Motivation, Disciplined Behaviour, Equal Treatment And Dispositional Flow In Physical Education Students

Juan Antonio Moreno Murcia [•]
Néstor Alonso Villodre [••]
Celestina Martínez Galindo [•••]
Eduardo Cervelló Gimeno [••••]
Luis Miguel Ruiz Pérez [•••••]

Abstract

The purpose of this study is to analyse the possible relations between dispositional goal orientations, perceived motivational climate, discipline, coeducation and the flow state in physical education students. The sample consists of 1,103 students with an average age of 14. The results show that task orientation is related to discipline, the perception of equal treatment, the task-involving motivational climate, ego orientation and the flow state in a positive and significant manner, while it is related to indiscipline and the ego-involving motivational climate in a negative manner. On the other hand, ego orientation is related to indiscipline, the perception of discrimination, the ego-involving motivational climate, task orientation and the flow state in a positive and significant manner and to discipline, the perception of equal treatment and the task-involving motivational climate in a negative manner. In the multiple regression analysis we can observe how discipline is predicted by task orientation and by the perception of a task-involving motivational climate. The task- and ego-involving climate, as well as ego orientation, predict indiscipline. On the other hand, the perception of equal treatment is predicted by the task-involving climate. The ego-involving climate and ego orientation predict the perception of discrimination.

Key-words: discipline, physical education, motivational climate, gender equality, dispositional flow.

[•] University of Murcia, morenomu@um.es
[••] Research Department of Physical Education and Sports, University of Murcia
[•••] Catholic University of San Antonio of Murcia
[••••] Miguel Hernández University of Elche
[•••••] University of Castilla La Mancha

Introduction

Motivation in Physical Education classes has been studied by many researchers, specifically the theories studying achievement motivation (Atkinson, 1977; McClelland, 1961), which consider it as a unitary construct. However, the basic pillar on which the study of motivation with regards to sport and Physical Education rests refers to the achievement goal theory (Ames and Archer, 1987, 1988; Dweck and Legget, 1988; Maehr, 1974; Maehr and Nicholls, 1980).

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 subjectively define their success and failure in the achievement context: task orientation and ego orientation. Therefore, according to Morgan and Carpenter (2002), task orientation is associated with the use of an equivalent conception of ability, where effort is seen to equal the term ability. In contrast, ego orientation is associated with the use of a differentiated conception of ability, where effort is not associated with ability, and a focus where little effort to enhance social status are combined.

Another term that plays a fundamental role in achievement goal theory is the concept of motivational climate, which was introduced by Ames (1984b, 1992b) and Maehr (1984) to refer to different environments created by adults in a success setting (Escartí and Gutiérrez, 2001), which are related to the conception of ability and competence the students have and which can predispose individuals to adopt a particular personal goal perspective in that situation and, as a consequence, use adaptive or maladaptive achievement strategies (Ames, 1984a, 1984b, 1992a, 1992b; Morgan and Carpenter, 2002; Nicholls, 1989).

As far as the achievement goal perspective is concerned (Ames, 1992b; Nicholls, 1989; Roberts, 1992), we can refer to studies that associate dispositional task orientation and the perception of task-involving motivational climates with the choice of more challenging tasks, more fun in competition and even more performance (Cervelló and Santos-Rosa, 2001; Theeboom, de Knop, and Weiss, 1995). Similarly, there is research (Cervelló and Santos-Rosa, 2001; Duda and Hom, 1993; Pensgard and Roberts, 2002; White and Duda, 1994) in both the sport and the educational setting, which inform us about the relation between different dispositional goal orientations and their respective perceived motivational climates.

On the other hand, disciplined behaviour in settings related to sport, physical activity and Physical Education has been debated and studied by many researchers

using the achievement goal model. They have also researched the appearance of social behaviour, such as leadership and moral and rational development (Cervelló, Jiménez, Del Villar, Ramos, and Santos-Rosa, 2004; Dunn and Dunn, 1999; Papaioannou, 1997a, 1997b, 1998; Spray, 2002; Spray and Wang, 2001).

Papaioannou (1998) and Spray and Wang (2001) found that task orientation and self-determination predicted disciplined behaviour. In contrast, ego orientation was positively related to external reasons and amotivation and did not predict disciplined behaviour. They also argued that task orientation identified intrinsic reasons for behaving in physical education classes, so that students could concentrate on aspects of skill development, affiliation and fun. Thus, task-oriented pupils should not feel obliged to be quiet or follow rules because they really want to learn, to cooperate with other pupils and to develop a sense of responsibility.

Recent studies have shown the association between the perception of a motivational climate and discipline. Thus, Cervelló et al. (2004) showed that the perception of a task-involving motivational climate is related positively with more disciplined behaviour, while the perception of an ego-involving motivational climate is related to more indiscipline in physical education classes.

Another subject related to the motivational climate, dispositional goal orientation and discipline is coeducation. In the strict sense of the term, coeducation refers to the common education of both sexes using the same educational model (Cervelló, Del Villar, Jiménez, Ramos, and Blázquez, 2003).

Therefore, different authors argue that coeducational experiences for girls are characterised by them participating less (Eccles and Harold, 1991), having fewer opportunities to practice their sports abilities (Solomons, 1976), not receiving as much instructional interaction and feedback from teachers' explanations and perceptions (Dunbar and O´Sullivan, 1986; Griffin, 1984, 1985; MacDonald, 1990; Nilges, 1998) and having low satisfaction in sport (Rosich, 1999).

Cervelló et al. (2004) state that the perception of a task-involving climate is related to the perception of equal treatment by the teacher. In contrast, the perception of an ego-involving climate is associated positively with the prediction of the perception of gender discrimination behaviour in physical education classes and negatively with the perception of equality and the appearance of disciplined behaviour.

Another of the variables analysed in our study refers to the dispositional flow and although Csikszentmihalyi (1990, 1993) was the first scientist to research it,

Jackson (1992, 1995), Jackson and Marsh (1996) and Jackson and Roberts (1992) have been the most involved in examining the scope of maximum performance in sport as a flow function. According to Jackson and Marsh (1996) flow is related to the optimal psychological state for performance (or flow state in sport), which occurs when the athlete is totally connected with what he is doing. Jackson and Marsh (1996) also define the flow state as "that psychological process underlying peak performance". As we have pointed out, the flow state is an optimal psychological state that allows the sportsperson to tackle a motor task with the best possible mental conditions and which encompasses the following nine characteristics: challenge-skill balance, action-awareness merging, clear goals, clear unambiguous feedback, concentration on task at hand, sense of control, loss of self-consciousness, transformation of time and autotelic experience (Csikszentmihalyi, 1990, 1993).

On the other hand, 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; Kowal and Fortier, 1999; Martin and Cutler, 2002).

Kowal and Fortier (2000) and Papaioannou and Kouli (1999) demonstrated the relations between the contextual motivational climate and dispositional flow, showing a positive significant relation between the task-involving climate and the flow state and a negative significant relation between the ego-involving climate and the appearance of the flow state on the other. Similarly, Kimiecik and Jackson (2002) discovered that task orientation is a better predictor of flow in sport.

Therefore, in accordance with the research carried out by numerous authors in educational settings (Ames, 1992a, 1992b; Cervelló et al., 2003; Papaioannou and Theodorakis, 1996; White and Duda, 1994) and in sport settings (Cervelló and Santos-Rosa, 2001; Duda and Hom, 1993; Pensgard and Roberts, 2002; Santos-Rosa, 2003) our hypotheses are that, on the one hand, there will be a positive significant relation between dispositional orientation and the motivational climate perceived in such a way that task orientation will be related to the task-involving motivational climate in a positive and significant manner, and, on the other, a positive significant relation between ego orientation and the ego-involving motivational climate.

As demonstrated in some studies (Cervelló et al., 2003; Cervelló and Jiménez, 2001; Cervelló et al., 2004; Papaioannou, 1998) we expect to find a positive significant relation between the students' perception of equal treatment and task orientation and

the perception of a task-oriented motivational climate. And, on the other hand, there will be a positive significant association between the young students' perception of discrimination and ego orientation and the perception of an ego-oriented motivational climate.

Similarly, numerous studies carried out by Cervelló et al. (2003), Cervelló et al. (2004), Papaioannou (1998) and Spray and Wang (2001) confirm that there will be a positive significant relation between task orientation, the perception of a task-involving motivational climate and the appearance of discipline-related behaviour; as well as a correlation between ego orientation, the perception of an ego-involving motivational climate and the appearance of behaviour associated with indiscipline.

Likewise, a positive significant relation will be established between the task-involving motivational climate and the dispositional flow and a negative significant relation between the ego-involving motivational climate and the dispositional flow, as mentioned by Kowal and Fortier (2000) and Papaioannou and Kouli (1999).

Method

Participants

The sample consisted of 1,103 students (606 males and 497 females) studying the second course of ESO (Compulsory Secondary Education) at state and private schools in the province of Alicante (Spain).

Measures

In the Spanish academic context, all the assessments of pupils' academic performance are ranged between 0 to 10. In order to make it easier for the students to reply in a more usual way, all the replies were indicated on a 10-point Likert scale anchored to strongly disagree (0) and strongly agree (10).

Questionnaire on Disciplined-Undisciplined Behaviour in Physical Education (ICDIEF). We used the Questionnaire on Disciplined-Undisciplined Behaviour in Physical Education (Cervelló et al., 2004) to measure disciplined-undisciplined behaviour in students in physical education classes. The questionnaire has 19 items, 9 for "undisciplined" behaviour and another 10 for "disciplined" behaviour. The replies to this questionnaire were closed and they were rated on a Likert-type scale ranging

from 0, a value indicating strongly disagree, to 10, which indicated that the student strongly agreed with what he was being asked. This inventory shows alpha results of .81 for the indiscipline subscale and .76 for the discipline subscale.

Questionnaire on Equality-Discrimination Perception in Physical Education (CPIDEF). We used the Questionnaire on Equality-Discrimination Perception in Physical Education (Cervelló et al., 2004) to measure students' perception of equality and discrimination in Physical Education, which the teacher inspires in them in physical education classes. The questionnaire has 19 items, 10 for "equal treatment" behaviour by the Physical Education teacher with regards to his/her students' gender. The other 9 items are for "discrimination" behaviour by the Physical Education teacher with regards to his/her students' gender. The replies to this questionnaire were closed and they were rated on a Likert-type scale ranging from 0, a value indicating strongly disagree, to 10, which indicated that the student strongly agreed with what he was being asked. This inventory shows alpha results of .84 for the equal treatment subscale and .72 for the discrimination subscale.

Questionnaire of the Climate Motivacional in Physical Education clases (CMEF). We used the Questionnaire of Students' Perception of Motivational Strategies used by the Teacher in Physical Education Classes (Cervelló, Moreno, Del Villar, and Reina, 2007) to measure students' perception of the motivational climate conveyed by their teacher in physical education classes. This questionnaire has 24 items, 12 for the teacher's strategies leading to the "task-involving motivational climate" and the other 12 for the teacher's behaviour leading to the "ego-involving motivational climate". The replies to this questionnaire were closed and they were rated on a Likert-type scale ranging from 0, a value indicating strongly disagree, to 10, which indicated that the student strongly agreed with what he was being asked. This inventory shows alpha results of .82 for the task-oriented motivational climate subscale and .77 for the ego-oriented motivational climate subscale.

Perception of Success Questionnaire (POSQ). We used the Spanish version (Cervelló, Escartí, and Balagué, 1999) of the Perception of Success Questionnaire (Roberts and Balagué, 1991; Roberts, Treasure, and Balagué, 1998) to measure young students' goal orientations in physical education classes. The inventory in question has 12 items, 6 for the student's "task" orientation and the other 6 provide information on the student's "ego" orientation. The replies to this questionnaire were closed and they were rated on a Likert-type scale ranging from 0, a value indicating strongly disagree, to 10, which indicated that the student strongly agreed with what he was being asked. This inventory shows alpha results of .88 for the task subscale and .93 for the ego subscale.

Dispositional Flow Scale (DFS). We used the Dispositional Flow Questionnaire (DFS) by Jackson (2000) adapted to the Spanish context by García Calvo, Cervelló, Jiménez, and Santos-Rosa (2005) to measure the students' flow in their physical education classes. The inventory has 36 items whose replies were closed and they were rated on a Likert-type scale ranging from 0, a value indicating strongly disagree, to 10, which indicated that the student strongly agreed with what he was being asked. 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 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.

Procedure

Permission to conduct this investigation was received from headteachers. The pupils were told the purpose of the research, their rights as study participants and asked to sign a consent form. The instruments for measuring the different variables were administered in a classroom to the chosen subjects when the teacher was not present. The measures were given to all 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 instructions or the clarity of particular items. No problems were encountered in completing either of the inventories or understanding the nature of the questions.

Results

Correlation Analysis

This section presents the correlations between disciplined-undisciplined behaviour, the perception of equal treatment-discrimination, perceptions of the motivational climate, goal orientations and the dispositional flow.

It can be observed in Table 1 how task orientation is related positively and significantly with discipline, the perception of equal treatment, the task-involving motivational climate, ego orientation and the dispositional flow. Similarly, it is related negatively with indiscipline and the ego-involving motivational climate.

Ego orientation is related positively and significantly with indiscipline, the perception of discrimination, the ego-involving motivational climate, task orientation and the dispositional flow. Similarly, it is related negatively with discipline, the perception of equal treatment and the task-involving motivational climate.

The task-involving motivational climate is related positively and significantly with discipline, with the perception of equal treatment, with task orientation and with the dispositional flow. Similarly, it is related negatively with indiscipline, the perception of discrimination, the ego-involving motivational climate and with ego orientation.

The ego-involving motivational climate is related positively and significantly with indiscipline, the perception of discrimination and with ego orientation. Similarly, it is related negatively with discipline, the perception of equal treatment, the task-involving motivational climate, task orientation and the dispositional flow.

Multiple Regression Analysis

According to the multiple regression analysis (see Table 2) of variables predicting personal, as well as contextual, factors and the dispositional flow in physical education classes, we can observe, in step 1, a positive and significant prediction of the dispositional flow of the perception of a task-involving motivational climate; in step 2, we can observe how both task and ego orientation, as well as the perception of a task-involving motivational climate, predict the appearance of the dispositional flow.

Similarly, according to the multiple regression analysis (see Table 3) of variables predicting personal, as well as contextual, factors and factors related to discipline and indiscipline in physical education classes, we can observe, on the one hand, and with regard to the discipline factor in step 1, a positive and significant prediction of the task-involving motivational climate and a negative and significant prediction of the ego-involving motivational climate. In step 2, we ascertained that both task orientation and the perception of the task-involving motivational climate predict disciplined behaviour in physical education classes in a positive and significant manner; and the ego-involving motivational climate and ego orientation explain this behaviour in a negative and significant manner. On the other hand, with regard to the indiscipline factor, we obtained a positive and significant prediction of the task- and ego-involving motivational climate in step 1. In step 2, we observed how indiscipline in the classrooms is predicted in a positive and significant manner by the perception of a task- and ego-involving motivational climate, as well as by ego orientation, and in a negative and significant manner by task orientation.

Similarly, according to the multiple regression analysis (see Table 4) of variables predicting personal, as well as contextual, factors and factors related to the perception of equal treatment and discrimination behaviour in physical education classes, we observed, on the one hand, and with regard to the equal treatment factor in step 1, a positive and significant prediction of the task-involving motivational climate and a negative and significant prediction of the ego-involving motivational climate. In step 2, we observed how the perception of equal treatment is predicted positively and significantly by the task-involving motivational climate and negatively and significantly by the ego-involving motivational climate. On the other hand, and with regards to the discrimination factor, we observed a positive and significant prediction of the ego-involving motivational climate in step 1, as well as a negative and significant prediction of the task-involving motivational climate. In step 2, we observed how the ego-involving motivational climate and ego orientation predict the perception of discrimination in a positive and significant manner, and how the task-involving motivational climate predicts it in a negative and significant manner.

Discussion

We have obtained a relation between the different dispositional goal orientations and the different motivational climates perceived by students in physical education classes, 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 positively and significantly with the perception of an ego-involving motivational climate.

These results coincide with those found in numerous research studies in both educational settings (Ames, 1992a, 1992b; Cervelló et al., 2003; Papaioannou and Theodorakis, 1996; White and Duda, 1994), and in sport settings (Cervelló and Santos-Rosa, 2001; Duda and Hom, 1993; Peiró, Escartí, and Duda, 1996; Pensgard and Roberts, 2002), which inform us about the relation between the different dispositional goal orientations and their respective perceived motivational climates.

This tells us that students will tend to prefer the type of perceived climate their Physical Education teacher conveys in his/her classes, in other words, if the teacher conveys contents related to personal improvement, collaboration among peers and task mastery in his/her sessions, the students will tend to prefer task orientation. However, if winning, being the best and demonstrating success are the ideas the teacher provides, his/her students will be more inclined towards ego orientation.

In this regard, we should mention that if personal orientation is strong, the student's ego or task orientation in a specific activity will be less likely to be suppressed or changed by external forces. In contrast, when this orientation is weak, the student will more easily fluctuate or change from one orientation to another affected by situational influences (Cecchini et al., 2001).

Another relation we have found in the results of our research is the one between the different dispositional goal orientations, perceived motivational climates and behaviour related to students' discipline and indiscipline in physical education classes. Therefore, we observed that there was a positive and significant relation between task orientation, the perception of a task-involving motivational climate and the appearance of behaviour related to discipline. Similarly, there is a correlation between ego orientation, the perception of an ego-involving motivational climate and the appearance of behaviour associated with indiscipline. These results coincide with those found by Cervelló and Jiménez (2001), Cervelló et al. (2004), Papaioannou (1998a) and Spray and Wang (2001).

Parallel to this research, and at the same time confirming our results, we can observe the positive association between the students' perception of a task-involving climate and the perception of teaching strategies that promote an internal locus of causality to regulate disciplined behaviour in Spray's study (2002). In contrast, the perception of an ego-involving climate was related to the promotion of an external locus of causality. Similarly, Spray demonstrated that a teacher's perception which places more emphasis on internal reasons for maintaining discipline was stronger with the perception of a task-involving climate.

These interpretations tell us that task-oriented students are more concerned with paying attention to their learning and personal improvement, so strategies to control their behaviour are not required. In contrast, ego-oriented students are more centred on being better than the rest and on doing everything possible to achieve this end, including, if necessary, behaving in an incorrect and undisciplined manner, so that the Physical Education teacher has to make use of coercive and restrictive strategies in order to obtain the correct attention climate in his/her classes.

We also found a relation between the different goal orientations, perceived motivational climates and the appearance of the dispositional flow, so task orientation is related positively and significantly with the task-involving motivational climate and the appearance of the dispositional flow. Likewise, we also found that ego orientation is connected with the appearance of the dispositional flow, but that, in contrast, the

perception of an ego-involving motivational climate is related negatively and significantly with the appearance of the dispositional flow.

We found research that confirmed our results and that has been carried out in sport settings, such as the study by Kimiecik and Jackson (2002), in which the task orientation proved to be a better dispositional flow predictor in sport. Other research corroborating our results has been carried out by Kowal and Fortier (2000) and Papaioannou and Kouli (1999), which showed a positive relations between the task-involving climate and the dispositional flow and, on the other, a negative significant relation with the ego-involving climate.

On the other hand, there is research that does not coincide with the results in our study, such as that carried out by Cervelló et al. (2001), which showed that the dispositional flow was predicted by both ego dispositional goal orientation and by the perception of both a task- and ego-involving motivational climate. Likewise, Santos-Rosa (2003) mentions that only ego orientation and not task orientation is a predictor of the dispositional flow in competition.

References

Atkinson, J. W. (1977). Motivation for achievement. In T. Blass (ed.), *Personality variables in social behavior* (pp. 47-67). Hisdale: NJ, Erlbaum.

Ames, C. (1984a). Achievement attributions and self-Instruction under competitive and individualistic goal structures. *Journal of Educational Psychology, 76*: 478-487.

Ames, C. (1984b). Competitive, cooperative and individualistic goal structures: a motivational analysis. In R. Ames & C. Ames (eds.), *Research on Motivation in Education: Student Motivation* (pp. 177-207). New York: Academic Press.

Ames, C. (1992a). Classrooms, goals, structures, and student motivation. *Journal of Educational Psychology, 84*: 261-271.

Ames, C. (1992b). Achievement goals, motivational climate, and motivational Processes. In G. Roberts (ed.) *Motivation in Sport and Exercise* (pp. 161-176). Champaign: IL, Human Kinetics.

Ames, C., & Archer, J. (1987). Mother's beliefs about the role of ability and effort in school learning. *Journal of Educational Psychology, 18:* 409-414.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Student's learning strategies a motivation processes. *Journal of Educational Psychology, 80:* 260-267.

Bidle, S., Cury, F., Goudas, M., Sarrazin, P., Famose, J. P., & Durand, M. (1995). Development of scale to measure perceived physical education class climate: a cross-national project. *British Journal of Educational Psychology, 65*: 341-358.

García Calvo, R., Jiménez, R., Santos-Rosa, F. J., & Cervelló, E. (2002). Relaciones entre el flow, la orientación de metas disposicional, el clima motivacional y la motivación intrínseca en el juego del fútbol de adolescentes (in español). 2nd Spanish and Portuguese Congress on Psychology of Physical Activity and Sport (Placencia, UNED).

Cechini, J. A., González, C., Carmona, A. M., Arruza, J., Escartí, A., & Balagué, G. (2001). The influence of the Physical Education teacher on intrinsic motivation, self-confidence, anxiety, and pre- and post- competition mood states. *European Journal of Sport Science, 1*: 1-11.

Cervelló, E., Del Villar, F., Jiménez, R., Ramos, L., & Bázquez, F. (2003). Clima motivacional en el aula, criterios de éxito de los discentes y percepción de igualdad de trato en función del género en las clases de educación física. *Enseñanza, 21:* 379-395.

Cervelló, E., Escartí, A., & Balagué, G. (1999). Relaciones entre la orientación de metas disposicional y la satisfacción con los resultados deportivos, las creencias sobre las causas de éxito en deporte y la diversión con la práctica deportiva. *Revista de Psicología del Deporte, 8:* 7-19.

Cervelló, E., & Jiménez, R. (2001). Un estudio correlacional entre la orientación motivacional, el clima motivacional percibido, la coeducación y los comportamientos de discipline en las clases de educación física. Santander. 4th Internacional Congress on Physical Education Teaching and School Sport.

Cervelló, E., Jiménez, R., Del Villar, F., Ramos, L., & Santos-Rosa, F. J. (2004). Goal orientations, motivational climate, equality, and discipline of Spanish physical education students. *Perceptual and Motor Skills, 99:* 271-283.

Cervelló, E., Moreno, J. A., del Villar, F., & Reina, R. (2007). Desarrollo y validación de un instrumento de medida de las estrategias motivacionales empleadas en las clases de educación física. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte, 2*(2), 53-72.

Cervelló, E., Nerea, A., Jiménez, R., García, T., & Santos-Rosa, F. (2001). Un estudio piloto de los antecedentes disposicionales y contextuales relacionados con el estado de flow en competición. *Study being updated*.

Cervelló, E., & Santos-Rosa, F. J. (2001). Motivation in sport: an achievement goal perspective in young Spanish recreational athletes. *Perceptual and Motor Skills, 92:* 527-534.

Csikszentmihalyi, M. (1990). Flow: The psychology of optimal experience. New York: Harper & Row.

Csikszentmihalyi, M. (1993). *The evolving self.* New York: Harper Collins.

Dorobantu, M., & Biddle, S. (1997). The influence of situational and individual goals on the intrinsic motivation of Romanian adolescents towards Physical Education. *European Yearbook of Sport Psychology, 1*: 148-165.

Duda, J. L., & Hom, H. L. (1993). Interdependencies between the perceived and self-reported goal orientations of young athletes and their parents. *Pediatric Exercise Science, 5:* 234-241.

Dunbar, R. R., & O'Sullivan, M. M. (1986). Effects of intervention on differential treatment of boys and girls in elementary physical education lessons. *Journal of Teaching in Physical Education, 5:* 166-175.

Dunn, J. G. H., & Dunn, J. G. (1999). Goal orientation, perceptions of aggression, and sportspersonship in elite male youth ice hockey players. *The Sports Psychologist, 13:* 183-200.

Dweck, C. S., & Legget, E. L. (1998). A social-cognitive approach to motivation and personality. *Psychological Review, 95:* 256-273.

Eccles, J. S., & Harold, R. D. (1991). Gender differences in sport involvement: Applying the Eccles' expectancy-value model. *Journal of Applied Sport Psychology, 3:* 7-35.

Escartí, A., & Brustad, R. (2000). El estudio de la motivación deportiva desde la perspectiva de la teoría de metas. 1st Spanish and Portuguese Congress on Psychology. Santiago de Compostela: Spain.

Escartí, A., & Gutiérrez, M. (2001). Influence of the motivational climate in physical education on the intention to practice physical activity or sport. *European Journal of Sport Science, 1:* 1-3.

García Calvo, T., Cervelló, E., Jiménez, R., & Santos-Rosa, F. J. (2005). *Psychometric properties of the Flow State Scale and the Dispositional Flow Scale, in Spanish practitioners of sport-physical activities.* Manuscript under review.

Griffin, P. S. (1984). Girls' participation patterns in a middle school team sports unit, *Journal of Teaching in Physical Education. 4:* 30-38.

Griffin, P. S. (1985). Boys' participation styles in a middle school physical education team sports unit, *Journal of Teaching in Physical Education, 4:* 100-110.

Jackson, S. A. (1992). Athletes in flow: A qualitative investigation of flow states in elite figure skaters. *Journal of Applied Sport Psychology, 4:* 161-180.

Jackson, S. A. (1995). Factors influencing the occurrence of flow state in elite athletes. *Journal of Applied Sport Psychology, 7:* 138-166.

Jackson, S. A. (2000). The Dispositional Flow Scale-2 and the Flow State Scale-2. In J. Maltby, C.A. Lewis, & A. Hill (eds.), *Comissioned reviews of 250 psychologycal tests* (pp. 50-52, 61-63). Lampter, U.K: Edwin Mellen.

Jackson, S. A., & Marsh, H. W. (1996). Development and validation of a scale to measure optimal experience: The flow state scale. *Journal of Sport & Exercise Psychology, 18:* 17-35.

Jackson, S. A., & Roberts, G. C. (1992). Positive performance states of athletes: Toward a conceptual understanding of peak performance. *The Sport Psychologist, 6:* 156-171.

Karageorghis, C. I., Vlachopoulos, S. P., & Terry, P. C. (2000). Latent variable modelling of the relationship between flow and exercise-induced feelings: An intuitive appraisal perspective. *European Physical Education Review, 6:* 230-248.

Kimiecik, J. C., & Jackson, S. A. (2002). Optimal Experience in Sport: A Flow Perspective. In T. Horn (ed.), *Advances in sport psychology* (pp. 501-527). Champaign IL: Human Kinetics.

Kowal, J., & Fortier, M. S. (1999). Motivational determinants of flow: Contributions from self-determination theory. *Journal of Social Psychology, 139:* 355-368.

Kowal, J., & Fortier, M. S. (2000). Testing relationships from the hierarchical model of intrinsic and extrinsic motivation using flow as a motivational consequence. *Research Quarterly for Exercise and Sport, 2:* 171-181.

MacDonald, D. (1990). The relations between sex composition of physical education classes and teacher-pupil verbal interaction. *Journal of Teaching in Physical Education, 9:* 152-163.

Maehr, M. L. (1974). Culture and achievement motivation. *American Psychologist, 29:* 887-896.

Maehr, M. L. (1984). Meaning and motivation: Toward a theory of personal investment. In R. Ames & C. Ames (eds.), *Research on motivation in education: Vol. 1. Student motivation* (pp. 144). New York: Academic Press.

Maehr, M. L., & Nicholls, J. G. (1980). Culture and achievement motivation: A second look In N. Warren (ed.), *Studies in cross-cultural psychology* (pp. 221-267). New York: Academic Press.

Martin, J. J., & Cutler, K. (2002). An exploratory study of flow and motivation in theater actors. *Journal of Applied Sport Psychology, 14:* 344-352.

Nilges, L. M. (1998). I thought only fairy tales had supernatural power: A radical feminist analysis of Title IX in physical education. *Journal of Teaching in Physical Education, 17:* 172-194.

McClelland, D. C. (1961). *The achieving society*. New York: Free Press.

Morgan, K., & Carpenter, P. (2002). Effects of manipulating the motivational climate in physical education lessons. *European Physical Education Review, 8:* 207-229.

Nicholls, J. G. (1989). *The competitive ethos and democratic education*. Cambridge: MASS, Harvard University Press.

Papaioannou, A. (1995). Differential Perceptual and Motivational Patterns when Different Goals are Adopted. *Journal of Sport and Exercise Psychology, 17*: 18-34.

Papaioannou, A. (1997a). "I agree with the referee's abuse, that's how I also beat": prediction of sport violence and attitudes towards sport violence. *European Yearbook of Sport Psychology, 1:* 113-129.

Papaioannou, A. (1997b). Perceptions of the motivational climate, beliefs about the causes of success and sportsmanship behaviours of elite Greek basketball players. In R. Lidor & M. Bar-Eli (eds.), *Innovation in sport psychology: linking theory and practice. Proceedings of the IX World Congress of Sport Psychology* (pp. 534-536). Israel: Wingate.

Papaioannou, A. (1998). Goal perspectives, reasons for being disciplined, and self-reported discipline in physical education lessons. *Journal of Teaching in Physical Education, 17:* 421-441.

Papaioannou, A., & Kouli, L. (1999). The effect of task structure, perceived motivational climate and goal orientation and student's task involvement and anxiety. *Journal of Sport and Exercise Psychology, 17:* 18-34.

Papaioannou, A., & Theodorakis, Y. (1996). A test of three models for the prediction of intention for participation in physical education lessons. *International Journal of Sport and Exercise Psychology, 27:* 383-399.

Peiró, C., Escartí, A., & Duda, J. L. (1996). The assessment of significant others' perceived goal perspectives in sport settings. *Journal of Applied Sport Psychology, 8: S*-138.

Pensgaard, A. M., & Roberts, G. C. (2002). Elite athletes experiences of the motivational climate: The coach matters. *Scandinavian Journal of Medicine and Science in Sport, 12:* 54-68.

Roberts, G. C. (1992). Motivation in sport and exercise: Conceptual constraints and conceptual convergence In G. C. Roberts (ed.), *Motivation in sport and exercise* (pp. 3-30). Champaign: IL, Human Kinetics.

Roberts, G. C., & Balagué, G. (1991). The development and validation of the Perception of Success Questionnaire. Paper presented at the *FEPSAC Congress*. Cologne: Germany.

Roberts, G. C., Treasure, D. C., & Balagué, G. (1998). Achievement goals in sport: The development and validation of the Perception of Success Questionnaire. *Journal of Sport Sciences, 16:* 337-347.

Rosich, M. M. (1999). Satisfacción de los y de las adolescentes con el deporte. In *VII Congreso Nacional de Psicología de la Actividad Física y el Deporte* (pp. 173-181). Murcia: Sociedad Murciana de Psicología de la Actividad Física y del Deporte.

Santos-Rosa, F. J. (2003). *Motivación, ansiedad y flow en jóvenes tenistas.* Doctoral thesis. Cáceres: University of Extremadura.

Solomons, H. (1976). *Sex-role-mediated achievement behaviors and interpersonal dynamics of fifth-grade coeducational physical education classes*. Dissertation Abstracts International, 37, 5545 A. University Microfilm.

Spray, C. M. (2002). Motivational climate and perceived strategies to sustain pupils' discipline in physical education. *European Physical Education Review, 8:* 5-20.

Spray, C., & Wang, C. K. (2001). Goal orientations, self-determination and pupils' discipline in physical education. *Journal of Sport Sciences, 19*: 903-913.

Theeboom, M., De Knop, P., & Weiss, M. R. (1995). Motivational climate, psychological responses and motor skill development in children's sport: A field-based intervention study. *Journal of Sport and Exercise Psychology, 17:* 294-311.

White, S. A., & Duda, J. L. (1994). The relationship of gender, level of sport involvement, and participation motivation to task and ego orientation. *International Journal of Sport Psychology, 25:* 4-18.

Table 1. Means, standard deviation, alpha coefficient and correlations for all the variables.

Factors	*M*	*SD*	α	1	2	3	4	5	6	7	8	9
1. Indiscipline	16.65	19.97	.81	-	-.49**	-.24**	.32**	-.14**	.40**	-.08**	.23**	-.12**
2. Discipline	14.87	78.56	.76	-	-	.36**	-.24**	.36**	-.32**	.30**	-.07*	.40**
3. Equal treatment	20.63	77.07	.84	-	-	-	-.50**	.65**	-.60**	.14**	-.07*	.26**
4. Discrimination	22.96	34.37	.72	-	-	-	-	-.35**	.54**	-.04	.18**	-.10**
5. Task climate	19.05	60.79	.82	-	-	-	-	-	-.56**	.19**	-.07*	.32**
6. Ego climate	17.75	29.64	.77	-	-	-	-	-	-	-.13**	.17**	-.17**
7. Task orientation	22.10	77.81	.88	-	-	-	-	-	-	-	.36**	.44**
8. Ego orientation	32.05	50.18	.93	-	-	-	-	-	-	-	-	.29**
9. Dispositional flow	15.87	64.97	.92	-	-	-	-	-	-	-	-	-

* $p<.05$; ** $p<.001$

Table 2. Summary of the multiple regression analysis for variables predicting the personal and contextual factors of the flow state in physical education classes.

Steps	*B*	Standard Error	*Beta*	*AR2*
Step 1	47.82	2.43		.10**
Task-oriented clima*te*	.27	.02	.33**	
Ego-oriented climate	.01	.03	.01	
Step 2	29.09	2.49		.28**
Task-oriented climate	.22	.02	.26**	
Ego-oriented climate	-.01	.02	-.01	
Task orientation	.23	.02	.32**	
Ego orientation	.09	.01	.19**	

* $p<.05$; ** $p<.001$

Table 3. Summary of the multiple regression analysis for variables predicting disciplined-undisciplined behaviour in physical education classes.

Steps	*B*	Standard Error	*Beta*	*AR2*
Discipline				
Step 1	70.89	2.212		.15**
Task-oriented climate	.20	.026	.25**	
Ego-oriented climate	-.15	.028	-.18**	
Step 2	60.16	2.444		.22**
Task-oriented climate	.16	.025	.21**	
Ego-oriented climate	-.12	.027	-.14**	
Task orientation	.19	.020	.29**	
Ego orientation	-.06	.014	-.14**	
Indiscipline				
Step 1	.94	2.454		.16
Task-oriented climate	.10	.029	.11*	
Ego-oriented climate	.43	.031	.46**	
Step 2	3.96	2.756		.20
Task-oriented climate	.11	.029	.13**	
Ego-oriented climate	.39	.031	.41**	
Task orientation	-.10	.022	-.14**	
Ego orientation	.11	.015	.22**	

* $p<.05$; ** $p<.001$

Table 4. Summary of the multiple regression analysis for variables predicting equal treatment-discrimination behaviour in physical education classes.

Steps	*B*	Standard Error	*Beta*	*AR2*
Equal treatment				
Step 1	58.17	2.326		.51**
Task-oriented climate	.50	.028	.46**	
Ego-oriented climate	-.35	.030	-.34**	
Step 2	57.62	2.680		.51**
Task-oriented climate	.50	.028	.46**	
Ego-oriented climate	-.40	.030	-.34**	
Task orientation	.00	.022	.00	
Ego orientation	.01	.015	.02	
Discrimination				
Step 1	19.75	3.112		.29**
Task-oriented climate	-.07	.037	-.06*	
Ego-oriented climate	.65	.040	.50**	
Step 2	17.34	3.567		.30**
Task-oriented climate	-.08	.037	-.07*	
Ego-oriented climate	.63	.040	.48**	
Task orientation	.00	.029	.00	
Ego orientation	.06	.020	.09*	

* $p<.05$; ** $p<.001$