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Relationships Between Predispositional and State Goal Orientations in Different Instructional Conditions in Physical Education Settings

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Abstract

Two studies were conducted to examine the effects of the instructional environment (i.e., setting process, performance, or "*do your best*" goals, study 1; teaching with the practice or the inclusion style of teaching, study 2) on the relationships between predispositional and state goals in physical education (PE) settings. In study 1, 100 fifth and sixth grade students completed a task and ego goal orientation measure and one week later they practiced basketball dribbling setting different types of goals in a single PE session and then they responded on a state goals questionnaire. In study 2, 24 girls completed a task and ego goal orientation measure and they participated in PE lessons taught with two different teaching styles, at the end of which they responded on a task and ego state goals measure. The results of both studies showed that predispositional goals were moderately and positively correlated with the corresponding state goals. Moreover, some evidence regarding the effects of the instructional environment on these relationships emerged. Results of both studies are discussed with reference to achievement goal theory. Practical suggestions are also offered.

Keywords: *predispositional goals, state goals, goal setting, practice style, inclusion style*

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Ερευνητική

Σχέσεις Μεταξύ Προδιαθεσικών και Περιστασιακών Στόχων Επίτευξης σε Διαφορετικά Περιβάλλοντα Διδασκαλίας στη Φυσική Αγωγή

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Περίληψη

Δύο έρευνες διεξήχθησαν για να εξεταστούν οι επιπτώσεις του διδακτικού περιβάλλοντος (στόχος διαδικασίας, απόδοσης ή στόχος «*κάνε το καλύτερο δυνατό*», έρευνα 1, διδασκαλία με τα στυλ διδασκαλίας παραγγέλματος ή συμπερίληψης, έρευνα 2) στις σχέσεις μεταξύ προδιαθεσικών και περιστασιακών στόχων επίτευξης; σε περιβάλλοντα Φυσικής Αγωγής (ΦΑ). Στην έρευνα 1, 100 μαθητές και μαθήτριες της πέμπτης και έκτης τάξης δημοτικού, ολοκλήρωσαν μια μέτρηση προδιαθεσικών στόχων επίτευξης και μία εβδομάδα αργότερα εξασκήθηκαν στην ντρίμπλα του μπάσκετ θέτοντας διαφορετικούς τύπους στόχων σε ένα μόνο μάθημα ΦΑ και στη συνέχεια απάντησαν σε ένα ερωτηματολόγιο περιστασιακών στόχων επίτευξης. Στην έρευνα 2, 24 κορίτσια ολοκλήρωσαν μια μέτρηση προδιαθεσικών στόχων και συμμετείχαν σε μαθήματα ΦΑ που διδάχθηκαν με δύο διαφορετικά στυλ διδασκαλίας, στο τέλος των οποίων απάντησαν σε μια μέτρηση περιστασιακών στόχων. Τα αποτελέσματα και των δύο μελετών έδειξαν ότι οι προδιαθεσικοί στόχοι συσχετίζονταν μέτρια και θετικά με τους αντίστοιχους περιστασιακούς στόχους. Επιπλέον, προέκυψαν ορισμένα στοιχεία σχετικά με τις επιπτώσεις του διδακτικού περιβάλλοντος σε αυτές τις σχέσεις. Τα αποτελέσματα και των δύο μελετών συζητούνται με αναφορά στη θεωρία στόχων επίτευξης. Προσφέρονται επίσης πρακτικές προτάσεις.

Λέξεις κλειδιά: *προδιαθεσικοί στόχοι επίτευξης, περιστασιακοί στόχοι επίτευξης, καθορισμός στόχων, στυλ παραγγέλματος, στυλ συμπερίληψης*

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Introduction

Understanding and enhancing students' motivation for participating in physical education (PE) has been a popular area of research in sport psychology. Achievement goal theory (Ames, 1992; Nicholls, 1989) is a theoretical framework that has been used in a plethora of studies examining the antecedents and consequences of motivation in sport and PE settings (Duda, 2001; Duda et al., 2014; Duda & Whitehead, 1998; Papaioannou, et al., 2012; Roberts & Papaioannou, 2014).

The core idea of achievement goal theory is that achievement behavior is a function of the personal meaning an individual assigns to perceived success and failure (Duda, 2001). Two main goal orientations have been identified: task orientation and ego orientation. The ways students define or construe competence directly affect the adoption of a different goal orientation (Nicholls, 1989). Students who define success in terms of mastering skills or knowledge, self-improvement, and effort investment are predominantly task-oriented. These students tend to focus on improving their performance and enhancing their learning and when they achieve such purposes, they feel competent and successful (Duda, 2001). Students who define success in terms of surpassing or outperforming others are more ego-oriented. These students tend to compare their performance with the performance of other students or a norm and they feel successful when they achieve such purposes (i.e., to win a game; Duda, 2001).

Research in sport and PE has shown that task and ego achievement goal orientations were associated with a different pattern of outcomes. In particular, it has been found that task orientation is associated with more adaptive outcomes, including greater persistence, more interest, and greater effort (Duda, 1992; Roberts, 2001; Roberts et al., 1997), intrinsic motivation (Goudas et al., 1994), self-determined exercise motivation (Standage et al., 2003), intrinsic reasons, caring, and responsibility for being disciplined in physical education (Papaioannou, 1998), self-esteem and enjoyment in sport (Atkins, et al., 2015), self-regulation learning skills (Elferink-Gemser et al., 2015) and beliefs that success is a result of hard work and effort (Duda & Nicholls, 1992; Duda & White, 1992). On the contrary, ego orientation is associated with greater competitiveness and anxiety during competition (Biddle, 2001; Duda, 2001), somatic anxiety (Papaioannou & Kouli, 1999), extrinsic reasons for being disciplined (Papaioannou, 1998), positive attitudes regarding performance-enhancing drugs (Allen et al., 2015) and beliefs that success requires high ability (Duda & Nicholls, 1992).

The abovementioned research used mainly task and ego orientation as a general predisposing tendency that individuals adopt in achievement settings. However, this tendency does not guarantee that individuals will be involved in a particular situation with the corresponding state goals (Dweck & Leggett, 1988). For example, a student who is strongly ego oriented will not necessarily be ego involved to the same degree in all PE activities. Thus, task and ego orientations (predispositional goals) are not equivalent to task and ego involvement (state goals) in a particular achievement activity (Roberts, 2001).

State goals are dynamic and can change from moment to moment (Roberts, 2012; Roberts & Papaioannou, 2014). For example, a student may begin a task with a strong task state goal, but due to contextual events the student may want to demonstrate superiority to others and thus to adopt an ego state goal. The display of task or ego state goals depends upon the strength of the predisposed task or ego orientations and the nature of the specific situation that can support or displace this predisposing tendency. Thus, contextual factors can influence students' state goals when engaged in leaning or achievement tasks (Dweck & Leggett, 1988; Duda & Whitehead, 1998). It has been supported that, students may possess dispositional goal orientations that provide a "*default*" orientation across various settings. However, it is also likely that students may develop different state goals in response to the characteristics of the performance environment they encounter (e.g., Elliot & Church, 1997; Mangos & Steele-Johnson, 2001; VandeWalle et al., 2001). In particular, factors such as the standards, methods, and criteria underlying evaluation, the nature of feedback and the manner in which it is provided, and the structure of the tasks used can form different learning environments which makes task and ego goals differently salient (Duda, 2001).

In contrast to the proliferation of research regarding predispositional task and ego orientations and its relations with a variety of achievement-related behaviours and motivational processes (Lochbaum, Çetinkalp, et al., 2016; Lochbaum, Zazo, et al., 2016), there is only limited evidence regarding students' task and ego state goals at specific situations in the physical domain (Duda & Whitehead, 1998; Swain & Harwood 1996). Furthermore, research examining the relationships between students' predisposed task and ego goal orientations for participating in PE and their state task and ego goals in specific instructional conditions in PE

lessons is limited. In sport settings, Swain and Harwood (1996) found that swimmers' state goals before competition (i.e., levels of task and ego involvement related to the specific race in question) were influenced not only by dispositional goal orientation, but also by their perception of situational factors. Moreover, Harwood and Swain (1998) found that tennis players' perceptions of significant others, their achievement value of the match and perceptions of ability were the major predictors of task involvement. The pre-match intensity of ego involvement was predicted by ego orientation combining with perceptions of significant others and match's value.

The examination of the relationships between predispositional and state achievement goals will increase our knowledge regarding students' involvement in PE and the factors that are associated with it. Theoretically, the individual variables (e.g., dispositions, goal orientations) and the situational variables (e.g., instructional conditions, motivational climate) are part of the same theory and should be examined together (Roberts, 2012). Moreover, researchers should consider the importance of both dispositional and situational variables when predicting achievement goal involvement in competitive contexts. Research in academic (Breland & Donovan, 2005) and sport settings (Swain & Harwood, 1996) have provided evidence showing that dispositional goal orientations are positively related to their respective state goals. However, in the domain of PE the relationship between predispositional and state achievement goals and the effects that different instructional environments can have in this relationship is largely unexplored.

Considering this gap in the literature, we conducted two studies to examine the relationships between students' predispositional and state achievement goals in PE settings. Moreover, we examined differences in the relationships between students' predispositional task and ego goals and their state task and ego goals when they involved in PE lessons under different instructional conditions (i.e., goal directed practice, study 1; practice with different teaching styles, study 2). These studies are presented next.

Study 1

Goal setting is a performance enhancement technique widely used in sport and PE settings (Kingston & Wilson, 2009) with positive results in students' performance (e.g., Kolovelonis et al., 2011a). Setting different types of goals (i.e., process, performance, outcome goals) during practice may create a different learning environment because different criteria for evaluating performance are used. When students focus on process goals, they try to improve their personal performance and thus, they may be task-involved. Conversely, in the case of outcome goals or in the absence of specific goals (e.g., "*do your best*" goals) students may adopt an ego state goal during practice in a specific task. Therefore, students' predispositional achievement goals may be related differently to their corresponding state goals depending on the specific goals (i.e., process, performance, or "*do your best*" goals) that they pursue during practice.

The aim of the first study was to examine the differences in the relationships between students' predispositional achievement goals and their state goals when they practiced basketball dribbling pursuing different goals (i.e., process, performance, or "*do your best*" goals). These correlations were expected to be higher for task achievement goals compared to ego goals for students who pursued process goals and higher for ego achievement goals compared to task goals for students pursuing performance goals. No specific prediction was made for students in the "*do your best*" condition (i.e., within subjects' comparisons). Moreover, the correlation between predispositional and state task achievement goals would be higher when students would practice setting process goals compared to the students pursuing performance or "*do your best*" goals, and the correlation between predispositional and state ego achievement goals would be higher when students would practice setting performance or "*do your best*" goals compared to students pursuing process goals (i.e., between group comparisons).

Method

Participants

Participants were 100 Greek students (40 boys and 60 girls, M_{age} = 11.33, SD_{age} = 0.55) who attended two fifth grade (40 students) and three sixth grade (60 students) PE classes from two elementary schools located in a medium-sized city in central Greece. Students participated in the study voluntarily and no student refused to

participate. Students had little previous experience in the basketball dribble and none of them participated in basketball clubs out of school. Participants were randomly assigned to a process goal (40 students), a performance goal (40 students) and a control "*do your best*" goal (20 students) group.

Experimental conditions

Three experimental conditions were included in this study: a) Group 1, with process goals (i.e., mastering two critical elements of basketball dribbling, the "*fingers-wrist*" and "*dribble low*"), b) Group 2, with performance goals (i.e., improving 20% their scores in dribbling), and c) Group 3, the control group (i.e., "*do your best*" goals).

Instruments

Predispositional goals**:** The Greek version (Papaioannou & Macdonald**,** 1993) of Task and Ego Orientation in Sport Questionnaire (TEOSQ; Duda & Nicholls, 1992) was used for the assessment of dispositional achievement goal orientations. This questionnaire is a 13-item scale asking the students to respond to task (7 items, *a* = .62; e.g., "*I learn something that is fun to do*") and ego (6 items, *a* = .81; e.g., "*The others cannot do as well as me*") goal statements following the stem "*I feel most successful in physical education when...*". Each item was answered on a five-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*).

State goals**:** A short version of the Greek version (Papaioannou & Macdonald**,** 1993) of TEOSQ (Duda & Nicholls, 1992) was used for the assessment task and ego state goals. Students were asked to respond to four items for task (*a* = .73; e.g., "*…to learn dribbling working hard*") and three items (*a* = .72; e.g., "*…to outperform the other students*") for ego state goals following the stem "*During this practice session I tried …*". Each item was answered on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Procedure

Permission to conduct the study was obtained from the Greek Ministry of Education, Lifelong Learning, and Religious, Cultural, and Sport Affairs (156464/Γ2) and the school principals. Students participated in the study in the school gym, in the presence of the experimenter who was a PE teacher blind to the aims of the study. Students were told that the purpose of the study was the improvement of their dribbling skill. One week prior the experiment students completed the TEOSQ during their regular PE classes. In the day of the experiment, students were informed about the procedure of the study and then were provided with oral instructions regarding the basic motor elements of dribbling, observed a demonstration of the dribble and practiced the dribble for 16 minutes in groups of four. During practice, group 1 students were asked to pursue a process goal that is to focus on executing properly two basic elements of dribbling technique (i.e., "*fingers-wrist*" and "*dribble low*"). Group 2 students were asked to pursue the performance goal of improving 20% their scores in dribbling among 5 cones. Before the beginning of the practice each student performed a drill of dribbling among 5 cones for 30 seconds. The number of cones dribbled successfully was used as a baseline for calculating each student's performance goal. Control group students did not receive any instruction to set a specific goal and simply were asked to "do their best". For students' practice the following drills were used: a) dribbling in a distance of 15m and return in the starting line dribbling with the opposite hand, b) dribbling among five cones back and forth using both hands. In each drill, two students practiced the dribble and two rested. After the end of the practice all students completed the state goal orientations questionnaire.

Statistical analyses

Pearson's correlations among state and predispositional goal orientations, separate for the three goal conditions (process goal, performance goal, "*do your best*" goal) were conducted. Fisher's r-z transform statistic and Steiger's Z_2* statistic (Steiger, 1980) were used to test for significant differences in correlations among predispositional and state goals between and within groups respectively.

Results

Descriptive statistics are presented in Table 1 and correlations among predispositional and state goal orientations separately for the three groups of students who practiced dribbling with different goals are presented in Table 2.

Table 1. Descriptive statistics (Study 1).

	Predispositional Goals				State Goals			
	Task		Ego		Task		Ego	
	M	SD	M	SD	M	SD	M	SD
Practice with process goals	1.60	0.44	3.56	0.83	1.66	0.61	3.25	0.99
Practice with performance goals	1.57	0.47	3.38	0.83	1.66	0.57	2.93	0.91
Practice with "*do your best*" goals (control group)	1.67	0.37	3.55	0.89	1.88	0.47	3.32	0.96

Table 2. Correlations among predispositional and state goals when different goals were set (Study 1).

	Predispositional Task	Predispositional-Ego
Practice with process goals		
State-Task	.43**	.00
State-Ego	.19	.41**
Practice with performance goals		
State-Task	.43**	-.10
State-Ego	.37*	.31
Practice with "*do your best*" goals (control group)		
State-Task	.34	.17
State-Ego	.23	.77**

Note: *Significant correlation at .05 level, ** Significant correlation at .01 level

Within groups comparisons

For students who practiced dribbling with process goals the difference of the correlation between predispositional and state task goal (r = .43) and the correlation between predispositional and state ego goal (r = .41) was nonsignificant as indicated by the Steiger's (1980) Z_2* statistic, Z = -.10, p = .92. Similarly, for students who practiced dribbling setting performance goals, the difference of the correlation between predispositional and state task goals (r = .43) and the correlation between predispositional and state ego goals (r = .31) was nonsignificant as indicated by the Steiger's (1980) Z_2* statistic, Z = -.58, p = .56.

However, for the "*do your best*" control group the difference of the correlation between predispositional and state task goals (r = .34) and the correlation between predispositional and state ego goals (r = .77) was significant as indicated by the Steiger's (1980) Z_2* statistic, Z = - 2.01, p = .04.

Between groups comparisons

The correlation between predispositional and state task goals was higher for students who practiced setting process goals (r = .43) and performance goals (r = .43) compared to "*do your best*" control group students (r = .34). However, as indicated by Fisher's r-z transform statistic, these differences between the "*do your best*" control group, and process goal group and performance goal group were nonsignificant (Z = .36, p = .72; Z = -.36, p = .72, respectively).

The correlation between predispositional and state ego goals was lower for students who practiced setting process goals (r: .41) and performance goals (r: .31) compared to "*do your best*" control group students (r = .77). The difference between the process and the performance goal group was nonsignificant as indicated by Fisher's r-z transform statistic (Z = 0.50, p = .62). The differences between the "*do your best*" control group, the process goal group, and the performance goal group was significant as indicated by Fisher's r-z transform statistic (Z = 1.96, p = .046, Z = 2.39, p = .02, respectively).

Discussion

The aim of the first study was to examine for differences in the relationships between students' predispositional achievement goal orientations and their state achievement goals when they practiced basketball

dribbling pursuing process, performance, or "*do your best*" goals. Results showed that students' predispositional goal orientations were positively correlated with the corresponding state goals. However, these relationships were of moderate magnitude. Moreover, some evidence regarding the effects of the instructional environment on the relationships between predispositional and state goals emerged.

The within groups comparisons between the predispositional and the corresponding state goals correlations were significant only for control group students. In particular, for students who practiced dribbling under the "*do your best*" goal condition, the correlation between predispositional and state task goals was significantly lower compared to the correlation between predispositional and state ego goals. This finding provides some evidence that the instructional environment may play a role in the relationship between predispositional and state ego goals. Students in the "*do your best*" condition endorsed more their ego orientation than their task orientation.

Further evidence regarding the effects of the instructional environment on the relationship between predispositional and state goals resulted from the between groups comparisons. The correlation between predispositional and state ego goals was significantly lower for students who practiced dribbling setting process goals or performance goals compared to "*do your best*" control group students. Again, students expressed their ego orientation more when they practiced in the "*do your best*" condition rather than when they practiced in the process or in the performance goal condition. Several explanations could be provided for this result. It has been theorized that contextual factors, such as criteria for performance evaluation may influence students' state goals when engaged in leaning or achievement tasks (Dweck & Leggett, 1988; Duda & Whitehead, 1998). That is, students' predisposition towards ego orientation and the nature of the "*do your best*" goals that guided their practice may have resulted in a prevalence of ego involvement during the practice in the dribbling task. Such goals are vague, non-specific and do not direct students' practice in a learning orientation. Thus, as the nature of dribbling drills permitted students to compare each other performance (e.g., number of cones successfully dribbled) and the lack of other apparent criterion for evaluating performance, students who were predisposed towards ego orientation found a favorable environment to express this tendency during practice evaluating their performance comparing it with their classmates' performance. Conversely, students who practiced with process goals focused on improving their performance in two critical elements of dribbling and students who practiced with performance goals focused on improving themselves in dribbling more cones successfully. In both cases, students used self-referenced criteria for evaluating their performance which are considered favorable for enhancing a task involvement. Thus, these instructional conditions may prevent those students' predisposed ego tendency to be translated into a high ego state involvement.

On the other hand, this potential effect of the instructional environment on the relationship between predispositional and state goals was not so apparent in the case of task goals. In particular, the difference of correlations between predispositional and state task goals in the process and the performance goal groups compared to "*do your best*" control group, were not significant. Probably, for students who were predispositional task orientated the "*do your best*" goal might function differently compared to students who are predisposed ego orientated.

An interesting result was the positive relationship between predispositional task and state ego goals for students who practiced with performance goals. Those students who reported that they were predisposed towards task orientation had also corresponding high levels of both task and ego involvement during practice. Students cannot be task and ego involved at the same moment, but they can change their involvement from task to ego and vice versa during their involvement with a task (Roberts & Papaioannou 2014). This result may be probably explained by the self-referenced nature of the performance goals students set (i.e., to improve 20% their previous personal performance). This type of goal gives students the chance to check their personal improvement but also to easily compare their performance with the performance of other students. Thus, students who were task oriented may have focused both on improving their personal performance and outperforming other students. This argument was supported by the result that the task and ego state goals were positively related ($r = .45$, $p < .01$). However, this interpretation needs further examination.

Study 2

PE teachers use various teaching styles to facilitate their students' psychomotor, cognitive, and social development (Mosston & Ashworth, 2002). Each teaching style aims different objectives, involves teachers and

students in particular actions and decisions, and can satisfy different relationships between teachers and students (Mosston & Ashworth, 2002). Thus, the teaching style can affect the nature of the instructional environment. For example, in the practice style most of the decisions (e.g., type of tasks, practice time) are made by the teacher. Students practice at the same level of difficulty, and instruction is usually provided at class level. However, students may be allowed for some decisions, such as to the pace of their practice in a specific activity. In the inclusion style, students are provided with a number of choices (e.g., choose the pace of practice, the activities, and methods of practicing) and they have opportunities to practice at the level of difficulty of their choice (Mosston & Ashworth, 2002). Involving students in the decision-making process or emphasizing cognitive or personal development can enhance the establishment of a task involving climate (Duda et al., 2014). For example, it has been found that the reciprocal and the guided discovery styles resulted in a more task-involving teaching climate in comparison to the command and practice style (Morgan et al., 2005).

The aim of this study was to examine the difference in the relationships between students' predispositional goal orientations and their state goals when they participated in PE lessons taught with a direct (i.e., practice style) or a differentiated (i.e., inclusion style) teaching style. These correlations were expected to be higher for task goals compared to ego goals when the inclusion style was used, and lower for task goals compared to ego goals when the practice style was used (i.e., within groups comparisons). Moreover, the correlation between predispositional and state task goals would be higher when students practiced with the inclusion style compared to the practice style, and the correlation between predispositional and state ego goals would be lower when students practiced with the inclusion style compared to the practice style (i.e., between groups comparisons).

Method

Participants

Participants were 24 girls ranging in age from 12 to 13 years who attended a private single-sex school in a small city in the southwest of England. The girls had not been previously taught track and field activities.

Teaching conditions

Four track and field activities were taught (hurdling, throwing, relay, and jumping), each with the practice style and the inclusion style (Mosston & Ashworth, 2002). In the lessons using the practice style of teaching, most of the decisions (e.g., selected tasks, practice time) were made by the teacher. All students practiced at the same level of difficulty, and instruction was provided usually in whole class rather than small group settings. However, students were allowed some decisions (e.g., in hurdling, students could choose the pace they were practicing at a given height of hurdle). In the inclusion style, students were provided with a number of choices (e.g., selection of activities, pace to work, level of difficulty). They could choose whether they wanted to be assessed or whether they wanted to measure (e.g., time) themselves. In both styles, during lessons, the teacher emphasized students' self-improvement.

Instruments

***Dispositional goals*:** The TEOSQ (Duda & Nicholls, 1992) was used for the assessment of dispositional goal orientations. The TEOSQ is a 13-item scale asking the students to respond to task (7 items, a = .80, e.g., "*I learn something that is fun to do*") and ego (6 items, a =.86, e.g., "*The others cannot do as well as me*") goal statements following the stem "*I feel most successful in physical education when…*". Each item was answered on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

***State goals*:** State task and ego goals were measured using items adopted from Meece (1991). Students responded to six items assessing task involvement (a = .72 - .82, e.g., "*I wanted to try to improve*") and three items assessing ego involvement (a = .70 - .80, e.g., "*I wanted to show others how good I am in athletics*") following the stem "*In today's lesson ...*". Each item was answered on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Students' responses after the four lessons with the practice style were computed to form a task and an ego state score for the practice style. The same procedure was followed to form each student's task and an ego state score for the inclusion style.

Procedure

A single intact class of girls participated in the study over a 10-week period. Girls were taught track and field athletics through two different teaching styles delivered by a male university lecturer experienced in teaching styles, pedagogy, and track and field. Girls participated in the study voluntarily and were assured regarding the confidentiality of their answers. One week prior to the first lesson, the girls completed the TEOSQ during their regular PE classes. At the end of each lesson the girls completed the questionnaire for state goals.

Statistical analyses

Pearson's correlations among state and predispositional goal orientations, separate for the two teaching conditions (practice style and inclusion style) were conducted. Williams' T_2 statistic and Steiger's Z_2* statistic (Steiger, 1980) were used to test for differences in correlations among predispositional and state goals between and within groups respectively.

Results

Correlations among predispositional and state goal orientations when students practiced with the practice and the inclusion style are presented in Table 3.

Table 3. Correlations among predispositional and state goals when different teaching styles were used (Study 2).

	Predispositional Task	Predispositional Ego
Practice teaching style		
State-Task	.53*	-.31
State-Ego	.08	.65**
Inclusion teaching style		
State-Task	.46*	-.26
State-Ego	.01	.59**

Note: *Significant correlation at .05 level, ** Significant correlation at .01 level

Within groups comparisons

A positive significant relationship between the predispositional goals orientations and the corresponding state goals was found in both teaching styles. In the practice style, the difference of the correlation between predisposed and state task goals (r = .53) and the correlation between predisposed and state ego goals (r = .65) was nonsignificant as indicated by Steiger's (1980) Z_2* statistic, Z = -.57, p = .57.

In the inclusion style, the difference of the correlation between predisposed and state task goals (r = .46) and the correlation between predisposed and state ego goals (r = .59) was nonsignificant as indicated by Steiger's (1980) Z_2* statistic, Z = -.58, p = .56.

Between groups comparisons

The correlation between predispositional and state task goals was not different in the practice style (r = .53) compared to the inclusion style (r = .46; Williams' T_2 statistic, $T_2(21)$ = -.85, p = .40). The correlation between predisposed and state ego goals in the practice style (r = .65) was not different than the respective correlation in the inclusion style (r = .59; Williams' T_2 statistic, $T_2(21)$ = -.65, p = .52).

Discussion

The aim of the second study was to examine differences in the relationships between students' predispositional goal orientations and their state goals when they involved in lessons taught with the practice or the inclusion style of teaching. Results showed that predispositional and the corresponding state goals were positively correlated. However, contrary to our hypotheses, the use of different styles of teaching did not affect the relationship between predispositional and the corresponding state goals.

In particular, a positive significant correlation between the predispositional and state task goals and the predispositional and state ego goals was found both when students practiced with the practice and the inclusion style of teaching. These results were consistent with previous findings that students' predispositional goals affect students' goal involvement (Breland & Donovan, 2005; Swain & Harwood, 1996). Moreover, this result is

in line with those found in study 1. It seems that students' tasks or ego involvement in particular tasks in PE are associated with their predisposed goal orientations but only to a moderate degree.

Our hypotheses regarding both within group comparisons and between groups comparisons were not confirmed. The difference of the correlations of task and ego predisposition with their respective state goals was not significant. Also, the correlations between task orientation and state task involvement were not significantly different between the two teaching styles and the same was true for the correlation between ego orientation and ego involvement. Probably, the use of these styles of teaching did not establish a different instructional environment which could have differently affected the relationships between students' predispositional and state goals.

General discussion

Predispotitional goal orientations have been widely examined in sports and in PE. Students' task orientation is associated with adaptive outcomes (e.g., greater persistence and effort, intrinsic motivation) whereas ego orientation is associated with maladaptive outcomes (e.g., greater competitiveness and somatic anxiety) (Duda, 2001; Lochbaum, Çetinkalp, et al., 2016; Lochbaum, Zazo, et al., 2016; Roberts, 2001). On the other hand, little research has examined students' state goals in physical education. The studies included in this article presented initial evidence regarding students' state goals when they involved in specific PE tasks and particularly, the relationships between students' predispositional and state goals and the effects of the instructional environment on this relationship.

Collectively, the results of these studies showed that students' predisposed tendency for PE related to their state goals when they are involved in particular activities although this relationship appears to be moderate. Moreover, some evidence regarding the effects of the instructional environment on the relationship between predispositional and state goals emerged. In the first study, students who were predisposed ego orientated, they express this tendency more when they practice dribbling "*doing their best*" compared to students who practiced dribbling with process or performance goals. These findings are consistent with theoretical arguments and empirical evidence that students' state goal involvement in specific activities is influenced by both dispositional and situational factors (Dweck & Leggett, 1988; Harwood & Swain 1998). In particular, it has been supported that students' predispositional goal orientation provides a "*default*" orientation across various settings, but students may develop different state goal involvement in response to the characteristics of the performance environment they participate (Elliot & Church, 1997; Mangos & Steele-Johnson, 2001; VandeWalle et al., 2001).

As several studies have established that task orientation is related to adaptive motivational behavioral patterns, and this study showed positive relationships between task orientation and task involvement in several conditions, physical educators should focus on establishing a task-orientated environment in order to affect students' involvement in PE lessons (Duda, 1996). In such environments, students should practice pursuing specific process or performance goals and monitor the achievement of these goals (Kolovelonis et al., 2011a). Moreover, they should use performance enhancement techniques, such as self-talk (Kolovelonis et al., 2011b) in order to focus on critical aspects of the task and to improve their performance. That is, students should be provided with opportunities to be involved in the process of their learning in order to become self-regulated learners (Goudas et al., 2013). Moreover, the use of self-referenced evaluative criteria is also an important factor associated with the establishments of a task-orientated climate (Duda, 2001). PE teachers should individualize practice focusing on enhancing students' personal improvement in order for all students to have positive and successful experiences during PE lessons. Moreover, teachers should use teaching styles that provides students with learning responsibilities and help them to improve performance (Mosston & Ashworth, 2002). For example, the use of the reciprocal and the self-check styles of teaching in PE helped students to focus on learning goals and thus to enhance their performance (Kolovelonis et al., 2011c).

A possible limitation may concern the single practice session used in the first study to examine the effects of goal setting in students' predispositional and state goal orientations. Future research should employ a sequence of practice sessions where students should use the goal setting technique in conjunction with other learning and performance enhancement processes, such as self-talk and self-monitoring to further explore the effects of the instructional environment in students' state goal orientations. Moreover, future research should examine the interactions between predispositional and state goals manipulating other characteristics of the PE environment. For example, such characteristics could be the use of different criteria (e.g., normative or self-referenced) for

evaluating performance, the establishment of an autonomy support versus a controlled environment, and the use of other learning techniques (e.g., self-talk). Moreover, the role of other motivational variables on the relationships between predispositional and state goals in PE should be examined. For example, in academic settings, Breland and Donovan (2005) found that dispositional goals were positively related to their corresponding state goals and they exert an indirect impact on self-efficacy through its influence on the development of the corresponding state goal orientations.

Finally, future research may use various approaches of measuring state goals. In both studies included in this paper, state goals were measured rewording the stem of a predispositional goal orientation measure to obtain a state measure. This is one of the ways that has been proposed in the literature (Roberts, 2012). However, Duda (2001) has argued that such a procedure may not capture the essence of task and ego involvement, because the states are dynamic and so the state of involvement will not remain stable throughout a practice session (Roberts et al., 2007). An alternative approach of estimating the dynamic nature of state goals may be to observe students' goal involvement at different times during practice (Roberts et al., 2007).

Significance for Physical Education

Students' task goals in PE, in contrast to ego goals, facilitate effort, persistence and enjoyment when learning new skills. The present study showed that the teaching environment may affect the goals that students adopt during practice. Therefore, creating a learning environment with an emphasis on self-improvement and provision for success for all students will maximize the benefits of PE.

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