

BURÇIN DEĞİRMEN

STUDENT NEED SATISFACTION AND LEARNING STRATEGIES: THE
RELATION TO MASTERY GOALS AND UNDERLYING REASONS

A MASTER'S THESIS

BY

BURÇIN DEĞİRMEN

THE PROGRAM OF CURRICULUM AND INSTRUCTION
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RELATION TO MASTERY GOALS AND UNDERLYING REASONS

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Burçin Değirmen

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Burçin Değirmen

June 2016

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Curriculum and Instruction.

Asst. Prof. Dr. Aikaterini Michou

Asst. Prof. Dr. Jennie Farber Lane

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Curriculum and Instruction.

Prof. Dr. Alipaşa Ayas

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Curriculum and Instruction.

Ass. Prof. Dr. Lennia Matos

Approval of the Graduate School of Education

Prof. Dr. Margaret K. Sands

ABSTRACT

STUDENT NEED SATISFACTION AND LEARNING STRATEGIES: THE RELATION TO MASTERY GOALS AND UNDERLYING REASONS

Burçin Değirmen

M.A., Program of Curriculum and Instruction

Asst. Prof. Dr. Aikaterini Michou

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This study investigated if students' need satisfaction and frustration are related to their learning strategies through mastery-approach goals (MAp; the goal to learn as much as possible) and mastery-avoidance goals (MAv; the goal to avoid learning less than it is possible). Furthermore, the study investigated if the autonomous and controlling reasons underlying these goals are related to their needs satisfaction or frustration. To address the questions for this research, two studies were conducted through two different research designs: a correlational cross-sectional study followed by a correlational short-term longitudinal investigation. The correlational cross-sectional was conducted with 226 students who participated voluntarily. They were from different departments of a foundation university in Ankara, Turkey. The correlational short-term longitudinal study was conducted with 331 students from the English Language Preparatory Program of the same university. In both studies, same survey was administered to assess the mediating role of autonomous and controlling reasons underlying the pursuit of MAp and MAv goals between students' perceived

need satisfaction and learning strategies. The results of the path analysis showed that students' perceived need satisfaction was positively related to MAp and MAv goals, particularly to the autonomous reasons underlying these goals. Also, when students adopt MAp or MAv goal for controlling reasons, students' need frustration is high. Additionally, MAp goals and autonomous reasons underlying MAp goals are stronger positive predictors of students' learning strategies than the MAv goals and their underlying autonomous reasons. Finally, suggestions for further research and implications of the results for education and teaching practices are discussed.

Key words: Need satisfaction, need frustration, Mastery-approach goals, Mastery-avoidance goals, autonomous and controlled motivation and learning strategies

ÖZET

ÖĞRENCİLERİN İHTİYAÇ TATMİNİ VE ÖĞRENME STRATEJİLERİ: BAŞARI HEDEFLERİ VE ALTINDA YATAN SEBEPLER

Burçin Değirmen

Yüksek Lisans, Eğitim Programları ve Öğretim

Yrd. Doç. Dr. Aikaterini Michou

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Bu çalışma öğrencilerin ihtiyaç tatmini ve mahrumiyetinin görev yaklaşımı (olabildiğince fazla öğrenmek) ve görev uzaklaşımı (mümkün olandan daha az öğrenmekten kaçınmak) hedefler aracılığıyla öğrenme stratejileri arasındaki ilişkiyi araştırmaktadır. Ayrıca, bu hedefler altında yatan otonom ve kontrol sebeplerin öğrencilerin ihtiyaç tatmini ve mahrumiyetiyle olan ilişkisi araştırılmıştır. Bu ilişkileri araştırmak için iki farklı araştırma yöntemi içeren çalışma yapılmıştır: kesit çalışması ve bunu takip eden kısa dönemli boylamsal çalışma. Kesit çalışması, çalışmaya gönüllü olarak katılan 226 öğrenciyle yürütülmüştür. Bu öğrenciler Ankara ilindeki bir vakıf üniversitesinin farklı bölümlerinde okumaktadırlar. Kısa dönemli boylamsal çalışma, aynı üniversitenin İngilizce Hazırlık Programında okuyan 331 öğrenciyle yürütülmüştür. Her iki çalışmada da görev yaklaşımı ve görev uzaklaşımı hedeflerin altında yatan otonom ve kontrol sebeplerin öğrencilerin ihtiyaç tatmini ve mahrumiyeti ve bunların öğrencilerin öğrenme stratejileri arasındaki ilişkiyi araştırmak için aynı anket uygulanmıştır. İlişki analizi sonuçları öğrencilerin ihtiyaç tatmininin görev yaklaşımı ve görev uzaklaşımı hedefler ve bu hedeflerin altında yatan sebeplerle pozitif ilişkili olduğunu ortaya koymuştur.

Ayrıca, öğrenciler bu hedefleri kontrol sebeplerinden dolayı benimsemişlerse, öğrencilerin ihtiyaç mahrumiyetinin yüksek olduğu belirlenmiştir. Buna ek olarak, görev yaklaşımli hedef ve bunun altında yatan otonom sebeplerin, görev uzaklaşımli hedef ve bunun altında yatan otonom sebeplere göre öğrencinin öğrenme stratejilerini belirleyen daha güçlü bir etken olduğu bulunmuştur. Son olarak, ileride yapılacak olan çalışmalar için öneriler ve sonuçların eğitim ve öğretim uygulamaları açısından yansımaları ele alınmaktadır.

Anahtar Kelimeler: İhtiyaç tatmini, ihtiyaç mahrumiyeti, görev yaklaşımli hedef, görev uzaklaşımli hedef, otonom ve kontrol sebepler ve öğrenme stratejileri

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CHAPTER 1: INTRODUCTION

Introduction

Students engage in different tasks in their academic life for different aims. Some students want to learn as much as possible to master a task and feel satisfied. Others engage in tasks because they intend to outperform their peers. Students have different reasons to adopt a particular goal. The students who aim to learn as much as possible may endorse a goal because they want to improve themselves in a certain area, while the students who aim to outperform their peers may endorse a goal because they want to prove themselves or satisfy their ego. Therefore, different goals can be endorsed for different reasons when engaging in school activities. Subsequently, the questions that emerge are: why do students select one goal over another goal and what are the reasons behind these goals? Furthermore, what is the relationship between students' goals and the reasons underlying these goals regarding students' educational outcomes?

This research study attempted to answer the “what” and the “why” aspects of student engagement, and to investigate the relation of these aspects to students' educational outcomes. This study also sought to provide more concrete suggestions to teachers about effective motivational practices for students' optimal learning.

Background

Achievement goal theory

There has been considerable research on achievement motivation literature over the past three decades. An important part of the achievement motivation literature is

oriented to research on achievement goals (Elliot & McGregor, 2001). These goals are commonly defined as the aim of all actions taken by individuals related to their achievement attainment (Dweck, 1996; Elliot, 1999; Nicholls, 1984). Achievement goals consist of two major types: mastery and performance goals (Dweck, 1986; Nicholls, 1984). According to Ames (1992), mastery goals are related to accomplishing the tasks and improving one's competence; whereas performance goals are related to performing better than others and to demonstrating one's competence over others.

After achieving consensus in the research field about achievement goals' contexts, Elliot and his colleagues (Elliot & Church, 1997; Elliot & Harackiewicz, 1996) proposed that the dichotomous model of achievement goals (i.e., the mastery and performance goals) needed to be further differentiated into approach and avoidance orientation. According to the approach orientation, one's behavior is oriented towards the satisfaction of one's desires or towards positive circumstances (Elliot, 1999). On the other hand, in avoidance orientation one's behavior is oriented towards the avoidance of negative consequences or circumstances. Crossing the mastery and performance achievement goals with the approach and avoidance orientation forms a 2X2 model in which:

- mastery-approach goals (MAp) represent one's aim to improve one's competence in an achievement situation or to master a task;
- mastery-avoidance goals (MAv) represent one's aim to not do worse than before or to stabilize one's performance in an achievement situation or to avoid the aversive situation of not being able to master a task;
- performance-approach goals (PAp) represent one's aim to be the best among

others; and

- performance-avoidance goals (PAv) represent one's aim not to be worse than others in an achievement situation (Elliot, 1999; Elliot & Thrash, 2001; Elliot & McGregor, 2001).

In this achievement goal distinction, the criteria individuals use to judge their competence (i.e., self-reference/absolute or normative) are the basis of goals differentiation.

Over the past several years, researchers have focused essentially on the 2X2 model of achievement goals. In this framework, research has shown that mastery-approach goals are related with positive educational outcomes, whereas mastery-avoidance goals are associated with less adaptive educational outcomes. Regarding the performance-avoidance goals, it seems that there is consensus about their maladaptive educational correlates, whereas performance-approach goals have not presented a clear behavioural, emotional and cognitive pattern (Elliot & McGregor, 2001; Elliot & Trash, 2001; Murayama & Elliot, 2009; Pintrich, 2000).

Reasons underlying achievement goals

In the literature about achievement goals, researchers give importance to investigating the motivational role of achievement goals, including the aims of one's behaviour. In essence, the "what" of one's behaviour seems to differentiate the related outcomes. However, behind each endorsed aim there is a particular reason that instigates goal endorsement (Elliot, 2005). Therefore, very recently researchers have oriented their interest to the motivational role of reasons underlying an achievement goal; this is, the "why" part of goal endorsement (Vansteenkiste, Lens,

Elliot, & Mouratidis, 2014; Vansteenkiste, Mouratidis, & Lens, 2010). In this recent direction of achievement goal research, the main question to answer is the following: Does the relationship between achievement goals and outcomes change when underlying reasons are also considered? It seems that in some cases, the reasons for pursuing a particular achievement goal account more for the outcomes compared to the achievement goal to which are tied (Benita, Roth & Deci, 2013). Thus, the joint consideration of the achievement goals and their underlying reasons could further illuminate achievement behaviour.

Autonomous and controlling reasons in line with self-determination theory

After this important clarification in the achievement goal literature, the number of studies that investigated a motivational complex consisting of the achievement goals and their underlying reasons has increased. In this direction, Vansteenkiste and his colleagues (Vansteenkiste, Smeets, et al., 2010) suggested that autonomous and controlling reasons, as defined from Self Determination Theory (SDT; Deci & Ryan, 2000), could be the prime reasons underlying achievement goals.

According to this theory, there are several reasons underlying one's behaviour and actions. For instance, interests, desires or external regulations can affect one's acts or behaviour. Thus, a person can be motivated by self-reference or by external sources (Vansteenkiste, Sierens, Sonens, Lucykx, & Lens, 2009). SDT distinguishes reasons as autonomous and controlled regulation; autonomous regulation is related with volition and choices, while controlled regulation is related with being controlled and obligated.

With respect to SDT, autonomous motivation has two subcomponents: intrinsic motivation and partially-internalized motivation. Controlled motivation also has two subcomponents: external regulation and partially-externalized motivation (Ryan & Connell, 1989; Ryan & Deci, 2000; Ciani et al., 2010). *Intrinsic motivation* means that humans engage in activities for their own gain, enjoyment or interest. They get pleasure from becoming involved in these activities and there are no external rewards or constraints (Deci & Ryan, 1985; Ryan & Deci, 2000; Ciani, Sheldon, Hilpert, & Easter, 2011; Vansteenkiste et al., 2010). For instance, a student learns Italian because he enjoys this activity. *Extrinsic motivation* means that humans engage in activities because of imposed values or external sources and has four different stages of internalization. In the first stage, there is *external regulation*, which means that humans behave in a desired way because of external sources such as avoiding punishment or gaining a reward. Students do their homework to avoid teachers' punishment, parents' threats or just because they want some particular rewards from their parents. In the second stage of internalization, there is *introjected regulation* which means that humans engage in activities to avoid self-imposed pressure such as shame or guilt. A student submits her homework on time, because otherwise she would feel guilty or anxious. For these two stages, motivation control implies that there are internal or external factors that exert some psychological pressure or control over humans' volition. In the third stage of internalization, there is *identified regulation* which means humans engage in activities even if it is not enjoyable, but they can identify and recognize the value of the activity. For example, students do their exercises in biology class because they will be strong in biology and they will succeed in university entrance exams; it could also be because they want to study medicine at the university level. Therefore, the students find a profit in engaging

school activities. There is a fourth stage of internalization, called *identified regulation*, where human behaviors are in harmony with their values and identities. But this regulation occurs only in adults who have created an identity.

According to SDT, autonomous motivation starts from identified regulation and includes identified, integrated and intrinsic motivation. On the other hand, controlled motivation includes external and introjected regulation (Ciani et al., 2011; Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000; Sheldon & Hilpert, 2012; Vansteenkiste, Mouratidis, & Lens, 2010). Autonomous regulation refers to adopting a goal because of one's interest and enjoyment (intrinsic motivation) or because one integrates his/her identity with the goal (integrated regulation) or because one gives personal importance to the goal itself (identified regulation). Thus, autonomous regulation starts from intrinsic motivation and continues with integrated and identified regulation. This regulation represents one half of a continuum according to SDT (Deci & Ryan, 2000; Deci & Vansteenkiste, 2004; Vansteenkiste, Sierens, Sonens, Lucykx, & Lens, 2009). The other half of the continuum is comprised of controlled regulation, which starts from external regulation and continues with introjected regulation. Controlled regulation refers to the adoption of goals because of self-imposed pressure or feeling guilty (introjected regulation) or some external sources such as rewards and threats (external regulation) (Deci & Ryan, 2000; Vansteenkiste, Smeets, et al., 2010).

Psychological needs

Self-determination theory (SDT) is concerned with motivations behind humans' actions and choices that could be qualitatively different, ranging from controlled to

autonomous. At the heart of this theory is the position that autonomous motivation, which is related to one's well-being and optimal functioning, could be achieved when individuals satisfy three basic psychological needs: the need for autonomy, the need for competence and the need for relatedness. Need for competence involves feeling competent to interact effectively with the environment; need for relatedness involves feeling connected to others in social environment; and need for autonomous (or self-determination) involves feeling a sense of volition and controlling and regulating one's own actions (Deci & Ryan, 1985, 1990, 2000; Ryan & Deci, 2000; Ryan & Connell, 1989; Williams & Deci, 1996).

According to Self Determination Theory (SDT), when these three needs are satisfied, humans are motivated and willing to engage with actions in life. However, when human needs are not satisfied, they become unmotivated (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000). Autonomous rather than controlled regulation of motivation arises when needs are satisfied (Deci & Vansteenkiste, 2004). In other words, human motivation, performance and development increases when their needs are satisfied.

Adopting and attaining some life goals provides the satisfaction of these basic needs; whereas some other goals do not provide any need satisfaction (Ryan, Sheldon, Kasser, & Deci, 1996). SDT expresses concern about human's needs and motivation, and investigates a behavior or an action that is influenced by internal or external factors. Simply stated, as queried by various researchers (e.g., Ciani, Sheldon, Hilpert, & Easter, 2010; Ryan, Kuhl, & Deci, 1997; Vansteenkiste,

Mouratidis, & Lens, 2010; Vansteenkiste, Soenens, Sierens, Luyckx, & Ryan, 2010), does a behavior occur from self-imposed or from external sources?

Problem

Every student has different aims and reasons for engaging in academic activities during their learning processes. When students feel coerced to participate in an activity, what achievement goals do they adopt and for what reasons? When students feel that they participate in the decision making, does this make a difference in the endorsed goals and underlying reasons? The literature has extensively investigated the relation of need satisfaction and frustration to autonomous and controlled motivation. However, very little research had been carried out to investigate the relation of need satisfaction with the adoption of a particular achievement goal. Also, even though there is a considerable amount of research investigating the relation of achievement goals with educational outcomes, there has been ample research investigating the relation of autonomous and controlled motivation with the educational outcomes, the relation of the achievement goals and their underlying reasons combined with the student outcomes is less investigated and understood.

There have been a few studies that have investigated both motivational aspects of students' engagement (the "what" and the "why" of student's engagement), and have focused especially on the reasons for adopting performance-approach goals.

Research related to the correlation of these goals has revealed contradictory results.

Therefore, there is a debate about the adaptive nature of these achievement goals.

The researchers of these studies made the assumption that by considering the reasons

behind the debated surrounding performance-approach goals, they will illuminate their adaptive or maladaptive role in students' motivation (Urdañ & Mestas, 2006; Vansteenkiste, Mouratidis, & Lens, 2010; Vansteenkiste, Smeets, et al., 2010; Mouratidis, Vansteenkiste, Michou, & Lens, 2013).

The research investigating the reasons behind performance-approach goals suggest that controlling reasons are predictors for negative educational results, whereas autonomous reasons are related to positive educational results. From this line of research a new question could emerge: Do the autonomous or controlling reasons underlying the "adaptive" mastery goals relate to different educational outcomes? Up to now, mastery goals related to optimal functioning in educational settings and teachers are encouraged to foster these goals in their students. However, what is the case if these goals are adopted for controlling reasons? Furthermore, what is the case if the less adaptive MAV goals are adopted for autonomous reasons? Concerning MAV goals, there is not a single study that investigates their adaptive or maladaptive functioning under the lens of the "what" and "why" of their pursuit. In this research, answers to the above questions will provide effective motivational practices for students and academic practices for teachers.

Purpose

The purpose of this research was to investigate if students' need satisfaction and frustration are related to their learning strategies through MAp and MAV goals. Furthermore, this study examines the autonomous and controlling reasons underlying these goals are related to their needs satisfaction or frustration. The present research consisted of two studies. In both studies, the relations mentioned above were

investigated by differentiating the research design in order to get more reliable results. Study 1 was a correlational cross-sectional study and Study 2 was short-term longitudinal study.

Research Questions

These studies will address the following questions:

1. Do students' perceived need satisfaction or frustration relate to mastery-approach or to mastery-avoidance goals respectively, as well as to the autonomous and controlling reasons underlying these goals? (Study1 and Study 2)
2. Do both mastery-approach or mastery-avoidance goals and their underlying autonomous or controlling reasons account for students' learning strategies? (Study1 and Study 2)

Significance

This study will provide evidence about the relation of need satisfaction and frustration with two aspects of students' motivation: the achievement goals and the underlying reasons for their pursuit. Specifically, the study will focus on the MAp and MAv goals with the aim to provide evidence about the motivational power of both mastery goals, and the underlying reasons for pursuing these goals, in producing particular educational outcomes among university students. The results of the study can be used to provide information to teachers about the adaptive patterns of students' motivation, suggesting more effective motivational practices for student learning. This study can inform to the teachers about which method they should use to satisfy students' needs, about how students are motivated in a classroom structure

and about which reasons affect students' goal adoption. According to this information, teachers can facilitate students to adopt beneficial motivation for themselves and they can gain optimal functioning and well-being.

Definition of key terms

Mastery goals: mastery-approach and mastery-avoidance, autonomous and controlling reasons, self-determination theory, need satisfaction: need for autonomy, need for competence and need for relatedness are defined in this thesis as follows:

Mastery goals are defined as developing one's self, improving competence, choosing challenging tasks and positive attitudes towards learning (Ames & Archer, 1988; Elliott & Dweck, 1988; Meece et al, 1988; Nicholls, 1984).

Mastery-approach goals are defined as mastering a task, learning as much as possible, improving competence, doing better than before and focusing on self-improving and learning (Barron & Harackiewicz, 2001; Dweck, 1986; Elliot, 1999; Elliot & McGregor, 2001; Midgley et al., 1998).

Mastery-avoidance goals are defined as avoiding failure, not performing worse than before and avoiding losing of skills or abilities (Elliot, 1999; Elliot & McGregor, 2001).

Autonomous reasons are defined as one's volition and sense of choice as well as self-regulation in setting achievement goals (Deci & Ryan, 2000; Vansteenkiste, Mouratidis, & Lens, 2010).

Controlling reasons are defined as feeling controlled, pressure from outside and a sense of compulsion in setting achievement goals (Deci & Ryan, 2000; Vansteenkiste, Mouratidis, & Lens, 2010).

Need satisfaction is defined as fulfillment of humans' basic psychological needs which are **need for autonomy** (a sense of volition and self-initiation of one's behaviours), **need for competence** (a feeling of sufficiency) and **need for relatedness** (a feeling of connected to the others in social environment) (Deci & Ryan, 2000; Deci, Vallerand, Pelletier, & Ryan, 1991).

CHAPTER 2: REVIEW OF THE LITERATURE

Introduction

This literature review provides essential background information about students' need satisfaction and its relationship with mastery goals as well as with autonomous versus controlled motivation. Also, this review examines mastery goals and their educational correlates. Lastly, it gives information about achievement goals and their underlying reasons and the relationship between educational outcomes.

Need satisfaction: The relationship with mastery goals

Self-determination theory (SDT) is concerned with motivation behind human actions and choices that lead them to specific outcomes. One's well-being, motivation and optimal functioning could be maximized when individuals satisfy three basic psychological needs: the need for autonomy, the need for competence and the need for relatedness (Deci & Ryan, 1985, 2000; Ryan & Deci, 2000; Ryan & Connell, 1989; Williams & Deci, 1996).

According to self-determination theory, when individuals' three innate, basic psychological needs (need for competence, autonomy and relatedness) are satisfied, they can participate in an activity for volitional reasons and therefore their motivation is autonomous. In contrast, when individuals' needs are frustrated, they are likely to be instigated by controlled motivation (Deci & Ryan, 2000).

Recently, self-determination theory and achievement goal theory were integrated to explain students' motivation and academic success (Ciani, Sheldon, Hilpert, &

Easter, 2011). This integration allows for the investigation of possible intersections of the two theories along with the examination of the relationship of need satisfaction with achievement goals.

Specifically, the limited research on the relationship of need satisfaction with achievement goals has shown that need satisfaction is related to mastery-approach goals (MAp) (Diseth, Danielsen, & Samdal, 2012; Janke, Nitsche, & Dickhauser, 2015). In addition, Ciani et al. (2011) found that students' autonomy and relatedness need satisfaction (but not competence need satisfaction) are related to both MAp and MAv goals (mastery-avoidance goals) via autonomous motivation.

As Deci and Ryan (2000) stated, to a greater extent mastery goals are related to intrinsic motivation compared to performance goals. Therefore, it may be assumed that need satisfaction is a positive predictor of mastery goals since it is also a positive predictor of autonomous motivation.

Need satisfaction: The relationship with autonomous versus controlled motivation

According to SDT, people regulate their behavior and actions using a variety of motives that can be either autonomous or controlling (Ryan & Deci, 2000). The theory, actually addresses “why” people participate in a specific activity or exhibit a particular behavior. In an attempt to study the behavioral regulation (i.e., the “why”), SDT distinguishes between these two types of motivation: autonomous motivation and controlled motivation.

According to SDT (Deci & Ryan, 2000), the prerequisite for autonomous motivation is the satisfaction of three basic, psychological needs: need for autonomy, need for competence and need for relatedness. Thus, the fulfilment of the three psychological needs allow people to be autonomously motivated. In contrast, when people's three basic psychological needs are frustrated, their behavior in specific situations is more likely to be induced by controlled motivation (Deci & Vansteenkiste, 2004).

Ntoumanis (2005) conducted a study with adolescents to find out the prerequisites for different motivation types to participate in optional physical education lessons. His findings supported the relation between need satisfaction and autonomous motivation. According to his results, students whose needs were fulfilled were more likely to have autonomous motivation. Thus, students' participation rates in physical education lessons were enhanced.

Another study was conducted by McDonough and Crocker (2007) to find out the mediating role of self-determined motivation between need fulfillment and affective and behavioral outcomes in adult physical activity. The results supported that need satisfaction is a significant predictor of autonomous motivation. When three basic psychological needs are satisfied, athletes are autonomously motivated and in turn, their engagement in activities enhanced.

Numerous studies have consistently shown that the satisfaction of these three basic needs plays an important role in students' autonomous motivation (Ntoumanis & Standage, 2009; Mouratidis, Barkoukis, & Tsorbatzoudis, 2015; Ward, Wilkinson, Graser, & Prusak, 2008; Zhang, Solmon, Kosma, Carson, & Gu, 2011). This

autonomous motivation has in turn been linked to positive outcomes such as: positive affect and preferring challenging tasks (Standage et al.,2005); concentration and increased participation (Ntoumanis, 2005); deep level learning (Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005); and high academic performance (Soenens & Vansteenkiste, 2005).

In contrast, studies have shown that controlled motivation is related to need frustration. Vansteenkiste, Zhou et al., (2005) conducted a study with Chinese students to find out the outcomes of autonomous and controlled motivation. This study again supported that controlled motivation is related to superficial learning, maladaptive meta-cognitive strategies such as poor time management and concentration, and high school dropout. Similar to these findings, Mouratidis et al., (2015) conducted a study with Greek middle school students to investigate the importance of need satisfaction in the prediction of autonomous and controlled motivation within the physical education (PE) context. They found that need satisfaction is associated with autonomous motivation, whereas need frustration is associated with controlled motivation. Students whose needs are satisfied become autonomously motivated and participate activities in PE classes. On the other hand, students whose needs are frustrated may exhibit controlled motivation and feel pressured to participate activities.

In general, these studies concluded that need satisfaction is related to autonomous motivation, which in turn has linked to positive outcomes. Accordingly, the studies found that need frustration is related to controlled motivation, which in turn has been linked to negative outcomes.

Mastery goals and their educational correlates

Over the past 30 years, there have been several studies carried out to investigate the relationship between mastery goals and their educational correlates. According to these studies, mastery goals have been seen as the most adaptive goal in achievement goal literature and have been linked to several adaptive educational outcomes (e.g., motivation, use of learning strategies, academic achievement, and class engagement etc.) (Benita, Roth, & Deci, 2013; Durik & Harackiewicz, 2003; Hulleman et al., 2010; Pintrich, 2000b; Senko, Hulleman, & Harackiewicz, 2011). Studies have shown that mastery goals are associated with positive educational outcomes such as higher academic achievement, preference of challenging tasks and task enjoyment, effort, intrinsic motivation and interest in learning activities (Ames & Archer, 1988; Elliott & Dweck, 1988; Kaplan & Maehr, 1999; Meece et al, 1988; Nicholls, 1984).

Elliot and McGregor (2001) conducted studies with undergraduates to investigate their 2x2 achievement goal framework and found that mastery approach goals are positively associated with need for achievement, self-determination, intrinsic motivation, perceived class engagement and deep processing. Students adopting MAp goals perceive their classes as interesting or engaging and they actively participated in the learning process. According to the findings, these students adopt organized strategies for studying, which is a positive predictor of deep processing. Similar to these findings, Elliot and Murayama (2008) supported the positive association between MAp goals and need for achievement and intrinsic motivation in their study with undergraduate students. MAp goals predicted intrinsic motivation, which in turn is related to positive educational outcomes. Students intrinsically motivated for learning succeed in their studies with the adoption MAp goals.

Matos, Lens and Vansteenkiste (2007) conducted a study with Peruvian high school students to examine the relationship among students' achievement goals, their use of learning strategies and their academic achievement. The researchers' results supported previous studies that found achievement goals are related to mastery goals. According to this study, mastery goals are positively associated with more use of learning strategies (i.e., rehearsal, organization, critical thinking and metacognitive strategies) and with higher academic achievement. Students who adopted mastery goals used effective learning strategies when preparing for their exams, which in turn resulted in higher grades in their Language courses. Therefore, their results supported the adaptive patterns of mastery goals.

Hulleman, Durik, Schweigert, & Harackiewicz (2008) conducted two studies within the education and sports context to examine the role of achievement goals for perception of the task value. According to the results, initial interest and M_{AP} goals both predicted subsequent interest, and were mediated by task values in both studies. When students had higher initial interest, their adoption of M_{AP} goals led them to have continued interest for both classroom and sports field. This interest in turn led them to perceive task values in achievement situations. Therefore, this perceived task values predicts interest and academic performance for both context. Students who adopt M_{AP} goals find tasks more valuable and this increased their interest for the course material and motivated them to accomplish the associated tasks.

The adoption of M_{AV} goals has been a recent addition to the achievement goal literature. Studies that investigated M_{AV} goals have found both positive and negative consequences. In some achievement contexts, the mastery component of the goal

dominates and leads to positive outcomes; while in other contexts, the avoidance component dominates and leads to the negative outcomes (Elliot & Murayama, 2008). Studies completed by Elliot and McGregor (2001) indicate that MAv goals are positively correlated with fear of failure, low self-determination, mother and father person-focused negative feedback. For instance, students who adopted MAv goals tried not to do worse than before and they feared negative results from their studies. Also, their parental responses or behaviors are important for these students, because these responses induced worry about failing or making mistakes. As a result, the students feel anxious that they cannot do as well as they can and they cannot be competent in the presence of difficulties. Additionally, the results indicated that MAv goals are associated with disorganized studying and superficial processing. Subsequently, students are disorganized when preparing for exams and cannot learn the lesson material more thoroughly. For example, experimental studies carried out by Van Yperen, Elliot and Anseel (2009) showed that adoption of MAv goals decrease individuals' performance in different achievement contexts: workplace and education. In both experiments, participants showed less improvement on engaging in the tasks. To sum, MAv goals undermined participants' performance which in turn gained less improvement on both contexts.

The previous studies reported the negative consequences of MAv goals; however in some studies, MAv goals have been correlated with positive educational outcomes as well. For instance, Elliot and McGregor (2001) indicated that MAv goals were positively associated with perceived class engagement. MAv oriented students perceive their class as being interesting and their engagement was high, much like MAp oriented students. Another study carried out by Elliot and Murayama (2011)

found positive consequences of MAv goals as well. According to their study with undergraduates, MAv goals, similar to MAp goals, were positively related with the need for achievement. Another experimental study was conducted by Senko and Freund (2015) to find out the relationship between MAv goals and age. According to their results, younger adults adopted MAv goals experienced low persistence, felt pressure about performance and perceived adoption of MAv goal more difficult than the adoption of MAp goal. On the other hand, older adults who adopted MAv goals experienced high persistence when they were confronted with an obstacle within the task. Thus, they tried to prevent performance decline and enjoyed the task more. Also, they experienced less pressure and felt more competent at the task. These researchers' results suggest that adopting MAv goals are beneficial for older adults who tried to maintain their skills or performance levels. These mixed research finding regarding the educational correlates of MAv goals show that more research is needed to clarify MAv goals relation to learning.

Achievement goals and underlying reasons: The relationship with educational outcomes

In recent years, the two approaches in achievement motivation, namely the achievement goal theory and the self-determination theory, have been combined to more fully explain motivation in achievement settings. According to this new approach, both the “what” and the “why” of learner striving are important to consider. The “what” aspect of achievement striving refers to achievement goals, while the “why” aspect refers to the reasons for endorsing these achievement goals. Specifically, researchers have suggested that the reasons underlying the achievement goals pursuit could be represented by the autonomous and controlled motivation, as

has been defined by SDT. Therefore, with this new approach in achievement motivation, scholars suggest that the achievement goals can be endorsed either for autonomous or for controlling reasons, and they have investigated the relation of each part of achievement striving (i.e., the “what” and the “why”) to outcomes (Deci & Ryan, 2000; Elliot, 2005; Elliot & Fryer, 2008; Vansteenkiste, Mouratidis, & Lens, 2010; Vansteenkiste, Smeets, et al. 2010).

From this perspective, what is being studied is the relation of mastery-approach goals endorsed for autonomous reasons, as well as for controlled reasons, to the outcomes. Gaudreau (2012) found that high self-concordance (i.e., autonomous reasons) underlying MAp goals was positively associated with academic satisfaction and performance. Therefore, students who adopted MAp goals for autonomous reasons could have high academic performance and as a result, they could have higher academic satisfaction. On the other hand, students who endorsed MAp goals with low self-concordance (i.e., with controlling reasons) experienced higher academic anxiety.

Another study was conducted by Benita, Roth and Deci (2013) to learn the effects of autonomy-supportive, suppressive or neutral contexts on the adoption of mastery goals and their relation with psychological outcomes. According to their results, when students experience autonomy (e.g., when MAp goals were endorsed), their outcomes were positively associated with task engagement, interest, and enjoyment and positive emotional experience. Students adopting MAp goals in an autonomy-supportive context engaged in activities and experience enjoyment. This, in turn predicted better psychological outcomes and intrinsic motivation.

Michou, Vansteenkiste, Mouratidis and Lens (2014) conducted two studies with adolescent and university students. Their first study revealed that the need for achievement was positively associated with MAp goals and the autonomous reasons underlying them. Also, they found MAp goals and underlying autonomous reasons mediated the relation between need for achievement and students' learning strategies (i.e., effort regulation, critical thinking and meta-cognitive self-regulation). In their second study, they asked participants to choose their most important achievement goal and most of the students chose the MAp goal. Thus, in this study Michou et al. (2014) had the chance to examine the mediating role of reasons underlying MAp goals in the relation between achievement motives (i.e., need for achievement and fear of failure) and learning strategies and cheating. According to the results, autonomous reasons underlying MAp goals were predicted by the need for achievement and related positively to effective learning strategies and negatively to cheating. On the other hand, controlling reasons underlying MAp goals were predicted by fear of failure and related negatively to effort regulation. To summarize the results, students who adopted MAp goals for autonomous reasons reported high effective learning strategies while studying and lower cheating inclinations. In contrast, students adopted MAp goals for controlling reasons tended to put less effort in their studies.

In a more recent study, Oz, Lane, & Michou (2015) found autonomous reasons underlying MAp goal endorsed during a specific task to predict positively the interest and enjoyment in the task, intention to repeat the task and value of the task. More importantly, controlling reasons underlying the endorsed MAp goal were positively related with tension during the task.

The present research

The limited number of studies that have investigated the relation of underlying reasons to the endorsement of MAp goals have shown that when MAp goals were endorsed for autonomous reasons, the related outcomes were positive. On the other hand, when MAp goals (which in the achievement goal theory tradition are considered adaptive goals) were endorsed for controlling reasons, the related outcomes were negative (Benita, Roth, & Deci, 2013; Gaudreau, 2012; Michou, Vansteenkiste, Mouratidis, & Lens, 2014).

However, there is no study that has examined the relation of MA_v goals adapted for either autonomous or controlling reasons to the outcomes; this is an important gap in the literature that has prevented a complete comprehension of achievement motivation. The current study is an attempt to fill this gap. Moreover, the present study will further extend the findings of previous findings by investigating the relations of need satisfaction to the adoption of MAp or MA_v goals and their underlying reasons.

CHAPTER 3: METHOD

Introduction

This research consists of two studies: Study 1 and Study 2. Both studies will investigate whether students' perceived need satisfaction or frustration relate to either mastery-approach or mastery-avoidance goals, as well as to autonomous and controlling reasons underlying these goals. Also, both studies will investigate to what extent students' mastery-approach or mastery-avoidance goals and their underlying autonomous or controlling reasons account for their learning strategies in their university coursework. These two studies tried to answer the questions through two different research designs: a correlational cross-sectional study followed by a correlational short-term longitudinal investigation.

Research design (Study 1)

Study 1 was a correlational cross-sectional study that aimed to investigate the mediating role of students' mastery goals and their underlying reasons between perceived need satisfaction and learning strategies.

Correlational studies have been used to investigate the relations between two or more variables in order to find out the association between each variable (Barker, Pistrang, & Elliott, 2002).

Correlational studies can be cross-sectional, composed of one-time assessment; they allow researchers to learn characteristics of the sample at one point in time (Coolican, 2009). Also, this research design has been used to identify common

characteristics in a chosen sample (Mann, 2003). Therefore, this design was chosen as a research design to examine the associations between variables and to justify the predictions of the research.

Context

Study 1 was conducted in different departments within a university in Ankara; this institution was the first private, nonprofit university founded in Turkey. The departments chosen for the study were based on which instructors gave permission for the researcher to use of twenty minutes of class time to conduct the survey. These departments included Business Information Management, Computer and Instructional Technology Teacher Education, Translation and Interpretation, Political Science, International Relations, Law, Psychology and also Curriculum and Instruction with Teaching Certificate MA Program and Curriculum and Instruction PhD Program.

Participants

Study 1 included 226 students whose mean age was 22.36, ranging from 18 to 47, *SD* = 3.92. Of the participants, 73 (32.6 %) were male and 151 (67.4%) were female (2 students omitted reporting their gender). Participants were either undergraduate or graduate students and some of them were scholarship students.

Instrumentation

This study involved an assessment of students' mastery goals and the reasons underlying these goals. The study also examined students' learning strategies and their perceived need satisfaction within their educational environment. We asked

students to assess these variables from a variety of instruments that all used a 5-point Likert type scale (1 [*Strongly disagree*] to 5 [*Strongly agree*]). All the instruments used in this study were valid and reliable measures that were independently translated by two experts in the field and adjusted according to the procedures proposed by Hambleton (1994). For this assessment, the following instruments were used:

Achievement goals

In order to assess students' mastery goals, two items of the Revised Achievement Goal Questionnaire (AGQ –R; Elliot & Murayama, 2008) were used. These two items represented a mastery-approach goal (e.g., My goal in this course is to learn as much as possible) and a mastery-avoidance goal (e.g., My goal in this course is to avoid learning less than it is possible to learn).

Underlying reasons of achievement goals

This study followed the operationalization that Vansteenkiste, Mouratidis, & Lens, (2010) used to assess students' autonomous versus controlling reasons underlying the pursuit of their mastery goals. This means that after each of the two items that assessed mastery goals, eight reasons were listed for adopting the goals. If students strongly endorsed a mastery-approach or avoidance goal (i.e., scored higher than 3), they were asked to assess the eight reasons. Of these eight items, (a) two assessed intrinsic reasons (e.g., I found avoiding performing worse than the others a challenging goal to pursue), (b) two assessed identified reasons (e.g., I found avoiding performing worse than the others a personally important goal), (c) three items assessed introjected reasons (e.g., I needed to prove it to myself), and (d) one

assessed external reasons (e.g., others (teacher, parents) obliged me to do so). The two intrinsic and the two identified scores were aggregated to create a composite autonomous reasons score for mastery-approach ($\alpha = .69$) and mastery-avoidance goals ($\alpha = .76$). The three introjected and the one external reasons were aggregated to create a composite controlling reasons score for mastery-approach ($\alpha = .71$) and mastery-avoidance goals ($\alpha = .71$). However it was noticed that when the external item was excluded, the internal consistency of the controlling reasons score for both the mastery-approach ($\alpha = .79$) and the mastery-avoidance ($\alpha = .79$) goal was higher. Taking into consideration that the ecological validity of the external reason as expressed in the one included item should be low (it seems to be a very rare case for a student to aim to learn as much as possible as a result of teachers' or parents' obligation), this item was excluded from the controlling reasons underlying mastery goals.

Perceived need satisfaction

The Balanced Measure of Psychological Needs questionnaire (BMPN; Sheldon & Hilpert, 2012) was administered to assess students' need satisfaction and frustration regarding their studies. Students' autonomous need satisfaction was assessed by three items (e.g., 'I was free to do things my own way') and three items were used to assess students' autonomy need frustration (e.g., 'I had a lot of pressures I could do without'). Students' competence need satisfaction was assessed by three items (e.g., 'I took on and mastered hard challenges') and three items were used to assess students' competence need frustration (e.g., 'I struggled doing something I should be good at.'). Students' relatedness need satisfaction was assessed by three items (e.g., 'I felt close and connected with other people.')

relatedness need frustration (e.g., ‘I felt unappreciated by one or more important people.’).

To create a need satisfaction composite score, the nine items for autonomy, competence and relatedness need satisfaction were averaged ($\alpha = .77$). To create, a need frustration composite score, nine items for autonomy, competence and relatedness need frustration were averaged ($\alpha = .78$).

Motivated learning strategies

A part of the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1993) was administered to assess three aspects of students’ learning strategies. Specifically, students reported their use of (a) critical thinking (5 items; e.g., “I often find myself questioning things I hear or read in this course to decide if I find them convincing”; $\alpha = .74$), (b) meta-cognitive self-regulation (5 items; e.g., “When I become confused about something I’m reading for my class, I go back and try to figure it out”; $\alpha = .75$); and (c) effort regulation (3 items; e.g., “I work hard to do well in this class even if I don’t like what we are doing”; $\alpha = .64$).

Method of data collection

Data for study 1 was collected through the survey instruments (i.e., self-reporting questionnaires). After receiving ethical approval from university’s ethical committee, the researcher contacted instructors to get permission to use twenty minutes of their class time to administer surveys. Participant students were informed about the purpose of the study and were asked to sign a consent form. They were assured responses would be anonymous. Students who signed a consent form were given a

questionnaire; they were assured that they could stop answering the questionnaire if they did not want to continue. The whole procedure lasted between 15 to 20 minutes. The data was entered into a SPSS file and each case was identified by a code that had been giving during the data entering according the order of the filled questionnaire in the questionnaires pile. The data was collected during 2012- 2013 academic year spring semester.

Method of data analysis

Data was analyzed by using SPSS (Statistical Package for the Social Sciences v.20). In the preliminary analysis, descriptives, bivariate correlations and MANOVA were run to analyze variables. Descriptives and bivariate correlations were displayed in a table by using SPSS to show sample characteristics and statistical relationships between variables respectively. A MANOVA analysis determined if there were any significant differences between the number of male and female students who pursue mastery-approach or mastery-avoidance goals.

In the main analysis, a path analysis, using EQS 6.1 for Windows [Structural Equation Modeling Software package (Bentler, 1995)], tested the mediating role of autonomous and controlling reasons underlying the pursuit of MAp and MAv goals between students' perceived need satisfaction and learning strategies which covered both research questions.

Research design (Study 2)

Study 2 was a correlational short-term longitudinal study; it aimed to investigate if students' perceived need satisfaction and need frustration and their mastery goal and

the reasons underlying these goals at the beginning of the semester (T1) could predict students' learning strategies at the end of the semester (T2), while controlling for learning strategies in T1.

Correlational studies enabled the investigation of the relationship between two or more variables as well as the comparison among the variables. Correlational studies can be longitudinal (Barker, Pistrang, & Elliott, 2002); a longitudinal study is composed of at least two assessments within an interval time, allowing researchers to observe and to explain changes over time (Coolican, 2009), as well as the cause and effect relationship between variables over a time period (Menard, 2008). At the end of the study, the researcher can compare different assessments that were done in different points in time and find out the relations among them. For Study 2, a short-term longitudinal study was used to examine associations between two different assessments.

Context

Study 2 was conducted within the same university as Study 1; however, this investigation took place within the department of English Language Preparation. This department aims to improve students' skills in English to prepare them to follow their academic study that uses English as a medium of instruction. Students who do not have valid English scores are given the placement test at the beginning of the semester. Based on the exam results, their English level is measured and which class level they will attend is determined. In this program, there are five levels: Elementary, Pre-Intermediate, Intermediate, Upper-Intermediate and Pre-Faculty. At the end of each course, students take an English exam to prove their proficiency.

Participants

Study 2 included 331 students with the mean age of 19.5, ranging from 18 to 34 (SD = 1.50). Of the participants, 119 (36%) were male and 178 (54%) were female (33 students omitted reporting their gender). Of the 331 students, 158 (48%) participated in both the first and second assessment (Time 1 [T1] and Time [T2]); there were 116 (35%) students who participated in only T1 and 36 (11%) who participated only in the T2 assessment. This study focused on the 158 students who completed both T1 and T2.

Instrumentation

In Study 2, students' mastery achievement goals and reasons underlying these goals were assessed at the beginning of a trimester. Also, students' perceived need satisfaction were assessed at the beginning of the trimester; whereas their learning strategies were assessed twice: at the beginning and the end of the trimester. Students were given a survey that assessed the above variables using a 5-point Likert type scale (1 [*Strongly disagree*] to 5 [*Strongly agree*]). All the instruments used in this study were identical to those used in Study 1, therefore they were valid and reliable measures that were independently translated by two experts in the field and adjusted according to the procedures proposed by Hambleton (1994). Specifically, the following instruments were used and α values were given in the table below.

Table 1
Instruments of Study 2

Instruments	Items	Cronbach alpha
<i>Achievement goals</i>	1 item for MAp goal	-
	1 item for MAV goal	-
<i>Underlying reasons of achievement goals</i>	4 items - Autonomous reasons for MAp and MAV goals (respectively)	$\alpha = .75$; $\alpha = .80$
	3 items- Controlling reasons for MAp and MAV goals (respectively)	$\alpha = .67$; $\alpha = .74$
<i>Perceived need satisfaction</i>	9 items, Need satisfaction	$\alpha = .74$
	9 items, Need frustration	$\alpha = .79$
<i>Motivated learning strategies</i>	5 items, Critical thinking	$\alpha = .73$ for T1 and $\alpha = .72$ for T2
	5 items, Meta-cognitive self-regulation	$\alpha = .72$ for T1 and $\alpha = .81$ for T2
	4 items, Effort regulation	$\alpha = .67$ for T1 and $\alpha = .62$ for T2

Method of data collection

As with study 1, data was collected through the survey instruments (i.e., self-reporting questionnaires). After receiving the ethical approval from university's ethical committee, the researcher next secured permission from the English Preparatory School. After receiving approval, the administrators informed the school instructors of the study. Questionnaires were given to the instructors who conducted the survey with their classes. As mentioned previously, this was a longitudinal study; therefore, this assessment was conducted twice. Time 1 assessment was conducted in the beginning of third trimester in May and Time 2 was administered five weeks later in June.

For Time 1, after participants completed a consent form, they were given the questionnaires. It took students between 15 to 20 minutes to complete the survey.

For Time 2, the same classes were visited and students were given the survey, which students completed within 25 to 30 minutes.

Students participated anonymously in this study; however, since the assessments took place at two different times, it was necessary for students to provide some sort of identification on the survey to make comparisons. Students were asked to indicate their ID number or a nickname (but not their name) at the beginning of each set of questionnaires.

The data was entered in a SPSS file and each case was identified by a code that had been given during the data entering according to the order of the filled questionnaire in the questionnaires pile. The first questionnaire of the first assessment (at the beginning of the semester) was coded with the number 1a. In a separate table, the ID numbers of the participant students were kept along with their code in the SPSS file. When entering the data from the second set of data, the questionnaires were ordered in the same way as during the first assessment, so the data of each student was entered in the same order. In this way in the statistical file, nobody could identify to which student belong the data.

Method of data analysis

Similar to Study 1, data was analyzed using SPSS (Statistical Package for the Social Sciences v.20). In the preliminary analysis, descriptives, bivariate correlations and MANOVA were run. Descriptives and bivariate correlations were displayed in a table by using SPSS. To find if there were differences between the number of male and female students who pursue mastery-approach or mastery-avoidance goals, a

MANOVA was performed and statistically significant results were reported. In the main analysis, similar to Study 1, path analysis was run by using EQS 3.1 for Windows (Structural Equation Modeling Software) to investigate whether students' perceived need satisfaction or need frustration relate to mastery-approach and mastery-avoidance goals respectively as well as to autonomous and controlling reasons underlying these goals. Furthermore, a path analysis, was used to investigate whether MAp, MAv goals and their underlying reasons mediated the relation between need satisfaction or frustration and learning strategies in T2 while controlling for learning strategies in T1.

CHAPTER 4: RESULTS

Introduction

In this chapter, the results of the data analysis are presented and summarized. The chapter begins with the preliminary analysis that shares descriptives, bivariate correlations and MANOVA. In the main analysis, the results of path analysis are represented. Moreover, the results present the quantitative data analysis to show the relation between students' perceived need satisfaction or need frustration and their mastery-approach and mastery-avoidance goals respectively. Further correlational analysis will present relationships among student needs satisfaction to the autonomous and controlling reasons underlying MAp and MAv (Study 1 & Study 2). Additionally, results will represent whether the MAp or MAv goals of students along with their underlying autonomous or controlling reasons account for students' learning strategies (Study 1 & Study 2).

Results for Study 1

Preliminary analysis

The Preliminary Analysis consists of the descriptive statistics conducted for this study. In addition, correlations of the measured variables and gender differences were performed. Descriptive statistics of the measured variables are presented in Table 2, which includes antecedents (factors that affect to adopt a particular goal), motivational variables and educational outcomes as measured variables.

Table 2
 Descriptives of the measured variables (Study 1)

	N	M	SD
<i>Antecedents</i>			
1. Need satisfaction	223	3.55	.60
2. Need frustration	222	2.88	.74
<i>Motivational Variables</i>			
3. MAp goals	199	4.25	.83
4. MAp autonomous	215	3.89	.74
5. MAp controlling	213	2.79	.91
6. MAV goals	201	3.54	1.11
7. MAV autonomous	172	3.42	.88
8. MAV controlling	170	2.48	.86
<i>Educational outcomes</i>			
9. Learning strategies	222	3.44	.61

Regarding the correlations of the measured variables presented in Table 3, a number of interesting and significant results were revealed. Below a few of the correlations are discussed.

Age was significantly and negatively correlated with need frustration ($r = -.15, p < .05$) and significantly and positively correlated with learning strategies ($r = .19, p < .01$). Therefore, it seems older students use effective learning strategies in their academic life and their needs are less dissatisfied.

Need satisfaction was significantly and positively correlated with MAp ($r = .19, p < .01$) and MAV ($r = .21, p < .01$) goals and their autonomous reasons ($r = .38, p < .01$; $r = .19, p < .05$ respectively) and also learning strategies ($r = .23, p < .01$). This analysis indicates that students who pursue MAp and MAV goals, and pursue these

goals for autonomous reasons, have satisfied their needs and they use effective learning strategies in their academic life.

On the other hand, need frustration was significantly and positively correlated with MAp controlling ($r = .27, p < .01$), MAv goals ($r = .16, p < .05$) and MAv controlling reasons ($r = .35, p < .01$). These results indicate that students' behaviors are controlled because their needs are not frustrated. As expected, there was no relation between need frustration and learning strategies.

MAp goals were significantly and positively correlated with MAv goals ($r = .32, p < .01$). They are intercorrelated with their autonomous reasons ($r = .41, p < .01$; $r = .19, p < .05$ respectively) and also with learning strategies ($r = .27, p < .01$). These results show that students who pursue MAp or MAv goals or students who are autonomously regulated use effective learning strategies.

MAv goals were significantly and positively correlated with MAv controlling reasons ($r = .26, p < .01$); whereas MAp goals and their controlling reasons were not correlated. This means that students who have high MAv goals they can also have high controlling reasons underlying them but this is not the case for MAp goals.

It is important to mention that autonomous reasons underlying both MAp and MAv goals were significantly and positively correlated with their controlling reasons. It indicates that these are not two opposite reasons; they are two aspects of a continuum.

MAp controlling reasons were significantly and positively correlated with learning strategies ($r = .14, p < .05$). Alternatively, there was no relation between MAv controlling and learning strategies. Students who pursue MAp goals even with controlling reasons use effective learning strategies in their academic life.

Different MANOVA tests were run to investigate gender differences in measured variables but there was not any significant gender effect in MAp and MAv goals. Furthermore, no significant gender effect was found in either autonomous or controlling reasons behind these goals, or in need satisfaction and learning strategies.

Table 3
Bivariate correlations of the measured variables (Study 1)

	1	2	3	4	5	6	7	8	9	10	11
<i>Background variables</i>											
1. Gender	-										
2. Age	-.06	-									
<i>Antecedents</i>											
3. Need satisfaction	-.07	.00	-								
4. Need frustration	.00	-.15*	.10	-							
<i>Motivational variables</i>											
5. MAp goals	-.06	-.09	.19**	-.01	-						
6. MAp autonomous	-.10	.11	.38**	.10	.41**	-					
7. MAp controlling	-.04	-.09	.16*	.27**	.12	.41**	-				
8. MAv goals	-.02	-.06	.21**	.16*	.32**	.25**	.16*	-			
9. MAv autonomous	.01	.09	.19*	.16*	.19*	.60**	.34**	.57**	-		
10. MAv controlling	.07	.03	.12	.35**	-.02	.39**	.65**	.26**	.64**	-	
<i>Educational outcomes</i>											
11. Learning strategies	-.01	.19**	.23**	.01	.27**	.42**	.14*	.21**	.31**	.11	-

Note. * $p < .05$. ** $p < .01$. MAp = Mastery-approach goals; MAv = Mastery-avoidance goals; Gender was dummy-coded (1 = females; 2 = males)

Main analysis

For Study 1, a Path Analysis was performed to test the mediating role of mastery goal and the reasons underlying these goals between need satisfaction and educational outcomes.

A Path Analysis was performed to examine relations between selected variables in order to answer the research questions of the study. The model presented in *Figure 1* yielded an acceptable fit ($S-B\chi^2 [11, N = 143] = 13.79, p < .01, CFI = .993, SRMR = .056, RMSEA = .042 [90\% CI: .000 - .102]$). The figure shows that need satisfaction was positively related to MAp ($\beta = .29, p = .01$) and MAv ($\beta = .27, p = .01$) goals as well as to autonomous reasons underlying MAp and MAv goals ($\beta = .32, p = 0.1, \beta = .23, p = .01$ respectively). In turn, MAp goals ($\beta = .22, p = .01$) and autonomous reasons ($\beta = .31, p = .01$) underlying MAp goals were positively associated with learning strategies. Need frustration was positively related with MAv goals ($\beta = .15, p = .05$) and controlling reasons underlying MAv and MAp goals ($\beta = .32, p = .01, \beta = .28, p = .01$ respectively). A test of indirect effects showed that need satisfaction were indirectly associated with learning strategies ($\beta = .16, z = 3.92, p < .01$) via MAp goals and MAp autonomous reasons.

For the sake of clarity, only selected correlations are included in the path analysis. In the figure are not shown the correlations between MAp and MAv autonomous reasons ($\beta = .34$), MAv autonomous ($\beta = .24$); MAv and MAp goals ($\beta = .28$), MAv autonomous reasons, ($\beta = .32$), MAv autonomous reasons ($\beta = .56$); MAv autonomous and MAv controlling reasons ($\beta = .38$), MAv autonomous reasons ($\beta = .75$) as well as between MAv autonomous reasons and MAv controlling reasons ($\beta = .31$), MAv controlling reasons ($\beta = .55$). All paths are standardized and significant at the .05 level.

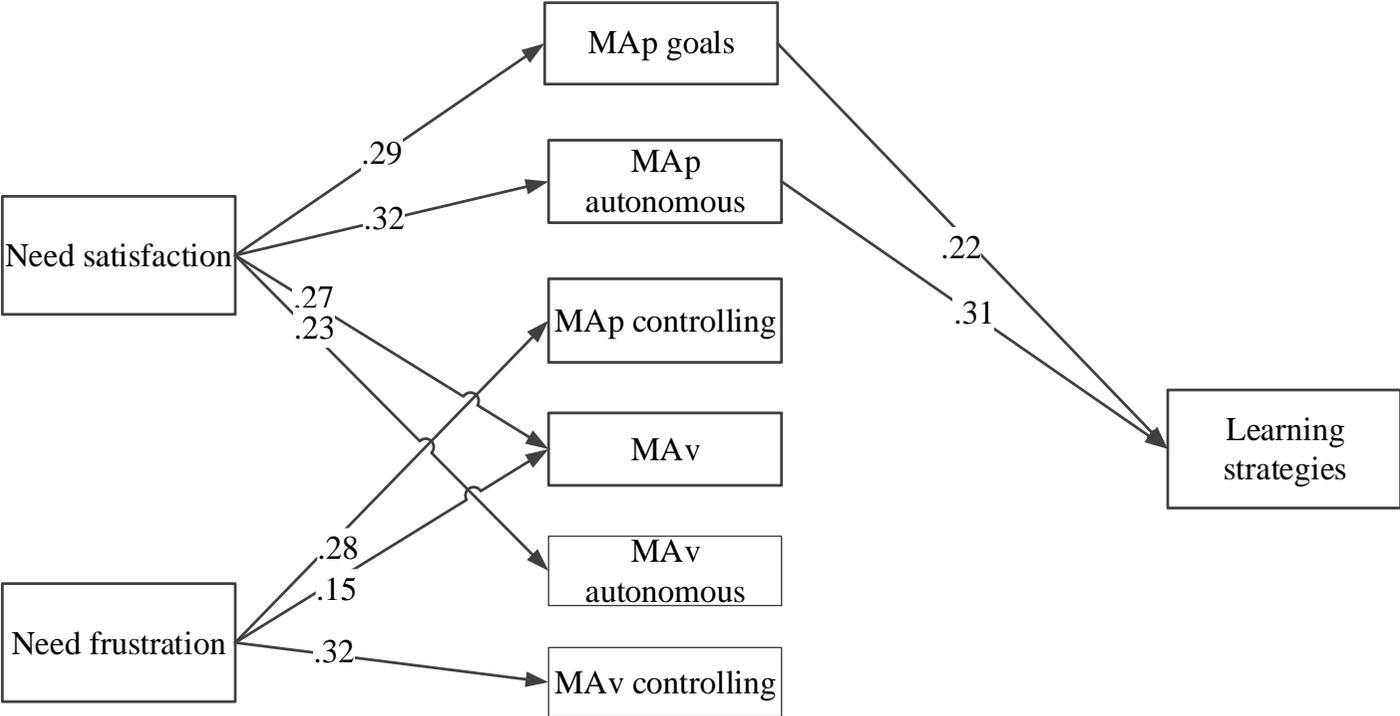


Figure 1. The tested model of Study 1.

Results for Study 2

Preliminary analysis

Similar to Study 1, descriptive statistics, correlations of the measured variables and MANOVA for gender differences were performed. As part of this longitudinal study, the survey was administered at two separate times (see Chapter 3). Descriptive statistics of the measured variables in Time 1 (T1) and in Time 2 (T2) are presented in Table 4 and Table 5, respectively. Both studies include the same variables: antecedents, motivational variables and educational outcomes.

Table 4
Descriptive statistics of the measured variables (Study 2 – T1 Assessment)

<i>Variables</i>	N	M	SD
<i>Antecedents</i>			
1. Need satisfaction.	290	3.43	.53
2. Need frustration	290	2.85	.69
<i>Motivational variables</i>			
3. MAp goals	252	4.22	.74
4. MAp autonomous	284	3.58	.79
5. MAp controlling	286	2.89	.81
6. MAv goals	260	3.47	1.09
7. MAv autonomous	218	3.15	.81
8. MAv controlling	217	2.68	.76
<i>Educational outcomes</i>			
9. Learning strategies	284	3.19	.54

The correlations of the measured variables of Study 2 are provided in Table 5. A few of the notable results are discussed below.

Gender was significantly and negatively correlated with MAv goals ($r = -.14, p < .05$). Age was significantly and positively correlated with need frustration ($r = .14, p < .05$), MAp controlling reasons ($r = .14, p < .05$) and learning strategies ($r = .13,$

$p < .05$). In contrast to Study 1, older participants are motivated by controlled reasons, in other words by external sources; therefore, their needs are frustrated. On the other hand, similar to Study 1, older students use more effective learning strategies.

Need satisfaction was significantly and positively correlated with MAp ($r = .18, p < .01$) and MAv goals ($r = .15, p < .05$) and their autonomous reasons ($r = .16, p < .01$; $r = .15, p < .05$ respectively) and with learning strategies ($r = .20, p < .01$). Students who adopt MAp goals and are autonomously regulated are satisfied with their needs, and also they use effective learning strategies.

Need frustration was significantly and positively correlated with controlling reasons underlying MAp ($r = .36, p < .01$) and MAv goals ($r = .39, p < .01$). As expected, students whose needs are frustrated are motivated by controlled regulation.

Similar to Study 1, MAp goals were significantly and positively correlated with MAv goals ($r = .22, p < .01$). They are intercorrelated with their autonomous reasons ($r = .32, p < .01$; $r = .26, p < .01$ respectively) as well as learning strategies ($r = .34, p < .01$). These results show that students who adopt MAp or MAv goals for autonomous reasons use effective learning strategies.

Autonomous reasons underlying MAp and MAv goals were significantly and positively correlated with their controlling reasons ($r = .43, p < .01$; $r = .68, p < .01$ respectively) as well as learning strategies ($r = .40, p < .01$; $r = .28, p < .01$ respectively). Autonomously regulated students use more effective learning strategies than controlled regulated ones.

A MANOVA was performed to examine whether males and females would differ in any of the measured variables. These gender differences were only explored for MAV goals. The analysis showed significant gender differences (Wilk's $\Lambda = .936$, $F(3, 198) = 6.42$, $p < .01$, multivariate $\eta^2 = .06$). A follow-up ANOVA after a Bonferroni correction indicated significant gender differences in MAV goals $F(1,198) = 6.42$, $p < .01$, $\eta^2 = .03$. Females scored higher in MAV goals compared to males ($M = 4.00$, $SD = 0.62$ vs. $M = 3.75$, $SD = 0.72$)

Table 5
 Bivariate correlations of the measured variables (Study 2 – T1 Assessment)

<i>Variables</i>	1	2	3	4	5	6	7	8	9	10	11	12
<i>Background variables</i>												
1. Gender	-											
2. Age	-.01	-										
<i>Antecedents</i>												
3. Need satisfaction	.07	.06	-									
4. Need frustration	.02	.14*	.10	-								
<i>Motivational variables</i>												
5. MAp goals	-.09	.08	.18**	-.12	-							
6. MAp autonomous	-.02	.08	.16**	.02	.32**	-						
7. MAp controlling	-.05	.14*	.05	.36**	.03	.43**	-					
8. MAv goals	-.14*	.08	.15*	.02	.22**	.25**	.19**	-				
9. MAv autonomous	.08	.07	.15*	.13	.26**	.54**	.38**	.34**	-			
10. MAv controlling	.08	.13	.08	.39**	.01	.24**	.60**	.20**	.68**	-		
<i>Educational outcomes</i>												
11. Learning strategies T1	-.03	.13*	.20**	.03	.34**	.40**	.05	.22**	.28**	.09	-	
12. Learning strategies T2	-	.15*	.32**	.03	.43**	.41**	.17*	.24	.29**	.12	.67**	-

Note. * $p < .05$. ** $p < .01$. MAp = Mastery-approach goals; MAv = Mastery-avoidance goals; Gender was dummy-coded (1 = females; 2 = males)

Main analysis

Similar to Study 1, for both T1 and T2, a Path Analysis was performed to test the mediating role of mastery goal and the reasons underlying these goals between need satisfaction and educational outcomes.

Similar to Study 1, a Path Analysis was performed to answer the research questions for this study. The model presented in *Figure 2* yielded an acceptable fit ($S-B\chi^2$ [14, $N = 104$] = 19.33, $p < .01$, CFI = .983, SRMR = .055, RMSEA = .061 [90% CI: .000 - .120]). The figure shows that need satisfaction in T1 was positively related to T1 MAp goals ($\beta = .39, p = .01$) and T1 MAv goals ($\beta = .22, p = .01$) as well as to autonomous reasons underlying T1 MAp goals and T1 MAv goals ($\beta = .25, p = .01, \beta = .17, p = .05$ respectively) and to learning strategies in T1 ($\beta = .30, p = .01$). In turn, need frustration in T1 was positively related to controlling reasons underlying T1 MAp and T1 MAv goals ($\beta = .30, p = .01, \beta = .32, p = .01$ respectively). Furthermore, autonomous reasons underlying T1 MAp goals ($\beta = .25, p = .01$) and learning strategies in T1 ($\beta = .53, p = .01$) positively associated with learning strategies in T2. A test of indirect effects showed no significant relation between learning strategies in T2 and need satisfaction in T1 through autonomous reasons behind T1 MAp goals and learning strategies in T1.

For the sake of clarity, in the figure are not shown the correlations between MAp and MAv autonomous reasons ($\beta = .36$), Map controlling ($\beta = .18$), MAV autonomous ($\beta = .21$) and learning strategies ($\beta = .27$); MAV and MAp goals ($\beta = .42$), MAp autonomous reasons, ($\beta = .23$), MAp controlling reasons ($\beta = .39$), MAV autonomous reasons ($\beta = .30$) and MAV controlling reasons ($\beta = .25$); MAp autonomous and MAp controlling reasons ($\beta = .55$), MAV autonomous reasons ($\beta = .59$), MAV controlling reasons ($\beta = .25$) and learning strategies ($\beta = .41$) as well as between MAV autonomous reasons and MAV controlling reasons ($\beta = .67$) and learning strategies ($\beta = .23$). All paths are standardized and significant at the .05 level.

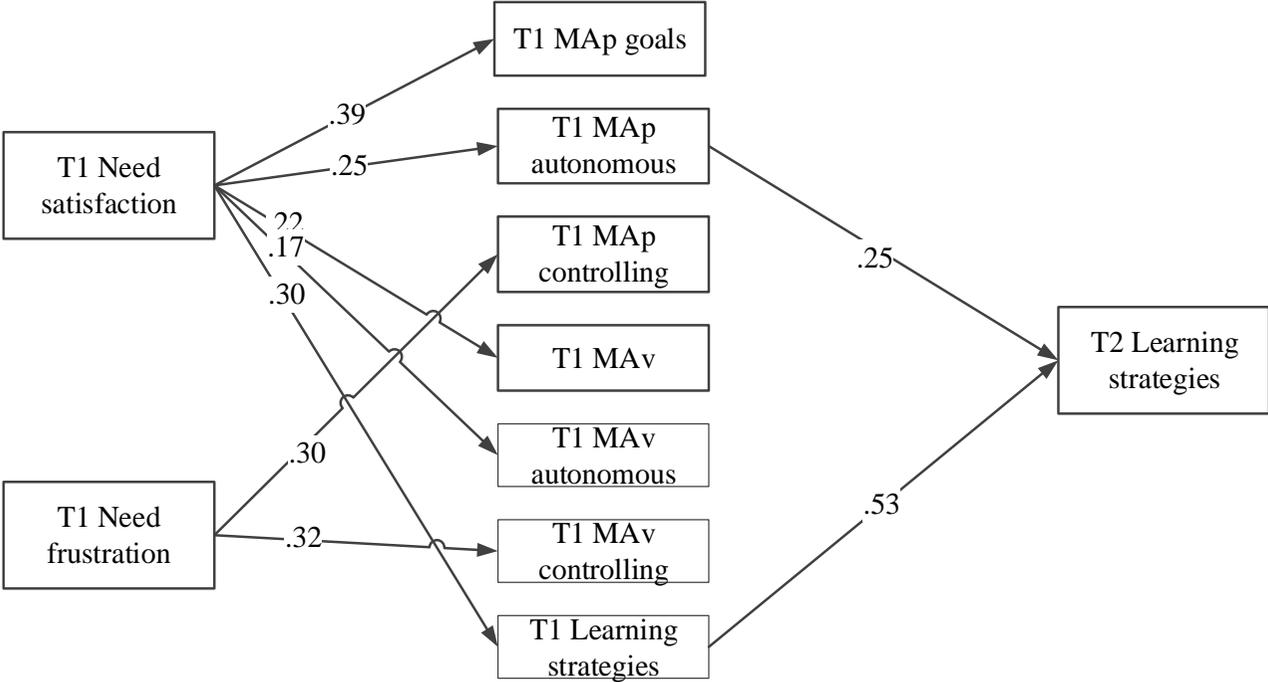


Figure 2. The tested model of Study 2.

To conclude, in both studies (Study 1 & Study 2), it was found that students' perceived need satisfaction or need frustration were positively and significantly related to mastery-approach and mastery-avoidance goals respectively. Also students' perceived need satisfaction was positively related to autonomous reasons underlying MAp and MAv goals; whereas students' perceived need frustration was positively related to controlling reasons underlying these goals. Furthermore, only MAp goals and autonomous reasons underlying MAp goals were related with learning strategies in Study 1. Indirect effects of need satisfaction on learning strategies were found through MAp goals and their autonomous underlying reasons. Regarding the results of Study 2, only autonomous reasons underlying MAp goals and learning strategies in T1 predicted students learning strategies in T2.

CHAPTER 5: DISCUSSION

Introduction

This chapter provides a discussion of the major findings from the research and their links to the related literature. The discussion begins with an overview of the study that includes the purpose of the study, participants, research methods and instruments. Then, it is followed by major findings and conclusions of the study. In the following section, implications for practice, implications for further research and limitations will be discussed.

Overview of the study

The purpose of this research was to investigate if students' need satisfaction and frustration are related to their learning strategies through M_Ap and M_Av goals. Furthermore, the study investigated the autonomous and controlling reasons underlying these goals are related to their needs satisfaction or frustration.

This research consisted of two studies. These two studies tried to answer the research questions through two different designs: a correlational cross-sectional study followed by a correlational short-term longitudinal investigation. In both studies, the relations mentioned above were investigated by differentiating the research design in order to get more reliable results. These studies will address the following questions:

1. Do students' perceived need satisfaction or frustration relate to mastery-approach or to mastery-avoidance goals respectively as well as to the autonomous and controlling reasons underlying these goals? (Study1 and Study 2)

2. Do both mastery-approach or mastery-avoidance goals and their underlying autonomous or controlling reasons account for students' learning strategies?
(Study1 and Study 2)

Study 1, which was correlational cross-sectional, was conducted with 226 students from different departments of a private, nonprofit university in Ankara. Students were to complete survey questions that was administered during twenty minutes of their class time. Study 2, which was correlational short-term longitudinal study, was conducted with 331 students from The English Language Preparatory Program of the same university. Students were to complete survey questions in two different times in a semester. The Time 1 assessment was conducted in the beginning of third trimester in May and Time 2 was administered five weeks later in June.

In both studies, the instruments were identical. Two items were used to assess students' mastery goals (MAp or MAv goal) from the Revised Achievement Goal Questionnaire (AGQ –R; Elliot & Murayama, 2008) and eight items, from the study of Vansteenkiste, Mouratidis, & Lens, (2010), were used to assess students' autonomous versus controlling reasons underlying the pursuit of their mastery goals. In order to assess students' need satisfaction and frustration regarding their studies, nine items for each respectively were used from the balanced measure of psychological needs questionnaire (BMPN; Sheldon & Hilpert, 2012). Lastly, to assess three aspects of students' learning strategies (critical thinking, meta-cognitive self-regulation and effort regulation), corresponding items from the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1993) was utilized. The data were analyzed by using path analysis(EQS 6.1 for Windows)

to test the mediating role of autonomous and controlling reasons between students' perceived need satisfaction and learning strategies. These controlling reasons underlie the pursuit of Map and Mav goals. This last analysis addressed both research questions.

Major findings and conclusions

Based on the analysis of results from both studies, the findings for each research questions of the study are discussed below:

First research question: Do students' perceived need satisfaction or frustration relate to mastery-approach or to mastery-avoidance goals respectively as well as to the autonomous and controlling reasons underlying these goals? (Study1 and Study 2)

The findings of the present study showed that students' perceived need satisfaction was positively and significantly related to MAp and MAV goals. On the other hand, need frustration was positively and significantly related to MAV goals for Study 1 only. Also, students' perceived need satisfaction was positively related to autonomous reasons underlying MAp and MAV goals; whereas students' perceived need frustration was positively related to controlling reasons underlying these goals.

In self-determination theory, need satisfaction has been considered as the prerequisite for autonomous motivation, while need frustration has been linked with controlled motivation (Deci & Ryan, 2000). Since autonomous and controlled motivation has recently been considered the motivational basis of achievement goal pursuit (Vansteenkiste, Smeets, et al., 2010), it was timely to investigate the relation of need

satisfaction and frustration to both the achievement goals and their underlying reasons. From this point of view, the results were consistent with integrated theories (i.e., the Self-determination and Achievement Goal Theory). The students whose needs are satisfied were instigated by autonomous motivation and they tended to adopt MAp goals in their academic life, while MAv goals could be also adopted when needs were satisfied (Study 1). On the contrary, students whose needs were frustrated were instigated by controlled motivation in achievement goal pursuit.

These findings enlarge our understanding of achievement motivation, especially the nature of MAp and MAv goals. These new insights consider (a) the relation between need satisfaction and need frustration to mastery goals and (b) the autonomous or controlling reasons underlying the adoption of mastery goals. Up to now, research had shown that need satisfaction is related to MAp goals (Diseth, Danielsen, & Samdal, 2012; Janke, Nitsche, & Dickhauser, 2015). In the present study, results replicated the positive relation between need satisfaction and the adoption of MAp goals, and moved one step forward show that need satisfaction can be also positively related to MAv goals; in particular, to autonomous reasons underlying these goals.

More importantly, the present study showed that when students adopt the goal to learn as much as possible (MAp goal) or the goal to avoid learning less than it is possible (MAv goal) because they feel coerced to do so (controlling reasons), students need frustration is high. This finding highlights the importance of students' psychological need satisfaction for an optimal achievement motivation.

The second research question of this study was: *Do both mastery-approach or mastery-avoidance goals and their underlying autonomous or controlling reasons account for students' learning strategies? (Study 1 and Study 2)*

The findings showed that only MAp goals and autonomous reasons underlying MAp goals were related with learning strategies in Study 1. Regarding the results of Study 2, only autonomous reasons underlying MAp goals and learning strategies used at the beginning of a trimester predicted students learning strategies few weeks later. For both studies, it seems that MAp goals and autonomous reasons underlying MAp goals are stronger positive predictors of students' learning strategies than the MAV goals and their underlying autonomous reasons. This result is consistent with the study of Matos, Lens and Vansteenkiste (2007) that found that mastery goals are positively associated with more use of learning strategies (i.e., rehearsal, organization, critical thinking and metacognitive strategies) and with higher academic achievement. Furthermore, Michou, Vansteenkiste, Mouratidis and Lens (2014) found similar results, showing that MAp goals and autonomous reasons underlying these goals were positively related to effective learning strategies. Thus, autonomous reasons behind MAp goals have a strong effect on predicting educational outcomes. Students adopting MAp goals for autonomous reasons use effective learning strategies to succeed in their academic life.

These findings highlight the importance of students' quality of motivation, as defined by the endorsed achievement goal and the underlying reasons, for an optimal functioning in learning.

Implications for practice

Regarding to the results of present study, there are some important implications for teacher education programs, teachers and schools:

Basic psychological need satisfaction is the prerequisite for well-being and it is related with learners' autonomous motivation and mastery goal adoption. Moreover, learners' MAp goals adopted for autonomous reasons are related to better learning strategies. Therefore, it seems important at school to satisfy students' needs in order to support positive educational outcomes. But how a teacher can satisfy students' psychological needs? When teachers set clear rules, explain clearly what they expect from students, encourage them and monitor their progress, they fulfill students need for competence (Reeve & Jang, 2006). In addition, when teachers provide choices within the task, adjust their teaching style to students' preferences and vary the content of their lesson to students' interest, they fulfill students' need for autonomy (Reeve & Jang, 2006). Finally, when teachers establish a peer learning group environment, acknowledge students contribution in the class and are available and respectful toward their students, they fulfill students need for relatedness (Reeve & Jang, 2006). These are instructional practices important for teachers who want to contribute to the positive development of their students.

However, sometimes teachers feel unable to apply such practices in the classroom; for this reason, teacher education programs should include courses about students' motivation and its relation to educational outcomes. Moreover, this programs should include teachers' motivating style to enhance students' development. As a result, trainee teachers could create need-supportive contexts in their classes.

In addition, teachers' professional development could encourage teachers to reflect on their need-supportive techniques and the consequences of their actions on students' development. Research has shown that need supportive teaching can be learned; therefore, seminars and workshops can help teachers to learn how to structure their classes for more adaptive educational results.

Implications for further research

The present study has also some implications for further research. With a cross-sectional and a short-longitudinal design, the relation of students need satisfaction with mastery goals and underlying reasons has been highlighted, as well as the relation of mastery goals and underlying reasons to learning strategies. However, what is the causal relationship of these factors? Is it students' autonomous motivation underlying the mastery goals that make them to feel their needs satisfied or vice versa? Is it students' quality of motivation that bring the positive educational outcomes or is their learning strategies that facilitated them to develop an autonomous motivation? The present research was unable to answer these questions. To more accurately describe the relations investigated in this research, experimental studies or long-term longitudinal studies can be done to test the causal relationships among need satisfaction and frustration, the achievement goals and underlying reasons, and educational outcomes.

Limitations

There were two studies in this research. For Study 1, the main limitation was that design was correlational cross-sectional. Thus, causal relationships between measured variables were precluded. Study 2, which was a short longitudinal survey,

was implemented in two stages: at the beginning and at the end of the semester. Participants in the first stage should participate in the second stage. Participants completed the questionnaires at the end of certain courses; for various reasons, the attrition rate of participants was high. Therefore, in Study 2, the sample size is a limitation. Another limitation is that students may have misunderstood the survey items or they may have interpreted the items according to their own understandings that were differently from the original meanings. This study was carried out in Turkey which has particular cultural characteristics. So, the cultural and language barriers can be a reason of misunderstandings of survey items.

Regarding the content of both studies, the limitations concern the fact that: (a) the endorsement of M_Ap or M_Av goals was assessed by only one item and internal consistency cannot be reported, (b) the controlling reasons were assessed only by introjected reason-items as the external reason-item failed to load on the controlling factor.

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APPENDICES

APPENDIX A: Survey, Study 1 & Study 2

ID: _____ **Gender M / F** **Age** _____ **Date:** _____

Please, indicate to what extent you agree or disagree with each statement by using the following statements.

	Strongly disagree	Disagree	Neither agree, nor disagree	Agree	Strongly agree
1. My goal in this course is to learn as much as possible	1	2	3	4	5
Wait! If you scored 3 or higher, respond to the following questions:					
Why do you aim to learn as much as possible?					
Because ...					
... others (teacher, parents) obliged me to do so	1	2	3	4	5
... I like to learn as much as possible	1	2	3	4	5
... I would have felt bad, guilty or anxious if I didn't do it	1	2	3	4	5
... I needed to prove to myself that I can learn as much as possible	1	2	3	4	5
... I found learning as much as possible a personally important goal	1	2	3	4	5
... Only then I could feel myself worthwhile and special	1	2	3	4	5
... I found learning as much as possible a challenging goal	1	2	3	4	5
... I fully recognized myself when I learn as much as possible	1	2	3	4	5

2. My goal in this course is to avoid learning less than it is possible to learn	1	2	3	4	5
Wait! If you scored 3 or higher, respond to the following questions:					
Why do you aim to avoid learning less than it is possible to learn? Because ...					
... I fully recognize myself when I avoid learning less than it is possible to learn	1	2	3	4	5
... I like to pursue this goal	1	2	3	4	5
... Only then I could feel myself worthwhile and special	1	2	3	4	5
... I would have felt bad, guilty or anxious if I didn't do it	1	2	3	4	5
... I found avoiding learning less than it is possible to learn a personally important goal	1	2	3	4	5
... I needed to prove it to myself	1	2	3	4	5
... others (teacher, parents) obliged me to do so	1	2	3	4	5
... I found avoiding learning less than it is possible to learn a challenging goal to pursue	1	2	3	4	5

Following there are some questions regarding how you usually feel at your studies during the last few weeks.

	Strongly disagree	Disagree	Neither agree, nor disagree	Agree	Strongly agree
1. I was free to do things my own way	1	2	3	4	5
2. I was successfully completing difficult tasks	1	2	3	4	5
3. I was lonely	1	2	3	4	5
4. I experienced some kind of failure.	1	2	3	4	5
5. I had a lot of pressures I could do without.	1	2	3	4	5
6. I felt a sense of contact with people who care for me	1	2	3	4	5
7. I took on and mastered hard challenges	1	2	3	4	5
8. My choices expressed my “true self”	1	2	3	4	5
9. I felt unappreciated by one or more important people	1	2	3	4	5
10. I did something that made me feel incompetent	1	2	3	4	5
11. There were people telling me what I had to do.	1	2	3	4	5
12. I felt close and connected with other people	1	2	3	4	5
13. I had to do things against my will.	1	2	3	4	5
14. I did well even at the hard things	1	2	3	4	5
15. I had disagreements or conflicts with people	1	2	3	4	5
16. I was really doing what interests me.	1	2	3	4	5
17. I struggled doing something I should be good at	1	2	3	4	5
18. I felt a strong sense of intimacy with people	1	2	3	4	5

Following there are some questions about the way you study at school. Please, indicate your degree of agreement with each statement by putting in circle the answer that better describes you.

Regarding the way I am studying in this course ...	Strongly disagree	Disagree	Neither agree, nor disagree	Agree	Strongly agree
1. I often find myself questioning things I hear or read in this course to decide if I find them convincing.	1	2	3	4	5
2. When I become confused about something I'm reading for this class, I go back and try to figure it out.	1	2	3	4	5
3. I often feel so lazy or bored when I study for this class that I quit before I finish what I planned to do.	1	2	3	4	5
4. Before I study new course material thoroughly, I often skim it to see how it is organized.	1	2	3	4	5
5. When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.	1	2	3	4	5
6. I treat the course material as a starting point and try to develop my own ideas about it.	1	2	3	4	5
7. I work hard to do well in this class even if I don't like what we are doing.	1	2	3	4	5
8. I ask myself questions to make sure I understand the material I have been studying in this class.	1	2	3	4	5
9. When course work is difficult, I either give up or only study the easy parts.	1	2	3	4	5
10. When studying for this course I try to determine which concepts I don't understand well.	1	2	3	4	5
11. I try to play around with ideas of my own related to what I am learning in this course.	1	2	3	4	5
12. Even when course materials are dull and uninteresting, I manage to keep working until I finish.	1	2	3	4	5
13. Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.	1	2	3	4	5
14. When I study for this class, I set goals for myself in order to direct my activities in each study period.	1	2	3	4	5

THANK YOU FOR YOUR PARTICIPATION

APPENDIX B: Consent form



Informed Consent Form

The purpose of this research is to investigate if students' need satisfaction and frustration are related to students' learning strategies through mastery goals as well as through autonomous and controlling reasons underlying these goals. This research is being conducted by Burçin Değirmen, master student in the Graduate School of Education at Bilkent University. I would be grateful if you could help me by carrying out the study which composed of a short questionnaire. Remember that all information you provide in the questionnaires will be treated confidentially.

The entire questionnaire will not take more than 15 minutes. There are no risks associated with participating in the study. The information you provide during the study is completely anonymous; at no time will your name be associated with the responses you give. If you have any questions about any item of the questionnaires or even about the study itself, please feel free to ask me now or at any other time during your participation.

Participation in this study is voluntary. You also have the right to withdraw from the study at any time. In the case, you choose to withdraw from the study all information you provide will be destroyed and omitted from the final paper. Insights gathered by you and other participants will be used in writing a quantitative research report. Your name and other identifying information won't be collected.

Thank you very much in advance for your cooperation!

I have read the information provided above. I have been given an opportunity to ask questions and all of my questions have been answered to my satisfaction.

Signature:

Date:

APPENDIX C: Anket (Çalışma 1 & 2)

Öğrenci No: _____ Cinsiyet K/E Yaş _____ Tarih: _____

Aşağıdaki ölçeği kullanarak her bir maddeye ne derecede katılıp katılmadığınızı lütfen belirtiniz.

	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum	Katılıyorum	Kesinlikle katılıyorum
1. Bu derste amacım olabildiğince fazla şey öğrenmektir.	1	2	3	4	5
DİKKAT ! Eğer puanınız 3 veya üzerindeyse, aşağıdaki soruları cevaplayınız.					
Neden olabildiğince fazla şey öğrenmeyi hedefliyorsun? Çünkü...					
... Buna başkaları (öğretmenim, ailem) tarafından zorlanıyorum.	1	2	3	4	5
... Olabildiğince fazla şey öğrenmek hoşuma gidiyor.	1	2	3	4	5
... Bunu yapmazsam, kendimi kötü, suçlu ve endişeli hissediyorum.	1	2	3	4	5
... Bunu yapabileceğimi kendime kanıtlamam gerekiyor.	1	2	3	4	5
... Bu amacı önemli bir kişisel hedef olarak görüyorum.	1	2	3	4	5
... Ancak o zaman kendimi değerli ve özel hissediyorum.	1	2	3	4	5
... Olabildiğince fazla öğrenmeyi kendimi zorlayabildiğim bir hedef olarak görüyorum.	1	2	3	4	5
... Olabildiğince çok şey öğrendiğimde kendimi daha iyi tanıyorum.	1	2	3	4	5

	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum	Katılıyorum	Kesinlikle katılıyorum
2. Bu dersteki amacım sınıftaki diğer öğrencilerden daha başarılı olmaktır.	1	2	3	4	5
DİKKAT ! Eğer puanınız 3 veya üzerindeyse, aşağıdaki soruları cevaplayınız.					
Neden diğer öğrencilerden daha başarılı olmayı hedefliyorsun? Çünkü...					
... Diğerlerinden daha iyi yapabildiğimi kendime kanıtlamam gerekiyor.	1	2	3	4	5
... Ancak o zaman kendimi değerli ve özel hissediyorum.	1	2	3	4	5
... Buna başkaları (öğretmenim, ailem) tarafından zorlanıyorum.	1	2	3	4	5
... Diğerlerinden daha başarılı oldukça kendimi daha iyi tanıyorum.	1	2	3	4	5
... Böyle yapmazsam, kendimi kötü, suçlu ve endişeli hissediyorum.	1	2	3	4	5
... Diğer öğrencilerden daha başarılı olmayı kendimi zorlayabildiğim bir hedef olarak görüyorum.	1	2	3	4	5
... Diğerlerinden daha başarılı olmak hoşuma gidiyor.	1	2	3	4	5
... Bunu önemli bir kişisel hedef olarak görüyorum.	1	2	3	4	5

Aşağıda, derslerinle ilgili son birkaç hafta içinde genelde nasıl hissettiğinle ilgili sorular yer almaktadır.

	<i>Kesinlikle katılmıyorum</i>	<i>Katılmıyorum</i>	<i>Ne katılıyorum ne katılmıyorum</i>	<i>Katılıyorum</i>	<i>Tamamen katılıyorum</i>
1. İşlerimi kendi bildiğim şekilde yapmakta özgürdüm.	1	2	3	4	5
2. Zor işleri başarılı bir şekilde tamamladım.	1	2	3	4	5
3. Tek başıyım.	1	2	3	4	5
4. Başarısız olduğum bazı konular oldu.	1	2	3	4	5
5. Üstümde gereksiz bir çok baskı vardı.	1	2	3	4	5
6. Beni önemseyen insanlarla aramda bir bağ olduğumu hissettim.	1	2	3	4	5
7. Zor işleri üstlendim ve üstesinden geldim.	1	2	3	4	5
8. Seçimlerim 'gerçek benliğimi' ifade etti.	1	2	3	4	5
9. Bir ya da birkaç önemli kişi tarafından kendimi değersiz hissettirildim.	1	2	3	4	5
10. Yetersiz hissetmeme neden olan bazı şeyler yaptım.	1	2	3	4	5
11. Ne yapmam gerektiğini söyleyen insanlar vardı.	1	2	3	4	5
12. Diğer insanlarla bir bağ kurduğumu, onlara yakın olduğumu hissettim.	1	2	3	4	5
13. İradem dışında şeyler yapmak zorunda kaldım.	1	2	3	4	5
14. Zor işlerin bile üstesinden geldim.	1	2	3	4	5
15. İnsanlarla fikir uyuşmazlıklarım ve çatışmalarım oldu.	1	2	3	4	5
16. Sadece ilgimi çeken şeylerle ilgilendim.	1	2	3	4	5

17. İyî olmam gereken şeyleri yaparken bocaladım.	1	2	3	4	5
18. İnsanlarla aramda güçlü bir yakınlık hissettim.	1	2	3	4	5

Aşağıda ders çalışma şeklinizle ilgili bazı sorular bulunmaktadır.

Lütfen her ifadeye katılma derecenizi, sizi en iyi ifade eden cevabı işaretleyerek belirtiniz.

Bu dersteki ders çalışma şekline dair...	<i>Kesinlikle katılmıyorum</i>	<i>Katılmıyorum</i>	<i>Ne katılıyorum ne katılmıyorum</i>	<i>Katılıyorum</i>	<i>Tamamen katılıyorum</i>
1. Kendimi sık sık bu derste duyduklarımı ve okuduklarımı ne kadar tatmin edici bulduğumu sorgularken buluyorum.	1	2	3	4	5
2. Dersle ilgili birşeyler okurken bir konuda kafam karışırsa, başa döner ve anlamak için çaba gösteririm.	1	2	3	4	5
3. Bu derse çalışırken kendimi çoğu zaman o kadar isteksiz ya da o kadar sıkılmış hissediyorum ki, planladıklarımı bitirmeden çalışmaktan vazgeçiyorum.	1	2	3	4	5
4. Derse ait yeni bir konuyu detaylı bir şekilde çalışmaya başlamadan önce, konunun nasıl ele alındığını anlamak için, materyali hızlıca gözden geçiririm.	1	2	3	4	5
5. Ders sırasında veya ders için okuduğum bir kaynakta bir teori, yorum ya da sonuç sunulmuşsa, bunları destekleyen bir bulgunun var olup olmadığına bakarım.	1	2	3	4	5

6. Derste kullanılan materyali bir başlangıç noktası olarak görür, ilgili konular üzerinde kendi fikirlerimi oluşturmaya çalışırım.	1	2	3	4	5
7. Derste yaptıklarımızdan hoşlanmasam bile başarılı olabilmek için sıkı çalışırım.	1	2	3	4	5
8. Derste işlenen konuları anladığımdan emin olmak için kendi kendime sorular sorarım.	1	2	3	4	5
9. Eğer bir ders zorsa ya çalışmaktan vazgeçerim ya da yalnızca kolay kısımlarını çalışırım.	1	2	3	4	5
10. Bu derse çalışırken, iyi anlamadığım kavramları belirlemeye çalışırım.	1	2	3	4	5
11. Bu derste öğrendiklerimle ilgili kendi fikirlerimin ne olduğunu ortaya koymaya çalışırım.	1	2	3	4	5
12. Ders kaynakları çok sıkıcı da olsa, ilgimi çekmese de, bitirene kadar çalışmaya devam ederim.	1	2	3	4	5
13. Dersteki konularla ilgili bir iddia ya da varılan bir sonucu okuduğumda veya duyduğumda, olası alternatifler üzerinde düşünürüm.	1	2	3	4	5
14. Bu derse çalışırken, her bir çalışma dilimini planlamak için, kendime hedefler belirlerim.	1	2	3	4	5