of studies that are especially referred to the Turkish educational context. To the best of the knowledge of this thesis writer, there is no study that examines the relations among students' achievement goals, their perceptions of the motivational environment of the classroom, academic striving and performance. Because Turkish educational system has somewhat different structure from Western countries, it is argued that learning environment and personal goals may influence Turkish students' motivation and academic achievement in a different way. For example, in Western countries teachers usually take into account students' interests and skills, whereas in Turkey teachers and parents force students to be academically successful (i.e., high grades in tests) (Yıldırım, 2000). So, if they take low grades in exams, they become more stressfull, in fact, they are more vulnerable to depression

especially in adolescence (Eskin, Ertekin, Harlak, & Dereboy, 2008). For this reason, it is expected that Turkish students who strive for academic success may perhaps be more likely to adopt performance goals than students in the Western countries.

To gain knowledge about how perceived classroom environment and achievement goals may relate to students' academic achievement and learning striving in Turkey, this study was conducted in the framework of a prominent motivation theory, called ''Achievement Goal Theory''. In the following sections, Achievement Goal Theory is presented first. Then, achievement goals are elaborated, followed by two potential predictors of them, perceived classroom environment (i.e., goal structures) and family socioeconomic status. The discussion is then shifted to three potential outcomes of achievement goals, namely academic striving (as expressed through challenge-avoidance and challenge-seeking) and academic achievement (as reflected through grades). The subject matter of mathematics was selected on this study because for many students math class is among the most difficult and stressful subject matters at school. In math classes, students have to gain problem solving skills and learn to thinking analytically (Kiong, Yong, & Hoe, 2007). Also, mathematics is among the most important courses that are examined in order a student enter university in Turkey. The introduction concludes with the presentation of the aims of the study and the associated hypotheses. In the second section, the methodology of the research is presented followed by the results. In the last section, the findings of the study are discussed in the framework of Achievement Goal Theory. The discussion concludes with the limitations of the thesis, and how future research may address some of them.

1.1 ACHIEVEVEMENT GOAL THEORY

History of the motivation studies dates back to William James. Some theorists like Weiner (1990) defined motivated behavior as drives and instincts or other inner traits. On the other hand, some scholars formulated new motivation theories based on the socio-cognitive approach. This theoretical perspective assumes that people learn by observing others. People can learn new knowledge and behaviors by observing a model. For example, a person learns to dance while he or she is watching a dancer's

performance (Bandura, 1986). As examples of motivation theories that are rooted on the principles of the socio-cognitive theory are the following: One of them is attribution theory that focuses on how individuals interpret their successes and failures in achievement situations (Weiner, 1979). For example, when a student takes low grade, he or she may say that "Questions were very difficult. So I took low grade." In contrast, when he or she takes high grade he or she may say that "I took high grade because I am very clever." Another useful motivational theory is the expectancy-value theory which argues that people are more likely to approach a task only when they believe that they will do well and when the task carries some value for them (Eccles & Wigfield, 2002). For instance, Ali is more likely to be interested in math if he believes that he can do well in math exams and he believes that math will be useful in his life.

A third interesting motivational theory is the Achievement Goal Theory that is also based on social-cognitive view of motivation. This theory was initially developed by Nicholls (1984), Dweck (1986), and Maehr and Midgley (1991) to understand behavior of students reacting to difficulties of achievement. This theory has been one of the most foremost theories of motivation for nearly 30 years (Senko, Hulleman & Harackiewicz, 2011).

At the beginning, theorists put emphasis on the distinction between performance and mastery goals. According to these theorists, the aim of the mastery goals is to develop one's competence and learn deeply, whereas the aim of the performance goals is to demonstrate one's competence by outperforming other students (Ames & Archer, 1988). For example, students who pursue mastery goals try to learn deeply and increase their knowledge in math class because they are personally interested in math. Such students are not concerned about whether they take higher grades than their peers. On the other hand, students who pursue performance-approach goals make an effort to outperform their peers and take higher grades than them. They do not focus on learning deeply but rather on those cues that are necessary for them to get high grades (Senko et al., 2011). Although these theorists who distinguished between performance and mastery approaches had different theoretical frameworks, they agreed with the fact that mastery goals evoked more educational gains than performance goals (Dweck, 1986). As both Nicholls (1984) and Dweck (1986) assumed, mastery goals provide greater

educational benefits to students than performance goals (Nicholls, 1984 & Dweck, 1986). This assumption revealed two main distinctions between performance and mastery goals.

According to Dweck (1986), students who pursue mastery goals believe that ability can be developed with effort and they thus struggle to develop their ability. In contrast, students who pursue performance goals believe that ability is fixed. Students who pursue performance goals seek challenges if they believe that they have high ability but they avoid challenges if they believe that they have low ability.

According to Nicholls (1984), success is defined differently under performance and mastery goals. Students who endorse performance goals define success when they outperform their peers and when they demonstrate superior ability. In contrast, students who endorse mastery goals define success when they put effort, learn, and develop their abilities. Under this distinction, it has been examined why students engage in an achievement task, what their intention is, and how different perceived learning environment may influence students' endorsement of either mastery goals or performance goals (Meece et al., 2006).

There are numerous of both experimental and correlational studies in the literature that have examined the relation of performance and mastery goals to a wide array of outcomes (e.g. Butler, 1987; Elliott & Dweck, 1988; Harackiewicz & Elliot, 1993). Most of these studies have been conducted in classroom settings and they correlated students' self-reported achievement goals with educational variables such as academic achievement, learning strategies, and interest in lessons. These studies generally indicated consistent findings with respect to mastery goals. For instance, students who pursue mastery goals have been found to consider lessons more interesting, to use more effective learning strategies, and to be more resilient against difficulties (Darnon, Butera, & Harackiewicz, 2007; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000). On the other hand, the findings with respect to performance goals have been more controversial. For example, some studies found that performance goals have positive impact on academic achievement, whereas others could not find such a relation (Skaalvik, 1997; Elliot & Church, 1997).

Harackiewicz, Barron and Elliot (1998) revised the Achievement Goal Theory and concurred that both mastery and performance goals, instead of only mastery goal, had some positive impact on academic performance and educational process. This revision occurred in three different ways: The first was done with respect to the definition of achievement goals (Elliot 1999). Whereas the original definition implied a higher-order reason underlying the pursuit of mastery or performance goals (with mastery and performance goals implying, respectively, the development and demonstration of competence), the revised theorizing considered mastery goals as pure aims: Mastery goals aim at learning and performance goals aim at outperforming others (and not necessarily at demonstrating superior competence) (Elliot, 2005).

The second revision, was endorsed by Elliot (1999) who argued that mastery and performance goals should be further divided into two subcategories called 'avoidance and approach' goals. Students who pursue performance-approach goals aim to outperform peers, whereas students who pursue performance-avoidance goals aim at not doing worse than peers. On the other hand, students who adopt mastery-approach goals struggle to learn deeply and improve their ability, whereas students who adopt mastery-avoidance goals aim to avoid learning incorrectly, stagnation, or not attaining the required standards. Findings of studies conducted in Western countries have shown that both mastery-avoidance and performance-avoidance goals lead, contrary to performance-approach and mastery-approach goals, to negative consequences (Hulleman, Schrager, Bodmann & Harackiewicz,2010). In addition, these studies found negative relations of both avoidance goals to self-confidence, intrinsic motivation, and academic achievement (e.g. Elliot & Church, 1997; Moller & Elliot, 2006).

The third revision, proposed by Pintrich (2000) and Barron and Harackiewicz (2001), assumes that students may adopt both performance and mastery goals at the same time. For instance, a student may be personally interested in learning math (a mastery goal), and concurrently he or she may try to take higher grades (performance goal). Especially, in Turkey, since grades are very important for university entrance exams, students should focus on that material that is directly relevant to exams even if they want to learn deeply. In addition, a student may adopt mastery goals in math lesson but performance goals in another lesson, such as English language. Such a student may like learning

solving math exercises and not concern about grades. Furthermore, he or she may not be genuinely interested in English lessons but he or she may try to get higher grades in that particular lesson because she considers it important for her future career (Lens, Simons, & Dewitte, 2002). This new perspective has been named as Multiple Goal Perspective and has led to some controversies among theorists who have different point of views. Some theorists have embraced the new Multiple Goal Perspective (Elliot, 1999; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002), whereas others have objected it and have continued to support the original Mastery Goal Perspective that favors mastery goals over performance goals (Kaplan & Middleton, 2002; Midgley, Kaplan, & Middleton, 2001). In this thesis, the Mastery Goal Perspective was taken.

In conclusion, the Achievement Goal Theory has been revised and developed rapidly during the last 30 years. This development has not easily occurred due to controversies and disagreements among theorists. For instance, as mentioned above, researchers have reported sometimes inconsistent results. So, there is still some disagreement regarding the benefits, or the disadvantages of particular achievement goals (namely, performance-approach goals). For example, Harackiewicz, Barron and Elliot (1998) recognized that both performance-approach goals and mastery-approach goals, and not only mastery-approach goals, may lead to positive educational outcomes. On the other hand, some theorists embraced the Multiple Goal Perspective, whereas others continued to support Mastery Goal Perspective that put emphasis on only benefits of mastery goals. Because of these controversies among theorists, more research is needed, especially in educational contexts and systems, like the Turkish one, where these issues have not been extensively investigated. One of the aims of this thesis was to investigate which achievement goal is linked with more educational benefits and whether perceived classroom environment can predict endorsement of achievement goals among Turkish adolescents.

In the following section, achievement goals are discussed in more details and findings of studies in literature regarding to achievement goals are presented to understand benefits or drawbacks of particular achievement goals.

1.1.1 Achievement Goals in the Framework of Achievement Goal Theory

The issue of achievement goals is one of the most salient topics among achievement goal theorists. So there are many studies conducted about them in literature (e.g., Harackiewicz, Durik, Barron, Linnenbrink-Garcia, & Tauer, 2008; Pekrun, Elliot, & Maier, 2009). For instance, Elliot and Church (1997) investigated the effects of mastery-approach, performance-approach, and performance-avoidance goals on intrinsic motivation and graded performance in a college classroom in New York. This study was conducted in psychology course. Results indicated that mastery-approach goals positively predicted intrinsic motivation but they were unrelated to graded performance. In contrast, performance-approach goals were unrelated to intrinsic motivation but they were positively related to graded performance. As expected, performance-avoidance goals predicted negatively both intrinsic motivation and graded performance. On the other hand, Harackiewicz, Barron, Carter, Lehto and Elliot (1997) found similar findings. They also investigated how personality characteristics influenced the achievement goals in an introductory psychology class among undergraduates. These results of this study indicated that individuals high in work mastery were more prone to adopt mastery goals whereas competitive individuals were more prone to adopt performance and work avoidance goals. Moreover, students who pursued mastery goals were more interested in lessons but mastery goals did not predict academic achievement (grades). Students who pursued performance-approach goals had higher grades but performance-approach goals were not related to interest. In addition, performance-avoidance goals predicted negatively academic performance.

Rawsthorne and Elliot (1999) provide a meta-analysis of the experimental literature that has investigated how performance and mastery goals influence intrinsic motivation. This meta-analysis includes 30 articles published between 1971 and 1997. Intrinsic motivation was defined as the interest that a person has in an activity or topic for its own sake. They found, consistent with Elliot and Church (1997), that students who adopted mastery-approach goals were more interested in the tasks they had to carry out than students who adopted performance-approach goals. Differently from these studies, Middleton and Midgley (1997), indicated that performance-approach goals were unrelated to academic efficacy and they were positively related to avoidance behaviors

and test anxiety among sixth graders. These authors found also some gender differences, with girls being more likely to pursue mastery goals than boys. The reasons for these gender differences is not yet clear because there are not enough studies that focus on gender differences in terms of achievement goals. In addition, although there are many studies conducted in the framework of other motivation theories, there are only a few studies that investigated gender differences in the framework of the Achievement Goal Theory. For instance, Anderman and Young (1994) found that girls were more likely to pursue mastery goals in science than were boys in sixth- and seventh-grade middle schools. Contrary to these findings, a study conducted by Greene, DeBacker, Ravindran and Krows (2002) showed that there are no gender differences in high school students' achievement goals in mathematics. As we see, studies of gender differences in students' achievement goal orientations did not show consistent results. Based on these findings, it was decided to examine whether there would be any gender differences in achievement goals and learning striving among high school students by focusing on specifically mathematics. In Turkish society, boys are generally more forced to be academically succesfull (i.e., higher grades in exams) than girls (Eskin et al., 2008). So, it was expected that boys were more likely to pursue performance-approach goals than girls wheras girls had more tendency to pursue mastery-approach goals.

Beyond these field studies, some achievement goal theorists conducted several experimental studies. One of them was conducted by Graham and Golan (1991). These authors manipulated a list of 60 words to be encoded superficially or deeply by 5th- and 6th-grade students. Students were randomly assigned to mastery-focused condition, performance-focused condition and a control group. Researchers oriented students to mastery and performance orientation by reading a script to groups with exception of control group. These findings indicated no differences in shallow processing words recalling, between the mastery-focused and performance-focused conditions. However, in deep processing, students in the mastery-focused condition recalled much more words than students in the performance-focused condition. Given these findings, and consistent with Nolen (1988), it can be inferred that students who pursue mastery-approach goals, compared to those who pursue performance-approach goals, are more likely to use deep processing strategies than surface-level strategies.

As said above, several studies have indicated that performance-approach goals are positively correlated with graded performance and unrelated to intrinsic motivation whereas mastery-approach goals are positively correlated with intrinsic motivation and unrelated to academic course grades (academic achievement). Also, performance-avoidance goals predict negatively both intrinsic motivation and course grades. Contrary to these studies, there are also several studies showing that mastery-approach goals predicted positively both intrinsic motivation and course grades, while performance-approach goals did not predict grades. For instance, Grant and Dweck (2003) investigated the effects of achievement goals on intrinsic motivation and course grades in a difficult college course. These results showed that mastery-approach goals predicted positively intrinsic motivation and course grades. At the same time, performance-approach and performance-avoidance goals were not significantly related to intrinsic motivation and course grades. Mastery goals predicted positively higher grades in especially difficult tasks because mastery-focused students used deep-learning strategies and because they gave personal value to tasks. In another study, conducted by Keys, Conley, Duncan and Domina (2012) it was investigated the relation between achievement goals and mathematics achievement among 2000 seventh- and eighth-grade White, Hispanic, and Vietnamese students in California. These results indicated, consistent with Grant and Dweck (2003), that mastery-approach goals were positively related to math achievement; instead, performance-approach goals were unrelated to it. Despite the researchers' expectations, performance-avoidance goals did not negatively predict math achievement. These surprising findings may result from, among other unknown factors, cultural differences among participants.

All things considered, it can be said that there are several ambiguous issues in Achievement Goal Theory. The first ambiguous issue concerns the research findings of performance-approach goals which are more controversial than the findings of performance-avoidance goals (Harackiewicz et al., 2002). For instance, some studies found associations between performance-approach goals and negative outcomes such as avoiding challenges and surface learning (Ames, 1992a; Dweck & Legget, 1988), whereas other studies did not find such associations. Moreover, many studies found associations performance-approach goals and higher grades whereas a few did not find similar results (Elliot, 1999; Urdan, 1997).

The second ambiguous issue concerns the association between mastery-approach goals and academic achievement as this association is still unclear. For example, findings of some studies, especially conducted in college settings, indicated that mastery-approach goals predict positively course grades (Grant & Dweck, 2003; Cury, Elliot, Fonseca& Moller, 2006), whereas other studies found no such relation (Elliot & Church, 1997; Harackiewiczet et al., 1997).

The third, and last ambiguous issue, concerns the context under the relations between achievement goals and outcomes have been investigated as these relations have not been systematically studied in Turkey. Indeed, there are only a few studies of this kind in Turkish literature. So, this thesis can pave the way for future studies about motivational constructs in Turkey. Because Turkish educational system has different structure from Western countries, findings of this study may be surprising. To address these ambiguous issues, the present study was conducted in Turkish high school classrooms by focusing on the associations between achievement goals and academic achievement. By doing so, it was aimed to shed some light on whether mastery-approach or performance-approach goals do predict academic striving and achievement.

Finally, in the achievement goal literature, mastery-avoidance goals seem less frequently endorsed than the other three achievement goals (Elliot, 2005). Most likely this is because mastery-avoidance goals are more salient for certain types of people such as elderly people as long as people are aging, their physical and mental abilities decrease. So these people are more likely to pursue mastery-avoidance goals because they want to preserve their abilities (Elliot, 1999). For example, they know that they cannot improve their memory as much as when they were younger. So they just try to preserve their abilities relating to memory. Similarly, perfectionist people who are not competitive may be also more prone to adopt mastery-avoidance goals because they want to do everything perfectly and therefore they may mainly aim at avoiding making any mistakes. Because, mastery-avoidance goals are less likely to be endorsed by students, mastery-avoidance goals were not included in this study. But what may leada student to endorse a mastery-approach, a performance-approach, or a performance-avoidance goal?

As mentioned above, classroom environment created by teachers and peers is one of the factors that may determine students' achievement goal endorsement. In the following section, it is discussed how classroom environment is related to the educational outcomes in general and to the endorsement of achievement goals in particular.

1.1.2. Classroom Environment in the Framework of Achievement Goal Theory

Motivation of students is influenced not only by internal motivational factors but also by external motivational factors such as sociodemographic background of family or the classroom environment. For example, when a math teacher emphasizes learning, improvement, and challenge-seeking, it is assumed that students will be more interested in learning math clearly and less focused on outperforming their peers. In such situations students learn math out of their personal interest. However, when a teacher puts more emphasis on performance and competition then students will be more likely to ignore their interest and focus more on what grades in comparison to their peers. Of course, except of the classroom environment, students' personal characteristics and the famiy's socieconomic background can have an impact on students' motivation and academic achievement but their impacts can be attenuated if the classroom learning environment is adaptive (Chiu & Khoo, 2005). This is because students spend lots of their time with peers and teachers in class. So, teachers or classmates may play more critical role in their achievement goals and academic performance than their family do.

Apart from the achievement goals per se, the Achievement Goal Theory put emphasis also on the effects of contextual factors such as the learning environment of classroom and how this can influence students' motivational approach (Meece et al., 2006). Generally speaking, researchers who investigate classroom environment (perceived classroom goal structures) focus on how teachers create different goal structures in the classroom and which strategies they use to create this atmosphere (Kaplan, Gheen & Midgley, 2002). Some teachers use competitive practices, whereas others put emphasis on skill development, mastery, and improvement. Several studies have consistently shown that goal structures of classroom have influence on student's achievement goals and academic performance (Meece et al., 2006). However, the influence of the perceived classroom goal structures on academic performance could be indirect; the

perceived classroom goal structures influence the achievement goals that students adopt, and achievement goals of students directly influence academic performance and intrinsic motivation (Church, Elliot & Gable, 2001). When classroom environment puts emphasis on learning and understanding, students are more likely to adopt mastery-approach goals. On the other hand, when classroom environment puts emphasis on competition and social comparisons, students are more likely to adopt performance goals, either performance-approach or performance-avoidance ones (Meece et al., 2006).

Several researchers conducted studies about how perceived classroom goal structures influence students' achievement goals. They used different methodologies and found diverse results. For example, Kaplan et al. (2002) conducted a study in a sample of ninth-grade students and reported that students who perceived their classroom as mastery-oriented displayed less disruptive behavior in math class than students in performance-oriented classroom. In addition, Gonida, Voulala, and Kiosseoglou (2009) investigated that role of perceived classroom goal structures in achievement goals among a sample of seventh- and ninth-grade students. They also included perceived parents' achievement goals in this study. Their findings indicated that both perceived classroom goal structures and parents' achievement goals predicted students' achievement goals. Specifically, students who had mastery-oriented parents and perceived their classroom goal structures as mastery-oriented were more likely to adopt mastery goals; performance-approach goals were only predicted by perceived parents' goals, not perceived classroom goal structures. On the other hand, Badieea, Babakhanib and Hashemian (2014) tested the mediating role of achievement goals and self-efficacy between perceived classroom goal structures and mathematics achievement. Participants were third-grade students in Tehran, Iran. These authors found that achievement goals and self-efficacy mediated between students' perception of classroom environment and students' math achievement. Moreover, students who perceived that they were evaluated on the process of learning and problem solving, they were more likely to adopt mastery goals. In contrast, if they perceive that they were evaluated on math grades, they became more performance-oriented. Perceived mastery-oriented classroom was positively correlated with self-efficacy that resulted in academic success.

At the same time, perceived classroom goal structures have been found to influence not only students' achievement goals but also their learning strategies indirectly via achievement goals. There are several studies examining the effects of classroom goal structures on learning strategies. For instance, Ames and Archer (1988) examined whether or not classroom environment influences students' learning strategies and task choices. Results showed that students who perceived their classroom as mastery-oriented used more effective learning strategies and preferred more challenging tasks. When students perceived their classroom as performance-oriented they avoided challenging tasks and used surface learning strategies. Lau and Nie (2008) conducted a similar study with fifth-grade students. The authors investigated the relations between achievement goals and perceived classroom goal structures and how these variables contributed to math achievement, interest, effort withdrawal, and avoidance coping. Lau and Nie indicated that performance-avoidance goals were positively related to effort withdrawal and avoidance coping and that perceived performance goal structures aggravated this relation. Furthermore, perceived mastery goal structures predicted positively math achievement and negatively effort withdrawal and avoidance coping. In contrast, perceived performance goal structures predicted negatively math achievement but positively effort withdrawal and avoidance coping.

Taken together, it can be concluded that both perceived mastery goal structures and mastery goals lead to the most adaptive outcomes, whereas perceived performance goal structures and performance-avoidance goals lead to the most maladaptive outcomes. As stated above, the vast majority of these studies have been conducted in US or other western countries. In the Turkish literature, there is a dearth of studies investigating the relations among classroom goal structures, achievement goals, learning striving and academic achievement. Therefore, one of the main aims of this study was to investigate how perceived goal structures of the classroom relate to students' achievement goals and how the latter are associated with students' academic achievement and learning striving in Turkish high schools. This is an important issue, because the Turkish educational system differs considerably from the respective educational systems of Western European countries or US. For example, Turkish students are more likely to experience a competitive environment, because they are heavily evaluated through exams that are normative assessed. They struggle to gain a good school report at the end

of the semester (Eskin et al., 2008) Furthermore, they have to pass many exams even if they are not interested in entering University. Because they face so many exams in many subject areas, they often have difficulty in following their true interests. It is hoped that the findings of this thesis may provide some evidence to Turkish teachers about how an adaptive learning environment (namely, a classroom environment that is more mastery-oriented and less performance-oriented) promote mastery-approach goals which in turn predict desired outcomes.

Goal structures of classroom may be assessed by using student questionnaires, teacher's reports, or observations. Several studies have indicated that students' self-reported classroom goal structures is more strongly related to students' achievement goals (Schunk & Meece 1992). Each student has different background and given his or her past experiences and preferences he or she may interpret differently the cues that may prevail in his or her classroom environment (Nolen & Haladyna, 1990).

Furthermore, students' (and their families') sociodemographic background was included in the present study, because, as explained below, sociodemographic background can have a critical role in academic achievement and motivation. In the next section, it is explained in more details why sociodemographic background was handled in the framework of the Achievement Goal Theory.

1.1.3. Sociodemographic Background of the Family in the Achievement Goal Theory

As mentioned above, there are several factors that determine students' motivation and academic performance. One of them is the socioeconomic background of family, consisting, among others, of socioeconomic status of family and parents' marital status (e.g., married vs. divorced). Regarding socioeconomic status, there is a growing recognition of its relation to academic performance (e.g., Crosnoe, 2004). Recently, the effects of family's socioeconomic status on students' academic performance have attracted theorists' attention to the educational domain. Some studies have shown that parents-child relationships and the socioeconomic status of the family influence academic achievement at school (e.g., Best, Hauser, & Allen, 1997). But, which specific indicators of socioeconomic status influence academic achievement? According to the

Family Investment Model (Melby, Conger, Fang, Wickrama & Conger, 2008). Family's socioeconomic statushave three components: Parental income, parent's education, and parent's job. These factors create the family environment that influence the development of children.

As in other theories of motivation, socioeconomic status of students (and of their families) should receive some attention also in the Achievement Goal Theory because it can influence students' achievement goals and academic achievement. Although there are some studies that examined the relations between socioeconomic status of family and academic achievement, only few studies, if any, within the framework of Achievement Goal Theory have investigated these relations. This seems particularly true for the Turkish educational context. On the other hand, there are more studies within the framework of the Family Investment Model that have investigated the links among family socio-economic status, academic striving and achievement. For example, Melby et al. (2008) examined the relations between socioeconomic status of family and the later educational attainment of 451 young adults (age 26) in the framework of Family Investment Model. Melby et al. (2008) showed, consistent with the Family Investment Model, that both parents' educational level and family income predicted positively youths' educational success 15 years later.

Likewise, Guo (1998) conducted a large-scale longitudinal study in order to examine in which period poverty is the most influential factor of students' academic achievement. He indicated that poverty experienced from birth to early adolescence and poverty experienced in adolescence had significantly negative effect on academic achievement. However, poverty experienced in childhood did not predict school achievement. Given these findings, it can be said that adolescence is a critical period during which the financial situation of the family can influence adolescents' academic achievement. On the other hand, Davis-Kean (2005) examined how parents' education level and family income were related to academic achievement of 8–12 year-old children. Results indicated that parents' education was related to child achievement but this relation was mediated by parents' achievement expectation and home behaviors. In other words, parents' education influenced indirectly child achievement. With regard to family income, contrary to Guo's study, poverty influenced significantly developmental

outcomes in the early childhood but this effect diminished during middle childhood and adolescence. In Guo's study, it was recognized that if parents provide their children an inciting home environment and help him or her at schoolwork, the negative effects of financial constrictions are minimized. This may be a ray of hope for students who live in poor family. Differently, Brooks-Gunn and Duncan (1997) showed that low income and financial restrictions had indirect effect on other academic achievement via low birth weight and the neonatal mortality rate for whites. Children with low birth weight were more likely to have serious physical disabilities, learning disabilities and these problems predicted lower grades in math and reading when they started school. Moreover, children who lived in longer time poverty had more damaged cognitive abilities so they faced with more academic challenging and lower success in their school lives.

Moving from the family financial background to that of education, Magnuson (2007) focused on the effects of mother's education on academic achievement. He investigated whether or not increases in mothers' education predicts their children's academic achievement. Children were between 6-12 years old. Findings indicated that if mothers were young and less educated, and continued their educational life, then their children's academic achievement increased, too. But interestingly, this was not the case if mothers were more educated mothers. Magnusson showed that mother's education upgrading is important only when mother is younger and less educated.

Chiu (2007) looked at the relations between sociodemographic background of family and academic achievement from the cultural perspective. He investigated the association between students' family status and science achievement among 107,834 fifteen-year-olds students across 41 countries. Results showed that children who lived with both parents, belonged to families with higher SES, were native born, and had more cultural possessions were more likely to take higher grades in science. Children in richer families had more opportunities to possess books, obtain resources and enjoy private courses. In more collectivistic cultures, family SES were less negatively correlated to science grades because children benefited more from their extended families in collectivist cultures even if they are in poverty or they have divorced parents.

Moreover, children have lower grades in developed countries, probably because developed countries have higher divorce rates.

Turkish culture has been mostly characterized as collectivistic, whereas Western and North American cultures have been mostly characterized as individualistic (Hofstede, 2001). Furthermore, Turkish cultural context puts emphasis on close relationships with extended family members and social groups (Imamoglu, Küller, Imamoglu & Küller, 1993). As mentioned above, some studies showed that students benefited from their extended families in collectivistic cultures so they are not negatively affected by the marital status (divorced or married) of their parents. So it may be interesting to investigate whether marital status of parents predict students' academic achievement or achievement goals in Turkey, just like in other collectivist cultures. But, with regards to Turkish literature, it seems that there is no study investigating the association between parents' marital status and students' academic achievement or motivation. So in this thesis, it was investigated whether marital status of parents influenced students' achievement and motivation.

With regard to sociodemographic backgorund, there are just few studies that have looked at the association between sociodemographic backgorund, students' academic achievement and motivation in Turkey. One of them was conducted by Tomul and Çelik (2009) who examined how parents' education and family income influence academic achievement and motivation among a sample of ninth-grade students. Results of this study showed that family income and parents' education predicted positively academic achievement and motivation. Also it was found that environmental factors such as low income, low education level, and poor family relationships influenced negatively academic achievement. A similar study was conducted by Engin-Demir (2009) in Turkey among a sample of sixth, seventh and eighth grade students. The author concurred that family income, parents' education level, and students' personality characteristics, influence academic achievement and motivation.

As said, these results showed that socioeconomic status of the family can have an impact on academic achievement and motivation. In this thesis, one of the main aims was to build on the existing knowledge by examining to what extent sociodemographic backgorund, relates to academic-related outcomes through the endorsement of

achievement goals. By taking into account these findings,parents' education level, family income, and marital status (i.e., single-parent versus intact families) were emphasized and it was examined whether each of them relates to students' achievement goals as well as to their academic striving and achievement. This was done, because these variables have not been extensively investigated in the framework of the Achievement Goal Theory, especially in Turkey.

In the following section, the importance of academic achievement is discussed. Also, it is discussed how academic achievement is handled by the Achievement Goal Theory.

1.1.4. Academic Achievement in the Framework of Achievement Goal Theory

Among the main aims of the educational systems is to find out which factors can have positive impact on students' well-being and academic achievement so as to further foster them (Badiee et al.2014). So, around the world, researchers have conducted many studies in order to recognize how academic achievement can be increased and which factors influence it. Different factors may affect academic achievement. In the Achievement Goal Theory, more emphasis is put on factors such as goal orientation and perception of classroom environment because they are crucial to increase academic achievement (Badiee et al., 2014). In this thesis, it is considered that academic achievement can be reflected through grades. Grades play critical role because they indicate, especially in Turkey, whether or not a student has successfully attained his or her academic goals. Students are therefore often evaluated on various lessons and they take grades on exams, assignments or papers (Shim & Ryan, 2005). These grades influence students' further learning and academic performance.

In general, it is believed that high grades promote students' motivation whereas low grades diminish students' motivation (Bouffard-Bouchard, 1990). Most likely however, the relation between grades and motivation is circular as the more a student is motivated the higher grades he or she gets and the higher grades one gets the more motivated he or she becomes. According to the Achievement Goal Theory, the achievement goals that students pursue have an important role in how students interpret the grades and how they reacting to them. In other words, achievement goals have critical role in students'

interpretation of grades. In early years, researchers concurred that performance goals led to negative outcomes and lower grades for students (e.g. Diener & Dweck, 1978).

After performance goals were divided into two parts as approach versus avoidance and after they have been defined as pure aims (Elliot, 2005), several studies found performance-avoidance goals to lead to lower grades but performance-approach goals to relate positively to course grades (e.g., Elliot & Harackiewicz, 1996; Harackiewicz et al., 1997). Given the findings of these studies, it can be clearly said that students who pursue performance-avoidance goals are more likely to take lower grades than their peers who do not pursue such goals (Wolters, 2004). Furthermore, although performance-approach goals are found to predict positively surface-level learning and to not promote deep learning (Elliot & Harackiewicz 1996), several studies indicated that performance-approach goals are positively correlated with students' course grades (e.g., Church, Elliot, & Gable, 2001; Elliot & Church, 1997; Harackiewicz et al., 1997; Harackiewicz et al. 2002). On the other hand, although researchers expected that academic achievement (grades) would be positively correlated with mastery goals, findings did not support this expectation (Barron & Harackiewicz, 2001; Elliott & Church, 1997; Elliot et al., 1999; Harackiewicz et al., 1997). It should be noted however that students who pursue mastery-approach goals learn deeply, do not give up at difficult task (Elliot & Dweck, 1988) and are more interested in tasks (Harackiewicz et al., 2000). In spite of all these educational benefits of mastery-approach goals, the expected positive relation between academic achievement (grade) and mastery-approach goals has not been steadily found (Barron & Harackiewicz 2001, Elliot & Church 1997). An underlying reason may be that students who pursue mastery and performance goals display different behaviors for their achievement in classroom. Normally, learning and academic achievement seem to be fairly related. It is usually believed that students' grades on exams and assignments indicate quality of students' learning. In reality, some students learn course materials very well but they do not necessarily take high grades on exams, simply because they are not so much interested in performing well per se (say, during a test). Rather, they may be more interested in learning extra things and devote much of their time in extra-curricular knowledge. This situation is more widespread among mastery-focused students than performance-focused students (Senko et al., 2011). Students who pursue performance-approach goals are more likely to take higher

grades because they may pay more attention to topics that teachers underline in lectures. Unlike mastery-focused students, performance-approach focused students do not necessarily try to learn deeply and they are more likely to ignore their personal interests (Jetton & Alexander, 1997). They focus only on topics that they may face at the exams because their main aim is to take higher grades and outperform peers. These attitudes are not common among mastery-focused students. They focus their efforts on personally interesting topics and they learn these topics deeply. Their curiosity guides them to learn. So they do not pay attention to exam-related cues given by teachers. Their main aim is to learn effectively and to develop ability, not to take higher grades (Hidi & Renninger, 2006). In this way, they can improve their interests in specific topics but they endanger academic performance (grades). When examining whether achievement goals predict grades among Turkish adolescent students. the focus was on math grades for two reasons. First, because including all lessons' grades was not practical. Second, because mathematics is highly valued in Turkey as it is one of the subject matters that students are tested to enter University.

In the following section, learning striving such as challenge-seeking and challenge-avoidance for math are discussed. Furthermore, it is examined how they are handled in the Achievement Goal Theory.

1.1.5. Achievement Striving: Challenge-Avoidance and Challenge-seeking for Math in the Framework of Achievement Goal Theory

Achievement goals do not predict only academic achievement but also learning striving such as challenge-avoidance and challenge-seeking. Some students may prefer to solve the problem but in a certain way that they believe that they know better. Furthermore, they may avoid to solve more difficult problems. By these ways, they avoid challenges, but instead they try to be successful via a way that seems easier to them. So, this is called as challenge-avoidance. Contrary to such challenge-avoidance, some students try to handle with difficulties. For example, they try to solve a difficult math problem. In short they prefer to struggle against challenges. This is called as challenge-seeking.

In literature, there is a limited body of studies investigating the relations among achievement goals, challenge-seeking, challenge-avoidance, and academic achievement.

There is only a few studies found in accessible sources in literature. For example, Shim and Ryan (2005) investigated the relation between achievement goals and changes in students' self-efficacy, challenge-avoidance, and intrinsic value in response to grades. Results indicated that grades moderated the effects of performance-approach goals on challenge-avoidance. When students received high grades, performance-approach goals were not correlated to challenge-avoidance. But, when students received low grades, performance-approach goals predicted positively challenge-avoidance. Regarding mastery goals, they were negatively correlated with challenge-avoidance, irrespective of whether the grades were low or high. Lastly, challenge-avoidance and performance-avoidance goals were positively correlated. Interestingly, no study could be spotted that concurrently examined the relations among challenge-seeking, achievement goals, and perceived classroom goal structures. By taking into account this gap in the literature, , next to grades, challenge-seeking and challenge-avoidance were included in this study. Challenge-seeking was opposite of challenge-avoidance. So, reasonably, it was expected that challenge-seeking and challenge-avoidance were negatively and significantly correlated.

All things considered, the concurrent associations among challenge-avoidance, challenge for tasks, achievement goals and perceived classroom goal structures have not received a lot of attention in the framework of the Achievement Goal Theory. In this thesis, it was aimed to examine these associations in a sample of Turkish adolescents. In the next part, the aims of the study and the research questions, are explained as well as the model that was tested.

1.1.6. The Tested Model in this Study and Aims of the Study

As seen in the literature, there are lots of factors that can impact on students' motivation and achievement goals. In the framework of the theories of motivation, especially in the Achievement Goal Theory, the main aim of this thesis is to investigate how perceived classroom goal structures, achievement goals, and sociodemographic background of family can explain students' academic striving (through challenge-seeking and challenge-avoidance) and achievement (through grades). The importance of Achievement Goal Theory is that it puts emphasis on factors determining achievement

goals and motivation of students. This theory also sheds light on how these factors influence students' motivation and interests.

However, there are perhaps only few studies which have examined the mediating role of achievement goals linking on the one hand sociodemographic background (e.g., socio-economic status, parents' educational level and marital status of parents) and perceived classroom environment (in terms of perceived goal structures) with academic striving and academic achievement on the other hand. Especially in Turkey there is a dearth of studies examining this issue.

By taking into account these deficits in the literature, it was investigated the relations among achievement goals, perceived classroom goal structures, academic achievement, family income, parents' education level, parents' marital status, challenge-avoidance and challenge-seeking in a large sample of tenth, and eleventh and twelfth students. The first purpose of the present study was to find out how whether family-related factors predict endorsement of achievement goals. The second aim of the study was to examine whether perceived classroom goal structures predict also achievement goals; then, whether achievement goals predict academic achievement and grades. Another aim of the study was to investigate whether achievement goals mediate the relation between the left-handed predictors and the right-handed predictors (as shown in Figure 1). Lastly, all questions of this study were inquired in the framework of Achievement Goal Theory and in the Turkish educational context. The model examined in this context was showed in Figure 1.

Figure 1: Effects of perceived classroom environment and sociodemographic backgorund of family on academic achievement and learning Striving: Mediator role of achievement goals

Based on this model, there are three hypothesis that were tests in this thesis:

1- It was hypothesized that both mastery-approach and performance-approach goals would relate positively to math grades whereas performance-avoidance goals would relate negatively to math grades. (Hypothesis 1)

2- It was hypothesized that perceived mastery-approach goal structures would predict positively mastery-approach goals and performance-approach goals and that perceived performance goal structures would predict positively both performance-approach or performance-avoidance goals in math class. (Hypothesis 2)

3- With respect to the relation of achievement goals to learning striving, it was hypothesized that mastery-approach goals and perceived mastery-approach goal structures would relate positively to challenge-seeking whereas performance-

approach or performance-avoidance goals and perceived performance-approach goals would relate negatively to challenge-avoidance in math class. (Hypothesis 3)

In addition, there were two main research questions that were also examined:

1- It was investigated whether achievement goals would mediate the relation between their predictors (i.e., perceived classroom environment and sociodemographic background of family) and outcomes (i.e., challenge-seeking, challenge-avoidance, and math grades)?

2- Last but not least, it was tested whether the measured variables differentiate with regard to gender?

CHAPTER 2

METHOD

This study was part of a larger longitudinal research project that has been financed by TUBITAK (Project id: 114K815). One of the aims of this project is to investigate the interplay of the factors lying at the personal and contextual level to detect which certain characteristics of the classroom and the family's sociodemographic background are especially beneficial or harmful for adolescents' academic achievement and well-being. The data used in this thesis are coming from a pilot study of that project. The main aim of this study was to investigate direct relations between perceived classroom goal structures and academic achievement or challenge-avoidance and to examine whether the relations of perceived classroom goal structures to math achievement (i.e. grades), challenge-seeking and challenge-avoidance for maths are mediated by achievement goals.

2.1. PARTICIPANTS

The participants in this study were 447 high school students from 18 classrooms from three anatolian high schools located in the district of Ankara. Students attended the 10th (N = 217), 11th (N = 215) and 12th grade (N = 15). However, because 78 of them provided inconsistent responses (e.g., they fully agreed with all the statements), I excluded them from my analyses. The retained sample was consisted of 369 students (181 males; 178 females; 10 students did not report their gender). Data collection took place in April, 2015. The sample was constituted by convenience sampling method and students participated on a volunteering basis. Informed consent were collected from parents of all students. Moreover, approval of principals of schools were taken for this study. The mean age of the participants was 16.67 years (SD = 1.85). Age range was between 15-18 years old. All participants were selected from math class. Lastly, students who need special education were excluded from this study. sociodemographic background of the participants was determined in terms of family income,parents'

education level and marital status of parents. Income that is between 500-2000 TL was referred as ‘low’, income between 2000-5000 TL was referred as ‘middle’ and income higher than 5000 TL was referred as ‘high’. According to these criteria, 52 students (14.1%) had low family income, 199 students 53.9%) had middle family income and 107 students (29%) had high family income. 11 of students did not declared their family income. As for mothers’ education level, 2 (5%) mothers are illiterate, 54 (14.4%) mothers finished from primary school, 42 (%11.4) mothers finished from middle school, 126 (34.1%) mothers graduated from high school, 29 (7.9%) mothers graduated from college, 109 (29.6%) mothers had a university or higher-degree diploma. 7 (1.9%) students did not declared their mothers’ education level. As concerns students’ fathers, 30 (8.1%) fathers graduated from primary school, 30 (8.1%) fathers finished from middle school, 91 (24.7%) fathers were high school graduated, 25 (6.8%) fathers graduated from college, 183 (49.6%) fathers had a university, or higher level diploma.10 students (2.7%) did not declared their fathers’ education level. As for marital status of parents, 49 couples (13.3%) were divorced whereas 320 couples (86.7) were intact. Demographic features of participants are shown in table 1.

Table 1

Demographic Features of Participants

Variables	Frequency	Percentage (%)
Gender		
Females	178	48.2%
Males	181	49.1%
Grade		
10th grade	152	52.6%
11th grade	164	44.4%
12th grade	11	3.0%
Mothers' eduational level		
Illiterate	2	0.6%
Primary school	54	14.9%
Middle school	42	11.6%
High school	126	34.8%
College	29	8.0%
University and/or higher degree	109	30.2%
Fathers' eduational level		
Illiterate	-	-
Primary school	30	8.4%
Middle school	30	8.4%
High school	91	25.3%
College	25	7.0%
University and/or higher degree	183	50.9%
SES		
Low (500 – 2000 TL)	52	14.1%
Middle (2001 – 5000 TL)	199	53.9%
High (> 5001 TL)	107	29.0%
Marital status		
Married	320	86.7%
Divorced	49	13.3%

2.2 INSTRUMENTS

The list of the variables in this study is given below:

- Perceived mastery approach goal structures
- Perceived performance approach goal structures
- Performance-avoidance goals
- Performance-approach goals
- Mastery-approach goals
- Gender
- Parents' education level
- Parents' marital status
- Family income
- Academic achievement (grades in math class)
- Challenge avoidance
- Challenge-seeking

The questionnaires were translated from English to Turkish and then back-translated from Turkish to English. The translation was checked by native speaking Turkish research assistants who were fluent in English. The adaptation study of these scales was done in the context of the TUBİTAK Project (Sayıl, Mouratidis, & Michou, 2014). All items in all questionnaires were assessed in a five-point, Likert-type scale, ranging from 1 to 5 where 1 represented a strong disagreement and 5 represented strong agreement with each statement. An average scores for each scale was computed by aggregating the respective items.

2.2.1. Demographic Form

In addition to other scales, with the aim of gaining knowledge about participants a demographic form was prepared. After a brief explanation for the purpose of the study,

demographic forms were given to students. Demographic questions included gender, age, grades and a self-report 5-point Likert scale measuring the income level of the family ("1 – "Very much below the average" to "6 – "Very much above the average"). Moreover demographic forms included questions about students' parents such as their educational level. The occupation and marital status of their parents was also recorded. All questions were answered by participants (high school students).

2.2.2. Perceived Classroom Goal Structure Scale

Classroom goal structures were assessed by 7 items from the Patterns of Adaptive Learning Scale (PALS; Midgley et al., 2000) and from Urdan's (2004) scale. In this scale, the participants had to report their perception of motivational environment in math class. From the total of 7 items, 4 items assessed mastery-approach goal structures, that is, the extent to which students perceived their math teacher to emphasize learning and improvement (e.g., "In our math class, it's important to understand the work, not just memorize it"). The internal consistency of this subscale, represented by Cronbach alpha, was $\alpha = .87$. Another 3 items out of 7 assessed performance-approach goal structures, that is, the extent to which students perceived their math teacher to emphasize competition and outperforming others (e.g., "In our math class, getting good grades is the main goal"). The internal consistency of this subscale, represented by Cronbach alpha, was $\alpha = .74$.

2.2.3. Achievement Goals Scale

The revised version of Achievement Goal Questionnaire (Elliot & Murayama, 2008) was used to assess the achievement goals (mastery-approach goals, performance-approach and performance- avoidance goals). Two items were used from each of the three-item subscales that were used to assess each of the three goals. In particular, the 2 items assessing mastery-approach goals, the degree to which students aim at learning and improving, were "My aim is to completely master the material presented in math class'' and ''My goal is to learn as much as possible in math class.'' The internal consistency of the 2 items as represented by Cronbach alpha was $\alpha = .77$. The 2 items assessing performance-approach goals, that is, the degree to which students aim at outperforming others and taking higher grades, were "My goal is to perform better than

the other students in math class." and ''I am striving to do well compared to other students in math class." Cronbach alpha for these items was α = .83. The last 2 items assessing performance-avoidance goals, that is, the degree to which students avoid being worse than others, were "My aim is to avoid doing worse than other students" and ''I am striving to avoid performing worse than others.'' Cronbach alpha for these items was α = .93.

2.2.4. Challenge-Avoidance Scale

The Challenge-avoidance scale were developed by Urdan, Ryan, Anderman and Gheen (2002) in order to assess whether students avoid challenging problems or, instead, whether they try to solve them. Challenge-avoidance was assessed by 5 items. A typical item measuring challenge-avoidance is "I would prefer doing math problems the usual way, rather than try something different." Internal consistency of these items, represented by Cronbach alpha, was α = .79.

2.2.5. Challenge-Seeking Scale

Challenge for reading is a subscale of Motivation for Reading Questionnaire developed by Baker and Wigfield (1999). Challenge for reading is assessed by 5 items. A typical item measuring challenge for reading is "I like hard, challenging books". Items of the subscale were adapted to assess challenge-seeking lesson. An adapted to the math subject matter item measuring challenge-seeking is "I like hard, challenging math problems". The internal consistency of the subscale represented by Cronbach alpha was α = .88.

2.2.6. Grades

Grade is referred as academic achievement of students. After the end of the school year in June, 2015, students' math grades were recorded for both the first and the second semester. This information was provided from the math teachers of the students.

PROCEDURE

Scales were applied to students of grade 10, 11 and 12 in their classroom under control of research assistants. During the application, the research assistants tried to make the

settings silent. It was paid attention not to interrupt application. These scales were applied to students on days which they did not have any exam. Before the application, all participants were verbally and nonverbally informed about the scope of the study. Furthermore, a consent from was obtained from students' parents. A permission from class teachers and school principals was also obtained Questionnaires were given only to those students who wanted to participate in the study. Students were informed that their participation would be voluntary and that they could quit at any time they desired. Only a few students refused participation. Students filled in the questionnaires for nearly two class hours. All answers of students were kept secret and students as well as teachers were assured about.

CHAPTER 3

RESULTS

This chapter provides the results of the present study which examines the relations among perceived classroom goal structures, students' sociodemographic background, students' achievement goals, students' academic achievement (math grades) and learning striving (i.e., challenge-seeking and challenge-avoidance). The analysis of the data was performed by Statistical Package for the Social Sciences (SPSS) 23.0. Prior to analyses, the data were screened for missing and out-of-range values. Missing value analyses showed statistically nonsignificant differences (Little's MCAR $\chi 2$ [52] = 47.42, p = .65, ns.) between the group of student for whom there is complete information versus those for whom there was no information in grades (n = 41) or gender (n=6). Firstly, descriptive statistics and bivariate correlations of the measured variables are reported. In addition to this, independent samples *t* test was conducted to determine the differences of gender among the achievement goals, perceived classroom goal structures, academic achievement and learning striving. In the following section, three set of hierarchical regressions were performed. In the first one, achievement goals were regressed on age, gender, financial income of family, parents' education level, parents' marital status and perceived classroom goal structures. In the second set of regressions, challenge-avoidance and challenge-seeking were regressed on age, gender, financial income of family, parents' education level, parents' marital status, achievement goals and perceived classroom goal structures. The third set of regressions concerned math grades in the end of the school year which were regressed on the same predictors (i.e., age, gender, financial income of family, parents' education level, parents' marital status, achievement goals and perceived classroom goal structures) after controlling for mid-semester math grades.

3.1. DESCRIPTIVE STATISTICS

Means and standard deviations of the variables are presented in Table 1. Numbers of the participants are different in some variables because some participants did not respond some parts of the survey (missing values: 19 for age, 6 for perceived mastery-approach goal structures, 6 for perceived performance-approach goal structures, 7 for mastery-approach goals, 8 for performance-approach goals, 7 for performance-avoidance goals, 9 for challenge-seeking, 11 for challenge-avoidance, 54 for mid-year grade, 55 for final grade)

Table 2

Descriptive Statistics for the Variables of the Study

Variables	*N*	*M*	*SD*
Age	350	16.67	1.85
Perceived map goal structure	363	3.77	0.85
Perceived pap goal structure	363	3.37	0.93
Map personal goals	362	3.52	1.04
Pap personal goals	361	3.35	1.14
Pav personal goals	362	3.25	1.07
Challenge avoidance	358	3.15	0.87
Challenge-seeking	360	3.16	1.03
Term grades	315	61.16	20.18
Final grades	314	66.29	18.51

Note. *N* = Number of participants for corresponding variable; *M* = Mean; *SD* = Standard Deviation. Map = mastery-approach; Pap = performance-approach; Pav = performance-avoidance.

3.2. THE BIVARIATE CORRELATIONS OF THE VARIABLES

The bivariate correlations of the variables are presented in Table 3, and they are described in terms of correlation coefficients.

Table 3

Bivariate Correlations for Studied Variables

	1	2	3	4	5	6	7	8	9	10
1.Age	-									
2. Perceived mastery-approach goal structures	-.02	-								
3. Perceived performance-approach goal structures	-.08	.59**	-							
4.Mastery-approach goals	-.00	.51**	.25**	-						
5.Performance-approach goals	.04	.40**	.36**	.56**	-					
6.Performance-avoidance goals	.01	.30**	.30**	.45**	.62**	-				
7.Challenge-avoidance for math	.06	.09	.13*	.07	.02	.10	-			
8.Challenge-seeking	.06	.40**	.16**	.54**	.33**	.18**	-.14**	-		
9. Math grade for I. term	.15**	.26**	.09	.41**	.32**	.21**	-.12*	.45**	-	
10. Math grade for II. Term	.21**	.24**	.07	.41**	.40**	.22**	-.10	.46**	.81**	-

Note. * $p < .05$. ** $p < .01$

Table 3 shows that perceived mastery-approach goal structures were positively correlated with perceived performance-approach goal structures; in addition, the correlations of perceived mastery-approach goal structures with mastery-approach goals and with performance-approach goals were positively and statistically significant. Also, perceived mastery-approach goal structures and challenge-seeking were positively correlated but, contrary to the existing literature, perceived mastery-approach goal structures and performance-avoidance goals were positively correlated. In addition, perceived mastery-approach goal structures were positively correlated with both mid-year grades and final grades. Consistent with Hypothesis 2, correlational analyses revealed that perceived performance-approach goal structures were significantly and positively related to both performance-avoidance and performance-approach goals. Unexpectedly, perceived performance-approach goal structures were positively correlated with mastery-approach goals. As for learning striving, perceived performance-approach goal structures were positively and significantly correlated with both challenge-seeking and challenge-avoidance. Lastly, perceived performance-approach goal structures were not significantly correlated with either mid-year grades or final grades.

With regard to achievement goals, consistent with Hypothesis 1, mastery-approach goals were positively correlated with both term grades and challenge-seeking. In addition, mastery-approach goals were positively correlated with both performance-approach and performance-avoidance goals. As for performance-approach goals, they were positively correlated with performance-avoidance goals and challenge-seeking. Like mastery-approach goals, consistent with Hypothesis 1, performance-approach goals were positively and significantly correlated with both mid-year grades and final grades. This result seems to be consistent with existing literature. Contrary to the hypothesis and existing literature, performance-avoidance goals were positively and significantly correlated with both mid-year grades and final grades. In addition to this, unexpectedly, performance-avoidance goals were positively correlated with challenge-seeking.

Regarding learning striving, as expected, challenge-avoidance was negatively correlated with challenge-seeking and mid-year grades. But, there was not a significant

relation between challenge-avoidance and final grades. On the other hand, challenge-seeking was positively correlated with both mid-year grades and final grades.

Lastly, correlational analyses also revealed that mid-year positively and significantly related to final grades. By depending on this result, it can be said that students took nearly same grades for both of the two term in math class.

3.3. RESULTS REGARDING GENDER DIFFERENCES AMONG MEASURED VARIABLES

A Multivariate Analysis of Variance (MANOVA) was conducted to determine whether there were any gender differences among the dependent variables included in this study. The MANOVA was statistically significant, Wilk's $\Lambda = .835$, $F(9, 284) = 6.24$, $p < .01$, multivariate $\eta 2 = .17$. Independent sample t-tests after adjusting the alpha level due to multiple comparisons at the level of .05/ 9 = .006 showed statistically significant differences in both perceived classroom goal structures, mastery-approach goals, performance-approach goals, performance-avoidance goals, challenge-seeking and grades. This information is shown in Table 4 and suggests that girls scored higher in all those variables. In contrast, there was no statistically significant differences between girls and boys in terms of avoiding challenges for math. It means that both girls and boys similarly struggle to avoid when they face with any challenges in math class.

Table 4
Results of T-Test For Differences in the Measured Variables Between Males (N = 181) and Females (N = 178).

	Females		Males		*t*-test
Variables	*M*	*SD*	*M*	*SD*	
Map goal structures	3.93	0.66	3.60	0.99	-3.74**
Pap goal structures	3.49	0.85	3.28	1.00	-2.13*
Map goals	3.70	0.96	3.37	1.10	-2.95**
Pap goals	3.60	1.03	3.12	1.21	-4.03**
Pav goals	3.41	1.03	3.11	1.11	-2.55*
Challenge-seeking	3.37	0.94	2.96	1.08	-3.73**
Challenge-avoidance	3.18	0.79	3.12	0.93	-0.62
Term grades	69.16	17.20	53.97	20.09	-7.09**
Final grades	71.93	15.66	61.25	19.51	-5.27**

Note. ** $p < .006$. Map = mastery-approach; Pap = performance-approach; Pav = performance-avoidance

3.4. HIERARCHICAL REGRESSION ANALYSIS

In the following section, three sets of hierarchical regressions were performed. In the first set, each of the three achievement goals was regressed on gender, age of adolescents, financial income of family, parents' education level, parents' marital status in Step 1, and perceived classroom goal structures in Step 2. In the second set, challenge-avoidance and challenge-seeking were regressed on gender, age of adolescents, financial income of family, parents' education level, parents' marital status in Step 1, perceived classroom goal structures in Step 2, and the three achievement goals in Step 3. In the third set, final grades for math were regressed on mid-year grades as well as on gender, age of adolescents, financial income of family, parents' education level, and parents' marital status in Step 1, perceived classroom goal structures in Step 2, and the three achievement goals in Step 3.

3.4.1. Hierarchical Regression for Achievement Goals

Three two-stage model, one for each achievement goal, were conducted. In Step 1, each of the three achievement goals were regressed on gender, age, financial income of family, parents' marital status, parents' education level. In Step 2 perceived classroom

goal structures (perceived mastery-approach goal structure, perceived performance-approach goal structure) were added. The results of the final regression models for mastery-approach goals are presented in Table 5, for performance-approach goals are presented in Table 6 and for performance-avoidance goals are presented in Table 7.

Table 5

Summary of Hierarchical Regression Analysis for Variables Predicting Mastery Approach Goals

		Step 1			*Step 2*	
Variables	*B*	(*SE*)	*B*	*B*	(*SE*)	*β*
Gender	0.36	(0.11)	.17**	0.14	(0.10)	.07
Age	0.01	(0.03)	.01	0.01	(0.03)	.01
Financial income	-0.05	(0.05)	-.06	0.01	(0.05)	.01
Parents' education level	0.16	(0.05)	.21**	0.09	(0.04)	.12*
Marital status of parents	-0.14	(0.17)	-.05	-0.02	(0.15)	-.01
Map goal structures				0.66	(0.07)	.55**
Pap goal structures				-0.14	(0.07)	-.12*
Adjusted R^2		.05			.26	
F		4.31**			17.92**	

Note. * $p < .05$. ** $p < .01$. Map = mastery-approach; Pap = performance-approach

Mastery-approach Goals. The hierarchical regression model for mastery-approach goals revealed that in Step 1 explained only 5% of the variance in mastery-approach goals. This variance was explained by gender, age of adolescents, financial income, parents' education, and marital status of parents, F (5, 326) = 4.31, p < .01. Inspection of the coefficients showed that parents' education level and gender were statistically significant positive predictors of mastery-approach goals while the other variables in Step 1 were not significant predictors. This means that if values of parents' education level increased up to one standard deviation, students' mastery-approach goals would increase by 0.21 standard deviations. Given the coding scheme (0 = males, 1 = females), the coefficient for gender suggests that females were more likely to endorse mastery-approach goals (by 0.17 standard deviation) than boys. When perceived mastery-approach goal structures and perceived performance-approach goal structures were added to hierarchical linear regression in Step 2, all the predictors explained in total

26% of the variance in mastery-approach goals, F (7, 324) = 17.92, p < .01. Perceived mastery-approach goal structures were positive predictor of mastery-approach goals. This result provides support to Hypothesis 2. Likewise, parents' education level positively predicted mastery-approach goals. On the other hand, perceived performance-approach goal structures negatively predicted mastery-approach goals. As expected, the most important predictor of mastery-approach goals were perceived mastery-approach goal structures when perceived classroom goal structures were added to analysis.

Table 6

Summary of Hierarchical Regression Analysis for Variables Predicting Performance-Approach Goals

	Step 1			*Step 2*		
Variables	*B*	(*SE*)	*B*	*B*	(*SE*)	*β*
Gender	0.51	(0.12)	.22**	0.32	(0.12)	.14**
Age	0.03	(0.03)	.04	0.04	(0.03)	.06
Financial income	-0.03	(0.06)	-.03	0.02	(0.05)	.02
Parents' education level	0.13	(0.05)	.16*	0.07	(0.05)	.09
Marital status of parents	-0.13	(0.18)	-.04	-0.07	(0.17)	-.02
Map goal structures				0.33	(0.08)	.25**
Pap goal structures				0.22	(0.08)	.18**
Adjusted R^2		.06			.19	
F		4.87**			11.84**	

Note. * $p < .05$. ** $p < .01$. Map = mastery-approach; Pap = performance-approach

Performance-approach Goals. In table 6, the hierarchical regression revealed that gender, age, financial income, parents' education and marital status of parents explained only 6% of the variance in performance-approach goals, F (5, 326) = 4.87. But these variables significantly predicted performance-approach goals. Also, results showed that gender and parents' education levels were statistically significant positive predictors of performance-approach goals while the other variables in the Step 1 did not predict significantly performance-approach goals. This means that if values of parents' education level increased up to one Standard deviation, students' performance-approach goals would increase by 0.16 standard deviations. Given the coding scheme (0 = males, 1 = females), the coefficient for gender suggests that females were more likely to

endorse performance-approach goals (by 0.22 standard deviations) than boys. When controlling for gender, financial income of family, parents' marital status, parents' education level, and age, perceived classroom goal structures (perceived mastery-approach goal structure, perceived performance-approach goal structure) were added to hierarchical linear regression for predicting performance-approach goals in step 2 that explained 19% of the variance in performance-approach goals, F (7, 324) = 11.84**. Consistent with Hypothesis 2, perceived mastery-approach goal structures and perceived performance-approach goal structures predicted positively performance-approach goals in step 2. Perceived mastery-approach goal structures were the most important predictor of performance-approach goals. Interestingly, parents' education level was not still significant predictor when the other variables were added in the analysis.

Table 7
Summary of Hierarchical Regression Analysis for Variables Predicting Performance-Avoidance Goals

	Step 1			*Step 2*		
Variables	*B*	(*SE*)	*B*	*B*	(*SE*)	*β*
Gender	0.35	(0.12)	.16**	0.23	(0.12)	.11
Age	0.01	(0.03)	.01	0.01	(0.03)	.02
Financial income	-0.02	(0.06)	-.03	0.01	(0.05)	.01
Parents' education level	0.06	(0.05)	.08	0.02	(0.05)	.03
Marital status of parents	0.03	(0.18)	.01	0.07	(0.17)	.02
Map goal structures				0.20	(0.09)	.16*
Pap goal structures				0.19	(0.08)	.16*
Adjusted R^2		.02			.09	
F		2.15			5.50**	

Note. * $p < .05$. ** $p < .01$. Map = mastery-approach; Pap = performance-approach

Performance-avoidance Goals. As shown in table 7, the hierarchical regression model in Step 1 revealed that explained only 2% of the variance in performance-avoidance goals which could be explained by gender, age of adolescents, financial income, parents' education and marital status of parents, *F* (5, 326) = 2.15. But step 1 did not significantly predicted performance-avoidance goals. It was indicated that only gender in step 1 was significant positive predictor of performance-avoidance goals. When

perceived mastery-approach goal structures and perceived performance-approach goal structures were added to hierarchical linear regression they explained 9% of the variance in performance-avoidance goals, F (7, 324) = 5.50. Furthermore, both perceived mastery-approach goal structures, unexpectedly, and perceived performance-approach goal structures predicted positively performance-avoidance goals. Interestingly, gender did not predict significantly performance-avoidance goals where structure goals were added in the analysis.

3.4.2. Hierarchical Regression for Challenge-avoidance

Three-stage model was used in hierarchical regression analysis for challenge-avoidance and challenge-seeking. Respectively, challenge-avoidance and challenge-seeking were regressed on gender, age of adolescents, financial income of family, parents' education level and parents' marital status in Step 1, perceived classroom goal structures (perceived mastery-approach goal structures, perceived performance-approach goal structures) in Step 2 and achievement goals (mastery-approach goals, performance-approach goals and performance-avoidance goals) in Step 3. The results of the final regression steps for challenge-avoidance are presented in table 8 and for challenge-seeking are presented in table 9.

Table 8

Summary of Hierarchical Regression Analysis for Variables Predicting Challenge-Avoidance

	Step 1			Step 2			Step 3		
Variables	B	(*SE*)	*β*	*B*	(*SE*)	*β*	*B*	(*SE*)	*β*
Gender	0.03	(0.10)	.02	-0.02	(0.10)	-.01	-0.01	(0.10)	-.01
Age	0.03	(0.03)	.07	0.04	(0.03)	.08	0.04	(0.03)	.08
Financial income	-0.05	(0.05)	-.08	-0.04	(0.05)	-.06	-0.04	(0.04)	-.06
Parents' education level	0.06	(0.04)	.09	0.04	(0.04)	.07	0.06	(0.04)	.09
Marital status of parents	-0.09	(0.15)	-.04	-0.09	(0.14)	-.03	-0.11	(0.14)	-.04
Map goal structures	-	-	-	0.03	(0.07)	.03	0.12	(0.08)	.11
Pap goal structures	-	-	-	0.14	(0.06)	.15*	0.11	(0.07)	.11
Map goals	-	-	-	-	-	-	-0.14	(0.06)	-.17*
Pap goals	-	-	-	-	-	-	-0.05	(0.06)	-.06
Pav goals							0.14	(0.06)	.17*
Adjusted R^2		-.00			.02			.04	
F		0.75			1.83			2.34*	

Note. * $p < .05$. ** $p < .01$. Map = mastery-approach; Pap = performance-approach; Pav = performance-avoidance

As for challenge-avoidance, in table 8, the hierarchical regression revealed that gender, age of adolescents, financial income, parents' education and marital status of parents did not significantly predicted challenge-avoidance. When controlling for financial income of family, parents' marital status, parents' education level, gender and age, perceived classroom goal structures (perceived mastery-approach goal structure, perceived performance-approach goal structure) were added to hierarchical linear regression for predicting challenge-avoidance in Step 2. These all variables explained 2% of the variance in challenge-avoidance, $F(6,323) = 1.83$. But this model did not significantly predict challenge-avoidance. Furthermore, perceived mastery-approach goal structures did not significantly predict challenge-avoidance whereas, consistent with my expectation, perceived performance-approach goal structures predicted positively and significantly challenge-avoidance. This means that if classroom environment focused on competiton and outperforming others, students were more prone to avoid challenges in math lesson. In step 2, perceived performance-approach goal structures were the only important predictor of challenge-avoidance. The lastly, when achievement goals

(performance-approach, mastery-approach and performance-avoidance goals) were added to hierarchical linear regression in order to show whether these variables predict challenge-avoidance. These all variables explained 4% of the variance in challenge avoidance, $F(10, 315) = 2.47^{**}$. There were only two variables predicting significantly challenge-avoidance. Firstly, mastery-approach goals predicted negatively challenge-avoidance. This means that students who pursued mastery-approach goals were not prone to avoid challenges in math lesson. Secondly, performance-avoidance goals predicted positively challenge-avoidance. This means that students who pursued performance-avoidance goals were more likely to avoid challenges. These results were consistent with literature and my expectation.

Mediation Analyses. In partial support to Hypothesis 3, the fact that in Step 2 perceived performance-approach goal structures were positive predictors of challenge-avoidance while they were non significant predictors in Step 3 when achievement goals were entered, implied that either performance-avoidance goals or mastery-approach goals mediated the relation between performance-approach goal structures and challenge-avoidance. To test whether indeed some mediation took place, a Sobel test was conducted. The Sobel test with mastery-approach goals as a mediator was marginally significant (Sobel = -1.92, SE = 0.01, p = .06), while the sobel test with performance-avoidance goals as a mediator was nonsignificant (Sobel = 1.094, SE = 0.02, p = 0.27). A test of indirect effects with the approach, recently introduced by Hayes (2013), showed that mastery-approach goals mediated the relation between performance-approach goal structures and challenge-avoidance (95% confidence interval: 0.002 – 0.087), while this was not the case for performance-avoidance goals (95% confidence interval: -0.008 – 0.037). A graphical representation of the patterns of associations among perceptions of classroom goal structures, achievement goals and challenge-avoidance is shown in Figure 2.

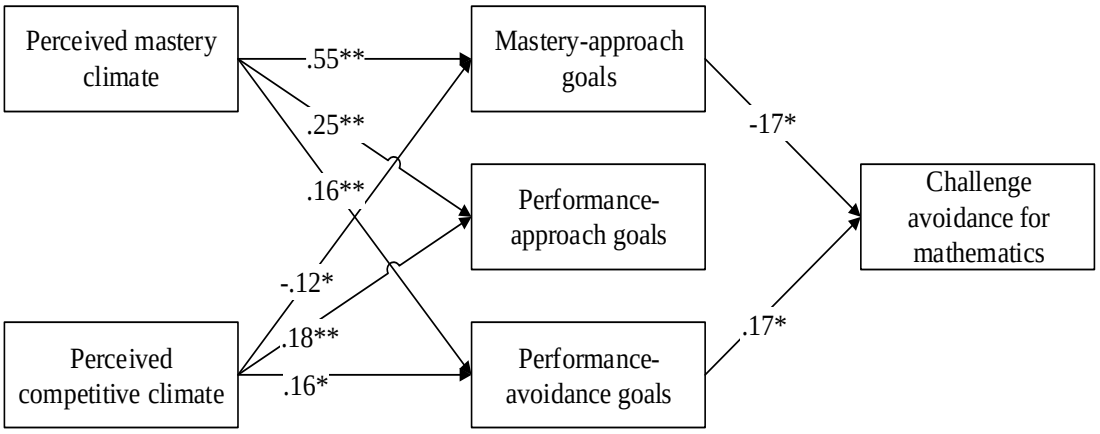

Figure 2. The patterns of associations between perceived classroom goal structures, achievement goals and challenge-avoidance for mathematics. *Note.* * $p < .05$. ** $p < .01$.

3.4.3. Hierarchical Regression for Challenge-Seeking for Math

In table 9, the hierarchical regression revealed that gender, age of adolescents, financial income, parents' education and marital status of parents clarified only 5% of the variance in challenge-seeking $F(5, 320) = 4.51$. Also, results showed gender and parents' education level were statistically significant predictors of challenge-seeking in the step 1. This means that when parents' education level increased students were more likely to struggle against challenges

Table 9

Summary of Hierarchical Regression Analysis for Variables Predicting Challenge-Seeking

	Step 1			Step 2			Step 3		
Variables	*B*	(*SE*)	*β*	*B*	(*SE*)	*β*	*B*	(*SE*)	*β*
Gender	0.45	(0.11)	.22**	0.30	(0.11)	.15**	0.23	(0.10)	.11*
Age	0.04	(0.03)	.08	0.04	(0.03)	.07	0.04	(0.03)	.06
Financial income	-0.01	(0.05)	-.01	0.02	(0.05)	.03	0.02	(0.05)	.02
Parents' education level	0.10	(0.05)	.13*	0.05	(0.05)	.07	0.01	(0.04)	.02
Marital status of parents	-0.09	(0.17)	-.03	-0.02	(0.16)	-.01	0.01	(0.15)	.00
Map goal structures	-	-	-	0.52	(0.08)	.43**	0.23	(0.08)	.19**
Pap goal structures	-	-	-	-0.16	(0.07)	-.15*	-0.09	(0.07)	-.08
Map goals	-	-	-	-	-	-	0.44	(0.06)	.44**
Pap goals	-	-	-	-	-	-	0.07	(0.06)	.08
Pav goals							-0.12	(0.06)	-.13*
Adjusted R^2		.05			.17			.31	
F		4.51**			10.59**			15.36**	

Note. * $p < .05$. ** $p < .01$. Map = mastery-approach; Pap = performance-approach; Pav = performance-avoidance

When perceived mastery-approach goal structures, perceived performance-approach goal structures were added to hierarchical linear regression in step 2, they explained 17% of the variance in challenge-seeking, $F(7, 318) = 10.59$. As expected, perceived mastery-approach goal structures predicted positively challenge-seeking whereas perceived performance-approach goal structures predicted negatively challenge-seeking. This means that if classroom environment focused on mastery-approach goals, students were more likely to struggle against challenges in math lesson. Also, if classroom environment put emphasis on performance-approach goals, students were less likely to challenge for math. These results supported my expectations regarding hypothesis 3. In step 2, perceived mastery-approach goal structures were the most important predictor of challenge-seeking. The lastly, when achievement goals (performance-approach, mastery-approach and performance-avoidance goals) were added to hierarchical linear regression in order to show whether these variables predict challenge-seeking. These all variables explained 31% of the variance in challenge-seeking, $F(10, 315) = 15.36$. There were four variables predicting significantly challenge-seeking in step 3. Firstly, as

expected, perceived mastery-approach goals predicted positively challenge-seeking. Secondly, as expected, mastery-approach goals predicted positively challenge-seeking. In other words, students who pursued mastery-approach goals were more likely to struggle against challenges in math lesson. Thirdly, consistent with hypothesis, performance-avoidance goals predicted negatively challenge-seeking. Students who pursued performance-avoidance goals were less likely to struggle against challenges. These results were consistent with literature and my hypothesis. Lastly, gender predicted positively challenge-seeking.

Mediation Analyses. In partial support to Hypothesis 3, the fact that in Step 2 perceived mastery-approach goal structures were positive predictors of challenge-seeking while their β values decreased from 43 to 19 in Step 3 when achievement goals were entered, implied that either performance-avoidance goals or mastery-approach goals mediated partially the relation between mastery-approach goal structures and challenge-seeking. To test whether indeed some mediation took place, a Sobel test was conducted. The Sobel test with mastery-approach goals as a mediator was statistically significant (Sobel = 6.942, SE = 0.04, $p < .01$), while the sobel test with performance-avoidance goals as a mediator was nonsignificant (Sobel = 1.389, SE = 0.02, p = 0.16). A test of indirect effects, similar to the way that was conducted for challenge-avoidance (see Hayes, 2013), showed that mastery-approach goals partially mediated the relation between perceived mastery-approach goal structures and challenge-seeking (95% confidence interval: 0.14 – 0.34). In contrast, performance-avoidance goals did not mediate the relation between perceived mastery goal structures and challenge-seeking (95% confidence interval: -0.02 – 0.02).

On the other hand, in Step 2, perceived performance-approach goal structures were negative predictors of challenge-seeking while they were nonsignificant predictors in Step 3 when achievement goals were entered, implied that either performance-avoidance goals or mastery-approach goals may have mediated the relation between perceived performance-approach goal structures and challenge-seeking. To test whether indeed some mediation took place, a Sobel test was conducted. The Sobel test with mastery-approach goals as a mediator was statistically significant (Sobel = 4.46, SE = 0.03, $p < .01$). A test of indirect effects (Hayes, 2013), showed that mastery-approach goals mediated the relation between perceived performance-approach goal structures

and challenge-seeking (95% confidence interval: 0.08 – 0.24). As concerns the performance-avoidance goals as potential mediators of the relation between perceived performance goal structures and challlenge for mathematics, the Sobel test was statistically significant (Sobel = 2.46, *SE* = 0.02, *p* = 0.01). However, the test of indirect effects showed that this was not the case (95% confidence interval: -0.08 – 0.01). A graphical representation of the patterns of associations among perceptions of classroom goal structures, achievement goals and challenge-seeking for mathematics is shown in Figure 3.

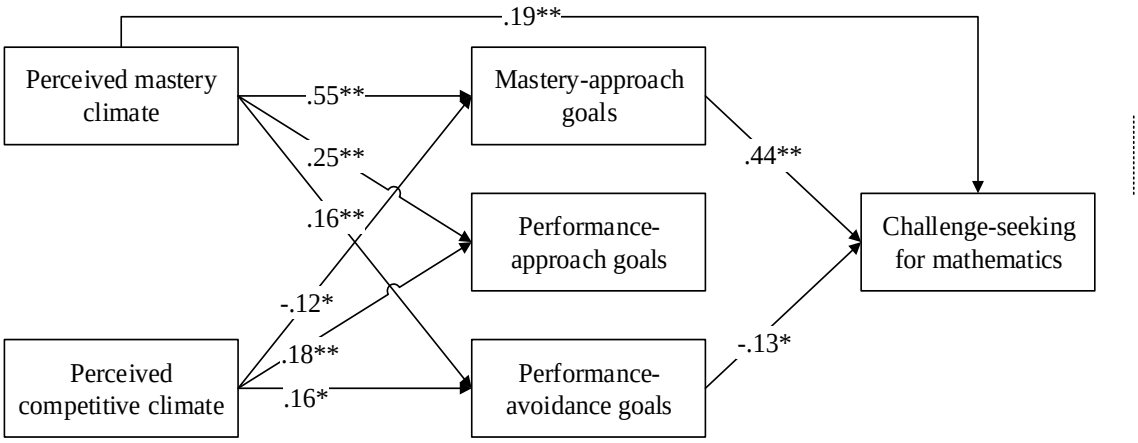

Figure 3. The patterns of associations between perceived classroom goal structures, achievement goals and challenge-seeking for mathematics. *Note*. * *p* < .05. ** *p* < .01.

3.4.3. Hierarchical Regression for Final Grades

Three-stage model was used in hierarchical regression analysis for final grades for math. Final grades were regressed on gender, age of adolescents, financial income of family, parents' education level, parents' marital status and mid-year grades in Step 1, perceived classroom goal structures (perceived mastery-approach goal structures, perceived performance-approach goal structures) in Step 2 and achievement goals (mastery-approach goals, performance-approach goals and performance-avoidance goals) in Step 3. The results of the final regression models for final grades are presented in Table 10.

Table 10

Summary of Hierarchical Regression Analysis for Variables Predicting Final Grades

	Step 1			Step 2			Step 3		
Variables	*B*	(*SE*)	*β*	*B*	(*SE*)	*β*	*B*	(*SE*)	*β*
Gender	-1.01	(1.42)	-.03	-1.15	(1.43)	-.03	-1.59	(1.38)	-.04
Age	0.85	(0.34)	.09*	0.85	(0.34)	.09*	0.80	(0.33)	.08*
Financial income	0.42	(0.63)	.03	0.48	(0.63)	.03	0.34	(0.61)	.02
Parents' education level	-0.57	(0.58)	-.04	-0.62	(0.58)	-.04	-0.93	(0.56)	-.07
Marital status of parents	-1.99	(1.92)	-.04	-1.82	(1.93)	-.03	-1.31	(1.86)	-.02
mid-year grade	0.75	(0.04)	.81**	0.74	(0.04)	.80**	0.69	(0.04)	.75**
Map goal structures	-	-	-	1.23	(1.01)	.05	0.07	(1.06)	.00
Pap goal structures	-	-	-	-0.33	(0.88)	-.02	-0.75	(0.88)	-.04
Map goals	-	-	-	-	-	-	1.11	(0.87)	.06
Pap goals	-	-	-	-	-	-	3.07	(0.79)	.19**
Pav goals							-0.78	(0.74)	-.04
Adjusted R^2	.66			.66			.69		
F	93.28**			70.06**			57.72**		

Note. * $p < .05$. ** $p < .01$. Map = mastery-approach; Pap = performance-approach; Pav = performance-avoidance

In table 10, the hierarchical regression revealed that gender, age of adolescents, financial income, parents' education, marital status of parents and mid-year grade explained 66% of the variance in final grades, F (6, 275) = 93.28. It was indicated that these variables significantly predicted final grades for math. Also, results showed that age of students predicted positively final grades in the step 1. Likewise, mid-year grade predicted positively and strongly final grades for math. This means that students who took higher grades in mid-year grade were more likely to take higher grades in final grade. When perceived mastery-approach goal structures and perceived performance-approach goal structures were added to hierarchical linear regression in step 2, they explained 66% of the variance in final grades, F(8, 273) = 70.06. Furthermore, there were only two significant positive predictors of final grades in step 2. Both age and mid-year grade predicted positively final grades. Other variables did not predict significantly final grades. Lastly, when achievement goals (performance-approach, mastery-approach and performance-avoidance goals) were added to hierarchical linear regression in order

to show whether these variables predict final grades. They explained 69% of the variance in final grades, F (11, 270) = 57.72. There were three variables predicting significantly final grades for math in step 3. Firstly, age of students predicted positively final grades for math. Secondly, mid-year grade predicted positively final grades. In other words, students who took higher grades in mid-year were more likely to take higher grades in math in final grade. Lastly, performance-approach goals predicted positively final grades. Students who tried to outperform their peers and focused on competition were more prone to take higher grades. This finding was in line with literature. A graphical representation of the patterns of associations among perceptions of classroom goal structures, achievement goals and final grades on mathematics is shown in Figure 4.

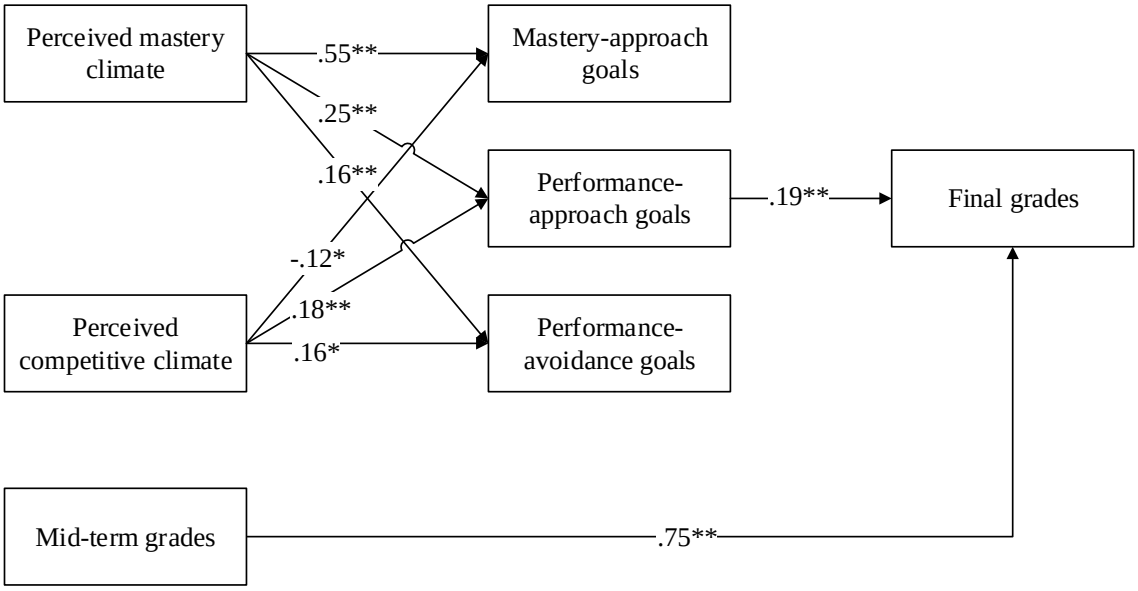

Figure 4. The patterns of associations between perceived classroom goal structures, achievement goals and final grades on mathematics, controlling for mid-term grades. *Note*. * $p < .05$. ** $p < .01$.

CHAPTER 4

DISCUSSION

Educational psychologists are mostly interested in detecting which factors determine the academic achievement of students. Because higher academic achievement predicts better job, higher social status, and more money in their future life, main aim of almost all students is to be academically successful during their school life. Besides, many people believe that academic performance is one of the most important indicators of IQ level. For all these reasons, academic achievement is very critical factor for students, their teachers and their families. Academic performance may be determined by factors such as family environment, SES, learning environment or culture. But the most crucial factor determining academic performance is 'motivation'. Motivation is consisted of internal and external factors that prompt people to make an effort to achieve a goal. It is at the core of educational system (Covington, 1992). Terrel H. Bell emphasis on the importance of motivation via his dictum: ''There are three things to remember about education. The first one is motivation. The second one is motivation. The third one is motivation.'' (Ames, 1990).

For quite a long time, many researchers have conducted studies to uncover the factors determining motivation in educational area. Identifying these factors help students to enhance their academic performance. Most of the studies have been conducted in the framework of the Achievement Goal Theory because the theory has been one of the most outstanding and acceptable motivation theories for over 25 years (Senko et al, 2011). This theory was developed to find out the most crucial elements that determine motivation. Among them, the learning environment has been emphasized as a critical factor that influences the endorsement of achievement goals and eventually academic performance. Many studies were conducted to detect the impact of the learning environment on achievement goals and success. Most of these studies, and the present one, have indicated that students are more likely to pursue most adaptive approach when classroom environment puts emphasis on mastery-approach goals such as deep learning or improving skills (Meece, Anderman, & Anderman, 2006). On the other hand, when teachers put emphasis on competition and demonstration of ability, students are more

likely to pursue performance goals and decrease motivation. Furthermore, according to these studies, mastery-approach goals lead among others, to higher self-efficacy, ability perceptions, enhanced intrinsic motivation, and deep learning (Midgley et al. 1998). A similar pattern was found in this research as mastery-approach goals were positive predictors of challenge-seeking. However, in spite of these advantages of mastery-approach goals, many studies could not show that there is a positive relation between mastery-approach goals and academic performance (math grades) (Elliot & Church, 1997). Because of the ambiguous findings regarding the link between mastery-approach goals and academic performance, this issue was investigated in this study. Unlike mastery-approach goals, studies indicated more consistent findings regarding the link between performance goals and academic performance. For example, although performance-approach goals seem to lead to maladaptive attitudes such as surface learning, cheating behaviors it has been shown that they can lead to higher academic achievement, whereas performance-avoidance goals dramatically diminished motivation and academic performance. Furthermore, there were many studies indicating positive relations between performance goals and self-handicapping strategies (Elliot, & Harackiewicz, 1996) but no study was found about relations between performance goals and other learning striving such as challenge-avoidance or challenge-seeking. So in this thesis, it was tried to shed some light on this obscure point. On the other hand, although family's sociodemographic background has critical role in students' motivation and academic achievement, no study could be found in the literature about how family's sociodemographic background relates to students' motivation and academic achievement in Turkey. By taking into account this missing point, it was focused on whether sociodemographic background consisting of, among others, family income, parents' education level and parents' marital status predict academic achievement and motivation in this thesis.

In the following section, the major findings of the present study are first overviewed, followed by the limitations of the study and possible directions for future research. The main research questions and tested hypotheses of this study are discussed in detail below. Because the study was about math learning, specific domain of mathematics was focused in the following discussion.

4.1. CORRELATION OF THE MEASURED VARIABLES

Based on most of the previous studies (e.g., Church et al., 2001; Keys et al., 2012) and Turkish educational system, it was expected that both mastery-approach goals and performance-approach goals would be positively and that performance-avoidance goals would be negatively correlated with academic achievement. Another expectation was that mastery-appraoach goals would be positively and that performance-avoidance and performance-approach goals would be negatively correlated with challenge-seeking. As expected, results of the present study indicated that mastery-approach goals were positively related to grades. They were also positively correlated with challenge-seeking. In addition, mastery-approach goals were found to positively relate to performance-avoidance goals. This finding was inconsistent with most of the previous studies and hypothesis. A likely underlying reason may be that mastery-approach goals and performance-avoidance goals may not be contradictory (Badieea et al., 2014). Some students pursue goals according to learning situations and are more likely to be successful than their peers who pursue just one goal (Barron & Harackiewicz, 2001; Pintrich, 2003). For instance, students may adopt mastery-approach goals at some specific topics in math whereas they adopt performance-avoidance goals at other topics. Or, a student may be very interested in mathematics but he or she may hate to take examination. So that the student will just try not to be worse than his or her peers in exams.

As for performance goals, as expected, results showed that performance-approach goals were positively correlated with grades. Although the developmental period of subjects was different, this finding supported the previous studies (e.g., Rahmani, 2011; Elliot & Church, 1997). Previous studies were generally conducted among primary or elementary school whereas participants of the present study were high school students. In addition, contrary to Hypothesis 3, performance-approach goals were strongly related to challenge-seeking. Unfortunately, there is no study about this relation in accessible resources. I hope, these results will give way for further studies in order to shed light on these points. Contrary to hypothesis, performance-avoidance goals were positively correlated to challenge-seeking and grades. In addition, there was no significant correlation between challenge-avoidance and performance-avoidance goals. These

results seemed to be surprising. Although, to the best of my knowledge, there has been no study investigating the relations between challenge-avoidance and performance-avoidance goals, it seems logical to infer that students who try not to do worse than others and not to look stupid are more likely to avoid challenges and to take lower grades than others. Regarding performance-avoidance goals, previous studies consistently showed that performance-avoidance goals were negatively related to grades (e.g., Rahmani, 2011; Elliot & Church, 1997). But the present results were not in line with these previous studies. Interestingly, performance-avoidance goals and both term grades were positively correlated in this study. This might result from methodological issues or students' cultural background. As mentioned above, this study is the first one in Turkey. So, motivational processes might work differently here; an alternative explanation is that students might interpret the meaning of the items in a less negative way for performance-avoidance goals. It is recommended that future researchers pay attention to these relations.

In regard to perceived classroom goal structures, perceived mastery-approach goal structures were, as expected, positively related to mastery-approach goals. But, unexpectedly, they were also positively correlated with performance-approach goals and performance-avoidance goals. To understand the reason for these unexpected results, further examination is needed in Turkey. On the other hand, consistent with the hypothesized relations between perceived classroom goal structures and achievement goals, perceived performance-approach goal structures were positively correlated with performance-approach and performance-avoidance goals, though they were positively related also to mastery-approach goals. These results may result from differences in Turkish educational system or methodological problems like perceived mastery-approach goal structures.

Regarding learning strategies, as hypothesized, challenge-avoidance was negatively correlated with challenge-seeking. To the best of my knowledge, the present study is the first one investigating relation between challenge-seeking and challenge-avoidance. I hope, future studies will support the present results. In addition, challenge-seeking was positively correlated with grades.

As seen above, there were many correlational relations among measured variables. However, it should be noted that the correlations do not indicate causality. So we cannot

make inferences such that there were causal relations between variables. We can just mention about relationships between variables.

4.2. PREDICTORS OF ACHIEVEMENT GOALS, LEARNING STRATEGIES AND ACADEMIC ACHIEVEMENT

4.2.1. Predictors of Achievement Goals

Effects of achievement goals on motivation have been studied for decades in the framework of Achievement Goal theory. Although many studies were conducted in other countries such as United States (e.g., Harackiewicz et al., 2008) there have been only few conducted in Turkey. Furthermore, the relations of family sociodemographic background (financial income, marital status of parents, education level of parents) to achievement goals and academic achievement have not yet been investigated in Achievement Goal Theory as far as I can know through what has been published.

Based on the literature (e.g., Church, Elliot, & Gable, 2001; Midgley, Arunkumar, & Urdan, 1996), in this study, it was expected that perceived mastery goal structures would positively predicted mastery-approach goals and that perceived performance-approach goal structures would negatively predict mastery-approach goals. Results showed that, consistent with Hypothesis 2, perceived mastery-approach goal structures were statistically significant positive predictor of mastery-approach goals, whereas perceived performance-approach goal structures were important negative predictor of mastery-approach goals. It means that if math teachers encourage students to improve their learning skills and have choice opportunities in class, students are more prone to have mastery-approach goals. In addition, the present findings indicated that, parents' education level positively predicted mastery-approach goals. This means that students who have more educated parents pay more importance to learning deeply and covering topics.

As for performance-approach goals, most of the studies in the literature have consistently indicated that performance-approach goals were positively predicted by perceived performance-approach goal structures (e.g., Badieea et al., 2014). Our results supported this finding. This means that if math teachers pay more attention to grades and create a competitive atmosphere in class, students are more prone to pursue performance-approach goals. In the first step of the hierarchical regression, parents'

education level positively predicted performance-approach goals. When perceived classroom goal structures were added in the second step of the hierarchical regression, parents' education levels did not predict performance-approach goals. It means that perceived classroom goal structures explained the whole variance in performance-approach goals. On the contrary, performance-approach goals were also positively predicted by perceived mastery-approach goals. This finding was in contradiction with previous studies conducted in European countries or USA. Underlying reasons may be that educational system in Turkey is somewhat different from the educational systems in European countries and USA. This is because in Turkey the educational system is based on competition and evaluation of grades because GPA is critical for university entrance. If a student wants to enter a qualified university to receive high quality education, he or she has to get a higher score from university entrance exam as %60 of GPA is added to university entrance score (ÖSYM, 2016). So grades and exam performance is very crucial for Turkish students. Especially mathematics is a prerequisite lesson for both the track of sciences and social sciences. To sum up, even if math teachers put emphasis on mastery-approach goals and say their students ''your grade is not important, just try to understand clearly'', Turkish students continue to try to get higher grades than their peers and they compare themselves to their competitors.

Regarding performance-avoidance goals, there are only a few studies examining the relations between perceived performance-approach goal structures and performance-avoidance goals (e.g., Wolters, 2004; Lau & Nie, 2008). In these studies correlations or interaction effects between variables were investigated whereas, in the present study, it was investigated whether perceived classroom goal structures predict performance-avoidance goals. Consistent with Hypothesis 2, these results indicated that perceived performance-approach goal structures were positive predictor of performance-avoidance goals. On the other hand, performance-avoidance goals were also predicted by perceived mastery-approach goal structures. This finding was unexpected. Underlying reasons of this situation might be is that students completed a self-report survey that assessed their perception of classroom goal structures. Students' perceptions did not reflect the objective classroom atmosphere itself (Murayama & Elliot, 2009). This fact may lead results to be problematic. So, these unexpected findings require further replication via more objective measurement before generalizing to other groups.

4.2.2. Predictors of Learning Strategies

Achievement goals and perceived classroom goal structures are not only associated with academic achievement but also with learning strategies such as challenge-seeking and challenge-avoidance. Although there are lots of studies investigating the relations between learning strategies and achievement goals or perceived classroom goal structures (e.g., Midgley & Urdan, 2001; Urdan, Midgley, & Anderman, 1998), the associations among challenge-avoidance, challenge-seeking, achievement goals and perceived classroom goal structures have not yet been extensively investigated. Taking into account this gap in the literature, this issue was examined in the present study.

Regarding challenge-avoidance, the hierarchical regression analysis showed that perceived performance-approach goals positively predicted challenge-avoidance. However, when achievement goals were added in the model, the effects of perceived performance-approach goals disappeared. In addition, mastery-approach goals negatively predicted challenge-avoidance whereas performance-avoidance goals positively predicted it. This result verified Hypothesis 3. This means that if a student prefers developing his or her abilities and learning deeply he or she has less desire to avoid challenges. In contrast, if his or her aim is to avoid looking stupid and not to do worse than classmates, he or she is more likely to avoid challenges in math. Mastery-approach goals and performance-avoidance goals explained the whole variance of challenge-avoidance.

In regard to challenge-seeking, my results indicated in the first step of the regression analysis, that parents' education level was positive predictor of challenge-seeking. In the second step of the regression analysis, perceived classroom goal structures were included in analysis and the effect of parents' education vanished. In addition, perceived performance-approach goals negatively predicted challenge-seeking, whereas perceived mastery-approach goal structures positively predicted challenge-seeking. In the last step, when achievement goals were added as predictors of challenge-seeking, perceived mastery-approach goals remained statistically significant predictor of challenge-seeking but perceived performance-approach goals did not. On the other hand, mastery approach goals positively predicted challenge-seeking, whereas performance-avoidance goals negatively predicted it. These findings were in line with Hypothesis 3. Performance-approach goals were unrelated to challenge-avoidance.

As mentioned above, there is a dearth of the studies examining the relations among challenge-seeking, challenge-avoidance, perceived classroom goal structures and achievement goals. So these results will inspire further researchers to replicate this study.

4.2.3. Predictors of Academic Achievement (Final Grades)

The main aim of most of the students is to be academically successful. So, educational psychologists and researchers struggle to find out factors that determine the academic achievement. Of course there are a lot of factors such as classroom environment, teachers, peers, socioeconomic status of family, relationships with family members, cultural values, and so on. But how can it be determined whether a student is successful or not? Especially in Turkey, academic achievement is reflected through grades that students get from exams. So grade is very crucial for Turkish students because it determines whether they are high achievers or not.

According to the Achievement Goal Theory, achievement goals have critical roles in students' reaction and interpretation of grades. So far, many studies across different countries have been conducted to examine the relations between achievement goals and academic performance in the framework of Achievement Goal Theory (e.g. Diener & Dweck, 1978; Hulleman & Senko, 2010) but only a few of them have been conducted in Turkey. Findings of these studies consistently indicated that although performance-approach goals predict positively surface-level learning (Elliot & Harackiewicz 1996), performance-approach goals are positively correlated with course grades (e.g., Church et al., 2001; Elliot & Church, 1997; Harackiewicz et al., 1997). On the other hand, performance-avoidance goals were negative predictors of academic achievement. As for mastery-approach goals, findings of most of the studies showed that although mastery-approach goals predicted many educational benefits such as deep learning and long term interest, they did not predict course grades. Although there is a few studies showing that mastery-approach goals were positively related to grades (e.g., Grant & Dweck, 2003) there are still controversial findings relating to mastery-approach goals (Barron & Harackiewicz, 2001).

Regarding academic achievements (grades), it was expected, similar to previous studies, that performance-approach goals would positively predict grades whereas performance-avoidance goals would negatively predict them. The present results in the first step of

the hierarchical regression, showed that if students got high grade at the first semester, they were more likely to get higher grades at the second semester. It means that they sustained consistently their academic performance. In the second step of the hierarchical regression, when achievement goals were added as predictors of final grade, grades of the first semester remained statistically significant predictor of final grade. The model indicated, consistent with literature, that performance-approach goals positively predicted final grades. So, it is possible to say that, students who prefer to outperform their classmates and demonstrate their abilities are more likely to get higher grades. In addition, consistent with previous studies, there was not significant relation between performance-avoidance goals and grades.

4.3. MEDIATIONAL ROLES OF ACHIEVEMENT GOALS

Achievement Goal Theory has focused on construing effects of school environment and classroom goal structures on students' motivation and academic performance. To shed light on these points, many researchers have examined for decades how perceived classroom goal structures are related to achievement goals and academic performance (e.g., Ames & Archer, 1988; Wolters, 2004). Some of these studies investigated the relations between achievement goals, academic performance and classroom goal structures (e.g., Wolters, 2004), while some of them examined the moderation effects of classroom goal structures (e.g., Lau & Nie, 2008). Different from them, it was investigated the mediational role of achievement goals in the relation between perceived classroom goal structures and academic achievement. One of the aims of this thesis was to investigate whether achievement goals would mediate the relation between perceived classroom goal structures and SES of family on the one hand academic achievement and learning striving on the other hand in the framework of Achievement Goal Theory.

In regard to results of this study, it was indicated that mastery-approach goals mediated the relation between perceived performance-approach goal structures and challenge-avoidance. This means that, as expected, performance-approach goal structures are related indirectly to challenge-avoidance via mastery-approach goals. But, performance-approach and performance-avoidance goals did not play a role in this mediational relation. As for challenge-seeking, the present results showed that mastery-approach goals partially mediated the relation between perceived mastery-approach goal

structures and challenge-seeking. It can be said that students who perceived their classroom environment to focus on developing abilities and learning deeply adopted mastery-approach goals. So they did not avoid when they faced with any challenges. They just tried to struggle against these challenges in math class. Also mastery-approach goals mediated relation between perceived performance goal structures and challenge-seeking.

Findings of the present study will give way for future studies. Since the study is perhaps among the few of the kind in Turkey, these findings need further examination.

4.4. GENDER DIFFERENCES AMONG STUDIED VARIABLES

Psychological and educational researches have focused on the role of gender in determining achievement and motivation for a long time (Pajares & Valiante, 2001). Consistently, the findings of these studies have shown that girls and boys follow gender role stereotypes about motivation-related subjects. It is generally indicated that boys have more interest and ability in mathematics and science, whereas girls have more in writing and language arts. But their performance in these domains is equally well. Recently, gender differences in motivation domains have decreased (Meece, Glienke, & Burg, 2006) but these differences haven't vanished yet. Grounded on motivation theories, many studies investigated gender differences in the academic motivation (e.g., Anderman & Anderman, 1999; Rahmani, 2011). However, all these studies were conducted in middle or primary schools and they focused on gender differences only in writing or language arts. To give an example, Pajares and Valiante (2001) found that girls had more interest and competence in writing and they were more likely to pursue mastery-approach goals, whereas boys reported less interest and stronger performance-approach goals in writing. Likewise, Yeung, Lau and Nie (2011) investigated motivation constructs of fifth grade and ninth grade students for learning English. Findings indicated that girls were more interested in English schoolwork and had more tendency to pursue mastery goals than boys. Also, boys were more prone to avoid challenges than girls. In contrast, Rahmani (2011) examined the gender differences in students' self-esteem and achievement goals. According to his results, boys had higher self-esteem and tendency to adopt performance-approach goals than girls. Furthermore, girls were more likely to pursue performance-avoidance goals instead of mastery-

approach goals and there was not statistically significant difference between boys and girls in mastery-approach goals.

As mentioned above, almost all of the studies investigating gender differences in motivation and achievement goals were conducted among primary or elementary school and focused on subjects such as English or writing but not so much on mathematics. So, gender differences among high school students were investigated and mathematics was focused in this thesis.

Regarding gender differences in achievement goals, results of the presents study showed that girls scored higher in mastery-approach goals, performance-approach goals, and performance-avoidance goals than boys. Results regarding to performance goals did not support previous studies. This surprising result may arise from cultural factors or developmental stage of participants. As this is among the few studies that investigated students' achievement goal orientation and motivation in Turkey there is still unclear whether such gender differences are indeed valid. So this issue needs further examination. Consistent with the scores of achievement goals, girls had higher scores in both perceived mastery-approach goal structures and perceived performance-approach goal structures. This means that girls are more likely to perceive classroom environment as both performance-focused and mastery-focused than boys.

As for learning striving, girls had higher score in challenge-seeking than boys. On the other hand, although there were no statistically significant differences between girls and boys in terms of avoiding challenges for math, boys scored higher in challenge-avoidance than girls. These findings seem to be in contradiction with previous studies. These results may shed light on some dark points in gender differences and pave the way for further studies in Turkey. Currently there is still no clear pattern of achievement goals and motivation among high school Turkish students. So this subject needs further examination in order to be clearer.

4.5. LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Findings of this study indicated that perceived classroom goal structures, parents' education levels and achievement goals play critical roles in academic performance and learning striving. It is hoped that they will give new opportunities for future researchers who want to study on Achievement Goal Theory in Turkey. However, beside the

significant results, there are some limitations in the present study. Firstly, the sample was chosen from the population of the high school students. Therefore, the result of this study cannot be generalized to younger or older students (ex. middle school students or university students or). In the future, it can be useful to construct the sample from university students because, in Turkey, the grading system is different in University. Most likely, university students would be more prone to pursue mastery-approach goals because they select the department that they want to study. So they may prefer to learn deeply and improve their abilities in their departments. Secondly, the study is cross-sectional and so we cannot learn whether or not achievement goals and perceived classroom goal structures change year after year. Longitudinal studies are needed in order to find more concrete answers to these questions. Thirdly, the study was conducted in an urban area in Ankara. So the answers of students cannot be generalized to other students who live in rural areas. In the future research, it can be effective to include schools which are in rural areas. Another limitation is that the studies relations were focused only on math grades. Students' patterns of motivation may be different in other lessons. So, future studies can focus on other lessons other than math. Lastly, math grades may varied from school to school and from teacher to teacher. Therefore, future studies may need to include a standardized test for all students.

4.6. CONCLUSION

When all findings of the present study were evaluated, it can be concluded that classroom environment and achievement goals are very important for academic achievement and learning striving in high school. For example, if teachers create a learning environment which focus on students' interest and efforts instead of grades, students could be more likely to adopt the mastery-approach goals. And these students will be more willing to struggle against challenges in math class. On the other hand, if classroom environment focuses on grades and outperforming others, students are more likely to pursue performance-approach goals and they try to avoid challenges in math class. They do not consider their interests and they focus only on grades. Perceived performance-approach goals also predicted performance-avoidance goals. Students who pursue performance-avoidance goals try to just not to do worse than other students but also they try to avoid challenges in math lesson.

On the other hand, parents' education level positively predicted both challenge-seeking and mastery-approach goals. Based on this finding, it can be said that not only classroom environment has critical role in achievement goals, but also family environment. On the other hand, contrary to other collectivist cultures, marital status of parents did not predicted motivation or academic achievement.

As for final grades, consistent with literature, performance-approach goals positively predicted final grades. This means that if students expend energy to take higher grades than others, they are more likely to take higher grades then their classmates.

In regard to learning striving, it was indicated that mastery-approach goals mediated the relation between perceived performance-approach goal structures and challenge-avoidance. Likewise, mastery-approach goals partially mediated the relation between perceived mastery-approach goal structures and challenge-seeking. Lastly, mastery-approach goals mediated the relation between perceived performance-approach goal structures and challenge-seeking. Performance goals did not have any mediating roles in these relations.

As mentioned before, this study is the first one in Turkey. So these findings may be very useful for future studies. Of course some findings in the results are not consistent with hypothesis and literature. But further examination will be able to help us to explain these dark points. Maybe, the replication study is needed in order to be sure about these points.

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Ek 1: Tez Orjinallik Raporu (Türkçe)

HACETTEPE ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
YÜKSEK LİSANS/DOKTORA TEZ ÇALIŞMASI ORJİNALLİK RAPORU

HACETTEPE ÜNİVERSİTESİ PSİKOLOJİ ANABİLİM DALI BAŞKANLIĞI'NA

SOSYAL BİLİMLER ENSTİTÜSÜ

Tarih: 12/07/2016

Tez Başlığı / Konusu: Öğrenclerin Başarılarının Yordayıcıları Olarak Algılanan Sınıf Ortamı, Aile Ortamı ve Başarı Hedefleri

Yukarıda başlığı/konusu gösterilen tez çalışmamın a) Kapak sayfası, b) Giriş, c) Ana bölümler ve d) Sonuç kısımlarından oluşan toplam 89 sayfalık kısmına ilişkin, 01/07/2016 tarihinde şahsım/tez danışmanım tarafından Turnitin adlı intihal tespit programından aşağıda belirtilen filtrelemeler uygulanarak alınmış olan orijinallik raporuna göre, tezimin benzerlik oranı % 27 dir.

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Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü Tez Çalışması Orjinallik Raporu Alınması ve Kullanılması Uygulama Esasları'nı inceledim ve bu Uygulama Esasları'nda belirtilen azami benzerlik oranlarına göre tez çalışmamın herhangi bir intihal içermediğini; aksinin tespit edileceği muhtemel durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.

Gereğini saygılarımla arz ederim.

12.07.2016

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Ek 2: Tez Orjinallik Raporu (İngilizce)

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
THESIS/DISSERTATION ORIGINALITY REPORT

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
TO THE DEPARTMENT OF PSYCHOLOGY

Date: 12/07/2016

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