Primary School Student Teachers’ Physical Self-Perceptions and Attitudes Toward Teaching Physical Education

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The importance of physical self-perceptions in relation to exercise behavior has been acknowledged. However, the importance of physical self-perceptions in relation to specific attitudes has been overlooked. This study used a self-report questionnaire to assess the physical self-perceptions and attitudes toward teaching physical education of a sample of final-year, female, primary school student teachers (N = 116). The most positive attitudes toward teaching physical education were recorded by students reporting more positive physical self-perceptions. Comparisons between students with low and high attitudes toward teaching physical education using MANOVA and discriminant function analysis confirmed these findings. Specifically, students with the most positive attitudes toward teaching physical education reported stronger self-perceptions of sports competence, and perceived competence in the sport subdomain was deemed more important than the other subdomains. It is speculated that these findings reflect a process of cognitive consonance mediating physical self-perceptions and attitudes.

Physical education experiences at primary school appear to have important implications for children’s education, health, exercise adherence, and general well-being (Harrison, 1998). Due to a variety of reasons, physical education classes may provide some children with their only opportunity to engage in moderate-to-vigorous physical activity (McKenzie, Feldman, Woods, Romero, Dahlstrom, Stone, Strikmiller, Williston, & Harsha, 1995), reiterating the importance of schools as a critical institution for promoting physical activity in children and youth (Sallis & McKenzie, 1991).

However, in British education, concerns about the adequacy of initial teacher training (ITT) to prepare students to teach physical education (PE) are well-documented (e.g., Carney & Armstrong, 1996; Kerr & Rodgers, 1981; Williams, 1979). In the United States, a substantial amount of primary (elementary) school PE is taught by nonspecialists who may also have limited training in PE (McKenzie, Alcaraz, Sallis, & Faucette, 1998). Furthermore, classes in PE may occur infrequently, and children are often relatively inactive (Faucette & Patterson, 1990; McKenzie et al., 1995).

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While implementing large-scale studies of curriculum and staff development programs in PE is necessary (e.g., SPARK: Sallis et al., 1997), further research is also warranted into the factors that underpin the quality of children's PE experiences. Greater understanding of such factors may prove more productive than continuing to fight for meager increases in the time devoted to PE in primary ITT, developing in-service training, or furthering the cause for PE specialists in all primary schools (Katene, Faulkner, & Reeves, in press).

**Attitude-Behavior Models**

Of interest in this paper are the personal attitudes that primary school student teachers bring to the delivery of PE in schools and how these may impact subsequent teaching behavior. One of the dominant theoretical frameworks in the attitude-behavior literature is the Theory of Planned Behavior (Ajzen, 1985). This model assumes that the immediate determinant of behavior is a person's intention to perform or not to perform a given behavior. This behavioral intention is a function of attitudes toward the behavior and the person's perception of social norms regarding the behavior. Attitudes are believed to be negative or positive evaluations of performing the behavior and the value placed on the behavior's consequence. Social norms influence intentions through beliefs concerning whether significant others believe the person should or should not perform the behavior, and the person's motivation to comply with those beliefs. Finally, perceived control over behaviors is a further determinant of intention as well as behavior. This is the perceived difficulty or ease of performing a behavior, which may reflect previous experience and anticipated barriers.

Applying such a theory to the delivery of primary school PE is not, however, straightforward since the behavior in question (teaching PE) is a compulsory task for most primary school teachers. Given the recent proposals by the British Secretary of State for Education ensuring top priority to literacy and numeracy within primary schools at the expense of noncore subjects, the time devoted to the delivery of PE is likely to be reduced (Harrison, 1998). In this scenario, staff lacking confidence to teach PE are likely to use such changes to further reduce their commitment to teaching the subject and limit the time children experience PE. This may be further exacerbated if "important" staff colleagues are perceived as placing little value on PE. This could be transmitted through poor-quality mentoring whereby subtle negative value judgements of PE are passed on to the student teacher.

Consequently, isolating the attitude component of the attitude-behavior framework and investigating correlates underlying attitudes held by primary school teachers and student teachers may be informative and has yet received little attention. Carney and Chedzoy (1998) investigated the importance of prior experiences of PE and their relationship with estimated competence to teach the six areas of the National Curriculum. They concluded that "if a student had an interest in an area and had positive prior experiences of an activity, he or she was more likely to be committed to that area" (p. 32). Those who participate voluntarily and regularly in any activity are likely to perceive these experiences as positive. Is there a possible transfer from personal interest and commitment in exercise and sport participation to the teaching of PE?

Katene, Faulkner, and Reeves (in press) used a self-report questionnaire to assess the exercise behavior and attitudes toward teaching PE of a sample of primary student teachers (N = 128). The results consistently indicated that exercise
behavior of student teachers was associated with attitudes toward teaching PE. Those most active had the most favorable attitudes to teaching PE. Conversely, the least active had the least favorable attitudes. Exercise adoption and, ultimately, maintenance may underpin commitment and more favorable attitudes toward teaching PE. Research needs to consider other variables, such as physical self-perceptions, that may influence attitudes toward teaching PE.

The Physical Self

What role do physical self-perceptions play in the development of attitude formation, specifically in relation to attitudes to teaching PE? One clear link could involve cognitive dissonance. The theory of cognitive dissonance (Festinger, 1957) argues that dissonance is a negative state that occurs when an individual simultaneously holds two cognitions (e.g., beliefs or attitudes) that are psychologically incompatible. Since dissonance is presumed to be unpleasant, individuals are motivated to reduce it by adding, changing, or eliminating cognitions to make them more compatible. Specifically, individuals are motivated to expose themselves to attitude-consonant information and to avoid attitude-dissonant information in order to stabilize a decision or an existing attitude. This consequently avoids cognitive dissonance while maintaining cognitive consonance. In our context, a generalist primary teacher may be aware of the importance of physical activity. If that teacher avoided teaching PE, however, other cognitions would be sought to avoid dissonance. For example, he or she reaffirms the greater value of other curriculum areas, associates with any similar avoidance behavior of fellow colleagues, or places strategic reliance on extracurricular physical activities.

Cognitive dissonance theory has generated great research interest and periodic revisions of its major tenets. Theorists such as Aronson (1969) have argued that central to dissonance theory is not the conflict of two opposing cognitions, but a conflict between the self-concept and cognitions about some behavior. Specifically, "if dissonance exists it is because the individual's behavior is inconsistent with his self-concept" (Aronson, 1969, p. 27). Accordingly, attitudes can be seen as partially serving as justifications for one's own self-concept.

Current consensus reports that self-esteem is a multidimensional and hierarchical construct that consists of different domains, for example, physical, academic, and social (Marsh & Shavelson, 1985). Each of these can exert independent effects on global self-esteem according to the relative importance an individual places on the domain (see Fox, 1997a). In its entirety, this can be regarded as a self-system. With regard to the physical domain, Fox and Corbin (1989) identified four subdomains that contributed to physical self-worth (general feelings of confidence or satisfaction in the physical self) in American college students. These included Body Attractiveness, Physical Condition, Sports Competence, and Physical Strength. Physical self-worth is theorized as mediating the relationship between specific physical self-perceptions and general feelings of self-esteem. Cognitive dissonance researchers have generally referred to global concepts such as self-image or self-concept. With growing conviction in the hierarchical nature of the self, it logically follows that specific aspects of the self such as these physical subdomains are more closely related to corresponding attitudes and behaviors.

Using the Physical Self Perception Profile (PSPP), several studies have demonstrated that the subdomains are predictive of exercise behaviors. Fox (1990)
highlighted that the four subdomains discriminated between students reporting purposeful physical activity and those who were sedentary with over 70% of participants correctly classified. Sonstroem, Speliotis, and Fava (1992) reported that in a sample of middle-aged adults, physical condition represented the best predictor of exercise with PSPP scales accurately categorizing exercisers and non-exercisers and the predicted degree of involvement. In addition, Sonstroem, Harlow, and Josephs (1994) found that exercise in a sample of adult female aerobic dancers was associated with positive evaluations of their physical condition and with negative evaluations of their bodies. Sonstroem (1997) concluded that such research provides preliminary evidence that physical self-components have the capacity to influence behavior.

Little research has been conducted relating physical self-perceptions with attitudes. Most research has related physical self-perceptions with exercise behaviors (e.g., Fox, 1990; Sonstroem et al., 1992) or examined and/or compared specific populations (e.g., Welk, Corbin, & Lewis, 1995; Whitehead, 1995). This appears to reflect a greater interest in exercise behavior and, ultimately, behavior change as a principle outcome variable. However, changing attitudes can be considered a meaningful basis for changing behavior. As a consequence, a primary focus for the current study was to explore the relationship between attitudes toward teaching PE and the physical self-perceptions of a sample of primary school teacher trainees. It is hypothesized that higher physical self-perceptions will be related to more positive attitudes toward teaching PE.

**Method**

**Sample**

The participants were a final-year cohort of primary education undergraduate majors attending a university in the Southeast of England. All subjects were female ($N = 116$), with a mean age of 25–30 years, and predominantly Caucasian (92%). Their course director gave consent for the inventories to be administered during a scheduled course meeting where the questionnaires were completed anonymously and returned.

**Instruments**

Physical self-perceptions and attitudes toward teaching PE were measured. The Physical Self-Perception Profile (PSPP: Fox, 1990) contains 30 items subdivided into 5 discrete scales (6 items each) assessing global Physical Self-Worth and the four subdomains of physical self worth: Attractive Body (BODY), Physical Condition (COND), Sport Competence (SPORT), and Physical Strength (STREN). A four-choice structured item format was used with each item presenting participants with two contrasting descriptions of people. For example, an item within the SPORT subscale presents the following two descriptions: “Some people feel that they are not very good when it comes to playing sports” and “Others feel that they are really good at just about every sport.”

Participants are asked which description is most like themselves and whether the description is “sort of true” or “really true” for them. The result is a 4-point response spread from 1 to 4 (Fox, 1990). Responses are summed for each subscale, resulting in a score ranging 6–24. Psychometric evaluation of the PSPP has revealed
good internal consistency and test-retest reliability (Fox & Corbin, 1989). The PSPP model has also been validated with British college-age participants (Page, Ashford, Fox, & Biddle, 1993). Indeed, in the present study, a Cronbach alpha of 0.87 was found for the PSPP scale.

In addition, Fox (1990) also developed the PIP (Perceived Importance Profile) to measure the importance of each of the four subdomains of the PSPP. Individuals may adopt a self-serving bias whereby low importance is attached to those domains where low competence is perceived, and conversely high importance may be attached to domains of high-perceived competence. It is possible that importance ratings may be additional predictors of external behaviors such as exercise activity (Marsh & Sonstroem, 1995). The PIP consists of four 2-item scales designed to ascertain perceptions of the importance of being competent or adequate in each of the four PSPP subdomains. Participants respond to the same format as the PSPP. For example, an item within the Sport Importance (SPORTIMP) subscale presents the following two descriptions: “Some people feel that being good at sports is vitally important to them” and “Others feel that being good at sports is not so important to them.” Participants are asked which description is most like themselves and whether the description is “sort of true” or “really true” for them. Responses are summed for each subscale, resulting in a score ranging 2–8. In the present study, a Cronbach alpha of 0.81 was found for the PIP scale.

Reviewing the literature revealed that no scale was currently available to determine student teachers’ general attitude toward teaching PE. As a consequence, the Attitude to Teaching Physical Education (ATTPE) Scale was devised specifically for this study. The ATTPE Scale consists of three questions: (a) Do you like teaching primary school physical education? (b) In general, do you look forward to teaching primary school physical education? and (c) If you had the choice, would you teach primary school physical education? These items were constructed following detailed discussions between student teachers and PE experts and were selected so that participants could reply using criteria of personal relevance rather than responding to prescribed aspects of teaching PE of unknown importance. Responses to the three items of the ATTPE scale were rated on a 5-point scale anchored by 1 (not at all) and 5 (very often). Participants’ scores were summed across the items to derive a single score ranging between 3 and 15.

Factor analysis and item analysis were used to assess the validity and reliability of the ATTPE scale. Preliminary findings suggest that the ATTPE Scale provides a satisfactory measure of general, evaluative attitudes toward teaching PE. A Cronbach alpha of 0.89 was found for the scale.

Statistical Analysis

Several statistical tests were employed to analyze the relationships among the selected variables. Firstly, Pearson Product Moment correlation coefficients were calculated to establish associations between each subscale of the PSPP, the PIP, and attitude toward teaching PE. To accompany this, a full model multiple regression analysis, with all variables entered simultaneously, was computed to investigate whether the PSPP and PIP subdomains were significant predictors of attitude to teaching PE. Finally, to gain further understanding of the importance of particular physical self-perceptions, comparisons were undertaken between students with “high” and “low” attitudes to teaching PE using a $2 \times 9$ (attitude $\times$ PSPP-PIP variables) multiple
analysis of variance (MANOVA). Since individuals with extreme attitudes (either positive or negative) are more likely than those with more moderate attitudes to translate these into behavior (Peterson & Dutton, 1975), upper and lower tertiles were used to identify the High Attitude to Teaching Physical Education group and the Low Attitude to Teaching Physical Education groups, respectively. A discriminant function analysis (all variables entered simultaneously) was used to determine the variables discriminating these groups.

Results

Relationships between Physical Self-Perceptions, Perceived Importance, and ATTPE

Pearson correlation coefficients among the subscales of the PSPP and PIP are reported in Table 1. The correlations among the various factors of the PSPP were moderate to high, similar to previous findings (Fox, 1990; Welk et al., 1995), with the strongest relationship between the construct of bodily attractiveness and physical self-worth \( r = 0.86, p < .001 \).

Correlations between each subscale of the PSPP (BODY, CONDITION, SPORT, STRENGTH, PHYSICAL SELF-WORTH) and the Attitude to Teaching Physical Education (ATTPE) scale are presented in Table 2. Notably, all were positive and significant \( (p < .05) \). A higher self-perception of competence in each subscale was associated with a more positive attitude toward teaching PE. Of further interest, correlational analyses using the importance ratings from the Perceived Importance Profile (PIP) revealed that the importance attached to each physical subscale was significantly related to attitudes toward teaching PE. For each subscale,

Table 1  Pearson Correlation Coefficients Between PSPP and PIP

<table>
<thead>
<tr>
<th></th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Body</td>
<td>0.69***</td>
<td>0.51***</td>
<td>0.47***</td>
<td>0.86***</td>
<td>0.32***</td>
<td>0.45***</td>
<td>0.31***</td>
<td>0.32***</td>
</tr>
<tr>
<td>2. Condition</td>
<td>0.56***</td>
<td>0.48***</td>
<td>0.72***</td>
<td>0.43***</td>
<td>0.59***</td>
<td>0.39***</td>
<td>0.39***</td>
<td></td>
</tr>
<tr>
<td>3. Sport</td>
<td></td>
<td>0.46***</td>
<td>0.53***</td>
<td>0.39***</td>
<td>0.37***</td>
<td>0.64***</td>
<td>0.42***</td>
<td></td>
</tr>
<tr>
<td>4. Strength</td>
<td></td>
<td></td>
<td>0.47***</td>
<td>0.41***</td>
<td>0.43***</td>
<td>0.36***</td>
<td>0.49***</td>
<td></td>
</tr>
<tr>
<td>5. Physical self-worth</td>
<td></td>
<td></td>
<td></td>
<td>0.28***</td>
<td>0.42***</td>
<td>0.30***</td>
<td>0.32***</td>
<td></td>
</tr>
<tr>
<td>6. Body importance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.54***</td>
<td>0.49***</td>
<td>0.48***</td>
<td></td>
</tr>
<tr>
<td>7. Condition importance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.48***</td>
<td>0.59***</td>
<td></td>
</tr>
<tr>
<td>8. Sport importance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.61***</td>
<td></td>
</tr>
<tr>
<td>9. Strength importance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001.
Table 2  Correlations and Multiple Regression Analysis With ATTPE as the Dependent Variable, and PSPP and PIP Subdomains as Independent Variables

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Correlation with ATTPE</th>
<th>Multiple regression values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>r^2</td>
</tr>
<tr>
<td>BODY</td>
<td>0.26**</td>
<td>0.07</td>
</tr>
<tr>
<td>CONDITION</td>
<td>0.38***</td>
<td>0.14</td>
</tr>
<tr>
<td>SPORT</td>
<td>0.49***</td>
<td>0.24</td>
</tr>
<tr>
<td>STRENGTH</td>
<td>0.30***</td>
<td>0.09</td>
</tr>
<tr>
<td>PHYSICAL SELF-WORTH</td>
<td>0.28**</td>
<td>0.08</td>
</tr>
<tr>
<td>BODYIMP</td>
<td>0.27**</td>
<td>0.07</td>
</tr>
<tr>
<td>CONDITIONIMP</td>
<td>0.23*</td>
<td>0.05</td>
</tr>
<tr>
<td>SPORTIMP</td>
<td>0.43***</td>
<td>0.37</td>
</tr>
<tr>
<td>STRENGTHIMP</td>
<td>0.22*</td>
<td>0.05</td>
</tr>
<tr>
<td>R^2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001.

greater perceived importance was associated with a more positive attitude toward teaching PE. This association was most pronounced for the SPORTIMP subscale (r = 0.43, p < .001). This positive and significant correlation indicates that students who perceived competence in sport as important held more positive attitudes to teaching PE, while students who did not perceive competence in sport as important reported the least positive attitudes toward teaching PE.

Multiple Regression Analysis

A multiple regression analysis was computed to investigate which subdomains were significant predictors of attitude to teaching PE. All predictors were entered simultaneously, and Table 2 includes data that confirm the significance of SPORT and SPORTIMP as predictors of attitude to teaching PE. Additionally, the PSPP and PIP variables accounted for 30% of the variance in the attitude scale.

Group Differences

The 2 × 9 (attitude × PSPP-PIP variables) MANOVA showed a significant main effect for attitude to teaching PE (Wilk's Lambda = 0.58, p < .001). Descriptive data for the two groups can be found in Table 3. The High ATTPE group reported higher PSPP and PIP means suggesting they held higher physical self-perceptions and attached greater importance to each of the PIP subscales. Follow-up univariate F-tests found students with a low attitude toward teaching PE had significantly (experimentwise alpha, 0.05/9 = 0.006) lower physical self-perceptions across all subscales except BODY (p = 0.018), BODYIMP (p = 0.025), and CONDIMP (p = 0.008).
Table 3  Physical Self-Perceptions and PIP Profiles: Means and Standard Deviations for Students with Different Attitudes Toward Teaching Physical Education

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Low ATTP</th>
<th>High ATTP</th>
<th>F (1, 69)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 38</td>
<td>n = 33</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>BODY</td>
<td>11.27</td>
<td>4.01</td>
<td>13.47</td>
<td>3.60</td>
</tr>
<tr>
<td>CONDITION</td>
<td>11.24</td>
<td>3.58</td>
<td>14.30</td>
<td>3.85</td>
</tr>
<tr>
<td>SPORT</td>
<td>9.26</td>
<td>2.77</td>
<td>13.79</td>
<td>3.34</td>
</tr>
<tr>
<td>STRENGTH</td>
<td>12.08</td>
<td>3.24</td>
<td>14.43</td>
<td>2.58</td>
</tr>
<tr>
<td>PSW</td>
<td>11.58</td>
<td>3.47</td>
<td>14.27</td>
<td>3.86</td>
</tr>
<tr>
<td>BODYIMP</td>
<td>4.66</td>
<td>1.42</td>
<td>5.36</td>
<td>1.14</td>
</tr>
<tr>
<td>CONDITIONIMP</td>
<td>4.66</td>
<td>1.36</td>
<td>5.51</td>
<td>1.27</td>
</tr>
<tr>
<td>SPORTIMP</td>
<td>3.29</td>
<td>1.04</td>
<td>4.67</td>
<td>1.19</td>
</tr>
<tr>
<td>STRENGTHIMP</td>
<td>4.10</td>
<td>1.06</td>
<td>4.84</td>
<td>1.15</td>
</tr>
</tbody>
</table>

These findings suggest that physical self-perceptions and importance ratings of the physical self are associated with attitudes toward teaching PE. To gain further understanding, a discriminant function analysis was undertaken. This analysis (a) revealed the dimensions on which High and Low groups differed, (b) identified the variables that most contributed to the differences on the dimensions, and (c) revealed the extent to which group membership could be classified using physical self-perceptions and PIP. In total, this clarified the importance of physical self-perceptions and PIP responses as predictors of attitude toward teaching PE.

To consider the contribution of each predictor variable and assist interpretation of the discriminant function, the correlations between predictor variables and each discriminant function should be examined (Tabachnick & Fidell, 1983). Indeed, Kinney and Gray (1992) suggest that these correlations provide the best indication of which variables contribute most to the discriminant function, and several related studies (e.g., Fox, 1990; Marsh & Peart, 1988; Sonstroem et al., 1992) report these to identify the best predictor variables. Consequently, the pooled within-groups correlations between discriminating variables and the canonical discriminant function are presented in Table 4.

Table 4 reports a significant discriminant function derived from the predictor variables (Wilks' Lambda = 0.58, p < .001). Analysis of the correlations between the discriminating variables and the discriminant function reveal that SPORT and SPORTIMP subscales were the best predictor variables. Nevertheless, given that correlations above 0.30 are usually accepted in the interpretation of a discriminant function (Tabachnick & Fidell, 1983), the correlations presented in Table 4 indicate that each of the nine subscales significantly contributed to the prediction of attitude to teaching PE.

The classification table included in Table 4 highlights the sensitivity of the discriminant function to predict attitudes towards teaching PE using PSPP and PIP subscales. Overall, 78.9% of the sample were correctly classified including 81.6% and 75.8% of subjects with low and high attitudes to teaching PE, respectively.
Table 4  Summary of Discriminant Function Analysis to Classify Attitude to Teaching Physical Education by PSPP and PIP Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlation with function</th>
<th>Correctly classified (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPORT</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>SPORTIMP</td>
<td>0.74</td>
<td>Low</td>
</tr>
<tr>
<td>CONDITION</td>
<td>0.49</td>
<td></td>
</tr>
<tr>
<td>STRENGTH</td>
<td>0.48</td>
<td>High</td>
</tr>
<tr>
<td>PHYSICAL SELF-WORTH</td>
<td>0.44</td>
<td></td>
</tr>
<tr>
<td>STRENGTHIMP</td>
<td>0.40</td>
<td>Overall</td>
</tr>
<tr>
<td>CONDITIONIMP</td>
<td>0.39</td>
<td></td>
</tr>
<tr>
<td>BODY</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>BODYIMP</td>
<td>0.32</td>
<td></td>
</tr>
</tbody>
</table>

Eigenvalue = 0.72; Canonical R = 0.65; Wilks’ Lambda = 0.58; Sig. = 0.0001.

Nevertheless, given the complexity of attitude formation, it is recognized that other factors beyond those presented in this paper (i.e., exercise behavior: see Katene et al., in press; or childhood experiences in PE) may also be important contributors to attitudes toward teaching PE.

Discussion

This study investigated the relationship between physical self-perceptions and their possible mediation of attitudes. It is clearly evident that higher self-perceptions of competence in each physical subscale were associated with a more positive attitude to teaching PE. This was also reflected in the importance ratings of each subdomain of the physical self. Data analysis revealed that the SPORT and SPORTIMP subscales were the significant predictor variables of attitude to teaching PE.

This finding is intuitively appealing since those who perceive themselves to be competent at sport and perceive such competence as important are more likely to have had successful sporting experiences. This may translate to higher levels of self-efficacy in teaching PE as reflected by more positive attitudes to teaching PE (Carney & Chedzoy, 1998). Similarly, lower levels of perceived competence may be the result of early negative sporting experiences, and these are associated with less favorable attitudes to teaching PE. This may illustrate a self-serving bias that is intended to protect the self-system but may also reflect continuing apprehension of what PE entails. We must ask if an individual needs to be competent at sport to teach PE at the primary school level. Arguably not, but further education may be needed in ITT to change stereotypical views of the nature of PE.

The Physical Self and Cognitive Dissonance

Given the importance of the physical self in the self-system (Fox, 1997a), these results may be strongly reflective of a process of avoiding cognitive dissonance. In
order to avoid dissonance, there is a shift in attitude toward teaching PE either negatively or positively to equate with comparative levels of perceived physical self-perception. Cognitive dissonance would exist if poor physical self-perceptions were held in parallel with a positive attitude to teaching PE or by having highly positive physical self-perceptions, yet a poor attitude to teaching PE. The results indicating that higher physical self-perceptions related to a more positive attitude toward teaching PE support the suggested consonance. This relationship is most likely among participants who perceive physical competence to be important for teaching PE effectively.

Originally, importance attached to cognitions was an integral aspect of cognitive dissonance theory (Wicklund & Brehm, 1976). Analogous to the importance individuals may infer on components of the physical self, individuals’ evaluations of importance may at times be inappropriately placed on particular cognitions. Reframing our initial question, is a competent physical self necessary to deliver a quality PE lesson? Again, arguably not. Possibly, the most cogent form of changing attitudes in this context is to promote the discounting of physical self-perceptions in teaching PE and/or promoting the importance of PE rather than changing cognitions per se. As mentioned, consonance is maintained by holding negative physical self-perceptions and having relatively lower attitudes toward teaching PE. By discounting the importance of physical self-perceptions in relation to teaching PE, this consonance is challenged, and the basis for dissonance is again created.

A shift in attitude toward teaching PE may result as the individual seeks to reduce this dissonance (if other components are held constant) by searching for alternative, consonant cognitions. One consonant cognition could indeed be a more positive attitude toward teaching PE. A short-term measure may be the emphasis on such discounting in ITT. Research could consider how ITT PE experiences change the importance students place on physical competence and the subsequent impact upon attitudes to teaching PE. Such theorizing provides a framework for changing any stereotypical perceptions held by preservice teachers and may be more effective than trying to change physical self-perceptions given the often brief contact students have with ITT PE courses. This applies particularly to individuals with low physical self-perceptions.

Alternatively, stressing the importance of PE may have the same effect. However, this may be less influential given the social context that reinforces any consonance between low physical self-perceptions and low attitudes toward teaching PE. For example, the limited time allocation for PE within ITT (Carney & Armstrong, 1996) strengthens the perceived and relative importance of PE. This may be further amplified in practice due to weak social norms. Furthermore, in the British context, the Secretary of State is reinforcing this consonance by stressing the importance of numeracy and literacy. Those who believe that PE is not important have further validation. These factors all restrict the possibility of dissonance and any positive attitude change toward teaching PE. The notion of cognitive dissonance is supported by much experimental research, which at the very least supports its existence as a pragmatic construct (Draycott & Dabbs, 1998). The pragmatic application of this theory to the current study makes logical sense but needs further exploration.

The Physical Self and ATTPPE

It may be speculated that the importance attached to sport competence independently mediates attitudes toward teaching PE. As well as serving as a protective
bias, those who do not value sport as an element of their self-system may not be the most effective at transmitting positive attitudes to sport and exercise to young children. Moreover, are such teachers most likely to avoid teaching PE whenever possible? Changing the perceived importance of sport held by individuals (in relation to their self-esteem rather than in relation to teaching PE) would be difficult and probably self-defeating. However, greater exposure to the concepts of, for example, health-related PE, and the important effects of PE on children’s social and moral development may moderate the influence individuals do or do not place on sport.

Other aspects of the physical self may also be important for primary student teachers. Perceptions of condition, which have been found to be the best PSPP predictor of activity in adult females (Sonstroem, 1997), was identified as an influential variable in the present study. Significant mean differences were apparent between the high and low attitude to teaching PE groups on the condition scale. Those who reported a more favorable attitude toward teaching PE perceived high competence in the condition subdomain. As Katene et al. (in press) found, higher levels of reported exercise behavior were also associated with this group. Consequently, perceptions of condition should be higher. Mediated through perceptions of self-efficacy, increasing perceptions of competence in the condition subdomain may also improve attitudes to teaching PE.

Further research into interventions designed to develop exercise habits of student teachers within the ITT setting is warranted. Targeting this sample for exercise promotion remains an intriguing possibility in terms of raising concomitant attitudes to delivering PE. Changes in perceived competence in physical subdomains, not necessarily changes in more global aspects of the self (e.g., physical self-worth, self-esteem), may influence attitudes.

There are a number of methodological issues related to the present study that warrant further consideration. Firstly, we assume that attitudes to teaching PE have some influence on actual teaching behavior via intentions. Intentions or behavior were not measured in the present study, and without the measurement of intentions, any link between attitudes and behaviors is considerably weakened. Consequently, there exist other influences other than ATTPE that impact on intentions and, ultimately, behavior that remain unaccounted for, as well as attitude formation itself. Such variables could include goal perspective (Biddle, 1997), personal experience of PE, exercise behavior (Katene et al., in press), and, indeed, ITT experiences.

While physical self-perceptions may influence attitudes that, in turn, may influence intentions, what influences the development of physical self-perceptions? Little is known about how individuals integrate aspects of their physical selves into their self-systems or how the physical self is modified through physical life experiences (Fox, 1997b). It is most probable that there is a continual cycle of modification and reinforcement of self-perceptions, attitudes, and behaviors that are forever in flux. A more varied combination of qualitative and quantitative techniques is needed to fully understand the entire picture.

Although the ATTPE scale appeared to be an appropriate scale for assessing a general attitude to teaching PE, further development of a scale examining attitudes toward teaching PE in terms of action, target, context, and time frame is necessary (Fishbein & Ajzen, 1975). Additionally, a recognized limitation with profiles like the PSPP is the “centrality of content to the value system of the population” (Fox, 1997b, p. 133) under question. While the PSPP was developed for and
validated with U.S. university students (Fox, 1990), there may be subtle subcultural variations that exist. The primary school student teacher will have a myriad of motivations for choosing such a vocation and, to a certain extent, will be over-loaded with other subjects of the curriculum to deliver. It may be that the physical self has limited relevance to the way they establish their self-esteem or impacts their subsequent behavior. Nevertheless, despite such considerations, this study found a strong relationship between physical self-perceptions and attitudes to teaching PE. It is suggested, therefore, that through a process of avoiding cognitive dissonance, physical self-perceptions strongly predict such attitudes. Further research is needed in relating aspects of the self-system, particularly the physical self, with attitudes and cognitions. Such understanding may be informative in planning future behavior change in a range of subject samples.

References


**Note**

*Further details are available on request from the authors.*

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