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GOAL ORIENTATIONS, MOTIVATIONAL CLIMATE AND DISPOSITIONAL FLOW IN GREEK SECONDARY EDUCATION STUDENTS PARTICIPATING IN PHYSICAL EDUCATION LESSON: DIFFERENCES BASED ON GENDER

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Abstract. *The purpose of this study is to analyze the possible relations between dispositional goal orientations, perceived motivational climate and the flow state in secondary education students, with special attention to possible gender differences. The sample consisted of 200 students with an average age of 14 to 16 years. The students completed the Task and Ego Orientation in Sport Questionnaire (TEOSQ), the Intrinsic Motivation Inventory (IMI) and the Dispositional Flow Scale. The results show that no significant differences were found between the males and females in terms of the general dispositional flow. Task orientation was positively and significantly related to a perceived task involving motivational climate and to the disposition to experience flow. Ego orientation was positively and significantly associated with a perceived ego-involving motivational climate and with dispositional flow. The perceptions of task-involving and ego-involving motivational climates were positively and significantly linked to the general dispositional flow. The regression analysis indicated that both task and ego goal orientations and perceived task and ego-oriented climates predicted dispositional flow. The males displayed a stronger ego orientation, and were more likely to report that they participated in an ego-oriented climate than the females. The females were more likely to perceive a task-oriented climate.*

Key words: *physical education lesson, motivation, goal orientation, flow.*

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INTRODUCTION

Physical inactivity represents one of the greatest public health challenges for most industrialized countries. Although the benefits of regular physical activity participation have been widely studied and there is strong evidence that regular physical activity has important health benefits, such as cardiovascular fitness, psychological health, skeletal health and body composition (Watts, Jones, Davis, & Green, 2005; Hoffman & Hoffman, 2008), young people in many countries are consistently reporting low levels of physical activity (Brophy et al, 2011).

There is little evidence that increasing in-school physical education classes will increase physical activity sufficiently to meet the recommended thresholds. It is generally accepted that school physical education (PE) is likely to play a key role in encouraging pupils' participation in regular physical activity (Siedentop, 1991; Biddle & Chatzisarantis, 1999; Bagøien, Halvari & Nesheim, 2010). Students who feel motivated toward physical activity in PE are more likely to participate in physical activities (Biddle & Chatzisarantis, 1999; Taylor, Ntoumanis, Standage, Spray, 2010). Therefore, it is important to examine student motivation for participation in Physical Education classes.

Motivation in Physical Education classes has been studied by many researchers, specifically the theories studying achievement motivation (Atkinson, 1977; McClelland, 1961). According to the motivational achievement goal theory (Nicholls, 1989), there are two goal perspectives, which convey the criteria by which individuals judge their competence and by which they define their success and failure in the achievement context: task orientation and ego orientation.

Task orientation is associated with the use of the equivalent concept of ability, where effort is seen as equal to the term ability. In task orientation, the perception of competence is referred to oneself and to the subjective experience of improving one's performance and increasing one's skills. It has been demonstrated that task goal orientation is associated with greater persistence, more interest, greater effort and enjoyment (Duda, 1992; Roberts, Treasure & Kavussanu, 1996; Roberts, 2001).

In contrast, ego orientation is associated with the use of a different concept of ability, where effort is not associated with ability, with little effort to enhance social status. In ego orientation the aim is to show that one is the best, i.e., to win, and assessment of one's performance is dependent on comparing oneself with others (Duda, 1992; Duda, Chi, Newton, Walling & Catley, 1995; Roberts, 2001).

The understanding of achievement goals can help to give meaning to student activity and may facilitate the interpretation of his/her behavior within the Physical Education class. Research on high school students during physical education classes (Duda & Nicholls, 1992; Lochbaum & Roberts, 1993; Walling & Duda, 1995; Cury et al, 1996; Kavussanu & Roberts, 1996; Roberts, Treasure & Kavussanu, 1996) has demonstrated that a task goal orientation is associated with the belief that hard work and cooperation lead to success in sport, and provide students with opportunities for improvement and collaboration with their peers (Papaioannou & McDonald, 1993; Walling & Duda, 1995). Different studies have shown that task orientation and the perception of a task-oriented motivational climate are related to having more fun (Ames & Archer, 1988; Kavussanu & Roberts, 1996; Ntoumanis & Biddle, 1999), a positive attitude towards class and more satisfaction (Solmon & Boone, 1993; Goudas et al., 1994; Goudas et al., 1995; Papaioannou, 1995, 1997, 1998; Cervello & Santos-Rosa, 2000; Treasure & Roberts, 2001). Ego orientation is associated with the view that the purpose of physical education is to provide

students with an easy class and teach them to be more competitive (Duda & Nicholls, 1992; Seifriz, Duda, & Chi, 1992; Cervello & Santos-Rosa, 2000; Skiesol & Halvari 2005). Researchers have reported that mastery climate, mastery goal, and perceived sport competence are all positively correlated with involvement in physical activity.

Flow is an enjoyable psychological state that is reflected in a holistic sensation that people feel when they are totally involved in the activity they are doing (Csikszentmihalyi, 1990, 1993). When in flow, a person becomes totally involved in the activity and undergoes a number of positive experiences, including freedom for self-consciousness, enjoyment, concentration, feelings of control and the sense of being completely in tune with the activity (Marsh & Jackson, 1999).

Different studies demonstrate the importance that motivation has in the appearance of the flow state in competition (Jackson, 1995; Jackson and Marsh, 1996; Karagerorghis, Vlachopoulos, and Terry, 2000; Kowal and Fortier, 2000). Furthermore, there are studies that relate intrinsic motivation with the appearance of the flow state in competition (Csikszentmihalyi, 1990; Jackson and Roberts, 1992; Martin and Cutler, 2002).

Researchers have examined the relationship between flow state and goal orientations. Jackson and Roberts found that the presence of a task orientation and higher levels of perceived ability were associated with a greater likelihood for the appearance of a flow state. Later, Jackson, Kimiecik, Ford & Marsh studied how certain psychological factors were related to flow. However, the authors did not find any relation between perceived flow experiences and goal orientations. Papaioannou and Kouli found that task orientation and the perception of a task motivational climate predicted higher levels of concentration, a more autotelic experience for those involved and an absence of self-consciousness.

Recent research has also revealed that the dispositional flow state correlates positively and significantly with self-efficacy, the tendency toward task orientation, and the perceived value of physical activity (Tipler, Marsh, Martin, Richards, & Williams, 2004; Cervello et al, 2006; Sicilia, Moren, & y Rojas, 2008).#

A high performance and motivation in the student would have theoretical and practical benefits. Understanding the relationship between motivation and flow can enable us to discover the motivational factors that disrupt and facilitate flow experiences in physical education classes.

Few studies have related motivation and flow within the context of physical education. Theoretically, an individual who is intrinsically motivated should be more prepared to experience flow because he will be interested in the task he is doing (Deci & Ryan, 1985). A high performance and motivation in the student would have theoretical and practical benefits. Understanding the relationship between motivation and flow can enable us to discover the motivational factors that disrupt and facilitate flow experiences in physical education classes.

Purpose

The objective of this investigation was to analyze the relationships between goal orientations, perception of motivational climate and dispositional flow in secondary level Greek students participating in physical education classes and the effects of possible gender differences.

METHOD

The sample consisted of 200 students involved in physical education classes from five state schools in the province of Athens (Greece). There was an equal number of boys (N=100) and girls (N=100) aged 15-16 (M=15.42, SD=1.23). The students attended 14 typical coeducational PE classes in the 8th and 9th grade.

Procedures

The students were asked to complete the Task and Ego Goal Orientation Sport Questionnaire (Duda, 1992), the Intrinsic Motivation Inventory (McAuley, Duncan and Tammen, 1989) and the Flow Trait Scale Questionnaire. Parental and participant consent was obtained prior to the start of the study. The scales were administered to the participants during April and May when all of the students had attended their PE classes for at least 6 months.

The pupils were told the purpose of the research and asked to sign a consent form. The measures were given to all the students in the same order. Each participant took 10-20 minutes to complete the questionnaires and responses to the instrument were kept anonymous. The participants were told to ask for help if confused concerning either the instructions or the clarity of particular items. No problems were encountered in completing either the inventories or understanding the nature of the questions. The students had to provide responses on a five-point Likert scale (1=strongly disagree to 5= strongly agree). The completed questionnaires were collected by one of the researchers.

Measures

Goal Orientation

The Task and Ego Goal Orientation Sport Questionnaire (Duda, 1992) was measured. It is a 13-item scale that measures the degree to which individuals identify ego and task goals orientation in sports. It consists of the two orthogonal dimensions, represented by task and ego goal orientation, that are assessed by composite scores of corresponding items. Seven items reflect task goal orientation and six items reflect ego goal orientation. An example of a task orientation item is: 'I feel most successful in physical education when I learn something that is fun to do', while an example of an ego orientation item is: 'I feel most successful in physical education when the others can't do as well as me.' Individuals indicate the degree to which they agree with each situation on a five-point Likert type scale, ranging from strongly disagree to strongly agree (Papaioannou & Kouli, 1999). In the physical domain the Task and Ego Goal Orientation Sport Questionnaire has been found to be valid and reliable (Duda, 1992; Duda, Olson & Templin, 1991).

Motivation Climate

The Intrinsic Motivation Inventory (IMI) which is a 19-item self-report inventory developed to assess the extent to which students perceive their PE class climate to emphasize mastery/task goals or performance/ego goals. When completing the EPCM, the participants were requested to think about what their PE class is usually like, and

respond to the stem 'In this PE class . . .'. An example item from the mastery subscale is 'the pupils are happy when they do their best to learn'. A performance subscale example is 'pupils try to do better than one another'. Responses were made on a 5-point Likert scale anchored by 1 ('strongly disagree') and 5 ('strongly agree'). McAuley, Duncan, and Tammen carried out a study to examine the validity of the IMI and found strong support for its validity.

Flow Trait Scale

The Flow Scale (DFS) developed by Jackson, Kimiecik, Ford, and Marsh was used to measure dispositional flow. The inventory consists of 36 items headed by the sentence "When practicing my sport…" (e.g., "Things just seem to happen automatically", "It is no effort to keep my mind on what is happening", "I feel like I can control what I am doing"). This inventory has a first-order factor (Dispositional Flow) and secondary factor nine (challenge-skill balance, action-awareness merging, clear goals, clear unambiguous feedback, concentration on the task at hand, sense of control, loss of self-consciousness, transformation of time and autotelic experience) based on the nine characteristics that explain an optimal state of performance (Csikszentmihalyi, 1990, 1993). This questionnaire has alpha values of .92 for the flow state taking the nine possible dimensions into account.

STATISTICAL ANALYSIS

The statistical program SPSS 17.0 was used to analyze the data. Cronbach's alpha coefficients were calculated to assess the internal reliability of the subscales. Descriptive statistics means and standard deviations for all of the variables were determined. Simple correlations were calculated to test the relationships among the variables. To analyze the effect of gender on goal orientations, perceptions of motivational climate and flow, the MANOVA was used. To calculate the prediction of perceived motivational climate and goal orientations in relation to flow (dependent variable), a hierarchical regression analysis was employed. The contextual measures (motivational climates) were included in Step 1. to analyze the increment of variance explained by dispositional variables. Goal orientations were entered during Step 2 due to prior evidence of their possible mediation on the effect of motivational climate on dispositional flow. A regression analysis was also performed in an attempt to see if there were any gender differences in the prediction of dispositional flow.

RESULTS

Descriptive statistics, including means and standard deviation, as well as correlation statistics are reported in Table 1. The influence of gender on task and ego orientations and indicators of intrinsic motivation, which was examined with a one-way between-subject ANOVA, is presented in Table 2, together with the results of the descriptive statistics. The ANOVA results show that gender significantly influences both the task and the ego orientation in physical education. The female participants were more task-oriented than the males.

As shown in Table 1, descriptive statistics revealed moderately high levels of task orientation for the sample (M = 7.98), moderate levels of ego orientation (M = 6.41), a moderately high perception of task climate (M = 7.55). In this sample of students, lower values were obtained for the perception of an ego climate (M = 4.02). Dispositional flow was found to be moderately high in this sample (M = 7.21).

Using the Pearson product–moment correlation, simple correlations were calculated to examine the relationships between all of the variables. Ego orientation showed a positive and significant relationship with task orientation ($r = .29$, $p < .01$), with a tendency to perceive an ego-oriented motivational climate ($r = .30$, $p < .01$), and with dispositional flow ($r = .29$, $p < .01$).

Task orientation was significantly related to the perception of a task-involved motivational climate ($r = .33$, $p < .01$) and with general dispositional flow ($r = .41$, $p < .01$). Task orientation was negatively and significantly related to the perception of an ego-oriented motivational climate ($r = –.10$, $p < .05$).

Table 1. Means, standards deviations, alpha coefficients and correlations among the variables.

	M	SD	a	2	3	4	5
1.Ego Orientation	6.41	2.21	.90	.29**	.00	.30**	.29**
2.Task Orientation	7.98	1.68	.91	-	.33**	-.10*	.41**
3.Task-involving climate	7.55	1.61	.89	-	-	-.03	.40**
4.Ego-involving climate	4.02	1.98	.88	-	-	-	.13**
5.Dispositional Flow	7.21	1.44	.90	-	-	-	-

The influence of gender on task and ego orientations and dispositional flow, which was examined with a one-way between-subject ANOVA, is presented in Table 2, along with the results of the descriptive statistics. The ANOVA results show that gender significantly influences both the task and the ego orientation in physical education. Significant differences (Table 2) between the males and females (Wilks' $\lambda = .86$, $F(17, 395) = 3.53$, $p < .001$), specifically in terms of the variables of ego orientation, $F(1, 411) = 16.40$, $p < .001$, perceived ego-involving motivational climate, $F(1, 411) = 13.83$, $p < .001$, and task-involving climate, $F(1,411) = 11.34$, $p<.01$ were determined. In relation to these findings, the males had stronger ego orientations (M = 7.09) than the females (M = 5.74) and were more likely to perceive an ego-oriented motivational climate. The females were more likely to identify a motivational climate more oriented toward learning (M = 8.23) than the males (M = 7.86).

Table 2. Differences between the males and females on Goal Orientation, Perceived Motivational Climate and Dispositional Flow

Factors	F	p	Boys	Girls
Ego Orientation	16.40	.000	7.09	5.74
Task orientation	.57	.418	8.49	9.01
Ego-involving climate	13.83	.000	4.69	3.60
Task-involving climate	11.34	.001	7.86	8.23
Dispositional flow	3.11	.112	7.33	7.03

A hierarchical multiple regression analysis was carried out to determine how the motivational climate and goal orientation variables affected the likelihood of dispositional flow. The motivational climate was considered as an independent variable and goal orientation as a dependent variable. The results showed a positive and significant prediction of ego climate on ego orientation (β = .30, p < .001, Adj. *R*2 = .10). The task climate positively and significantly predicted task orientation ((β = .33, p < .001), while the ego climate did this negatively (β = –.10, p < .05, respectively, and Adj. *R*= .13). In the second of the analyses, we considered the dispositional flow as a dependent variable (Table 3). The contextual variables (ego and task climate) were entered into the equation at Step 1. To analyze the variance explained by the dispositional variables, goal orientations were entered at Step 2.

At Step 1 of the regression analysis, ego-involving and task-involving motivational climates explained 19% of the variance in dispositional flow. The task-involving climate (β = .41) was more important for explaining the variance among individuals in the dispositional flow than the ego involving climate (β = .16), although each explained a significant amount of variance in the dispositional flow. At Step 2 of the regression equation, task and ego orientations were also included. The combination of goal orientation and motivational climate variables accounted for 28% of the variance in the dispositional flow, F (4, 408) = 41, p < .001. The task-involving motivational climate (β = .32) and task orientation (β = .20) were most strongly associated with variance in the dispositional flow.

Table 3. Multiple Regression Analysis Summary for Predictor Variables of Contextual and Dispositional Factors Related with the Dispositional Flow in Sport

Steps	B	SEB	β	R^2
Step 1	34.69	3.10		.19**
Ego-involving motivation climate	.08	.02	.16**	
Task-involving motivation climate	.40	.03	.41**	
Step 2	20.01	4.01		.28**
Ego-involving motivation climate	.07	.02	.13*	
Task-involving motivation climate	.31	.03	.32**	
Ego orientation	.06	.02	.13*	
Task orientation	.18	.04	.20**	

*p<.05. **p<.001.

A linear regression analysis by gender was also performed (Table 4). The results of the analysis showed that the task involving climate (β = .41), ego-involving climate (β = .16) and task orientation (β = .23) predicted a positive and significant dispositional flow in the boys. In the case of the girls, the results of the analysis showed the same dispositional flow prediction variables as in the case of the boys, although with different regression weights.

Table 4. Predictive Analysis of Dispositional Flow based on Gender

	B	SEB	β	R^2
Boys	34.69	3.10		.19**
Ego-involving motivation climate	.05	.02	.16**	
Task-involving motivation climate	.28	.03	.41**	
Ego orientation	.04	.02	.10	
Task orientation	.20	.03	.023**	
Girls	-6.89	12.07		.29**
Ego-involving motivation climate	.06	.05	.19*	
Task-involving motivation climate	.58	.10	.41**	
Ego orientation	.07	.04	.14	
Task orientation	.19	.08	.20**	

*p<.05. **p<.001

DISCUSSION

The purpose of this investigation was to test whether goal orientations, motivational climate and dispositional flow, mediate the involvement in physical education classes in secondary education students, while paying simultaneous attention to possible gender differences.

We have obtained a relation between the different goal orientations and the different motivational climates perceived by the students, so that task orientation is related positively and significantly with the perception of a task-involving motivational climate and, in contrast, ego orientation is related in a positive and significant way to the perception of an ego-involving motivational climate. Studies have shown a correlation among cognitive, affective and behavioral patterns of these two goal orientations in a physical education setting. Students whose goals are task-related usually choose challenging tasks and focus on effort, and obtain greater enjoyment than ego-oriented students do (Solmon & Boone, 1993; Roberts, 2001; Wang, Chatzisarantis, Spray & Biddle, 2002).

We found that dispositional flow was related to both the perception of ego-oriented motivational climates and task-oriented motivational climates in a significant and positive way, which is in agreement with previous research involving Spanish athletes (Garcia Calvo, 2004). Cervello et al. showed significant differences between athletes and non-athletes in goal orientations and dispositional flows in physical education classes.

Since the relationship between the perceptions of an ego-involving motivational climate whose dispositional flow was relatively low, this relationship needs to be interpreted with caution. In the relation between the specific components of the motivational climates and flow, the components of the task appear to be more strongly linked to flow, as found previously by Papaioannou and Kouli (1999). Recent research has shown that the combination of high task- and ego-involving motivational climates has a positive effect on enjoyment (Papaioannou, Marsh, & Theodorakis, 2004).

So far, we have not heard of studies that have studied the connection between motivation and flow within the context of physical education. However, factors such as the autotelic experience of flow seem to be key concepts within the study of motivation in educational scenarios. In this respect, different studies in the context of physical education have

shown that task orientation and the perception of a task-oriented motivational climate are related to having more fun (Ames & Archer, 1988; Kavussanu & Roberts, 1996; Ntoumanis & Biddle, 1999), a positive attitude towards class and more satisfaction (Solmon & Boone, 1993; Goudas et al., 1994; Goudas et al., 1995; Papaioannou, 1995, 1997, 1998; Cury et al., 1996; Treasure, 1997; Cervello & Santos-Rosa, 2000; Treasure & Roberts, 2001). Theoretically, an individual who is intrinsically motivated should be more prepared to experience flow because he will be interested in the task he is doing (Deci & Ryan, 1985).

Another purpose of our study was that gender differences would affect goal orientations, motivation climate and flow. In our study males displayed a stronger ego orientation, and were more likely to report that they participated in an ego-oriented climate, while females were more likely to perceive a task-oriented climate. Previous studies have reported that males will be significantly more likely to endorse an ego orientation and that females will be more likely to endorse a task orientation as has been identified in previous studies (Moreno Murcia, Cervelló Gimeno & González-Cutre Coll, 2008; Castillo, Balaguer, & Duda, 2002; Gano-Overway & Duda, 2001; Papaioannou & Kouli, 1999; White, Kavussanu, & Guest, 1998).

In our results, both orientations correlate positively and significantly with the factors of flow. This confirms the proposal of Stein, Kimiecik, Daniels, and Jackson, who, in a study carried out on a sample of competitive and recreational sportspeople, concluded that in both of them, flow could appear and therefore, both the participants who are motivationally ego-oriented and those who are task-oriented could achieve an optimal psychological state to practice sport.

According to Csikszentmihalyi, flow appears in all areas of life, and is necessary for one to experience a more complete life, as it is closely related to satisfaction with one's activities. Therefore, we consider that flow can contribute to a very fruitful line of research and work, because this variable can be modified for use in many areas of psychology.

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CILJEVI, MOTIVACIJA I STAV PREMA NASTAVI FIZIČKOG OBRAZOVANJA SREDNJOŠKOLACA U GRČKOJ: RAZLIKE BAZIRANE NA POLU

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Cilj ovog istraživanja je da analizira moguće odnose između ciljeva, nivoa motivacije koje okruženje pruža i stave srednjoškolaca, uz poseban osvrt na moguće razlike vezane za pol. Uzorak je činilo 200 srednjoškolaca , prosečne starosti od 14 do 16 godina. Srednjoškolci su popunili upitnik o ciljevima i orijentaciji (TEOSQ), kao i inventar o intrinzičnoj motivaciji (IMI) i skalu o stavu Dispositional Flow Scale. Rezultati ukazuju na to da značajnih razlika između pripadnika oba pola u pogledu opšteg stave nema. Fokusiranje na zadatak je bilo u pozitivnoj i značajnoj vezi sa motivacijom iz okruženja i stavu prema iskustvu koje se stiče. Ego orijentacija je bila u pozitivnoj i značanoj vezi sa motivacionim okruženjem i stavom. Percepcije o motivaciji iz okruženja koja se tiče zadatka i ega su bile u pozitivnoj i značajnoj vezi sa opštim stavom. Regresiona analiza je ukazala da I orijentacija i okruženje se mogu koristiti za predviđanje stave. Muškarci su pokazivali veću ego orijentaicju, i postojala je veća verovatnoća da su učestvovali u okruženju fokusiranom na egu nego žene. Pripadnice ženskog pola su češće uočavale okruženje fokusirano na zadatak.

Ključne reči: *nastava fizičke kulture, motivacija, ciljevi, promena.*