

## GOAL ORIENTATIONS, MOTIVATIONAL CLIMATE, EQUALITY, AND DISCIPLINE OF SPANISH PHYSICAL EDUCATION STUDENTS<sup>1</sup>

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*Summary.*—This study analyzes how dispositional goal orientations and perception of different motivational climates are related to the students' perception of sex-related egalitarian treatment and the appearance of disciplined or undisciplined behaviors in physical education classes. Analyses showed that ego orientation is a predictor of undisciplined behavior. Task orientation was positively associated to discipline. The perception of task-involving motivational climate is related to the students' perception of equal treatment. On the contrary, the perception of ego-involving climate has been linked positively to the prediction of the perception of sex discrimination in physical education classes and negatively to the perception of equality and the appearance of disciplined behavior. This study discusses the implications of these results related to teaching instructional actions in physical education classes.

One of the objectives to be pursued in many countries, including Spain, is the creation of an educational system that is as egalitarian as possible in terms of students' sex. However, as Griffin (1985) indicates, professionals in the field of physical education do not always take this aspect into consideration in the planning of their classes. Some studies indicate that occasionally teachers transmit lower expectations of success to female than male students, generating less self-confidence (Marteniuk, 1989; Lirgg, 1993).

Another aspect which preoccupies professionals and investigators in the field of physical education is the understanding of the cognitive mechanisms related to disciplined or undisciplined behaviors in physical education classes (Siedentop, 1991; Lewis, 2001), since prosocial conduct in children and young people is one of the goals the educational environment should achieve (Anderson, Avery, Pederson, Smith, & Sullivan, 1997). Few studies have analyzed how different teaching styles are related to discipline in education; results have shown that both disciplinary techniques and teaching style are related to elements such as students' responsibility, attitudes toward school work, and distraction at work (Lewis, 2001).

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In sports and physical education, the achievement goal perspective (Nicholls, 1989; Ames, 1992) has been the theoretical model which has contributed the most to the understanding of cognitive, behavioral, and emotional patterns related to students' achievement in physical education (Papaioannou, 1998). Key aspects such as the study of disciplined behavior, the appearance of prosocial conduct, such as sportsmanship, and reasoning and moral development in environments related to sport and physical activity, have been analyzed with respect to the achievement goals model (Duda, Olson, & Templin, 1991; Duda & Huston, 1995; Papaioannou, 1997a, 1997b, 1998; Dunn & Dunn, 1999; Kavussanu & Roberts, 2001; Spray & Wang, 2001). Aspects related to equality of treatment received in physical education have also been studied (Papaioannou, 1995).

The achievement goals perspective considers that in achievement settings, such as school and sports, there are two achievement goals which define the concept of ability. One way is to judge ability according to social comparison with others, so that one feels successful when one shows more ability than the reference group. This is known as ego orientation. On the other hand, when individuals adopt task-related goals, they are concerned with personal improvement and feel successful after a high effort and the mastery of a task. This conception of ability is known as task orientation.

Several studies have indicated that task orientation is associated with more positive motivational patterns than ego orientation (see Duda, 2001; Duda & Hall, 2001; Roberts, 2001). Among adaptive patterns we find that task orientation has been related to greater interest in physical education classes (Dorobantu & Biddle, 1997; Cervelló & Santos-Rosa, 2000), while ego orientation has been related to external reasons for committing oneself (Goudas, Biddle, & Underwood, 1995). Nevertheless, the perspective of achievement goals also assumed that situational elements specify what is considered success or failure at school; these are known as the motivational climate (Maehr, 1984; Ames, 1992). Motivational climate refers to all the social and contextual signs through which the related social agents, in this case physical education teachers and peers, define success and failure. As indicated by Ames (1992), teachers, coaches, parents, and peers structure the class, the training session, and the home environment so that different signals for success or failure are implicit (or explicit). As in previous studies (Papaioannou, 1998; Spray & Wang, 2001), the association of dispositional goal orientation and the appearance of disciplined and undisciplined behavior in physical education classes was assessed. Finally, considering that the task-involving climate allows to a large extent the same opportunities for all subjects regardless of their characteristics (Ames, 1992), the association of type of motivational climate, and the perception of equality or discrimination according to sex was assessed.

A positive relationship was expected between the perception of an ego-involving climate and ego orientation and between the perception of a task-involving climate and of task orientation. We believe that task orientation and perception of task-involving motivational climate will be positively linked to disciplined behaviors and ego orientation and the perception of task-involving climate with undisciplined behaviors. Finally, the perception of a task-involving motivational climate and task orientation should be related to the perception of equality, and the perception of an ego-involving climate and ego orientation to the perception of discrimination.

## METHOD

### *Participants and Procedure*

Our study sample consisted of 100 students ( $M$  age = 12.6 yr.,  $SD$  = 2.8). There were 46 boys and 54 girls, all members of physical education classes in schools in a large Spanish city. All subjects volunteered to participate.

Permission to conduct this investigation was received from head teachers. The pupils were told the purpose of the research and their rights as participants and asked to sign a consent form. The measures for the different variables were administered in one order in a classroom to the chosen subjects when the teacher was not present. Each participant took 15–20 minutes to complete the questionnaires, and responses were kept anonymous. The participants were told to ask for help if confused concerning either instructions or the clarity of particular items. No problems were encountered in completing either of the inventories or understanding the questions.

### *Measures*

*Goal orientations.*—To measure the students' dispositional goal orientations in the physical education classes, the Spanish version (Cervelló, Escartí, & Balagué, 1999; Cervelló & Santos-Rosa, 2000, 2001) of the Perception of Success Questionnaire was used (Roberts & Balagué, 1989; Roberts, Treasure, & Balagué, 1998). This questionnaire has 12 items of which six measure Task orientation (e.g., 'In Physical education classes, I feel successful when I reach a goal') and six measure Ego orientation (e.g., 'In physical education classes, I feel successful when I win'). The replies are rated on a Likert-type scale on which each item has a response range from 1 to 100 (anchors: 0 = strongly disagree and 100 = strongly agree). The Spanish version of this questionnaire showed a factor distribution and internal consistency coefficients similar to those obtained for American athletes and students of physical education (Cervelló, *et al.*, 1999; Escartí, Roberts, Cervelló, & Guzmán, 1999; Cervelló & Santa-Rosa, 2000, 2001).

*Motivational climate in physical education classes.*—To measure the students' perception of motivational climate in physical education classes, the version translated into Spanish by Balaguer, Guivernau, Duda, and Crespo

(1997) of the Perception of Motivational Climate in Sport Questionnaire-2 (Newton & Duda, 1993) was adapted. The Spanish version of this questionnaire has two higher-order dimensions, which measure the Perception of Task-involving Motivational Climate and the Perception of Ego-involving Motivational Climate. In the Spanish version, the Task-involving climate factor is composed of 11 items. Examples of the items included: "In physical education (P.E.) classes, students feel good when they try their best" and "In P.E. classes, students help each other learn." The ego-involving climate factor includes 13 items (e.g., "In P.E. classes the teacher has his favorites"). The replies to the questionnaire were indicated on a Likert-type scale with a range response of 0 to 100 (0=strongly disagree to 100=strongly agree). Studies carried out with Spanish athletes have shown a factor distribution and internal consistency coefficients similar to those found in athletes and students in other countries (Balaguer, *et al.*, 1997; Cervelló & Santa-Rosa, 2000).

*Perception of sex-related equality in physical education classes.*—To assess whether pupils perceive that their teacher carries out sex-equitable physical education sessions, a questionnaire designed by those responsible for the research was used, after several joint meetings and after consulting teachers in active service. For drawing up the measure, named Perception of Equality/Discrimination in Physical Education Questionnaire,<sup>2</sup> the categories designed for a qualitative study carried out by Del Villar (1996) on the problems in teaching instructions for inexperienced teachers in Physical Education classes were used. The questionnaire has 19 items, 10 of which are grouped in the perception of Equality factor and correspond to equality parameters (e.g., "In physical education classes, my teacher organizes us into groups made up of boys and girls," "My teacher assesses us on our progress, regardless of whether we are boys or girls") and nine of which are grouped in the factor named perception of Discrimination, corresponding to discriminatory parameters (e.g., "My teacher doesn't devote the same attention time to the boys and the girls," "He/she motivates the boys in a different way from the girls"). These parameters refer to aspects such as grouping, type of assessment, attention time, motivation, previous performance expectations and autonomy distribution in boys and girls in physical education classes. The replies are formulated on a Likert-type scale on which each item uses anchors of 0=total disagreement and 100=total agreement. For the present investigation, Items 2 and 12 of the original version were deleted given low item-total correlations (below .30). With the two items deleted, the Cronbach alphas were .82 for the Equality factor and .78 for the Discrimination factor.

<sup>2</sup>Data are on file in Document APD-2004-016. Remit \$12.00 for photocopy to the Archive for Psychological Data, P. O. Box, 7922, Missoula, MT 59807-7922.

*Disciplined–undisciplined behavior.*—To measure disciplined and undisciplined behaviors in physical education classes, the Disciplined–Undisciplined Behavior Inventory designed by Cervelló, Jiménez, Nerea, Ramos, Del Villar, and Santos-Rosa (2002) was given. This inventory has 19 items, nine grouped in the Disciplined Behavior factor (e.g., “In physical education classes you comply with the rules established in the running of the class,” “You use class material correctly”), and 10 items belonging to the Undisciplined Behavior factor (e.g., “You don’t pay attention to the teacher’s explanations,” “You carry out different activities to those the teacher tells us to practice”). The replies are formulated on a Likert-type scale on which each item has a response range based on anchors of 0=total disagreement and 100=total agreement. In the study developed by Cervelló, *et al.* (2002), exploratory factor analysis confirmed the two-factor structure, and alphas for Disciplined Behavior and Undisciplined Behavior factors were .83 and .79, respectively. For the present investigation, Items 3, 16, and 17 of the original version were deleted given their low item-total correlations (below .30). With the three items deleted, the Cronbach alphas were .78 for the Disciplined Behavior factor and .77 for the Undisciplined Behavior factor.

## RESULTS

### *Factor Analysis*

To examine the factorial validity of the Perception of Equality-Discrimination in Physical Education Questionnaire, developed for this study, and the Disciplined–Undisciplined Behavior Inventory, principal components exploratory factor analysis with varimax rotation were conducted. An eigenvalue of 1.0 or greater was used as the criterion for extracting factors and a loading of .40 or greater for selecting items.

Analysis of factor loadings on the Perception of Equality-Discrimination in Physical Education Questionnaire indicated that nine items relating to perception of Equality had loadings on the first factor which ranged from .78 to .45. Eight items relating to perception of Discrimination loaded on the second factor and were in the range from .73 to .54. Equality and Discrimination factors accounted for 29% and 15% of the variance, respectively, for a total of 44% (see Table 1).

In the factor analysis performed on Disciplined–Undisciplined Behavior, two factors of seven and nine items, respectively, emerged. All items had satisfactory loadings. The Disciplined Behavior factor accounted for 32% of the variance, and Factor 2 accounted for 12% of the variance, 44% in total. Table 2 provides the final factor loadings for the Disciplined–Undisciplined Behavior Inventory.

### *Descriptive Statistics, Reliability, and Correlations*

Table 3 presents the descriptive statistics for the measures, the reliabil-

TABLE 1  
 ROTATED FACTOR LOADINGS FOR PERCEPTION OF EQUALITY/DISCRIMINATION  
 IN PHYSICAL EDUCATION QUESTIONNAIRE

Item No.	Equality	Discrimination
17	<b>.78</b>	-.07
16	<b>.74</b>	-.24
6	<b>.69</b>	-.30
13	<b>.62</b>	-.25
15	<b>.61</b>	-.46
1	<b>.60</b>	-.21
10	<b>.60</b>	.13
18	<b>.56</b>	.10
3	<b>.45</b>	.04
4	.05	<b>.73</b>
9	-.08	<b>.72</b>
8	.03	<b>.66</b>
5	-.02	<b>.61</b>
19	-.24	<b>.58</b>
7	-.29	<b>.57</b>
11	-.03	<b>.55</b>
14	-.08	<b>.54</b>
Eigenvalue	4.87	2.51
% of variance	28.68	14.78

ity coefficients, and the correlations between the variables. The mean scores on the factors show that these physical education students scored high on Task orientation and moderate on Ego orientation. The students also rated the climate high on Task-involving and low on Ego-involving. In the same way, they reported high scores on Equality in the Physical Education classes and low scores on perception of Discrimination, as well as having high scores on the Disciplined Behavior and low scores on the Undisciplined Behavior. Reliability coefficients for all scales exceeded .70 (Nunnally, 1978); therefore, the reliability of the questionnaires is acceptable. Positive and significant correlations were found between the perception of the Task-involving motivational climate and Task orientation and between the perception of an Ego-involving motivational climate and Ego orientation. As in previous studies, negative and significant connections between the perception of both motivational climates obtained (Kavussanu & Roberts, 1996). In Table 3 are positive correlations among Ego orientation, Undisciplined Behavior, and perception of Discrimination. Perception of Task-involving motivational climate was related positively to perception of Equality and Disciplined Behavior. Finally, perception of Ego-involving motivational climate was related positively to scores on Discrimination and Undisciplined Behavior, and negatively to Equality and Disciplined Behavior.

TABLE 2  
ROTATED FACTOR LOADINGS OF DISCIPLINED-UNDISCIPLINED BEHAVIOR INVENTORY

Item No.	Disciplined Behavior	Undisciplined Behavior
18	.77	-.17
11	.73	-.21
14	.72	-.01
10	.68	-.03
6	.62	-.18
8	.59	-.18
1	.40	-.14
5	-.12	.83
2	.04	.64
7	-.02	.64
4	-.18	.62
19	-.33	.60
9	-.24	.55
15	-.21	.51
13	-.33	.43
12	-.57	.42
Eigenvalue	5.08	1.88
% of variance	31.75	11.76

TABLE 3  
MEANS, STANDARD DEVIATIONS, COEFFICIENTS ALPHA, AND CORRELATIONS OF ALL VARIABLES

Variable	M	SD	$\alpha$	r							
				1	2	3	4	5	6	7	8
1. Ego Orientation	51.3	27.9	.88	.20*	.30†	-.03	-.12	.26†	-.15	.41†	
2. Task Orientation	88.0	12.1	.73		-.04	.40†	.15	.08	.17	.06	
3. Ego-involving Climate	22.1	19.7	.84			-.27†	-.37†	.44†	-.39†	.31†	
4. Task-involving Climate	77.5	17.0	.81				.45†	-.05	.24*	-.14	
5. Equality	81.4	18.7	.82					-.33†	.15	-.17	
6. Discrimination	35.0	24.3	.78						-.09	.30†	
7. Disciplined Behavior	80.2	19.3	.78							-.44†	
8. Undisciplined Behavior	19.8	19.0	.77								

\* $p < .05$ . † $p < .01$ .

### *Hierarchical Multiple Regression*

We conducted four separate hierarchical analyses. In these analyses each of the analyzed factors (perception of Equality, perception of Discrimination, Disciplined Behavior, and Undisciplined Behavior), served as a dependent variable. The summary for each regression equation is displayed in Tables 4 and 5. Based on previous work by Papaioannou (1998) about the effect of goal orientation and perception of motivational climate in students' discipline, the scores on perception of Equality, Discrimination, and Disci-

plined and Undisciplined behaviors were hierarchically regressed on the variables of (a) Dispositional factors (Task and Ego orientations) and (b) Contextual factors (perceived Task-involving and Ego-involving climate).

TABLE 4  
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIABLES  
PREDICTING PERCEPTION OF EQUALITY AND DISCRIMINATION

Variable	B	SE B	$\beta$	$\Delta R^2$
Equality				
Step 1				.05
Task Orientation	.30	.15	.19	
Ego Orientation	-.11	.06	-.17	
Step 2				.22†
Task Orientation	.00	.15	.00	
Ego Orientation	.00	.06	-.30	
Task-involving Climate	.41	.10	.37†	
Ego-involving Climate	-.25	.09	-.26*	
Total $R^2$				.27†
Discrimination				
Step 1				.07*
Task Orientation	.00	.20	.03	
Ego Orientation	.22	.08	.25*	
Step 2				.15*
Task Orientation	.13	.20	.06	
Ego Orientation	.10	.08	.12	
Task-involving Climate	.00	.14	.03	
Ego-involving Climate	.52	.12	.42†	
Total $R^2$				.22†

\* $p < .05$ . † $p < .01$ .

As shown in Table 4, perception of Task-involving climate, positively, and perception of Ego-involving climate, negatively, predicted 22% of the variance for the perception of Equality factor. Ego orientation and perception of Ego-involving climate were positive predictors of Discrimination. However, the beta value of Ego orientation was not significant, suggesting that the effect on perception of Discrimination was mediated by perception of an Ego-involving motivational climate. In Table 5, Disciplined Behavior was predicted positively by Task orientation in Step 1 and negatively by perception of Ego-involving climate in Step 2. Finally, only Ego orientation predicted positively Undisciplined Behaviors.

#### DISCUSSION

Our results suggest that both the dispositional goal orientations and the perception of task-involving and ego-involving motivational climate are moderately related to the perception of equality or discrimination and the appearance of students' disciplined or undisciplined behaviors. A detailed inspec-

TABLE 5  
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIABLES  
PREDICTING DISCIPLINED-UNDISCIPLINED BEHAVIORS

Variable	B	SE B	$\beta$	$\Delta R^2$
Disciplined Behaviors				
Step 1				.06*
Task Orientation	.34	.16	.21*	
Ego Orientation	-.13	.06	-.19	
Step 2				.12†
Task Orientation	.22	.16	.13	
Ego Orientation	-.05	.06	-.07	
Task-involving Climate	.10	.11	.09	
Ego-involving Climate	-.33	.09	-.34†	
Total $R^2$				.19†
Undisciplined Behaviors				
Step 1				.16†
Task Orientation	-.03	.14	-.02	
Ego Orientation	.28	.06	.41†	
Step 2				.04
Task Orientation	-.07	.16	.04	
Ego Orientation	.23	.06	.34†	
Task-involving Climate	-.11	.11	-.10	
Ego-involving Climate	.17	.09	.18	
Total $R^2$				.21†

\* $p < .05$ . † $p < .01$ .

tion of the regression analysis shows, curiously, that motivational climate is a better predictor of perception of equality and discrimination than goal orientation. These results seem coherent with the postulates defended by the achievement goals perspective, since ego-involved environments also lead to discrimination towards students if they are rewarded by their demonstration of superior capacity and not by their personal improvement in the execution of the task. These environments encourage the creation of stereotypes according to the sex of participants. Such evidence has been found in various studies which indicate that coeducational experiences are characterized by female students participating less than male students (Eccles & Harold, 1991) because they have less opportunity to practice sporting skills (Solomons, 1976) and experience less instructional interaction and feedback through the explanations and perceptions of their teachers (Griffin, 1984, 1985; Dunbar & O'Sullivan, 1986; Turvey & Laws, 1988; MacDonald, 1990; Nilges, 1998). Physical education teachers can either reinforce the acquisition of these stereotypes or encourage sex equality. It is possible that this different treatment of male and female students affects the perceptions of ability in females in such a way that they feel less competent given the information they obtain from the way they are treated by their teachers. As is indicated by Nicholls

(1989), those classroom climates that encourage achieving success through effort, persistence, and active participation, without making comparisons among students, but assess personal progress, favor the appearance of a greater feeling of competence. We believe that this is associated with the perception on the part of the students that they are receiving a genuinely egalitarian education.

Observing the results that relate dispositional goal orientations and the perception of different motivational climates and disciplined or undisciplined students' behavior, we have found that ego orientation positively predicted undisciplined behavior. This result is in line with that of Papaioannou (1998). We believe that, as Papaioannou indicated, subjects presenting a high ego orientation are motivated by other aspects than learning, due to which they do not perceive that developing disciplined behaviors is necessary to achieve a correct teaching-learning environment which allows improvement and achieving good behavior. In contrast to previous studies, we have found significant but small correlations between task orientation and disciplined behavior. As Spray (2002) indicated, pupils are more likely to involve themselves fully in lessons, work hard, and cooperate with each other when task-involved. It is more unlikely that task-involved pupils will perceive external constraints on their behavior as they want to work hard and develop skills. They will not feel pressured to follow rules since the value of these rules has been internalized. More research is necessary to assess whether significant relationships between task orientation and disciplined behaviors are characteristic of the sample in this study or whether, indeed, there is no significant connection between these two variables.

Finally, we have found that the motivational climate is also moderately related to disciplined behavior in physical education classes. Only the perception of ego-involving motivational climate was negatively related to students' disciplined behavior. These results may be indicating that climates favoring the absence of interpersonal competition and encouraging independent behavior of the students leads to the appearance of disciplined behavior. The problem of the appearance of disciplined or undisciplined behavior can be explained by the diminished responsibility of students in making decisions in those environments that do not encourage intrinsic reasons for maintaining discipline in physical education classes. These students perceive their teacher lays great emphasis on the development of rules, forms of punishment, and even in some cases humiliation in front of the group to maintain discipline, owing to which their social responsibility does not increase, and they do not consider it important to maintain discipline required to complete the teaching-learning process satisfactorily.

The importance of practical matters must be stressed, i.e., the way in which teachers oriented the planning of their classes. This is not only linked

to favor of a less discriminatory and disciplined form of education but also to achieve an ideal atmosphere for improving learning and increasing students' commitment and cooperative responsibility (cf. Papaioannou, 1998; Cervelló & Santos-Rosa, 2000; Treasure, 2001; Spray, 2002).

To conclude, we want to consider some limitations of this study. Regarding the analyses of factorial validity of the inventories, we must acknowledge the limitation of having fewer than five subjects per item for the factorial analysis. However, the results of the factorial analyses of this study are similar to those found by Cervelló, *et al.* (2002) using exploratory factor analysis and to an unpublished manuscript by Cervelló and Moreno (2004) reporting a confirmatory factor analysis of relationships of perception of different types of feedback on perception of Equality and Discrimination in physical education. These studies have shown the stability of the Disciplined–Undisciplined Behavior Inventory and the Perception of Equality–Discrimination in Physical Education Questionnaire in the Spanish context, but more investigation is necessary to confirm the adaptation of these questionnaires to other cultures and contexts.

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*Accepted May 18, 2004.*