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The relationship between motivational climate and social behavior in physical education

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Abstract

The aim of the study was to examine the relationship of motivational climate with students' social behavior in elementary physical education. Participants were 143 sixth grade students from 10 elementary schools in Greece. Students completed the Greek version of the Multisource Assessment of Children's Social Competence Scale and a motivational climate scale adapted for the physical education. Canonical correlation showed that students' perceptions of an empowering motivational climate were related with positive social behavior while perceptions of a disempowering motivational climate were related with negative social behavior. These results suggest that motivational climate is related with students' social behavior in physical education and are discussed with reference to developing an empowering motivational climate in physical education to promote students' social development.

Keywords: achievement goals; self-determination; education

1 Introduction

Participating in sport and physical education students can develop positive attitudes towards exercise and acquire important skills. However, the mere participation in sport and physical education does not guarantee positive results. In fact, students' experiences in sport and physical education can be both positive and negative (Zarrett, Lerner, Carrano, Fay, Peltz, & Li, 2008). Therefore, physical education programs should be carefully designed to offer students positive experiences.

Various factors have been associated with the effectiveness of physical education programs. Motivational climate, which refers to the psychological atmosphere in which physical education takes place (Ames, 1992), is such an important factor (Papaioannou & Goudas, 1999). Two types of motivational climate have been identified, the task-involving or empowering and the ego-involving or disempowering motivational climate. These two types of motivational climate have different characteristics and are associated with different outcomes (Keegan, Spray, Harwood, & Lavallee, 2010). In particular, a motivational climate that focuses on students' personal improvement, promotes students' autonomy, competence, and relatedness, and involves students in decision making is characterized as empowering motivational climate (Duda, 2013). An empowering motivational climate encourages students to learn new skills, rewards effort, personal improvement and cooperation, considers mistakes as a part of learning process, and promotes relative evaluation criteria. On the other hand, a motivational climate that is characterized be promoting competition between students, controlling their behaviors, rewarding win and not effort, and evaluating performance using objective criteria (e.g., norms) can be labeled as disempowering motivational climate (Duda, 2013).

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These two different dimensions of the motivational climate are associated with different outcomes in sport and physical education. Research has shown that an empowering motivational climate is related with self-determined motivation (Goudas & Biddle, 1994), intrinsic motivation and enjoyment (Weiss, Amorose, & Wilko, 2009), moral behavior (Ommundsen, Roberts, Lemyre, & Treasure, 2003), perceived competence (Goudas, Biddle, & Fox, 1994; Digelidis, Papaioannou, Laparidis, & Christodoulidis, 2003), lower levels of stress (Smith, Smoll, & Cumming, 2007), the satisfaction of the basic needs of autonomy, competence, and relatedness (Reinboth & Duda, 2006), and use of metacognitive skills (Theodosiou & Papaioannou, 2006). When students perceived that physical education had specific and valued outcomes they reported higher levels of intrinsic motivation (Goudas, Dermitzaki, & Bagiatis, 2000), which in turn could have a positive effect on students' out school physical activity (Goudas, Biddle, & Underwood, 1995). In contrast, a disempowering motivational climate is associated with increased levels of anxiety (Liukkonen, Barkoukis, Watt, & Jaakkola, 2010), higher levels of drop out (Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002), and lower levels of moral behavior (Ommundsen et al., 2003).

Physical education and sport can also be appropriate environments for teaching students life skills, such as goal setting, positive thinking, cooperation, and stress management (Goudas, 2010). Teaching life skills in physical education have positive results, such as higher performance in sport skills (Goudas & Giannoudis, 2008; Papacharisis, Goudas, Danish, & Theodorakis, 2005) and fitness tests (Goudas, Dermitzaki, Leondari, & Danish, 2006), and higher levels of self-determination (Kolovelonis, Goudas, Dimitriou, & Gerodimos, 2006) and self-efficacy (Dimitriou, Kolovelonis, Goudas, & Gerodimos, 2007). Students enjoyed their participation in life skills programs and reported that they used life skills in other life domains (Goudas & Giannoudis, 2010; Kolovelonis, Goudas, Dimitriou, & Hasandra, 2010).

A large category of life skills is social skills which refer to the development of effective skills as a means of creating relationships and cooperation (Brooks, 1984). Examples of social skills include showing understanding and empathy for others, communicative skills, such as active listening, and conflict resolution skills. Such skills can help students develop positive interactions with other people, make friends, develop caring for others and feelings that belong to a team [Collaborative for Academic, Social, and Emotional Learning (CASEL), 2003]. Physical education is particularly suitable for teaching social skills due to the social nature of sport activities and the frequent and varied interactions that take place between students (Mchugh, 1995). Moreover, social goals, such as the promotion of fair play and the development of students' responsibility are traditionally part of physical education curriculum (Hellison, 2003). Promoting students' social skills through physical education can have positive outcomes. For example, the implementation of a cooperative program enhanced students' social skills (e.g., cooperative skills, empathy) and their attitudes towards group work (Goudas & Magotsiou, 2009). Therefore, examining factors that are associated with students' social behavior during physical education it is of great interest. Such knowledge could be the basis for designing, implementing and evaluating programs for enhancing students' social behavior. The motivational climate may be considered as a factor that interrelated with students' social behavior in physical education.

A large amount of research has examined the relationships between motivational climate and factors such as, performance, motivation, moral behavior, self-efficacy, anxiety, and enjoyment (e.g., Goudas & Biddle, 1994; Ommundsen et al., 2003). However, no research to our knowledge has examined the relationships between motivational climate and students' social behavior in physical education, yet. The motivational climate may be related with students' social behavior during physical

education. The psychological atmosphere in which physical education takes place may affect the way students behave. For example, when physical education promotes competition among students then antisocial behaviors may be increased and negative interactions among students may be emerged. Research in male youth soccer showed that athletes' perceptions of a disempowering motivational climate were related with higher levels of self-reported inappropriate behaviors and lower levels on sportspersonship (Ommundsen et al., 2003). On the other hand, when students are prompted to improve themselves, work in small groups to achieve a common goal and interact positively with their classmates, then positive social behaviors would be expected. Such an empowering climate in the domain of sport has been found to be related with respect for rules, officials, and opponents (Gano-Overway, Guivernau, Magyar, Waldron, & Ewing, 2005; Ommundsen et al., 2003) and positive relations with peers (Ommundsen, Roberts, Lemyre, & Miller, 2005).

This research in youth sports provides some evidence that different types of motivational climate may be related with differences in young athletes' behaviors. However, this research has focused mainly on students' moral behavior during sports. Furthermore, research examining associations between motivational climate and students' behavior in the domain of physical education is limited. Thus, the examination of the relationships between motivational climate and students' social behavior in physical education is warranted. Such research would increase our knowledge regarding the outcomes that are associated with different types of motivational climate in physical education. Moreover, it would reveal information regarding factors that are related with students' social behavior providing the basis for designing effective interventions focusing on students' social development.

The aim of the study was to examine the relationship between motivational climate and students' social behavior in elementary physical education. It was hypothesized that an empowering motivational climate would be related with positive social behavior, whereas a disempowering motivational climate would be related with negative social behavior.

2 Methodology

2.1 Participants

Participants were 143 sixth grade students (77 boys and 66 girls) from 10 elementary schools located in a medium sized city in central Greece. Students participated voluntarily in the study and no one refused to participate.

2.2 Measures

2.2.1 Social Behavior

A short form of the self-report form of the Greek version (Magotsiou, Goudas, & Hasandra, 2006) of the Multisource Assessment of Children's Social Competence Scale (MASCS, Junttila, Voeten, Kaukiainen, & Vauras, 2006) was used. This scale consists of four factors: Cooperating skills (e.g., I work cooperatively with classmates), Empathy (e.g., I respect other pupils and I care about them), Quick-temperedness (e.g., I am easily irritated and upset), and Disruptiveness (e.g., I tease and annoy my classmates). Each subscale consists of four items. Students rated their social behavior using a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

2.2.2 Motivational climate in physical education.

The multi-dimensional measure of perceived empowering and disempowering coaching behaviors (Appleton, Ntoumanis, Quested, & Duda, 2011) adapted for physical education was used. The Greek version of this scale consists of two factors (see confirmatory factor analysis in the results section): Empowering coaching climate (14 items, e.g., My teacher encourage students to try new drills) and Disempowering coaching climate (8 items, e.g., My teacher pay more attention to the best of my classmates). Responses were provided in a scale from 1 (strongly disagree) to (strongly agree).

2.3 Procedure

Permission to conduct the study was obtained from the school principals and physical education teachers. Students participated in the study voluntarily after parental consent was obtained. Questionnaires were completed in classrooms settings during physical education hours with the presence of a researcher. Students were provided with detailed instructions regarding the procedure and the completion of the questionnaires and they were informed that their answers would be anonymous and confidential.

2.4 Statistical Analysis

Means, standard deviations, and correlations among the subscales of the questionnaires were calculated. Multivariate correlations between the two dimensions of motivational climate and the four dimensions of students' social behavior were examined through a canonical correlation. Confirmatory factor analyses with EQS program (Bentler, 2006; version 6.1 for windows) for MASCS, and AMOS (version 20.0; Arbuckle, 2011) for motivational climate scale was also applied. The following indices of fit were used: a) the χ^2, b) the Nonnormed Fit Index (NNFI), c) the Comparative Fit Index (CFI), d) the Tucker-Lewis Index (TLI), and e) the Root Mean Square Error of Approximation (RMSEA). The RMSEA 90% confidence intervals were also provided. NNFI, TLI, and CFI values above .90 and .95 are considered to reflect acceptable and excellent fit to the data, respectively (Hoyle & Panter, 1995; Hu & Bentler, 1999). RMSEA values of less than .05 and .08 are considered to reflect a close and an acceptable fit, respectively (Browne & Cudeck, 1993).

3 Results

3.1 Confirmatory Factor Analysis

Confirmatory factor analysis for the MASCS showed an adequate model fit, $\chi^2(98) = 163.54$, NNFI = .911, CFI = .927, RMSEA = .069 (90% CI: .050 – .087) of the four-factor model. All items loaded on their designated factor (range .41 – .81). Intercorrelations among latent factors ranged from -.02 to .51. Cronbach's alphas for the four subscales were acceptable (Table 1). Confirmatory factor analysis for the Motivational climate scale showed an inadequate fit for the initial scale with 25 items, $\chi^2(274) = 484.44$, TLI = .829, CFI = .843, RMSEA = .074, RMSEA = .074 (90% CI: .063 – .084). After deleting 3 items, the Motivational climate scale showed an adequate model fit, $\chi^2(206) = 294.43$, TLI = .911, CFI = .921, RMSEA = .055 (90% CI: .040 – .069) of the two-factor model. All items loaded on their designated factor (range .33 – .77). Intercorrelation among latent factors was -.41. Cronbach's alphas for the four subscales were acceptable (Table 1). Means and standards deviations for each subscale of the two questionnaires are presented in Table 1.

Table 1. Means, standards deviations, cronbach's alphas, and correlations between dimensions of motivational climate and social behavior

				Correlations				
Variables	*α*	*M*	*SD*	1	2	3	4	5
1. Cooperating skills	.68	4.16	0.76	-				
2. Empathy	.83	3.90	0.89	.61**	-			
3. Quick-temperedness	.78	1.90	0.84	-.22**	-.18*	-		
4. Disruptiveness	.83	1.65	0.90	-.28**	-.13	.72**	-	
5. Empowering climate	.91	3.55	0.91	.33**	.39**	-.15	-.08	-
6. Disempowering climate	.72	2.50	0.81	-.18*	-.07	.42**	.44**	-.39**

Note: *α*: Cronbach's alpha, *p < .05, **p < .001

3.2 Correlation Analysis

Correlations between dimensions of motivational climate and social behavior are presented in Table 1. Canonical correlation between the two dimensions of motivational climate (empowering and disempowering) and the four dimensions of students' social behavior (cooperating skills, empathy, quick-temperedness, and disruptiveness) showed two significant canonical correlation roots. The first root (eigenvalue .31, Wilk's λ = .63, $F(8, 274) = 8.95$, $p < .001$) explained the 59.42% of the variance and the second root (eigenvalue .21, Wilk's λ = .82, $F(3, 138) = 9.80$, $p < .001$) explained the 40.57% of the variance. The correlations with the canonical variate and the standardized canonical coefficients of each variable separately for the two canonical roots are presented in Table 2. According to the first canonical root, high scores in the disempowering climate were correlated with high scores in quick-temperedness and disruptiveness. According to the second canonical root, high scores in the empowering climate were correlated with high scores in cooperating skills and empathy and low scores in quick temperedness.

Table 2. Canonical correlation between dimensions of motivational climate and social behavior

	1st Canonical root		2nd Canonical root	
	Correlation with canonical variate	Standardized canonical coefficient	Correlation with canonical variate	Standardized canonical coefficient
Motivational Climate				
Empowering climate	.15	.56	.99	.92
Disempowering climate	.85	1.07	-.52	-.16
Social behavior				
Cooperating skills	-.01	-.03	.79	.37
Empathy	.30	.47	.89	.60
Quick-temperedness	.73	.29	-.50	-.40
Disruptiveness	.88	.72	-.34	.13

4 Discussion

The aim of the study was to examine the relationship between motivational climate and students' social behavior in elementary physical education. Results showed that the motivational climate in physical education was related to students' social behavior. In particular, when students perceived that the motivational climate was empowering they reported higher levels of positive social behaviors (i.e., cooperative skills and empathy). In contrast, when students perceived that the motivational climate was disempowering they reported higher levels of negative social behaviors (i.e., quick-temperedness and disruptiveness).

These results support the research hypothesis. Different dimensions of the psychological atmosphere during physical education were related with different social behaviors. In fact, students reported positive social behaviors when they perceived that the motivational climate in physical education was empowering. This result could be attributed to the characteristics of an empowering motivational climate. Empowering environments involve students in learning process, promote the satisfaction of their basic needs (i.e., autonomy, competence, relatedness; Deci & Ryan, 2004), and focus on students' personal improvement. Such environments can help students to focus on developing their skills, cooperating with their classmates and understating each other. Therefore, students who perceived that the environment in physical education is structured based on such characteristics they reported positive social behaviors. Research in youth sport has shown positive relationships between an empowering motivational climate and self-reported respect for rules and officials (Ommundsen et al., 2003), positive relations with peers (Ommundsen et al., 2005), and respect for the game and the opponent (Gano-Overway et al., 2005). Moreover, students who were task orientated reported intrinsic reasons, caring, and responsibility for being disciplined in physical education (Papaioannou, 1998). On the other hand, a disempowering motivational climate controls students, promotes competition, and may cause negative social behaviors, such as quick-temperedness and disruptiveness as well as negative interactions among students (Duda, 2013; Roberts & Papaioannou, 2014). For example, young athletes who perceived the motivational climate as disempowering were more likely to report inappropriate and illegitimate behaviors, lower levels on sportspersonship, and a "win at all costs" attitude (Ommundsen et al., 2003).

The results of the present study expanded previous research regarding the associations between dimensions of motivational climate and various outcomes in physical education. An empowering motivational climate has been associated with positive outcomes, such as students self-determined motivation (Goudas & Biddle, 1994), use of metacognitive skills (Theodosiou & Papaioannou, 2006), and moral behavior (Ommundsen et al., 2003). In contrast, a disempowering motivational climate has been associated with increased levels of anxiety (Liukkonen et al., 2010) and dropouts (Sarrazin et al., 2002), and lower levels of moral behavior (Ommundsen et al., 2003). Adding to this line of research evidence the present study suggests that students' positive social behavior may be enhanced if the motivational climate in physical education is structured effectively. Such meaningful manipulations should include among others the focus on personal improvement and cooperation, the use of relative evaluative criteria and student-centered teaching styles that provide students with autonomy and chances to succeed (Duda, 2013; Roberts & Papaioannou, 2014). Collectively, this evidence supports the notion that the establishment of an empowering motivational climate can be the basis for providing students a quality physical education (Roberts & Papaioannou, 2014).

Social emotional development should be a central goal in physical education curriculum (CASEL, 2003; Laker, 2000). In the present study students' social behavior was examined through self-report of two positive social skills (e.g., cooperating skills, empathy). Social skills constitute important elements of students' social development as they can help students to cooperate and positively interact with their classmates, to make friends, to develop caring for others and feelings that belong in a team, and deal effectively with demanding situations (CASEL, 2003). Students can acquire such important life skills when teaching environments are carefully shaped towards this aim (Gillies & Ashman, 1996). The results of the study suggest that the creation of an empowering motivational climate can contribute to the establishment of such favorable teaching environments.

From an applied perspective the results of the present study highlight the role that the motivational climate could play in enhancing students' positive social behaviors in physical education. In fact, creating an empowering motivational climate should be the basis for designing and implementing interventions that focus on students' social development. Implementing such interventions (e.g., Goudas & Magotsiou, 2009) in empowering environments may have more positive results. Moreover, it is should be taken into account that physical education teacher play a central role in forming the motivational climate in physical education. Therefore, physical education teachers should be trained to develop and use techniques and didactic approaches that contribute to the establishment of empowering motivational climates. Classmates can also contribute to the development of the motivational climate in physical education. When classmates encourage, provide support and feedback with each other, an empowering climate would be created (Vazou, Ntoumanis, & Duda, 2006). This suggests that reciprocal interactions between students' social behavior and motivational climate may exist. Such interpretations should be further examined in future research.

This study was correlational in nature. Therefore, no cause and effect relationships between motivational climate and students' social behavior can be established. Future research should examine the causal effects of motivational climate in students' social behavior. Such research should examine the effects of interventions designed to create a positive motivational climate on students' social behavior. Another limitation of the present study was that students' social behavior was evaluated only through self-reported data. In fact, the scale that was used to measure students' social behavior has four forms depended on the person who rate the social behavior (i.e. self, peers, teacher, and parents). However, the self-reported form of the scale was not found to be susceptible in the social desirability effect (Magotsiou et al., 2006). Moreover, the self-report and the peer-report form of the scale were found to have the same factor structure (Goudas, Magotsiou, & Hatzigeorgiadis, 2009a) and to be positively correlated (Goudas, Magotsiou, & Hatzigeorgiadis, 2009c). Nevertheless, future research may combine different source (i.e. self, peers, teacher) of collecting data regarding students' social behavior and involve other types of social behaviors, such as students' feelings toward group work (Goudas, Magotsiou, & Hatzigeorgiadis, 2009b).

Future research should also examine interactions between motivational climate, students' social behavior and their learning in physical education. Previous research has shown that cooperative learning has positive effects on students' learning (Goudas & Magotsiou, 2009). Creating an empowering climate may enhance students' positive behaviors in physical education. This in turn may increase academic learning time affecting positively students' learning. Such environments are considered appropriate for developing students' self-regulating learning (Goudas, Kolovelonis, & Dermitzaki, 2013).

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