

# THE EFFECTS OF GOAL ORIENTATIONS ON GLOBAL SELF-ESTEEM AND PHYSICAL SELF-WORTH IN PHYSICAL EDUCATION STUDENTS

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**Abstract:** This study examined the main and interactive effects of goal orientations on global self-esteem and physical self-worth in 160 students recruited from a secondary school. The mediating role of perceived sports competence in the relationship between goal orientations and physical self-worth was also investigated. Students participating in Physical Education lessons completed questionnaires measuring task and ego orientations, global self-esteem, physical self-worth, and sports competence. Results indicated that both task and ego orientations positively predicted global self-esteem and physical self-worth; a significant interaction was also revealed between the two goals indicating that the highest levels of physical self-worth were reported by those who were high on both task and ego orientation. The main effects of task and ego orientations were fully mediated by perceived sports competence, while their interaction effect was only partially mediated by this construct. In conclusion, achievement goal orientations have important implications for both global self-esteem and physical self-worth.

**Key words:** Global self-esteem, Goal orientation, Physical self-worth.

## INTRODUCTION

Global self-esteem and physical self-worth are two highly desirable attributes of the self. Global self-esteem has been linked to subjective well-being and happiness (Diener, 1984) and is considered a key indicator of emotional stability (Sonstroem, 1997). Low self-esteem plays an important

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role in depression, with low self-esteem children and adolescents commonly reporting depressed affect (Renouf & Harter, 1990). Aspects of the physical self, on the other hand, have been associated with physical and psychological health (Sonstroem & Potts, 1996). Thus, identifying determinants of global self-esteem and physical self-worth is an important research pursuit.

### *Global self-esteem*

One of the first conceptualizations of global self-esteem was offered by Rosenberg (1965), who defined this construct as a positive or negative attitude toward the self. He also distinguished between the evaluation that one is "very good" versus the evaluation that one is "good enough". He noted that a person may consider himself or herself superior to most others, but at the same time may not feel adequate in terms of the standards he or she has set for the self. Similarly, one may consider himself or herself an average person, but he or she may be quite contented with the self he/she observes. In the instrument he developed to measure self-esteem, high self-esteem expresses the feeling that one is good enough.

More recently, a distinction has been made between self-concept and self-esteem and these two constructs are considered to be multidimensional and organized in a hierarchical manner, with more general dimensions at higher levels and more specific dimensions at the lower levels of the hierarchy (see Fox & Corbin, 1989). Specifically, self-concept is the descriptive aspect of the self, namely *what* one is, while self-esteem is the evaluative aspect of the self, namely how good one is (see Harter, 1999). Individuals use various aspects of the self to evaluate how good they are. For example, Harter (1986) identified five distinct domains, which children use to evaluate the self: athletic competence, scholastic competence, physical appearance, social acceptance, and behavioral conduct. Shavelson and colleagues (Shavelson, Hubner, & Stanton, 1976) also described self-concept as comprising academic, social, emotional and physical domains, which are organized in a hierarchical manner.

### *The physical self*

One of the domains people use to evaluate the self in the models proposed by Shavelson et al. (1976) and Harter (1986, 1993) is the physical domain.

Based on Shavelson et al.'s (1976) model, Marsh (1989, 1990) developed the Self-Description Questionnaire (SDQI, SDQII, and SDQIII) to measure academic and non-academic components of self-concept. Two of the SDQ scales refer to physical appearance and physical ability, which are clearly components of the physical domain. To further address the multidimensional nature of the physical domain, Marsh (1996) developed the Physical SDQ (PSDQ), which contains nine specific and two global scales. The specific scales measure appearance, strength, condition/endurance, flexibility, health, coordination, physical activity, body fat, and sport competence. The global scales measure overall feelings of physical and global self-esteem. A comprehensive review of empirical research related to the PSDQ has been provided by Marsh (2002).

Fox and Corbin (1989) have also attempted to delineate the specific sub-domains of the physical self. Based on Harter's (1986, 1993) model and using her methodology Fox and Corbin (1989) conducted interviews with children and content analysis of open-ended responses, and identified four sub-domains of the physical self, namely sports competence, body attractiveness, physical condition, and physical strength. In addition, they proposed that physical self-worth — a concept equivalent to physical self-esteem according to Fox and Corbin (1989) — is a superordinate representation of the combined four sub-domains, reflecting *overall* feelings of pride, self-respect, satisfaction and confidence in the physical self. Thus, in Fox and Corbin's (1989) view, the physical self consists of two levels: the domain level which is represented by physical self-worth, and the sub-domain level which is represented by sports competence, body attractiveness, physical condition, and physical strength. The Physical Self-Perception Profile (PSPP) was developed by Fox and Corbin (1989) to measure the four sub-domains of the physical self as well as physical self-worth<sup>1</sup>.

In most global and physical self-esteem models (e.g., Fox & Corbin, 1989; Harter, 1987, 1993; Rosenberg, 1965) perceptions of competence play a central role in the conceptualization of the constructs. For example, Rosenberg (1965) pointed out that to evaluate the self the individual con-

<sup>1</sup> As sport psychological research to date has used the physical self-worth subscale to measure physical self-esteem (e.g., Hagger, Ashford, & Stambulova, 1998), and the terms self-worth and self-esteem have been used interchangeably to refer to the overall evaluation of one's worth or value as a person (Ebbeck & Stuart, 1996; Harter, 1999), in the present manuscript, the terms physical self-worth and physical self-esteem are used interchangeably.

siders whether he or she is good enough. The person evaluates the self in relation to internal standards. Harter (1993) identified athletic and scholastic competence as important domains of the self on which evaluations of self-esteem are based, and Fox and Corbin (1989) described three (i.e., sports competence, physical condition, and physical strength) of the four sub-domains of the physical self as competence domains on which physical self-worth is based (see also Fox, 1997). Empirical evidence in sport has also confirmed the relationship between perceived competence and global self-esteem. For instance, Ebbeck and Weiss (1998), using Harter's model in children and youths enrolled in summer sports camps, found that athletic competence was a significant predictor of global self-esteem. Similar findings were reported by Ebbeck and Stuart (1996) in children and young adolescent male basketball players. Finally, significant links have been consistently identified between the sports competence and physical self-worth subscales of the PSPP (e.g., Hagger, Biddle, Chow, Stambulova, & Kavussanu, 2003; Page, Ashford, Fox, & Biddle, 1993).

### *Goal orientations and physical self-esteem*

Although perceived competence is undoubtedly an important aspect of the self on which evaluations of both global and physical self-esteem are based, individual differences in the criteria people tend to use to evaluate competence have received little attention. As achievement goal theory (e.g., Nicholls, 1984, 1989; Nicholls & Miller, 1983) suggests, however, individuals differ in their tendency to use self versus other referenced criteria to evaluate competence; these differences are reflected in two achievement goal orientations, namely task and ego. The individual high in task orientation tends to use self-referenced criteria to evaluate success and feels competent when he or she has achieved learning, improvement, or mastery of a task. In contrast, the individual high in ego orientation tends to use other-referenced criteria to evaluate success and feels competent when he or she has demonstrated superior ability to others (Nicholls, 1984, 1989). The two achievement goals are orthogonal, that is, the same person can have varying combinations of task and ego orientation (Nicholls, 1989; Roberts, Treasure, & Kavussanu, 1996).

Due to the centrality of perceived competence in models of global and physical self-esteem (Fox & Corbin, 1989; Rosenberg, 1965), individual differences in the criteria people tend to use to evaluate competence reflected

on their goal orientation seem particularly relevant for self-esteem<sup>2</sup>. For example, in task orientation, perceptions of competence and feelings of self-esteem that are based on these perceptions are dependent upon self-referenced accomplishment. Because the major concern of this individual is to improve at the task (Nicholls, 1989), perceptions of competence and consequently high self-esteem may be more easily maintained than they would for an ego-oriented person. In contrast, in ego orientation, perceived competence and accompanying feelings of self-esteem are dependent on how the individual's performance compares to that of others, which is not always under one's control. Because the ego-oriented individual's self-esteem is contingent upon other-referenced accomplishment, feelings of competence and self-esteem may be more difficult to be maintained under conditions of high ego orientation (Kavussanu & Harnisch, 2000).

A few studies have investigated the relationship between achievement goal orientations and global self-esteem and physical self-worth in physical activity settings. Positive moderate to strong relationships between task orientation and global self-esteem have been identified in a large sample of children participating in summer sports camps (Kavussanu & Harnisch, 2000) and in adolescent boys and girls participating in physical education classes (Guinn, Vincent, Semper, & Jorgensen, 2000). The relationship between ego orientation and global self-esteem was not significant in either of these two studies. Task orientation has also been positively associated with global self-esteem and physical self-worth in adolescent girls participating in physical education (Biddle & Wang, 2003), while the relationships between ego orientation and global self-esteem and physical self-worth were also positive but weak. Finally, in a recent study (Newton, Detling, Kilgore, & Bernhardt, 2004) of college students enrolled in physical activity classes, task orientation was positively associated with physical self-worth and the self-perception of physical condition as measured by the PSPP (Fox & Corbin, 1989), while ego orientation was positively linked to physical self-worth and all four physical self-perceptions, but only in males. Thus, task orientation has been consistently linked to global self-esteem and physical self-worth. With the exception of the findings of one study (Newton et al., 2004), the relationship between ego orientation and global self-esteem and physical self-worth has been either weak or non-existent.

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<sup>2</sup> The distinction between approach and avoidance goals has been made by more recent theorists (e.g., Elliot & Church, 1997); however, this distinction was not considered relevant to the research questions of the present study.

### *Goal orientations and perceived sports competence*

A consistent relationship that has emerged in past research is the association between goal orientations and perceived sports competence. The studies reporting this relationship have typically used adolescents recruited from secondary schools. For example, in a large scale study involving boys and girls from 49 English schools, Wang and Biddle (2001) found that both task and ego orientations were positively related to perceived sports competence and physical self-worth, with correlations between task orientation and the two constructs substantially exceeding those of ego orientation. Similar findings were revealed in English school girls (Biddle & Wang, 2003), while significant positive relationships between both goals and sports competence have been identified in British (Vlachopoulos, Biddle, & Fox, 1997), Finnish (Lintunen, Valkonen, Leskinen, & Biddle, 1999), and Hungarian (Biddle, Soos, & Chatzisarantis, 1999) adolescents. Finally, Ebbeck and Becker (1994) reported positive relationships between the two achievement goals and soccer competence in young adolescent soccer players. Thus, considerable empirical evidence to date supports a positive relationship between task orientation and to a lesser extent ego orientation and perceived sports competence among adolescents.

Adopting a somewhat different approach, Fox et al. (Fox, Goudas, Biddle, Duda, & Armstrong, 1994) used median splits to classify children into four profile groups depending on their scores of task and ego orientation and examined their perceptions of athletic competence as measured by the PSPP for adolescents (Harter, 1987). The group which was low on both task and ego orientation contained a disproportionately high number of low athletic competence children. Interestingly, the lowest number of low athletic competence children was found in the high task/low ego group. Thus, either children with low perceived competence are less likely to adopt task-oriented goals, or task orientation may facilitate positive self-perceptions in sport.

### *Aims - Hypotheses*

In sum, task orientation has been consistently associated with global self-esteem and physical self-worth, while ego orientation has been either positively but weakly related or unrelated to global self-esteem and physical self-worth. An important issue that has received little attention

to date in research examining goal orientations and global self-esteem and physical worth is whether the two goals interact with each other in predicting these constructs. As stated earlier, the same individual may have varying levels of task and ego orientation; therefore, an interaction between the two goals is possible. Indeed, interaction effects between the two goals have been identified in past research, such that for beliefs about success (Roberts et al., 1996) and prosocial judgments (Sage, Kavussanu, & Duda, 2006) the effects of the one goal vary depending on the individual's level of the other goal. To date, however, only one study has examined the interaction between task and ego goals in relation to global self-esteem (Kavussanu & Harnisch, 2000), and no study has investigated this issue in relation to physical self-esteem. Thus, the first purpose of the present study was to examine the main and interactive effects of task and ego orientation on global and physical self-esteem of adolescents participating in physical education classes. Based on the literature reviewed above, task orientation was hypothesized to positively predict both global and physical self-esteem, while a weak relationship was anticipated between ego orientation and the two constructs (Hypothesis 1). As achievement goal theory (Nicholls, 1989) does not explicitly specify how the two goals should interact in predicting global and physical self-esteem no hypotheses were forwarded regarding the interactive effects of the two goals.

A second issue that needs to be considered in research examining the link between goal orientation and physical self-worth is the mechanism through which achievement goals influence physical self-worth. The studies described earlier indicate that task and ego orientations are positively related to perceptions of sports competence (e.g., Biddle et al., 1999; Fox et al., 1994; Wang & Biddle, 2001). Preliminary evidence also suggests an association between the two achievement goals and physical self-worth (e.g., Biddle & Wang, 2003; Newton et al., 2004), while the relationship between sports competence and physical self-worth has been well established in the literature (e.g., Fox & Corbin, 1989; Hagger et al., 2003). Therefore, it is possible that perceived sports competence mediates the relationship between goal orientations and physical self-worth. This hypothesis was investigated in the present study. More specifically, it was hypothesized that task and ego orientations would lead to high perceived sports competence, which in turn would lead to high physical self-worth (Hypothesis 2).

## METHOD

### *Participants*

Participants were 160 students recruited from a secondary school in Southeast England. A total of 85 males and 75 females participated in the study, and their age ranged from 12-18 years ( $M = 14.85$ ,  $SD = 1.26$ ). All students participated in Physical Education (PE) lessons taking place at the school for two hours each week, but for a varying number of years depending on the length for which they had attended the school.

### *Procedure*

First, the head of the PE department of the school was contacted by telephone and asked whether the students could participate in the study. Permission was granted and it was arranged for the data to be collected at the beginning of a PE lesson. Parental consent was also obtained. A research assistant administered students a multi-section questionnaire and a consent form. The questionnaire included instruments measuring goal orientation, global self-esteem, physical self-perceptions of competence, and physical self-worth. Demographic information was also collected.

Two sets of data were collected to ensure a sufficiently large sample size. The same questionnaire assessing identical variables was used in both sets. In the first set, students ( $n = 61$ ) were asked to take the questionnaire home and return it to a member of staff as soon as possible but no later than a week after they had received it, while some students ( $n = 11$ ), who were not participating in the lesson on the day of data collection due to injury or illness were asked to complete the questionnaire in the changing rooms during the lesson. A second set of data was collected three weeks later. At this time, all students ( $n = 88$ ) completed the questionnaires at the beginning of their PE lesson. Participants were asked to complete the questionnaire as honestly as possible and it was emphasized that there were no right or wrong answers. The research assistant was present at this session and encouraged students to ask questions, which she answered ensuring that questions were clear and no misunderstanding occurred. In addition, it was emphasized that all answers would be kept confidential and used only for research purposes.



## Measures

**Goal orientation.** The Perception of Success Questionnaire (POSQ; Roberts, Treasure, & Balague, 1998) was used to assess participants' goal orientation. The POSQ is a 12-item sport-specific measure of achievement goal orientations. It consists of two 6-item subscales measuring task and ego goals. Participants were asked to think about when they feel most successful in PE, and circle the answer that best reflects their feelings. The stem for each question was "I feel most successful in PE when..." Examples of items are "I work hard" and "I show clear personal improvement" for task orientation; "I am clearly superior" and "I am the best" for ego orientation. Participants responded on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Their responses on each subscale were added, and this score was divided by the number of items to provide separate scores for each subscale. The POSQ has demonstrated satisfactory internal consistency, with Cronbach's (1951) alpha coefficients of .90 and .84 for the task and ego subscales, respectively (Roberts et al., 1998). In the present study, alpha coefficients were .83 and .90 for task and ego orientation, respectively.

**Global self-esteem.** Global self-esteem was measured using Rosenberg's (1965) Self-Esteem Scale. Participants were asked to read 10 statements and circle the response that best reflected their feelings. Examples of items are "I feel I have a number of good qualities" and "On the whole, I am satisfied with myself". Participants responded on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*, and their responses were added and divided by 10 to provide a mean score for their global self-esteem. Internal consistency and convergent validity have been demonstrated in past research (Curbow & Somerfield, 1991; Wylie, 1989), and in the present study Cronbach's alpha was .90, indicating high internal consistency of the scale.

**Perceived sports competence.** Perceived sports competence was measured using the Sports Competence subscale of the PSPP (Fox & Corbin, 1989). Although Fox and Corbin (1989) identified three of the four sub-domains of the physical self as competence domains, only the sports competence subscale was used in this study, because only this subscale has been consistently linked to goal orientations in past research (e.g., Biddle et al., 1999; Fox et al., 1994; Lintunen et al., 1999; Vlachopoulos et al., 1997). As perceived sports competence was examined in this study as a mediator of the relationship between goal orientations and physical self-worth, an

established link between sports competence and goal orientations was a prerequisite for formulating our hypothesis.

The Sports Competence subscale of the PSPP consists of six items. For each item, participants were presented with two competing statements describing a person. They were asked to first decide which statement best describes them and then indicate if it is “sort of true” or “really true” for them. To facilitate participants’ responses, an example was provided at the beginning of the subscale. Examples of the two competing statements measuring sports competence are: “Some kids do very well at all kinds of sports” but “Other kids don’t feel that they are very good when it comes to sports”. If the participant selected the statement indicating high sports competence, he or she received a score of 3 for selecting “sort of true for me” and a score of 4 for selecting “really true for me”. For the low sports competence choice, a score of 1 was assigned for selecting “really true for me” and a score of 2 was assigned for selecting “sort of true for me”. Thus, responses ranged from 1-4, with higher scores indicating higher sports competence. The perceived sports competence subscale has demonstrated high internal consistency and factorial and predictive validity (Fox & Corbin, 1989). In the present study, Cronbach’s alpha was .86.

**Physical self-worth.** The physical self-worth subscale of the PSPP (Fox & Corbin, 1989) was used to assess participants’ physical self-worth. This subscale consists of six items, and each item consists of two competing statements describing a person. Examples of two competing statements are: “Some kids are happy with how they are and what they can do physically” but “Other kids are unhappy with how they are and what they can do physically”. The response format is the same as the one described above for perceived sports competence. Thus, participants’ responses ranged from 1-4 with higher scores indicating higher levels of physical self-worth. The physical self-worth subscale has demonstrated high internal consistency and factorial and predictive validity (Fox & Corbin, 1989). In this study, Cronbach’s alpha was .88.

## RESULTS

### *Preliminary analyses*

Prior to the main analyses, data were checked for missing values, univariate and multivariate outliers and fit between their distributions and the assumptions of multivariate analysis (see Tabachnick & Fidell, 2001). One case was deleted

**Table 1. Descriptive statistics and zero-order correlations for all variables**

Variable	M	SD	Zero-order correlations							
			1	2	3	4	5	6	7	
1. Task orientation	4.15	0.59	--							
2. Ego orientation	3.53	0.87	.29**	--						
3. Global self-esteem	3.78	0.70	.36**	.31**	--					
4. Physical self-worth	2.62	0.66	.23**	.35**	.55**	--				
3. Sports competence	2.59	0.69	.36**	.46**	.56**	.72**	--			
6. Gender	--	0.51	-.00	.36**	.27**	.20*	.17*	--		
7. Age	14.85	1.26	.04	.11	.15	.10	.12	.25**	--	

*Note.* Possible responses were 1-5 for task, ego, and global self-esteem, and 1-4 for sports competence and physical self-worth. Age range was 12-18 years. Females were coded as 0, whereas males were coded as 1. \* $p < .05$ ; \*\* $p < .001$ .

because data were missing in two of the five scales. Three additional cases were identified as univariate outliers on task orientation and were deleted. No other univariate or multivariate outliers were identified. Thus, the final sample consisted of 156 cases. Following deletion of outliers, the distributions of all variables were examined through histograms, q-q plots, bivariate scatter-plots, and inspection of values of skewness. It was confirmed that the assumptions of normality, linearity, and homoscedasticity had been met.

### ***Descriptive statistics and correlation analyses***

Descriptive statistics and zero-order correlations for all variables are presented in Table 1. As can be seen in this table, participants scored high on task and moderately high on ego orientation, and reported above average levels of global self-esteem, physical self-worth, and sports competence. Both goal orientations were related to global self-esteem, physical self-worth, and sports competence, while the latter three variables were interrelated. Significant positive correlations also emerged between gender and all variables, except for task orientation, indicating that males reported significantly higher ego orientation, global self-esteem, physical self-worth, and sports competence than females. Age was related significantly only to gender indicating that males were older than females.

### ***Goal orientations predicting global self-esteem***

Hierarchical regression analysis was used to investigate the main and interactive effects of goal orientations on global self-esteem. As recommended by Aiken and West (1991), prior to conducting this analysis, task and ego

orientation were centred by subtracting the mean of each variable from the individual scores. Then, the interaction term was formed by multiplying the two centred variables. This procedure of centring the variables before creating the interaction term is essential in order to avoid multicollinearity and does not alter the regression coefficients, standard errors, or significance tests (Aiken & West, 1991). Because gender differences in goal orientations and global self-esteem were found in this sample (see Table 1), gender was entered in the first step of the regression analysis to control for these differences. The centred task and ego orientations were entered in the second step, while the interaction term was entered in the third step.

This analysis indicated that global self-esteem was positively predicted by both task orientation,  $B = 0.37$ , for 95% confidence interval (CI)  $B$  values ranged from 0.19 to 0.55, Beta = .31,  $t = 4.03$ ,  $p < .001$ , and ego orientation,  $B = 0.15$ , 95% CI = 0.11 to 0.28, Beta = .19,  $t = 2.29$ ,  $p = .03$ . However, no interaction was found between the two goals, as indicated by the non-significant effect for the Task x Ego interaction term. Gender accounted for 3% of the variance,  $F(1, 254) = 4.38$ ,  $p < .05$ , while the two goal orientations together accounted for an additional 16% of the variance in global self-esteem,  $F(2, 152) = 14.99$ ,  $p < .001$ . Even though both goals positively and significantly predicted global self-esteem it is worth noting that task orientation was a stronger predictor than ego orientation.

### ***Goal orientations predicting physical self-worth***

This study also examined whether the two achievement goals predicted physical self-worth, and whether this relationship was mediated by perceived sports competence. Using hierarchical moderated regression analysis, the main and interactive effects of task and ego orientation on physical self-worth were examined first, followed by an investigation of the mediating role of perceived sports competence. Again, gender was entered in the first step of this analysis to control for gender differences in physical self-worth and goal orientations. The centred task and ego goals were entered in the second step, followed by the interaction term in the third step. These results are presented in Table 2, where it can be seen that both goals were significant positive predictors of physical self-worth accounting together for 11 % of its variance. However, the interaction between task and ego orientation was also significant accounting for an additional 5 % of the variance in physical self-worth. As suggested by Aiken and West (1991), this effect was probed further

Table 2. Effects of goal orientations and sports competence on physical self-worth

Variable	B	95% CI for B	Beta	t
Step 1				
Gender	0.27	0.06 to 0.47	0.20	2.55*
Step 2				
Gender	0.14	-0.07 to 0.35	0.11	1.30
Task	0.18	0.004 to 0.35	0.16	2.02*
Ego	0.20	0.08 to 0.33	0.27	3.17**
Step 3				
Constant	2.51			
Gender	0.13	-0.08 to 0.33	0.09	1.19
Task	0.19	0.02 to 0.36	0.17	2.25*
Ego	0.16	0.03 to 0.29	0.21	2.50*
Task x Ego	0.30	0.10 to 0.50	0.22	2.96**
Step 4				
Constant	2.59			
Gender	-0.01	-0.17 to 0.15	-0.01	-0.12
Task	-0.02	-0.15 to 0.11	-0.02	-0.30
Ego	-0.01	-0.11 to 0.09	-0.01	-0.13
Task x Ego	0.23	0.08 to 0.38	0.17	2.98**
Competence	0.68	0.56 to 0.80	0.71	10.88***

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . Total  $R^2 = .55$ ,  $F(5, 150) = 36.92$ ,  $p < .001$ ; for Step 1,  $\Delta R^2 = 0.04^*$ ; for Step 2,  $\Delta R^2 = 0.11^{***}$ ; for Step 3,  $\Delta R^2 = 0.05^{**}$ ; for Step 4,  $\Delta R^2 = 0.35^{***}$ .

by plotting the interaction and testing whether the slopes of three simple regression lines were significantly different from zero.

When two predictors  $X$  and  $Z$  interact, it is suggested that the regression of  $\hat{Y}$  on  $X$  is plotted at three values of  $Z$  corresponding to 1  $SD$  above the mean of  $Z$ , the mean of  $Z$  and 1  $SD$  below the mean of  $Z$ . Accordingly, the values of ego orientation ( $Z$ ) chosen for plotting the regression of physical self-worth ( $\hat{Y}$ ) on task orientation ( $X$ ) were 0.87, 0, and  $-0.87$  reflecting high, average, and low ego orientation, respectively. These values were substituted in the regression equation ( $\hat{Y} = 2.51 + .19X + .16Z + .30XZ$ ), yielding three simple regression equations (of  $\hat{Y}$  on  $X$  at specific values of  $Z$ ). These equations, presented in Figure 1, were subsequently plotted to display the interaction by substituting in each equation two values of task orientation, that is, 0.59 and  $-0.59$  representing 1  $SD$  above and below the variable's mean, respectively.

Post hoc significance testing of the slopes of the three simple regression lines indicated that task orientation was a significant positive predictor of physical self-worth when one had high levels of ego orientation,  $B = 0.45$ , 95%  $CI = 0.20$  to  $0.71$ ,  $t = 3.58$ ,  $p < .001$ , or for the mean ego orientation,

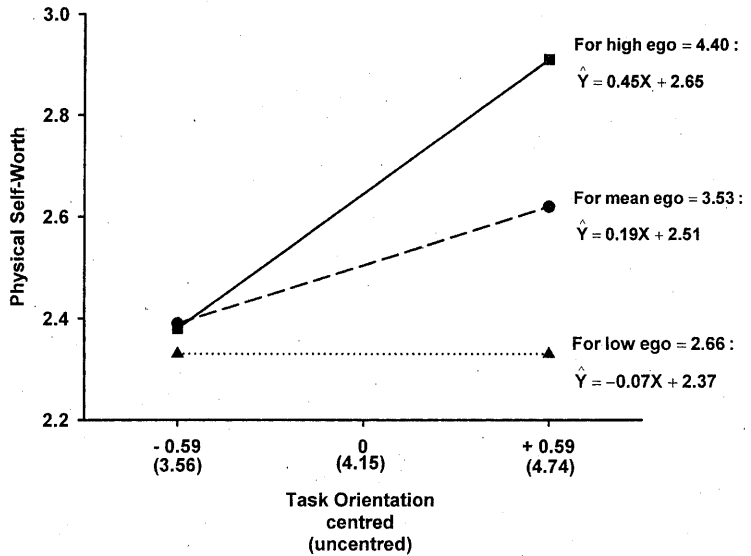


Figure 1. Simple regression lines of physical self-worth ( $\hat{Y}$ ) on task orientation ( $X$ ) at three levels of ego orientation ( $Z$ ).

$B = 0.19$ , 95%  $CI = 0.02$  to  $0.36$ ,  $t = 2.25$ ,  $p = .03$ . In contrast, the regression of physical self-worth on task orientation at low levels of ego orientation was not significant,  $B = -0.07$ , 95%  $CI = -0.13$  to  $0.40$ ,  $t = 1.00$ ,  $p > .05$ . These results indicate that the two goals interacted with each other such that the maximum levels of physical self-worth were achieved when the individual was high on both task and ego orientation.

**Sports competence as a mediating variable.** The mediating role of sports competence on the relationship between task and ego orientation and physical self-worth was examined following the steps outlined by Baron and Kenny (1986). Again, gender was entered in step one to control for its effects on physical self-worth. According to Baron and Kenny (1986), mediation should be tested by estimating three regression equations. In the first equation, the mediator is regressed on the predictor. In the second, the outcome variable is regressed on the predictor, while in the third equation the outcome variable is regressed on both the predictor and the mediator.

To establish mediation, the following four conditions must be met: First, the predictor must affect the mediator. Task and ego orientations significantly affected sports competence,  $B = 0.31$ , 95%  $CI = 0.14$  to  $0.48$ ,

Beta = .27,  $t = 3.68$ ,  $p < .001$  for task orientation, and  $B = 0.26$ , 95%  $CI = 0.14$  to  $0.38$ , Beta = .33,  $t = 4.28$ ,  $p < .001$  for ego orientation. Second, the predictor must affect the outcome variable. As Step 2 of Table 2 shows, both task and ego orientation were significant predictors of physical self-worth. Third, the mediator must affect the outcome variable. Sports competence was a significant positive predictor of physical self-worth,  $B = 0.69$ , 95%  $CI = 0.58$  to  $0.80$ , Beta = .72,  $t = 12.47$ ,  $p < .001$ . If all these conditions hold in the predicted direction, which was the case here, the effect of the predictor variable on the outcome variable must be less in the third equation than in the second. As can be seen in Step 4 of Table 2, the main effects of task and ego orientation were significantly reduced, and the two goals had no effect on physical self-worth in the presence of sports competence. These results indicate that the main effects of task and ego orientation were fully mediated by perceived sports competence. However, the interaction effect between task and ego orientation remained significant, even in the presence of sports competence indicating that when both task and ego orientations are high, physical self-worth is also high regardless of one's level of sports competence.

## DISCUSSION

The importance of global self-esteem for mental and physical well-being has been widely recognized (e.g., Diener, 1984; Sonstroem, 1997). Aspects of the physical self have also been associated with reports of physical and psychological health (e.g., Sonstroem & Potts, 1996). Thus, identifying the factors associated with global self-esteem and physical self-worth is important. The present study investigated the main and interactive effects of goal orientations on global self-esteem and physical self-worth and examined whether perceived sports competence mediates the effects of goal orientations on the latter two variables.

### *Goal orientations and global self-esteem*

In this study, task orientation emerged as a significant predictor of global self-esteem. Thus, using primarily self-referenced criteria to evaluate one's achievements and focusing on personal accomplishment in the context of physical education may have important implications for students' global

self-esteem. This finding is not surprising if we consider the conceptualization of global self-esteem offered by Rosenberg (1965) that individuals high in self-esteem focus on attaining standards set by themselves, recognize their limitations, and want to improve, grow, and overcome their deficiencies. Clearly, such a focus is compatible with a task goal orientation, which represents the individual's tendency to feel successful when he or she applies effort and observes personal improvement at the task. Similar to high self-esteem individuals, who want to improve their deficiencies, those high in task orientation focus on personal improvement.

The present findings support past research which has also reported a positive relationship between task orientation and global self-esteem among children participating in summer sport and health camps (Kavussanu & Harnisch, 2000) and among physical education students (Guinn et al., 2000). Although physical education is only one of many achievement domains, children's goal orientations in this domain tend to parallel their goal orientations in other domains. Indeed, Duda and Nicholls (1992) showed that goal orientations cut across school and sport, that is, children who are primarily task or ego oriented toward their achievement in school, also hold a similar orientation toward achievement in sport. Thus, it may not be the goal orientation that is manifested at the physical education context but a more general goal orientation of the individual that is important for global self-esteem.

Ego orientation was also a significant predictor of global self-esteem although its effects were not as strong as those of task orientation. This finding contradicts past research (Kavussanu & Harnisch, 2000), which has reported no relationship between the two variables in children coming from low income families and participating in summer health and sport camps. However, it should be noted that in the current study participants differed in several characteristics from those of the Kavussanu and Harnisch (2000) study. First, participants were students taking part in physical education, which is a longer-lasting context than a summer sports camp. Second, their age spanned the whole period of adolescence rather than only early adolescence. Perhaps ego orientation predisposed these older students to work harder in the physical education context, thereby increasing their sports competence and subsequently their self-esteem. Indeed, sports competence was positively related to both ego orientation and global self-esteem.



### ***Goal orientations and physical self-worth***

The second variable of interest in this study was physical self-worth. Both goal orientations emerged as significant positive predictors of this construct. In addition, a significant interaction effect was found such that the highest levels of physical self-worth were attained in individuals who reported high levels of both task and ego orientations. When an interaction effect is found main effects have to be interpreted in light of the interaction. Thus, task orientation was a positive predictor of physical self-worth at average and high levels of ego orientation but did not predict physical self-worth at low levels of ego orientation. This finding indicates that the one goal enhances the positive effects of the other on physical self-worth, such that the highest levels are achieved in individuals who score highly on both goals.

The positive main effects of task and ego orientation on physical self-worth parallel the findings of other studies (e.g., Biddle & Wang, 2003; Newton et al., 2004; Wang & Biddle, 2001), which have also reported significant positive relationships between both task and ego orientation and physical self-worth. Thus, not only the disposition to feel successful when one works hard and judges the self using self-referenced criteria, but also the tendency to evaluate success based on one's standing in comparison to others seem to have positive effects on physical self-worth. Perhaps, individuals who are oriented toward doing better than others in the physical domain may also try hard to outperform others in this domain, and this motivates achievement, an increase in one's competence and a subsequent increase in physical self-worth. A strong task or ego orientation implies that the individual is oriented toward accomplishing a goal; perhaps the motivation to achieve, which is the common denominator of these two goals, is the crucial factor in attaining high physical self-worth.

The current findings suggest that both task and ego orientation might be beneficial for physical self-worth. These results parallel recent work in educational psychology that has reported that both mastery and performance goals, which are equivalent to task and ego orientations, are associated with certain positive outcomes. For example, Pintrich (2000) in a sample of junior high school students found that when performance goals were coupled with mastery goals, they were associated with positive outcomes such as high self-efficacy, task value, risk taking, and low self-handicapping. Mastery goals were consistently related to adaptive

outcomes. In a study examining the effects of different goals on achievement, Barron and Harackiewicz (2001) found that college students adopting performance goals and succeeding in solving math problems solved more problems than students low on performance goals, while participants endorsing mastery goals expressed more interest in solving math problems. Thus, although mastery or task goals have been consistently linked in the educational and sport psychology literature with adaptive outcomes, performance or ego goals can also be adaptive under certain conditions and for certain outcomes (see also Midgley, Kaplan, & Middleton, 2001). As the present findings indicate, these goals may be beneficial for physical self-worth.

Mediation analysis indicated that perceived competence fully mediated the main effects of both task and ego orientations on physical self-worth. This finding suggests that the effects of task and ego orientations on physical self-worth may be explained through perceived competence; this is consistent with past work that has investigated goal profiles in sport. Specifically, Fox et al. (1994) found that among four goal profile groups, the low ego/low task group reported significantly lower perceptions of sports competence compared to the remaining three groups. Stated differently, the groups in which children reported high levels of at least one goal orientation, also reported high perceptions of competence. Taken together, these findings suggest that increased perceived sports competence may be the mechanism through which goals influence physical self-worth. However, it must also be noted that these conclusions are tentative as the cross-sectional nature of this study precludes firm statements about the direction of causality.

Interestingly, perceived competence only partially mediated the interactive effects of the two goals on physical self-worth. That is, even in the presence of sports competence, the interaction between task and ego orientation in predicting this variable remained significant. This finding suggests that when high levels of task and ego orientation are combined, their effects on physical self-worth cannot be attributed solely to the presence of high levels of competence. It is not clear why perceived competence mediated only the main effects of the two goals on physical self-worth. Perhaps, when the individual is high in both goals, the boosting effect that this combination confers on physical self-worth is so strong that it exceeds the effects achieved solely through sports competence. Clearly the interrelationships among achievement goals, perceived competence and

physical self-worth are complex. Future research should replicate the present finding and attempt to elucidate these relationships.

### ***Limitations of the study***

Although this study revealed some interesting findings regarding goal orientations and global and physical self-worth in physical education students, it also contains some limitations, and the findings should be interpreted in light of these limitations. First, the study is cross-sectional, which precludes firm conclusions about the direction of causality. For example, goal orientations were hypothesized to lead to an increase in sports competence with subsequent changes in self-esteem, but it is also possible that high sports competence led to an increase in one's goal orientation. Second, data were collected only from adolescent students participating in physical education. It is not known whether the relationships identified in this study hold for younger children or older individuals. Finally, students from only one school participated in the study, and the current findings may be specific to characteristics of the pupils in that school. As the findings can only be generalized to a population with characteristics similar to the ones of the sample used in this study, future research should replicate the present findings with more diverse samples.

### ***Conclusion***

This study identified some interesting relationships among goal orientations and global and physical self-worth. Although both goals predicted global self-esteem, the effects of task orientation were stronger than those of ego orientation, indicating that the tendency to evaluate success using primarily self-referenced criteria has important implications for global self-esteem. Both goals similarly predicted physical self-worth and they also interacted with each other, such that the highest levels of physical self-worth were attained by the individuals who were high on both task and ego orientation. Finally, the main – but not the interactive – effects of goal orientations on physical self-worth were fully mediated by perceived sports competence suggesting that a potential mechanism explaining the effects of achievement goals on physical self-worth is increased perceived competence.

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