



Turkish Students' Opinions about Their Perceived Motivational Climate and Effort/Persistence in Physical Education

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Abstract

This study examined students' perceived motivational climates and explored how their perceived motivational climates might affect their reported persistence/effort in physical education classes. Participants consisted of 111 8th graders and 117 11th graders attending two public schools in central Turkey. Because 8th and 11th grades in Turkey represents a critical period of schooling in which students have to begin to prepare for the national high school and university entrance examinations, these grades were preferred to be involved in this study. In this study that used the *Perceived Motivational Climate in Sport Questionnaire* and *Self-Reported Persistence/Effort Questionnaire*, pearson-product correlations were performed to examine relationships between motivational climate and self-reported persistence and effort, simultaneous multiple regression analysis was employed to examine how motivational climates might affect student reports of their persistence/effort, and a multivariate analysis of variance (MANOVA) was used to examine gender and grade differences among the participants on the two perceived motivational climates. Pearson-product correlation analysis showed that task and ego-involved climates related positively to student persistence/effort. Multiple regression analysis revealed that task and ego-oriented climates were significant positive predictors of persistence/effort. The MANOVA yielded a significant main effect for grade differences ($p < .001$). Follow-up univariate ANOVAs revealed that 8th graders placed significantly higher values on students' self-reported persistence/effort. These findings indicate that the complex nature of perceived motivational climate in influencing students' persistence/effort may depend on physical education settings, grade levels, and socio-cultural norms.

Keywords

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Introduction

The term 'motivation' originates from the Latin verb *movere* (to move) and it means ' gets us going, keeps us moving, and helps us jobs done' (Pintrich & Schunk, 1996, p.4). Great achievement comes from high motivation (Ağbuğa & Xiang, 2008; Ağbuğa, Xiang, & McBride, 2010). Defined as the energization, direction, and regulation of behavior (Roberts, 2001), motivation influences achievement behaviors such as activity choice, effort, persistence, and performance. Not surprisingly, therefore, both

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coaches and physical educators are interested in achievement motivation in order to win the race or increase learning capacity of students (Chen, 2001; Harackiewicz, Barron, Carter, Lehto & Elliot, 1997; Treasure & Roberts, 2001). Achievement motivation can be explained as approach or avoidance to competition and includes the concept of desire (Cox, 1995). In the literature, many theories have evolved to explain what motivates people to act. According to need achievement theory, the two constructs – motive to achieve and fear of failure – will decide the athlete who will approach and perform the task or not (Atkinson, 1974; McClelland, 1961). Attribution theory, on the other hand, focused on how people explain their success or failure (Heider, 1958; Weiner, 1985). This theory is important to give self-defense and self-confidence to the individual because it will affect the future efforts of individual. The last theory is achievement goal theory. This theory was formulated in the educational domain by Nicholls (1984, 1989). Nicholls' achievement motivation is a logical extension of both Bandura's theory of self-efficacy and Harter's theory of components motivation (Cox, 1995). Especially, in the last decade, achievement goal theory was defined as one of the most popular motivation theories in education (Ames, 1992a; Duda, 1992). According to the achievement goal theory, three factors (achievement goals, perceived motivational climate, and achievement behavior) interact to determine a person's motivation. Achievement goals, known as dispositional goal orientations, have adopted a dichotomous framework to describe goal-oriented dispositions; mastery (task) orientation and performance (ego) orientation. Task orientation goal allows students to develop their ability through mastery of the knowledge and skill involved. An ego-oriented goal fosters students' sense of ability relative to others. While task orientation is associated with adaptive motivational patterns, ego orientation is associated with maladaptive motivational patterns (Ames, 1992a, 1992b; Duda, 1992). Moreover, task-oriented students believe success is due to effort, cooperation, and intrinsic interest whereas ego-oriented students believe success is due to deception and superior ability (Solomon, 1996).

The role of students' perceptions of their learning environments also important to impact motivational outcomes (Schunk & Meece 1992). It is important therefore to investigate the learning environment from the students' perspective (McCombs 2003, Meece, Herman, & McCombs, 2003). Grounded in the achievement goal model, perceived motivational climate is directly related to students' motivational outcomes. Perceived motivational climate refers to student perception of achievement goals stressed by the teacher (Ames, 1992a, 1992b). More specifically, what the teacher promotes and expects could influence students' perceptions (task or ego orientations) as significant in the classroom. Students perceive the classroom as a task and an ego-involved climate and, as a consequence, evoke qualitatively different motivational patterns (Xiang & Lee, 2002). According to Ames (1992a, 1992b), the perceived classroom climate can predispose individuals to adopt a particular personal goal perspective and use adaptive and maladaptive achievement strategies. She argues that two climates predispose: (a) task climate, (b) ego climate. In a task-involved climate, the teacher emphasis is on self-improvement and skill learning. In an ego-involved climate, on the other hand, the emphasis is on the demonstration of superior performance with beating others.

In physical education and sport setting, a number of studies have focused on the relationship between perceived motivational climate and achievement motivation (Treasure & Roberts, 1998; Xiang & Lee, 2002). Treasure and Roberts (1998), for example, examined the relationships among achievement goals, perceived motivational climate, belief about success, and sources in satisfaction in basketball. They concluded that achievement goals and perceived motivational climate were two significant factors influencing students' beliefs about success. Xiang and Lee (2002) investigated the relationships among achievement goals, perceived motivational climate, and students' self-reported mastery behaviors as well as age-related differences. Fourth, eighth, and eleventh grade students completed questionnaires assessing their achievement goals, perceived motivational climate, and self-reported mastery behaviors. They found that achievement goals and perceived motivational climate were related to students' self-reported mastery behaviors. They also reported that the older students, compared to younger students, were more ego oriented and preferred the ego-involved climate to the task-involved climate.

Persistence/effort is considered as an important indication of students' motivation and an important educational outcome (e.g., Dweck, 1986; Elliot, McGregor, & Gable, 1999; Xiang & Lee, 2002). Students who persist and put forth effort are more likely to learn and achieve than students who lack

persistence and effort. Persistence is defined as a continued investment in learning in the face of difficulty, while effort reflects the overall amount of energy or work expended over the course of learning (Pintrich, Smith, Garcia, & McKeachie, 1993; Zimmerman & Risemberg, 1997). Because of the significant relationships between persistence/effort and student motivation and achievement, achievement goal researchers (Ağbuğa, 2009; Ames & Archer, 1988; Dweck, 1986; Elliot & Harackiewicz, 1996; Elliot et al., 1999; Guan, Xiang, McBride, & Bruene, 2006; Xiang & Lee, 2002) in both academic and physical education settings have often included it in their investigations. Ames and Archer (1988), for example, found that perceived a task-involved climate is associated with the use of effective learning strategies, preference for challenging tasks, positive attitudes about the class, and a belief that success is attributable to effort whereas students perceived an ego-involved orientation tended to focus on ability rather than effort and were more likely to evaluate their ability in a negative manner. The studies of the motivational climate in physical activity settings have also indicated the perception of a task-involved climate is associated with effective motivational patterns and that these patterns are less likely to be evident when an ego-involved climate is perceived (Papaioannou, 1995; Seifriz, Duda, & Chi, 1992). Some other researches also have documented that persistence/effort is positively related to mastery and/or performance-approach goals (Elliot & Harackiewicz, 1996; Elliot et al., 1999; Guan et al., 2006; Xiang & Lee, 2002). Chaumeton and Duda (1988) also found that children see the motivational climate in their sport settings more ego involving as athletes move from elementary to high school level athletics. In physical education, little empirical work has documented age-related changes in perceived motivational climate and their relation to persistence/effort. Xiang and Lee (2002), for example, demonstrated that perceptions of a task-involved climate are related to self-reported mastery behaviors in elementary and middle school physical education. It appears that it is very critical to examine this area of research for understanding children achievement motivation and related behaviors in physical education.

Researches have reported mean differences in achievement goal orientations between genders (Duda, 1989; Duda, Olson, & Temple, 1991) while other research found no significant mean differences (Dunn, 2000; Guan et al., 2006; Treasure & Roberts, 1998). Kavussanu and Roberts (1996), for example, found that male students were more likely to see their classrooms as an ego-oriented climate, whereas female students tended to view their classrooms as a task-involved climate. These differences in motivational studies indicates that little is known about whether the mediating role of achievement goals, particularly perceived motivational climate on the student motivational outcomes differs for male and female students. Cunningham and Xiang (2008) point out that by examining differential relations between motivational variables by gender, “researchers might be in a better position to help teachers maintain and enhance student motivation and achievement for both sexes” (p. 195). Conversely, it is important for researchers to extend these previous research by focusing on perceived motivational climates and students’ persistence/effort in various physical education settings.

Perceived motivational climate studies in physical education, on the other hand, mostly have been conducted primarily with American students (Guan et al., 2006; Xiang & Lee, 2002). The results of Guan et al. (2006) and Xiang and Lee (2002) studies indicated that social, cultural, and contextual influences should be investigated to establish a broad knowledge based on students’ perceived motivational climate (Heo & Shin, 2000; Ntoumanis & Biddle, 1999). The present study, therefore, extends previous work on American students’ motivational climate in physical education to students from Turkey, a country with different social and cultural values and structures from the United States. United States is generally considered a society characterized by individualistic cultures where competition, individualism, strength of character, and is greatly emphasized assertiveness (Bond, 1986; Chen & Uttal, 1988; Hess, Chang, & McDevitt, 1987). Turkey, on the other hand, possesses not only individualistic cultures but also collectivist cultures where efficacy of effort, interpersonal harmony, modesty, and cooperation is greatly emphasized. Specifically, this study examined age and gender-related changes in perceived motivational climates and their relations to students’ self-reported persistence/effort in a physical education setting. The following research questions were addressed: (a) What are the relationships between perceived motivational climate and self-reported persistence/effort? and (b) Do these relationships differ by grade and gender?

Method

Participants

Participants consisted of 228 middle and high school students attending two public schools in central Turkey. They were 111 8th graders (57 boys and 54 girls, M age = 14.05, SD = 0.67) and 117 11th graders (64 boys and 53 girls, M age = 17.28, SD = 0.90). The sample size was adequate in terms of the stipulation that sample size should be 5 or 10 times the number of items in the scale (Büyüköztürk, 2002; Mishel, 1998; Şimşek, 2007). Because 8th and 11th grades in Turkey represents a critical period of schooling in which students have to begin to prepare for the national high school and university entrance examinations (i.e., From Primary to Secondary Education Entrance Exam and the Student Selection Examinations [SSE]), these grades were preferred to be involved in this study. Notably, these examinations requires students to master content knowledge in natural sciences, mathematics, Turkish, social sciences, and a foreign language (Student Selection and Placement Center, 2000). At both schools, students had co-educational physical education classes once a week for 90 minutes. They were all taught by specialists with similar teaching experiences (less than 5 years). The national teaching program established by Ministry of Education was implemented as curriculum in the physical education program. This teaching program mainly focuses on learning sports rules, practicing sports such as track and field, soccer and basketball (Milli Eğitim Bakanlığı, 1995). The command style was dominant among specialists – a teaching style in which teachers make almost all decisions for students in the teaching-learning process (see Mosston & Ashworth for a review, 1994). Permission from the Provincial Directorate of National Education, students, and their parents was obtained. Students were informed that their participation was voluntary and that they could withdraw without penalty.

Variables and Measures

The students responded to a two-part questionnaire. The first part consisted of demographic information including age, grade, gender, and school. The second part assessed student perceived motivational climate and self-reported persistence/effort in physical education.

Perceived motivational climate. Students' perceived motivational climate (ego-involved and task-involved) was assessed using 25 items adapted from the Perceived Motivational Climate in Sport Questionnaire (PMCSQ; Walling et al., 1993). All items were prefaced with the heading 'In my physical education classes ...' 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 11 task-involved items were, 'All students are encouraged to do their best,' and 'The teacher wants me to improve my score and not worry about anyone else's score.' Examples of the 14 items assessing ego-involved statements were, 'Outperforming classmates is important,' and 'Students feel left out if they are not among the best.' The PMCSQ has demonstrated acceptable validity and reliability (Walling, Duda, & Chi, 1993). It has also been adopted in physical education (Solmon, 1996).

Self-reported persistence/effort. This construct was assessed with eight items adapted from previous research (Fincham, Hokoda, & Sanders, 1989; Xiang & Lee, 2002). Again, 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). Exemplary items were, 'I work hard to do well even if I do not like what we are doing,' 'When something that I am practicing is difficult, I spend extra time and effort trying to do it right,' and 'Regardless whether or not I like the activities, I work my hardest to do them.'

The self-report measures on perceived motivational climate and persistence/effort generated reliable and valid scores with American students (e.g., Guan et al., 2006; Walling et al., 1993; Xiang & Lee, 2002). Participants in the present study, however, were Turkish students in middle and high school physical education. Therefore, several steps were taken to preserve the validity and reliability of these measures with these Turkish students.

First, all questionnaire items were translated to Turkish by three physical educators who were fluent in both Turkish and English. Then they were invited to evaluate item consistency between the English and Turkish versions of the questionnaire in a panel. They found no inconsistencies. Finally, the questionnaire was back translated into English by another bilingual physical educator with no prior knowledge of the questionnaire (Brislin, 1970). An expert committee compared the backward translation with the original questionnaire. This expert committee included one bilingual physical educator and one English language professional involved in the process. They found also no inconsistencies.

Second, a pilot study was conducted with 46 nonparticipating 8th- and 11th-grade students to assess whether the language in the translated questionnaire was appropriate for Turkish students in secondary physical education. Students raised no questions while completing the questionnaires.

Third, an exploratory factor analysis was conducted to examine the factorial validity of task-oriented and ego-oriented climates. The analysis yielded two factors with an eigenvalue greater than 1, accounting for 26.04% of the variance and all items loaded higher than .40 on the factor. Then, confirmatory factor analysis (CFA) was conducted to provide evidence of factorial validity of the measures assessing students' perceived motivational climate. Indices used to determine the goodness-of-fit included: (a) the chi-square to degrees of freedom ratio (χ^2/df), for which values less than 3.0 suggest a good fit (McIver & Carmines, 1981), (b) the comparative fit index (CFI), for which values larger than .90 indicate a good fit, (c) the Tucker-Lewis index (TLI), for which values .90 or higher indicate a good fit and (d) the root mean square error of approximation (RMSEA), for which .06-.08 is considered to be an acceptable fit, while .08-.10 is considered to be a marginal fit (Browne & Gudeck, 1993; Hu & Bentler, 1995). The CFAs were conducted using AMOS 5 (Analysis of Moment Structures); covariance matrices served as input, and solutions were generated on the basis of maximum likelihood. The results of a confirmatory factor analysis (CFA) on the perceived motivational climate questionnaire scores indicated all indices ($\chi^2/df=1.86$, CFI = .94, TFI = .93, and RMSEA = .06) represented an acceptable fit between the two-factor model (task-involved and ego-involved climates) and the data (Browne & Gudeck, 1993; Hu & Bentler, 1995; McIver and Carmines, 1981). Moreover, factor loadings ranged from .69 to .80 for task-involved climate items, .67 to .74 for ego-involved climate items, respectively. These loadings were all acceptable (see Clark & Watson, 1995; Floyd & Widaman, 1995). Consequently, scales of two climates were constructed by averaging the items on the scales. Finally, Cronbach alphas for the scale of general, the task-involved and ego-involved climates were .86, .74 and .71, respectively, indicating the score produced by the perceived motivational climate scale had acceptable internal consistency (Nunnally, 1978).

Finally, an exploratory factor analysis was conducted to examine the factorial validity of self-reported persistence/effort measures. Although persistence and effort represent two different constructs theoretically, previous studies (e.g., Dweck, 1999; Dweck & Leggett, 1988; Guan et al., 2006; Xiang & Lee, 2002) revealed that they could be combined into one single construct empirically. Therefore, a principle component factor analysis with VARIMAX rotation was conducted on the eight persistence and effort items to determine whether or not they represented a single construct. The analysis indicated a single factor with an eigenvalue greater than 1, accounting for 46.07% of the variance and all items loaded higher than .40 on the factor. The reliability analysis showed a high internal consistency (Cronbach alpha = .90) for this factor. The results of the CFA for self-reported persistence/effort scale also indicated all indices ($\chi^2/df=1.90$, CFI = .96, TFI = .94, and RMSEA = .06) represented an acceptable fit (Browne & Gudeck, 1993; Hu & Bentler, 1995; McIver & Carmines, 1981). Moreover, factor loadings ranged from .72 to .80. Again, all loadings were acceptable (see Clark & Watson, 1995; Floyd & Widaman, 1995). Consequently, an overall score for the self-reported persistence/effort scale was computed by averaging the items on the scale for each participant.

Procedure

After obtaining institutional and school district approval and informed consent from the participants, the questionnaires were administered to intact classes by the author during regularly scheduled physical education classes. Each item was read aloud to the students and they were encouraged to answer as truthfully as they could. Students were also encouraged 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. In addition, the researcher carefully monitored students throughout data collection and answered their questions as necessary. They were also informed that their teachers would not have access to their responses. It took students approximately 30 minutes to complete the questionnaires.

Analysis

Descriptive statistics were used to provide a summary of students' perceived motivational climate and self-reported persistence/effort in their physical education classes. Pearson-product correlations were performed to examine relationships between these two variables. Simultaneous multiple regression analysis was employed to examine how motivational climates might affect student reports of their persistence/effort. Finally, a 2 (Gender) \times 2 (Grade level) multivariate analysis of variance (MANOVA) was used to examine gender and grade differences among the participants on the two perceived motivational climates (task and ego-involved) in physical education.

Bulgular

Descriptive statistics on students' perceived motivational climate and persistence/effort are presented in Table 1. Consistent with previous research, participants in this study reported higher scores on task-involved climate than ego-involved climate. Participants also reported above-average scores on the measure of self-reported persistence/effort.

Table 1. Descriptive Data of Perceived Motivational Climate and Persistence/Effort

Variables	Total sample (<i>n</i> = 228)		Males (<i>n</i> = 110)			
			Grade 8 (<i>n</i> = 57)		Grade 11 (<i>n</i> = 53)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Ego	4.84	.98	4.93	.86	4.81	1.06
Task	5.18	.90	5.22	.72	5.35	.94
Per/eff	5.09	1.32	5.41	1.18	4.82	1.33
Variables			Females (<i>n</i> = 118)			
			Grade 8 (<i>n</i> = 54)		Grade 11 (<i>n</i> = 64)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Ego			5.02	.98	4.63	.99
Task			5.30	1.03	4.89	.84
Per/eff			5.64	1.26	4.58	1.26

Note. Ego = Ego-involved climate; Task = Task-involved climate; Perr/eff = Persistence/effort

The intercorrelations among perceived motivational climates and self-reported persistence/effort indicated that both task-oriented and ego-oriented climates and persistence/effort were positively associated with one another (see Table 2).

Table 2. Correlations among Perceived Motivational Climate and Persistence/Effort

Variables	Correlation		
	1	2	3
1. Ego-involved	-	.453**	.534**
2. Task-involved		-	.546**
3. Persistence/effort			-

** $p < .01$

A multiple regression analysis revealed that task-oriented and ego-oriented climates were significant positive predictors of persistence/effort. Moreover, R^2 from this multiple regression analysis was .41, indicating a positive linear relationship between the perceived motivational climates and students' self-reported persistence/effort (see Table 3).

Table 3. Results of Multiple Regression on Students' Persistence/Effort

Predictor Variables	b	β	R^2	t value
1. Ego-involved	.485	.361	.28	6.231**
2. Task-involved	.619	.382	.41	6.610**

R^2 values are cumulative, with each incremental step adding to the variance explained.

** $p < .01$

Prior to the 2 (Gender) \times 2 (Grade level) MANOVA analysis, the assumption of homogeneity of covariance was examined using the Box M test. The result revealed that the assumption was met (Box $M = 23.379$, $F = 1.267$, $p = .198$). Because of this, Wilks' Lambda was performed to evaluate multivariate significance of main effects and interactions. The MANOVA yielded a significant main effect for grade, Wilks' Lambda = .885, $F(3, 222) = 9.614$, $p < .001$, $\eta^2 = .115$. Follow-up univariate ANOVAs revealed that 8th graders only placed significantly higher values on persistence/effort [$F(1, 224) = 24.165$, $p < .01$, effect size (f) = .097] than 11th graders, although no significant gender differences were found on two perceived motivational climates and persistence/effort. In addition, the MANOVA revealed no significant main effect for gender or interaction between gender and grade.

Discussion and Conclusion

This study examined the relationship between students' perceived task-involved and ego-involved climates and self-reported persistence/effort, as well as how these goals might affect student reports of the persistence and effort they expended toward physical education.

Results of the study revealed some grade differences. Specifically, compared with 11th-graders, 8th-graders were more likely to endorse ego-involved climates and to report higher levels of persistence/effort in physical education classes. This finding was not consistent with many American studies that students become more ego-involved focused as they advance from grade to grade owing to increasing emphasis on competition against peers, social comparison, normative feedback, and ability-based evaluation over the school years (Eccles, Midgley, & Adler, 1984; Harter, 1981; Nicholls, 1989). This finding was also not consistent with the Xiang and Lee (2002) study that American 11th-graders were more likely to endorse ego-involved goals than both 4th- and 8th-graders in physical education.

Correlation analysis showed that task- involved and ego- involved climates related positively to student persistence/effort. The results from this study provided additional support to the previous research (e.g., Xiang & Lee , 2002; Parish & Treasure, 2003; Treasure & Roberts, 2001) found that students perceive the classroom as task- or ego- involved, and that perception influences their

motivation and achievement behavior. In these previous studies, perceptions of a task-involved climate is only associated with high levels of persistence and effort. The current study, however, found that both task and ego-involved climates are associated with students' self-reported persistence and effort. The multiple regression analysis also revealed that both task and ego-involved climates significantly contributed to student self-reported persistence and effort. This finding is not consistent with results from studies based on self-report instruments indicating students in the task-involved climate were more persistent whereas students in an ego-involved climate were unlikely to persist in practice at a difficult level (Ames & Archer, 1988; Solmon, 1996; Solmon & Boone, 1993; Xiang & Lee, 2002). The possible explanation for the inconsistency could be that the effects of social and cultural differences in the achievement motivation (Heo & Shin, 2000; Xiang, Lee, & Solmon, 1997). United States is generally considered a society characterized by individualistic cultures where competition, individualism, strength of character, and is greatly emphasized assertiveness (Bond, 1986; Chen & Uttal, 1988; Hess et al., 1987). Turkey is a unique country because it represents a bridge between Europe and Asia. Therefore, both western and eastern cultures have great effects on it. Turkey, therefore, may possess not only individualistic cultures but also collectivist cultures where efficacy of effort, interpersonal harmony, modesty, and cooperation is greatly emphasized. Such differences may contribute to the discrepancy. Additionally, the Turkish Educational System was centralized by the Act of "Law of Unification of Instruction" in 1924. All schools throughout the country must use the same curricula, which are developed and implemented by the National Ministry of Education (Ayas, Cepni, & Akdeniz, 1993). Importantly, the concrete indicator of achievement is national central exams results starting from 6th grade to 12th grade. Students have to compete each other to enter the best schools. The current study's findings, therefore, suggest that social, educational, and cultural influences can be powerful factors in achievement settings.

Given the fact that both task-involved and ego-involved climates became significant predictors of self-reported persistence/effort for students, the current study provides an empirical support for the benefits of both perceived climates in physical education settings. It should be noted, however, that it is a task-involved climate consistently associated with student achievement-related cognitions including high quality engagement, students' satisfaction with physical activity, and beliefs about success (Cunningham & Xiang, 2008; Dweck & Leggett, 1988; Nicholls, 1989; Ntoumanis & Biddle, 1999; Treasure & Roberts, 1998) and an ego-involved goal might lead to some negative outcomes including fear of failure (Elliot, 1999; Elliot et al., 1999; Ntoumanis & Biddle, 1999). Therefore, the current study suggests that educators should construct a task-involved climate in their learning environments to enhance students motivation. Taking all the issues together, teachers' instructional strategies might include the following: providing a variety of learning activities; allowing students to work at their own level; encouraging students to set specific and short-term goals; allowing students to participate in decision-making during the lessons; allowing students to select their own teammates, location, and posture; developing social interplay; evaluating students on mastery and skill development rather than on ability; allowing students to keep their own personal records; allowing students to dictate the pace of learning based on their needs and interests.

Most of research have reported gender differences in achievement goal orientations between male and female (Duda, 1989; Duda et al., 1991; Kavussanu & Roberts, 1996; Kim & Gill, 1997). The current study, however, found that no gender differences among task-involved climate, ego-involved climate, and students' self-reported persistence/effort, which is not consistent with previous studies in physical education settings (e.g., Cunningham & Xiang, 2008; Dunn, 2000; Treasure & Roberts, 1994). The possible explanation might be that both Turkish female and male students viewed the physical education curriculum to be gender appropriate, although the gender appropriateness of the curriculum as perceived by the students was not focus of this research. These divergent findings seems to reflect that additional research is needed to make clear the role of gender in achievement goal orientations and behaviors in various physical education settings. In so doing, researchers might better assist teachers in maintaining and enhancing female and male students' achievement behaviors.

Results of the study also revealed no significant grade differences in perceived motivational climates. This finding is consistent with the Xiang and Lee (2002) study that both American 11th- and 8th-graders endorsed high scores on the perception of an ego-involved climates in physical education. Xiang and Lee (2002), however, indicated that 4th grade students had higher scores on the perception of a task-involved climate than 8th- and 11th- grade students. Notably, the current study found that 8th-graders endorsed high scores on self-reported persistence/effort than 11th-graders. A possible explanation for the consistency could be that both 8th- and 11th- grade Turkish students are promoted to be involved in higher ego-oriented environment by their teachers. Eighth and 12th- grade in Turkey represents a critical period of schooling in which students have to take the national high school and university entrance examinations (i.e., the Student Selection Examination [SSE]). These examinations requires students to compete each other in science, mathematics, Turkish, social sciences, and a foreign language. (Student Selection and Placement Center, 2000). To enter into the best schools, students have to study hard by showing more persistence and effort. "The best students enter the best schools" is the main motto among parents and students. The main indicator of achievement is these national central exam results starting from 6th grade to 12th grade. Specifically, students have to take national exams during their 6th-, 7th-, and 8th grade to enter into the best high schools. Then, students have to take another national exam to enter into the best universities while they are in 12th-grade. Notably, to be in the best high schools are seen as the most important step for entering the best universities for students. Under these circumstances, 8th-grade students need to be more persist to study and spend extra effort than 11th grade students. Additional study, however, is recommended in order to explore and account for grade-related changes in perceived motivational climates and students' self-reported persistence/effort. Because self-reported questionnaires were used in this study, another additional study is also recommended. Given that what students' thinking might be different than what students' doing, there is a need to extend the current study using empirical measures of students' perceived motivational climate and persistence/effort by videotaping students and/or assessing their physical activity engagement in their learning environment.

Taking all the issues together, the current study suggests that the complex nature of perceived motivational climate in influencing students' persistence/effort may depend on physical education settings, grade levels, socio-cultural norms, and how students' achievement behaviors are measured. Future research, therefore, should clarify the relations between perceived motivational climate and persistence/effort in different education settings such as mathematics, physics, and science with students of different grades, and with students of different cultures.

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