Original Article

Relationship between Turkish students' achievement goals and motivational strategies in physical education

GÖKÇE ERTURAN ILKER[1] , GIYASETTIN DEMIRHAN[2]
[1]School of Sport Sciences and Technology, Pamukkale University TURKEY
[2]School of Sport Sciences and Technology, Hacettepe University TURKEY

Abstract
The aim of this study was to investigate the relationship between Turkish high school students' achievement goals and motivated strategies. 1065 high school students (219 boys and 234 girls) completed a self-report survey. Results revealed that self-regulation is related to cognitive strategy use, self-efficacy, intrinsic value and test anxiety. All three achievement goals are related to each other. Performance approach goal is positively related to test anxiety and performance avoidance achievement goal is negatively related to intrinsic value. As a result performance approach and avoidance goals have caused negative outputs in high school physical education setting.
Key Words*: motivation, physical education, high school students*

Introduction
Motivational Strategies in Physical Education
Physical education is the study, practice, and appreciation of the art and science of human movement. Although movement itself is spontaneous, the refinement and perfection of movement is an educational process that is often entrusted to physical educators (Harrison, Blakemore & Buck, 2004; 15). According to Ommundsen and Lemyre (2007) efficient and adaptive learning strategies can facilitate learning and performance in physical education classes. Hence, factors that may facilitate cognitive and motivational self-regulation in student learning and performance in physical education seem important to identify.

Self-regulation is considered to be an important mediator between personal and contextual characteristics and actual achievement and performance also in the motor domain (Zimmerman & Kitsantas, 1996). Self-regulated learning is viewed as *proactive* processes that students use to acquire academic skill, such as setting goals, selecting and deploying strategies, and self-monitoring one's effectiveness, rather than as a reactive event that happens to students due to impersonal forces. Although self-regulated learning was viewed as especially important during personally directed forms of learning, such as discovery learning, self-selected reading, or seeking information from electronic sources, it was also deemed important in social forms of learning, such as seeking help from peers, parents, and teachers (Zimmerman, 2008).

Self-regulation is driven by goal-directed behavior comprising a standard, criteria or reference value that serves to guide self-regulatory processes (Zimmerman & Schunk, 2004). Achievement goal theorists defined achievement goal as the purpose for which a person engages in achievement behavior (Dweck, 1996; Maehr, 1989) or an orientation toward achievement tasks (Ames, 1992; Elliot & Thrash, 2001). Most achievement goal theorists have defined two types of achievement goals (performance-learning, ego-task) the various frameworks have been viewed as conceptually similar enough to justify convergence in the form of a performance goal versus mastery goal dichotomy (Ames & Archer, 1988). In this dichotomous model performance goals focus on the demonstration of competence relative to others, whereas mastery goals focus on the development of competence or task mastery (Elliot, 1999). However, during the past decade, the sufficiency of this dichotomous model has been called into question on both empirical and conceptual grounds. Previous research seems to provide support for the hypothesis that task/learning goals promote positive outcomes, but it does not provide support for the proposition that ego/performance goals lead to unequivocally negative outcomes. Ego/performance goals sometimes produce negative outcomes, but at other times they produce null results or even positive outcomes (Elliot & Conroy, 2005).

Achievement Goal Theory
In the trichotomous achievement goal model, the conventional performance goal construct is partitioned into separate approach and avoidance orientations, and three independent achievement goals are delineated: a *mastery goal,* focused on attaining self- or task-referential competence (i.e., developing competence or attaining

Correspondence: Gökçe Erturan Ilker Email: **gokce.erturan@gmail.com**

GÖKÇE ERTURAN ILKER[1] , GIYASETTIN DEMIRHAN[2]

task mastery); a *performance-approach goal,* focused on attaining normative competence; and a *performance-avoidance goal*, focused on avoiding normative incompetence (Elliot, 1999).

Achievement goals and their cognitive, affective, motivational, and behavioral correlates among students have been examined extensively in a variety of achievement settings, including classrooms and physical education classes (Ames, 1992; Anderman & Maehr, 1994; Kaplan & Maehr, 1999; Solmon, 1996; Xiang & Lee, 2002). Previous research has shown that mastery goal is related to coping with difficulties and persistence (Elliot & Dweck, 1988), self-regulation (Graham & Golan, 1991), transferring problem solving skills to the task (Bereby-Meyer & Kaplan, 2005), deep learning strategies (Elliot, McGregor & Gable, 1999; Kaplan & Midgley, 1997), recalling knowledge (Elliot & McGregor, 1999), and high self-efficacy (Kaplan & Maehr, 1999).

Although according to some researches performance approach goal is related to positive outputs such as persistence, positive feelings and high grades (Elliot, 1999; Harackiewicz, Barron, Pintrich, Elliot & Thrash, 2002), according to others performance approach goal is related to negative outputs such as anxiety, misbehavior and low level of recalling knowledge (Midgley, Kaplan & Middleton, 2001). Today the potential benefits of performance approach goal have been discussed in educational researches (Elliot & Moller, 2003; Harackiewicz, Barron, Pintrich, Elliot & Thrash, 2002; Hidi & Harackiewicz, 2000; Kaplan & Middleton, 2002).

Similar to performance approach goal while some researches have presented performance avoidance goal has no relation with positive or negative outputs (Middleton & Midgley, 1997), others have introduced a relation with effort in the face of failure (Elliot, McGregor & Gable, 1999), positive attitude towards challenging, self-efficacy, test achievement and intrinsic motivation (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Skaalvik, 1997). Additionally some researches have revealed that performance avoidance goal is related to some negative outputs such as surface processing of knowledge (Elliot, McGregor & Gable, 1999) avoiding asking for help in the class (Newman, 1998; Ryan & Pintrich, 1997), anxiety, low grades, test anxiety and low achievement (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Skaalvik, 1997; Urdan, Ryan, Anderman & Gheen, 2002). The reported inconsistencies in findings indicate a need for further research on the differential role of performance-approach and avoidance goals with respect to pupils' self-regulation (Ommundsen, 2006). Furthermore scarcity of researches investigating cognitive outputs of achievement goals in Turkish students enhances the necessity for further research. This is in line with what has been suggested by achievement goal theorists (e.g., Pintrich, 2003) to expand the applicability of the theory with students in different sociocultural and educational contexts. Accordingly it is important to examine relationship between components of achievement goals and motivated strategies in Turkish high school students. The present research, therefore, applies the trichotomous achievement goal framework to investigate the relationship between Turkish high school students' achievement goals and motivational strategies.

Material & methods
Participants
Participants consisted of 1065 high school students attending three public schools in central Turkey. They were 453 9th graders (219 boys and 234 girls, M age = 15.09, SD = 0.23), 349 10th graders (165 boys and 184 girls, M age = 16.47, SD = 0.59), 167 11th graders (79 boys and 88 girls, M age = 17.63, SD = 0.76) and 96 12th graders (41 boys and 55 girls, M age = 18.35, SD = 0.71). Three of the schools had gymnasium and female physical education teacher. In all three schools physical education was a required course and all participants have had physical education as a required course.

Procedure
All data were collected during regularly scheduled physical education classes by the first author after obtaining permission from the relevant institutions. The questionnaires were administered to intact classes by the first author. Students were encouraged to answer as truthfully as they could and to ask questions if they had difficulty understanding instructions or items in the questionnaire. Students raised no questions. To ensure independence of students' responses, students were asked to spread out so that they could not see one another's responses. They were also informed that their teachers would not have access to their responses. It took students approximately 50 min to complete the questionnaires.

Instruments
The questionnaire was made up of two parts. The first part of the questionnaire assessed student achievement goals and second part assessed motivational strategies for learning.

Achievement Goals. Students' mastery, performance-approach, and performance avoidance goals were assessed using 18 items adapted by Agbuga and Xiang (2008) from Duda and Nicholls (1992), Elliot (1999), and Elliot and Church (1997). All items were prefaced with the heading "In my physical education class. . . ." Students rated each item on a 7-point scale, ranging from 1 (*not at all true for me*) to 7 (*very true for me*). Examples of the six items assessing mastery goals were, "It is important for me to do my very best," "I want to learn as much as possible," and "It is important for me to learn a new skill by trying hard." Examples of the six items assessing performance-approach goals were, "It is important for me to do better than others," "I am striving to demonstrate

GÖKÇE ERTURAN ILKER[1] , GIYASETTIN DEMIRHAN[2]

my ability relative to others," and "My goal is to score the most points/goals/hits/etc." The six items assessing performance-avoidance goals included, "I just want to avoid doing poorly," "I worry about the possibility of getting a bad grade," and "My goal is to avoid doing poorly." Achievement goals generated reliable and valid scores with Turkish students. The results indicated there were three distinct achievement goals represented in the data set. All indices (X^2/df = 1.87, CFI = .90, NNFI = .86, and RMSEA = .062) represent an acceptable fit between the three-factor model and the data. Cronbach α values for the three scales were .73, .73, and .74, respectively, indicating acceptable internal consistency (Agbuga & Xiang, 2008).

To ascertain the validity and reliability of TAGS for Turkish high school students, it was administered to 852 female and 866 male ($\overline{X}_{Age}$=15.72±1.01) Turkish high school students attending three public schools. Exploratory Factor Analysis revealed that the TAGS has a structure with three factors where the first factor explains 31.24% of total variance and all three factors explain 46.10% of the total variation. Confirmatory Factor Analyses determined that TAGS displays (RMSE = .069; SRMR = 0.047, CFI = 0.95, GFI = 0.93, AGFI = 0.90, and NFI = 0.95) acceptable values. The Cronbach's alpha values for the entire scale and for the mastery, performance approach, and the performance avoidance subscales were determined as 0.85, 0.79, 0.74, and 0.71, respectively.

Motivated Strategies for Learning. Students' motivational strategies for learning were assessed using Motivational Strategies for Learning Questionnaire that was developed by Pintrich and De Groot (1990) and adapted by Üredi (2005) to Turkish. Questionnaire consists of 44 items on self-efficacy, cognitive strategy use, self-regulation, intrinsic value and test anxiety. Students were instructed to respond to the items on a 7-point Likert scale (1 = not at all true of me to 7 = very true of me) in terms of their behavior in the physical education class. Example of the nine items assessing self-regulation was "1 work hard to get a good grade even when I don't like a class". Example of the 13 items assessing cognitive strategy use was "I always try to understand what the teacher is saying even if it doesn't make sense". Example of the nine items assessing self-efficacy was "I expect to do very well in this class". Example of the nine items assessing intrinsic value was "I like what I am learning in this class". Example of the four items assessing test anxiety was "I worry a great deal about tests". In previous research, Turkish version of the scale has been found to be valid and reliable. Cronbach alphas of the subscales were .82 for cognitive strategy use, .84 for self-regulation, .92 for self-efficacy, .88 for intrinsic value and .81 for test anxiety (Üredi, 2005). To ascertain the validity and reliability of MSLQ for Turkish high school students, it was administered to 829 girls and 776 boys and totally 1605 Turkish high school students ($\overline{X}_{Age}$=15.67±1.19) attending three public school. Confirmatory factor analysis results indicated that there was good consistency between the model that was consisted of first level covered variables (*self-regulation strategies and motivational strategies*) and second level covered variables (*self-regulation, cognitive strategy use, self-efficacy, intrinsic value and test anxiety*) and observed variables. Cronbach Alpha values, used for determining consistency of the questionnaire, were between 0.70 and 0.77 and were indicated that the questionnaire has sufficient reliability.

Data collection and analysis / Statistical analysis
Results
To determine correlation between achievement goals and motivated strategies in Turkish students Pearson moment-product correlations was conducted on students' mean scores of achievement goals and motivated strategies for learning. The means and standard deviations of the variables and Pearson moment-product correlations results are presented in Table 1.

Table 1 Descriptive Data and Correlations for Achievement Goals and Motivated Strategies for Learning

	M	*SD*	1	2	3	4	5	6	7	8
1. Self-regulation	42.88	8.956	-	.670**	.433**	.481**	.282**	-.013	-.022	-.023
2. Strategy use	66.93	13.749		-	.502**	.610**	.255**	.003	.003	-.028
3. Self-efficacy	43.88	10.986			-	.581**	.096**	.031	-.012	-.015
4. Intrinsic value	46.53	9.679				-	.244**	-.026	-.020	-.063*
5. Test anxiety	18.76	6.204					-	-.007	.064*	-.038
6. Mastery goal	5.58	1.25						-	.601**	.422**
7. Perf.-approach goal	4.93	1.33							-	.426**
8. Perf.-avoidance goal	4.80	1.34								-

*p < .05 (2-tailed) **p < .01 (2-tailed).

GÖKÇE ERTURAN ILKER[1] , GIYASETTIN DEMIRHAN[2]

The mean scores of the mastery, performance-approach, and performance-avoidance goals were above the midpoint of the scale (i.e., 4), suggesting that these students adopted all three achievement goals. Self-regulation is related to cognitive strategy use, self-efficacy, intrinsic value, and test anxiety. All three achievement goals are related to each other. Also performance approach goal is positively related to test anxiety and performance avoidance achievement goal is negatively related to intrinsic value.

Discussion

Performance approach goal was found to be positively related to test anxiety. Mastery and performance-approach goals are characterized as self-regulation according to potential positive outcomes (task mastery and normative competence, respectively) (Elliot and Church, 1997). Focusing on the positive outcomes of success in the learning environment can be associated with an expectation to receive high grades which refers test anxiety. Additionally when students have aimed to be ahead of their peers in a learning environment, situations that emphasize social comparison become more important. Accordingly perceptions of competence have been shown to be related to test anxiety (Nicholls, 1976). Test anxiety has not been recommended in educational settings because it has been associated with poor organizational skills and other learning and study strategies (Hembree, 1988).

Some studies have revealed similar results with our results. According to Suarez Riveiro et al. (2001)'s study with university students, performance approach goal showed negative correlations with metacognitive self-regulation. Similarly, Somuncuoğlu and Yıldırım (1999) investigated the correlation between Turkish undergraduate students' performance approach goal predicts surface cognitive strategy use but does not relate to deep and metacognitive strategy use. Nevertheless some studies have proved the effect of performance approach goal on positive cognitive outcomes. Liem, Lau and Nie (2008)'s study with 9th year students in Singapore revealed that mastery and performance approach goals were positive predictors of deep learning, Ommundsen (2006) investigated the relationship between 10th grade performance approach goal related positively to metacognitive regulation and effort regulation in physical education and related negatively to self- handicapping and Greene et al. (2004)'s study with Norwegian high school students showed that strategy use and self-efficacy scores were highly correlated with mastery goals and performance approach goals.

Performance avoidance achievement goal was found to be negatively related to intrinsic value. Intrinsic value is the enjoyment, the individual gets from performing the activity or the subjective interest the individual has in the subject (Eccles & Wigfield, 2002). Intrinsic value is very strongly related to use of cognitive strategies and self-regulation, independent of initial performance levels or self-efficacy and test anxiety (Pintrich & De Groot, 1990) and adoption of competence-based goals may account for enhanced effort and persistence (Sideridis, 2005).

On the other hand performance avoidance goals are characterized as self-regulation according to potential negative outcomes, and this avoidance orientation is posited to yield processes (e.g., anxiety and task distraction) that produce the helpless pattern of achievement outcomes (Elliot and Church, 1997). Due to that performance avoidance goal-oriented students try only not to be the worst compared with their friends, they evaluate their own progress with a little mental effort, they do not cherish and value the tasks and did not taste the success in physical education lessons (Erturan İlker, 2010). Therefore, as level of performance avoidance goal perception increases, level of intrinsic value may decrease.

Previous studies proved negative effects of performance avoidance goals which can explain the decline of intrinsic value. According to Ommundsen (2006) performance avoidance goal was positively related to self handicapping and negatively related to effort regulation. Somuncuoğlu and Yıldırım (1999)'s study with Turkish undergraduate students performance avoidance goal negatively correlates with deep cognitive and metacognitive strategy use. Middleton and Midgley (1997) found that reports of self-regulated learning unrelated to both the approach and avoidance components of ability goals in mathematics.

Conclusions

In summary, the results revealed evidence for negative outputs of performance approach and avoidance goals in high school physical education setting. Although correlations are not significant, mastery goal has assumed to have more positive outcomes such as cognitive strategy use and self efficacy. Physical education teachers are recommended to provide mastery climate in order to support students' mastery achievement goal. First priority may be to provide students with mastery experiences to affirm ones competence-based beliefs and enhance efficacy and self-esteem (Sideridis, 2005).

As students have used motivated strategies during skill learning in physical education lessons, examining motivated strategies in terms of achievement goal perspective has considerable importance concerning student achievement. Therefore future studies should deal with the relation between different cognitive and affective skills and achievement goals. Also perception of motivational climate should be examined in relation with various learning strategies.

GÖKÇE ERTURAN ILKER[1] , GIYASETTIN DEMIRHAN[2]

References:

Agbuga, B. & Xiang, P. (2008). Achievement goals and their relations to self-reported persistence/effort in secondary physical education: A trichotomous achievement goal framework. *Journal of Teaching in Physical Education*, 27, 179-191.

Ames, C. & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation process. *Journal of Educational Psychology*, 80, 3, 260-267.

Ames, C. (1992). Classrooms: Goals, Structures, and Student Motivation. *Journal of Educational Psychology*, 84, 261–271.

Bembenutty, H. (April, 2010). A *latent class analysis of teacher candidates' goal orientation, perception of classroom structure, motivation, and self-regulation*. Paper presented at the annual meeting of the American Educational Research Association, Denver, CO.

Bereby-Meyer, Y. & Kaplan, A. (2005). Motivational influences on transfer of problem-solving strategies. *Contemporary Educational Psychology*, 30, 1– 22.

Duda, J. L. & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology*, 84, 290-299.

Dweck, C. S. (1996). Capturing the dynamic nature of personality. *Journal of Research in Personality, Special Issue: The Future of Personality*, 30, 348-362.

Eccles, J. S. & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychololgy,* 53, 109–32.

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychology,* 34 (3), 169-189.

Elliot, A. J. & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, 72, 218-232.

Elliot, A. J. & Conroy, D. E. (2005). Beyond the dichotomous model of achievement goals in sport and exercise psychology. *Sport and Exercise Psychology Review,* 1(1), 17-25

Elliot, A. J. & Dweck, C. S. (1988). Goals: An Approach to Motivation and Achievement. *Journal of Personality and Social Psychology,* 54, 5-12.

Elliot, A. J. & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, 70 (3), 461-475.

Elliot, A. J. & McGregor, H. A. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, 76, 628– 644.

Elliot, A. J., McGregor, H. A. & Gable, S. (1999). Achievement goals, study strategies, and exam performance: A mediational analysis. *Journal of Educational Psychology*, 91, 549–563.

Elliot, A. J. & Moller, A. (2003). Performance-approach goals: Good or bad forms of regulation? *International Journal of Educational Research*, 39, 339– 356.

Erturan İlker, A. G. (2010). The effects of physical education lessons conducted according to different motivational climates on students' achievement goals, motivational strategies and attitudes toward physical education. Hacettepe University Institute of Health Sciences, Unpublished Doctoral Thesis, Ankara.

Graham, S. & Golan, S. (1991). Motivational influences on cognition: Task involvement, ego involvement, and depth of information processing. *Journal of Educational Psychology*, 83, 187–194.

Greene, B. A., Miller, R.B., Crowson, H. M., Duke, B. L. & Akey, K. L. (2004). Predicting high school students cognitive engagement and achievement: Contributions of classroom perceptions and motivation. *Contemporary Educational Psychology*, 29, 462-482.

Harackiewicz, J. M., Barron, K. E., Pintrich, P. R., Elliot, A. J. & Thrash, T. M. (2002). Revision of achievement goal theory: Necessary and illuminating. *Journal of Educational Psychology,* 94, 638– 645.

Harrison, J. M., Blakemore, C. L. & Buck, M. M. (2004). *Instructional Strategies for Secondary School Physical Education*. 5th Edit. New York: McGraw Hill.

Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of Educational Research,* 58(1), 47-77.

Suarez Riveiro, J. M., Cabanach, R. M. & Arias, A. V. (2001). Multiple-goal pursuit and its relation to cognitive, self-regulatory, and motivational strategies. *British Journal of Educational Psychology,* 71, 561- 572.

Kaplan, A. & Maehr, M. L. (1999). Achievement goals and student well-being. *Contemporary Educational Psychology*, 24, 330–358.

Kaplan, A. & Middleton, M. J. (2002). Should childhood be a journey or a race?: A response to Harackiewicz et al. *Journal of Educational Psychology*, 94, 646–648.

Kaplan, A. & Midgley, C. (1997). The effect of achievement goals: Does level of perceived academic competence make a difference? *Contemporary Educational Psychology*, 22, 415– 435.

Liem, A. D. Lau, S. & Nie, Y. (2008). The role of self-efficacy, task value, and achievement goals in predicting learning strategies, task disengagement, peer relationship, and achievement outcome. *Contemporary Educational Psychology*, 33, 486-512.

Maehr, M. L. (1989). Thoughts about Motivation. Ames, C., Ames, R. (Ed.), *Research On Motivation In Education: Goals And Cognitions*. New York: Academic Press. 299-315.

Middleton, M. J. & Midgley, C. (1997). Avoiding the demonstration of lack of ability: An under-explored aspect of goal theory. *Journal of Educational Psychology*, 89, 710–718.

Midgley, C., Kaplan, A. & Middleton, M. J. (2001). Performance-approach goals: Good for what, for whom, under what circumstances, and at what cost? *Journal of Educational Psychology*, 93, 77–86.

Millî Eğitim Bakanlığı Ortaöğretim Genel Müdürlüğü. (2009). Ortaöğretim Beden Eğitimi Dersi Öğretim Programı (9 – 12. Sınıflar)

Newman, R. S. (1998). Students' Help seeking during problem solving: influences of personal and contextual achievement goals. *Journal of Educational Psychology,* 90, 644–58.

Nicholls, J. (1976). When a scale measures more than its name denotes: The case of the Test Anxiety Scale for Children. *Journal of Consulting and Clinical Psychology*, 44, 976-985.

Ommundsen, Y. (2006). Pupils' self-regulation in physical education: the role of motivational climates and differential achievement goals. *European Physical Education Review*, 12, 289-315.

Ommundsen, Y. & Lemyre, P. N. (2007). Self-regulation and strategic learning: The role of motivational beliefs and the learning environment in physical education. In J. Liukkonen, Y. V. Auweele, B.Vereijken, D. Alfermann, Y.Theodorakis (Eds.) *Psychology for Physical Educators Student in Focus*. Champaign: Human Kinetics.

Pintrich, P. R. & De Groot, E. (1990). Motivational and self regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82 (1), 33-40.

Ryan, A. M. & Pintrich, P. R. (1997). Should I ask for help?: The role of motivation and attitudes in adolescents' help seeking in math class. *Journal of Educational Psychology*, 89, 329–341.

Sideridis, G. D. (2005). Goal orientation, academic achievement, and depression: Evidence in favor of a revised goal theory framework. *Journal of Educational Psychology*, 97, 3, 366-375.

Skaalvik, E. M. (1997). Self-enhancing and self-defeating ego orientation: Relations with task and avoidance orientation, achievement, self-perceptions, and anxiety. *Journal of Educational Psychology*, 89, 71– 81.

Somuncuoğlu, Y. & Yıldırım, A. (1999). Relationship between achievement goal orientations and use of learning strategies. *Journal of Educational Research*, 92 (5), 267-278.

Suarez Riveiro, J. M., Cabanach, R.G. & Arias, A.V. (2001). Multiple-goal pursuit and its relation to cognitive, self-regulatory, and motivational strategies. British Journal of Educational Psychology, 71, 561- 572.

Urdan, T. C., Ryan, A. M., Anderman, E. M. & Gheen, M. (2002). Goals, goal structures, and avoidance behaviors. In C. Midgley (Ed.), *Goals, goal structures, and patterns of adaptive learning* (pp. 55-83). Mahwah, NJ: Lawrence Erlbaum.

Üredi, I. (2005). The contributions of perceived parenting styles to 8th class primary school students' self regulated learning strategies and motivational beliefs. Yıldız Teknik University, Social Sciences Institute, Unpublished Doctoral Thesis.

Zimmerman, B. J. (2008). Investigating Self-Regulation and Motivation: Historical Background, Methodological Developments, and Future Prospects. *American Educational Research Journal*, 45 (1), 166 –183.

Zimmerman, B. J. &Kitsantas, A. (1996). Self-regulated learning of a motoric skill: The role of goal setting and self-monitoring. *Journal of Applied Sport Psychology*, 8 (1), 60 – 75.

Zimmerman, B. J. & Schunk, D. H. (2004). Self-regulating intellectual processes and outcomes: A social cognitive perspective. In D. Y. Dai, R. J. Sternberg (Eds.). *Motivation, emotion, and cognition: Integrative perspectives on intellectual functioning and development* (pp. 143−174). Mahwah, NJ: Lawrence Erlbaum.