Cross-domain generality of achievement motivation across sport and the classroom: the case of Spanish adolescents

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CROSS-DOMAIN GENERALITY OF ACHIEVEMENT MOTIVATION ACROSS SPORT AND THE CLASSROOM: THE CASE OF SPANISH ADOLESCENTS

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ABSTRACT

Drawing from contemporary social cognitive theories of achievement motivation, the relationship of personal theories of achievement (ego and task theory) with perceived ability and reported satisfaction with school and sport was examined. The cross-domain generality of these relationships in these contexts, in the case of a representative sample of adolescents between 11 and 15 years of age (N = 967, M age = 13.5, SD = 1.80; 492 girls and 475 boys) from the Valencian Community (Spain) also was examined. According to previous research in the United States (Duda & Nicholls, 1992), the findings of this study indicate a cross-domain consistency with regard to how adolescents tend to define success and their views of how achievement activities operate across sport and the classroom. However, little cross-domain generality was found for perceptions of ability and reported satisfaction. In the sport and classroom domains, a task theory was related to greater satisfaction, while an ego theory was related to greater reported boredom and low interest in the activity.

The achievement goal approach has become one of the most important conceptual avenues to describing and/or explaining motivated behavior (Roberts, 2001). This framework assumes that an individual is an intentional, goal-directed organism that operates in a rational manner and that achievement goals govern achievement beliefs and guide subsequent decision-making and behavior in achievement contexts (such as the classroom and in sport). Achievement goal theory proposes that there are at least two predominant dispositional goals or bases for indexing subjective success and construing competence in

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achievement situations, such as sport and the educational domain, namely a task and an ego goal orientation (Nicholls, 1989). On the one hand, people with a predominant task orientation tend to judge their ability with respect to personal improvement and hard work. On the other hand, people with a predominant ego-orientation tend to define success using normative criteria, and thus feelings of competence are derived from the demonstration of superior ability over others. Consistent associations have emerged between these dispositional goals and *effort, ability* and *deceptive* beliefs about the causes of success in both the sport setting (Castillo, Balaguer, & Duda, 2002; Duda & White, 1992; Guivernau & Duda, 1998; Newton & Duda, 1993; Newton & Fry, 1998; Van Yperen & Duda, 1999) and the academic setting (Castillo, Balaguer, & Duda, 2001; Duda & Nicholls, 1992; Guivernau & Duda, 1998; Nicholls, Patashnick, & Nolen, 1985; Nicholls, Cheung, Lauer, & Patashnick, 1989; Nicholls, Coob, Wood, Yackel, & Patashnick, 1990; Thorkildsen, 1988). Task orientation has been found to be positively linked to the belief that *effort* leads to success and negatively correlated with the view that *deceptive* strategies are a precursor to achievement. Ego orientation, in contrast, is positively associated with the belief that the possession of *ability* and the use of *deceptive* tactics are antecedents to success. According to Nicholls (1989), these different goal-belief dimensions (task and ego goal-belief dimensions) reflect individual differences in people's *personal theories of achievement* (ego and task theories) in both sport and the classroom.

In general, research in academic and sport settings has supported the view that a task theory establishes the basis for maximal motivation and adaptive behaviors (Duda, 2001).

Studies conducted in the educational and athletic settings (Balaguer, 2002; Castillo et al., 2001, 2002; Duda & Nicholls, 1992; Guivernau & Duda, 1998) have provided support for the relationship between emerging task and ego goal-belief dimensions (or personal theories) and perceived ability and reported satisfaction with school and sport. Specifically, these studies reported that a task goal-belief dimension was positively linked to greater enjoyment and negatively related to boredom in both the sport (Balaguer, 2002; Castillo et al., 2002; Duda & Nicholls, 1992; Duda et al., 1992; Guivernau & Duda, 1998) and classroom contexts (Balaguer, 2002; Castillo et al., 2001; Duda & Nicholls, 1992; Guivernau & Duda, 1998). In contrast, an ego goal-belief dimension was negatively related, or unrelated, to satisfaction with these activities and was positively associated with boredom in both contexts (Castillo et al., 2001; 2002; Duda & Nicholls, 1992; Duda et al., 1992; Guivernau & Duda, 1998).

Although many studies from different countries have examined the relationships between goal-beliefs and perceived ability and satisfaction with school and sport, no studies about cross-domain generality in sport and school have been conducted with Spanish adolescents.

In this study, the objective was to replicate a previous research work whose hypothesis was tested in the American culture (Duda & Nicholls, 1992). Duda and Nicholls (1992) found strong cross-situational generalizability with respect to goals-beliefs, less cross-situational generalizability with respect to perceptions of competence, and no appreciable relationship between reported satisfaction and boredom experienced in sport and school. Although cross-domain generality was supported by the American high school sample, more research is needed in other countries in order to find cross-cultural generalizability of this hypothesis from the achievement goal approach (Neuliep & Crandall, 1993). The principal goal of the present study was to examine the degree to which the targeted dimensions of achievement motivation cut across the two achievement milieus. In line with previous findings (Duda & Nicholls, 1992), we expected goals-beliefs to generalize more than perceptions of competence, and we expected little generality in reported satisfaction and boredom in these different domains.

METHOD

Participants

A representative sample of 967 adolescent students (492 girls and 475 boys; M age = 13.54; SD = 1.80, range 11-16 years) from the Valencian Community (Spain) participated in this research. The sample was selected on a random, stratified basis (relative size of each province: Alicante, Valencia, and Castellón; and type of educational establishment; public, private or semiprivate). The maximum statistical error for the total sample was +/−2.9%, with a confidence level of 95.5%.

Measures

A Spanish version of a multi-section instrument was administered. It included:

(a) Goal orientations in school and sport. The students' degree of task and ego orientation in the classroom was assessed with 16 items (task: 8 items; ego: 8 items) based on the *Motivational Orientation Scales* (Nicholls, 1989; Duda & Nicholls, 1992; Castillo et al., 2001). Students were asked to think of when they feel most successful in the

classroom. To assess students' task and ego orientation in the sport domain they were asked to respond to the 13 items (task: 7 items; ego: 6 items) of the Spanish version of the *Task and Ego Orientation in Sport Questionnaire* (TEOSQ) (Duda, 1989; Balaguer, Castillo, & Tomás, 1996). Students were requested to think of the sport they play most often and to indicate when they feel most successful at it. In both questionnaires participants indicated their degree of agreement with each item on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

(b) *Beliefs about the causes of success in school and sport.* (effort: 8 items; ability: 4 items; and deception: 5 items) were assessed by asking participants: "What do you think is most likely to help people do well or succeed in schoolwork?" and a parallel set of 16 *Belief about the causes of sport success,* to assess perception that effort (7 items), ability (4 items) or deception (5 items) leads to success in the classroom and in the sport domain (Nicholls et al. 1985, 1989; Duda & Nicholls, 1992; Castillo et al., 2001, 2002. Students indicated their degree of agreement with each cause of classroom and sport success on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Consistent with past research (Duda & Nicholls, 1992, Guivernau & Duda, 1998; Castillo et al., 2001, 2001) the authors created two goal-belief dimensions for each motivational context (classroom and sport). Ego orientation was linked with the belief in ability and deception (classroom/sport ego theory), and task orientation with the belief in effort (classroom/sport task theory). Previous research involving Spanish students (Castillo et al., 2001, 2002) provided evidence for the internal consistency of the goal-belief dimensions (Cronbach α between .80 and .85). In this study, Classroom Ego Theory (alpha = .84 and Classroom Task Theory alpha = .77. In the sport domain, Sport Ego Theory alpha = .83 and Sport Task Theory alpha = .76. Further details concerning creation of goal-belief dimensions can be found in Castillo et al. (2001, 2002).

(c) Satisfaction was assessed by the Spanish versions of the *Classroom Satisfaction Questionnaire* (CSQ); Castillo et al., 2001) and the *Sport Satisfaction Questionnaire* (SSQ); Balaguer, Atienza, Castillo, Moreno, & Duda, 1997). Each of these questionnaires is comprised of seven items that are divided into a 5-item subscale that measures Satisfaction and a 2-item subscale that assesses Boredom. Support for the reliability and validity of these scales has been reported in past research in the academic context (Balaguer et al., 1997; Castillo et al., 2001; Guivernau & Duda, 1998) and in the sport context (Balaguer et al., 1997; Guivernau & Duda, 1998). The results were Cronbach α

values between .71 and .86 for the classroom satisfaction and boredom scales, and Cronbach α values between .83 and .94 for the sport version of these scales.

(d) Perceived ability was assessed by the Spanish versions of the *Perceived Athletic Competence* (6 items) and *Perceived Academic Competence* (6 items) subscales of the Self Perception Profile for Children (Harter, 1985; Atienza, Balaguer, & Moreno, 2002). These measures use a structured alternative format in which the student is presented with two opposing statements about how a student might feel and is asked to decide which statement best fits him or her. The student then decides whether the chosen statement is "really" or "sort of " true for him or her. Responses are scored from 1 to 4 with high scores reflecting perceptions of greater competence. Previous research involving Spanish students (Atienza et al., 2002; Castillo & Balaguer, 2000) has provided evidence for the internal consistency of the Perceived Athletic Competence scale and Perceived Academic Competence subscales (Cronbach α between .68 and .86).

Procedure

Prior to collection of data, informed consent was obtained from the head teachers of the schools that were asked to take part in research on adolescents' achievement motivation. When a school did not agree to collaborate, it was replaced by another school from the same sample stratum. Students were randomly selected at each school center. The adolescents filled out the multi-sectional questionnaire at school in small groups (never more than 5 students) during a regularly scheduled class session. During administration of the questionnaire, the adolescents were instructed to ask for help if an item was unclear and to answer all questions as honestly as possible. No problems were reported by the subjects when completing the multi-section inventory. The procedures ensured pupils' anonymity.

RESULTS

Descriptive statistics and scale reliabilities. Means, standard deviations, ranges and alpha coefficients (Cronbach, 1951) for all variables assessed are shown in Table 1. Examination of the means reveals that Spanish adolescents rated themselves relatively high on task orientation and on effort perceptions in sport and classroom domains, while reporting moderate ratings on ego orientation and on ability beliefs in both contexts. Indeed, adolescents gave a low rating on the beliefs that

Table 1

Descriptive Statistics, Internal Consistency and Context differences for all variables

		Sport domain			*Classroom domain*			t
Variable	Range	*M*	*SD*	α	*M*	*SD*	α	
Ego Orientation	1-5	2.82	.90	.80	2.92	.86	.85	-4.29**
Task Orientation	1-5	4.27	.53	.73	4.13	.56	.75	7.83**
Effort	1-5	4.22	.52	.77	4.37	.53	.70	-10.21**
Ability	1-5	3.22	.98	.75	3.24	1.02	.70	-.67
Deception	1-5	2.21	.93	.79	2.06	.91	.78	6.42**
Perceived Comp.	1-4	2.56	.58	.84	2.58	.61	.86	-.37
Satisfaction	1-5	4.18	.75	.86	3.35	.79	.80	-18.82**
Boredom	1-5	1.92	.94	.76	3.09	.99	.76	25.91**

Note: ** $p<.001$

the use of deceptive tactics leads to success in sport and the classroom. The adolescents gave high ratings to intrinsic satisfaction in both domains, and on boredom in the school context, and reported low ratings on boredom in the sport context. They reported moderate ratings on perceived ability in sport (perceived athletic competence) and academic domains (perceived academic competence). As shown, all the alpha coefficients ranged from .70 to .86.

Goal-belief dimensions: Theories of success in sport and the classroom. A confirmatory factor analysis model (LISREL 8.54) was conducted that evaluated associations between goals orientation and beliefs about the causes of success in both the sport and academic settings (TEOSQ, MOS, and Beliefs scales). Two factors were postulated in each setting: Ego and Task theories. Consistent with past research (e.g., Duda & Nicholls, 1992), it was hypothesized that Task orientation was coupled with the belief that effort results in success in both domains (Task Theory); and is also consistent with previous work, Ego orientation was associated with the belief that the possession of Ability and the use of Deceptive tactics lead to success in sport and the classroom (Ego Theory). As expected, given the large sample, the Sport Model did not fit very well according to the chi-square statis-

tic p value, χ^2 (370, N = 967) = 560.47, $p < .001$. However, the χ^2 df ratio was 1.51, the CFI was .91, the NNFI was .90 and the RMSEA was .08, indicating that this model is considered acceptable. Also as expected, according to the chi-square statistic p value, the School Model did not fit very well, χ^2 (488, N = 967) = 649.55, $p < .001$. Nevertheless, the χ^2/df ratio was 1.33, the CFI was .92, the NNFI was .91, and the RMSEA was .07 indicating that this model could be also considered acceptable. The alpha values for the present study are acceptable, ranging from .76 to .84 (Classroom Ego Theory α = .84; Classroom Task Theory α = .77; Sport Ego Theory α = .83 and Sport Task Theory α = .76).

Relationships between personal theories of achievement and perceived ability and satisfaction. Based on previous studies (e.g., Duda & Nicholls, 1992), associations of goal-belief dimensions (personal theories) to perceived ability and satisfaction / boredom in the classroom and in sport were examined. The association between personal theories of achievement and perceived ability differed as a function of domains. In the sport setting, both the ego and task theories were positively associated with perceived ability, whereas in the classroom, task theory was positively associated with perceived ability, and ego theory was inversely related to perceived ability. The correspondence between personal theories of achievement and intrinsic satisfaction was consistent across the two domains. In the classroom and in the sport setting, satisfaction/enjoyment was positively associated with the emphasis placed on a task theory. In contrast, boredom was positively correlated with an ego theory and negatively correlated with a task theory in both achievement settings (Table 2).

Generality of motivational dimensions. The cross-domain generality of motivational dimensions with Pearson product-moment correlations was examined. Significant differences between cross-domain correlations were investigated by computing Dunn and Clark's statistics for comparison across scales (Steiger, 1980). All cross-domain associations were significant ($p < .001$). The highest cross-domain associations were found among personal theories of achievement (Table 3). These associations (r = .81 and .68) were significantly higher than the cross-domain correlation for perceived ability and perceptions of satisfaction/enjoyment and boredom (r = .26 and .13). (Table 4). Cross-domain correlations for perceived ability (r = .26) were also significantly higher than the cross-domain correlations observed for perceptions of boredom (r = .13). Finally, cross-domain correlations for perceptions of satisfaction/enjoyment (r = .19) were also higher than the correlation for perceptions of boredom (r = .13), although this difference did not reach statistical significance (Table 4).

Table 2

Associations of Goal-Belief Dimensions (Personal Theories of Achievement) to Perceived Ability and Satisfaction/Boredom in Sport and the Classroom

Dimension/variable	Ego Theory	Task Theory
Sport domain		
Perceived Athletic Competence	.27**	.24**
Satisfaction/Enjoyment	.09	.47**
Boredom	.31**	-.32**
Classroom domain		
Perceived Academic Competence	-.23**	.27**
Satisfaction/Enjoyment	-.06	.26**
Boredom	.29**	-.09**

** $p < .01$

DISCUSSION

In terms of cross-domain generality and consistent with findings in the United States (Duda & Nicholls, 1992), our findings indicate a cross-domain consistency regarding how adolescents tend to define success and their views of how achievement activities operate across sport and schoolwork. Our findings also show a slight cross-domain for perceived ability and a low cross-domain for satisfaction and boredom across the two domains. The lower cross-domain associations for perceived ability and satisfaction/boredom suggest that these variables could be considered specific to domain, whereas students' personal theories of achievement (task and ego goal-belief dimensions) transcend situations. In other words, goal-belief dimensions generalize across contexts, and these results might be important for understanding adolescents' activities.

The present findings suggest that the observed goal-belief dimensions were predictive of the degree to which Spanish adolescents found

Table 3

Generality of Motivational Dimensions across the Classroom and Sport

Dimension/ Sport scale	Correlation (r) with corresponding Classroom scale	Sport		Classroom	
		M	*SD*	*M*	*SD*
Ego Theory	.81***	2.67	.69	2.76	.65
Task Theory	.68***	4.31	.42	4.18	.44
Perceived ability	.26***	2.56	.58	2.58	.61
Satisfaction/Enjoyment	.19***	4.18	.75	3.35	.79
Boredom	.13***	1.92	.94	3.09	.99

*** $p < .001$

sport and the classroom to be a satisfactory or boring experience. In both domains, a task theory corresponded to greater satisfaction, and an ego theory corresponded to greater reported boredom and low interest in the activity. Similar to past work by Duda and Nicholls (1992), both the task and ego goal-belief dimensions (task and ego theories) were positively correlated with perceived ability in the sport setting. However, potential maladaptive facets of an ego theory were revealed in the educational environment, where ego theory was negatively correlated with perceived ability. In the classroom, task theory was also positively associated with perceptions of competence. These situational differences might be explained by the voluntary nature of sport as opposed to the obligatory nature of secondary education. In the former situation, where individuals could drop out if they felt inadequate, we might expect an endorsement of both task and ego goals to be positively associated with perceptions of competence. Indeed, it makes sense that students with an ego theory of achievement would choose to stay in the sport context when they perceive themselves to be highly competent. In such cases, adolescents who are high in ego theory of achievement can show others how good they are. However, in the educational domain,

Table 4

Tests for comparing cross-domain correlations

Cross-domain correlations		Z_2*	Sig.
Ego Theory (r =.81)	Task Theory (r =.68)	5.89	.01
Ego Theory (r =.81)	Perceived ability (r =.26)	17.63	.01
Ego Theory (r =.81)	Satisfaction (r =.19)	19.20	.01
Ego Theory (r =.81)	Boredom (r =.13)	20.35	.01
Task Theory (r =.68)	Perceived ability (r =.26)	11.63	.01
Task Theory (r =.68)	Satisfaction (r =.19)	13.20	.01
Task Theory (r =.68)	Boredom (r =.13)	14.40	.01
Perceived ability (r =.26)	Satisfaction (r =.19)	1.59	n.s.
Perceived ability (r =.26)	Boredom (r =.13)	2.90	.01
Satisfaction (r =.19)	Boredom (r =.13)	1.32	n.s.

n.s. = not significant

individuals (ego or task theories of achievement) are obligated to stay involved until they are 16 years old, even if they have negative perceptions of their academic competence.

Finally, as predicted, the highest cross-domain associations were found among goal-belief dimensions and were all significantly higher than the cross-domain associations for perceived ability and for satisfaction and boredom ($p < .001$). These results provide further evidence that the personal theories identified by Nicholls (1989) hold cross-culturally. The present findings are also consonant with the tenets of achievement goal frameworks (Nicholls, 1989) in which a task perspective is assumed to be adaptive and a facilitator of enjoyment and students' personal welfare.

In sum, these results suggest that the way students tend to judge their competence and define success in the academic and in the sport domain has implications for their level of investment and engagement in both contexts. Emphasizing a task theory appeared to promote school and sport satisfaction; in contrast, endorsing an ego theory

seemed to hinder the quality of the school and the sport experience since the students perceive that they were bored.

Future research should further address individuals' interpretation of both achievement activities (intellectual and athletic skills) in tandem. In accordance with Guivernau and Duda (1998), we consider that, if research of motivation is separated by domain, our picture of the motivational processes operating in student' lives may be incomplete and misleading (p. 13).

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