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European Physical Education Review 2001 7: 24

DOI: 10.1177/1356336X010071005

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Children's perceived competence and enjoyment in physical education and physical activity outside school

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and

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Abstract

This study aimed to examine the relationship of children's perceived competence in physical education to their enjoyment in the subject, and how boys and girls scoring high and low in enjoyment and perceived competence differed in their levels of physical activity. Year 6 primary school children ($n = 922$) completed questionnaires giving their physical activity the previous week, their perceived competence in, and enjoyment of, PE. Employing correlation, multivariate and univariate analysis of variance techniques, the results indicated moderate positive and significant relationships between enjoyment in PE and perceived competence in PE for the whole sample ($r = .39, p < 0.001$). Children of high perceived competence participated in significantly more physical activity (quantity and intensity) outside school than those of low perceived competence, but there was no difference in enjoyment levels and quantity of physical activity. The boys scored higher than the girls on time spent on physical activity, on perceived competence and enjoyment. Motivation theory is utilized to examine the relationship of perceived competence and enjoyment in physical education to physical activity outside school.

Key-words: enjoyment of PE • perceived competence in PE • physical activity

The apparent sedentary lifestyles of some children (Armstrong and Bray, 1990; Cale, 1996; Health Education Authority [HEA] 1997; Sleep and Warburton, 1990; Thirlaway and Benton, 1993), and the consequences such lifestyles have for present and long-term health (Bouchard et al., 1994; HEA, 1997; Powell et al., 1987), have led to an increased interest in the psychological determinants of children's physical activity participation. However, research undertaken to examine the psychological correlates of children's physical activity has so far generally placed an emphasis on

participants in organized sports or sports clubs. This has led to a focus in the literature on the factors that determine participation of specific minorities of children, often the more able. A further consequence of this line of inquiry is a dearth of information relating to what influences children to be physically active outside the structured confines of organized sports. Physical education has been acknowledged as having the potential to promote physical activity outside school (Sallis and McKenzie, 1991). However, previous research has revealed that, for some, bad memories of school physical education, often related to a self-image of not being athletically competent, has been one factor negatively affecting physical activity participation in adulthood (Fox, 1988; Thomas, 1985; White and Coakley, 1986). It appears that not enough is known about how experiences in physical education relate to young children's current volitional sports participation, and specifically, whether children's experiences of physical education may be positively or negatively affecting habitual physical activity.

Previous research has focused on either the relationship between perceived competence and enjoyment of physical education, the relationship between perceived competence and enjoyment of physical activity or the relationship between perceived competence and enjoyment with regard to participation in organized sport. Furthermore, as is exemplified in the following review, the majority of research examining these relationships has been conducted on older American school children. There is considerably less work on primary schoolchildren in the UK.

Theory and research suggest that the experience of enjoyment is a critical factor in determining one's motivation for and continued participation in exercise settings (Kremer et al., 1997; Wankel, 1993). Weiss (1987) advises that children will be more inclined to participate in physical activity if they perceive it to be enjoyable, and the chances of continued participation will be increased by enhancing their intrinsic motivation. Similar sentiments have been echoed by research in which enjoyment has been found to be positively related to a desire to continue participation (Scanlan and Lewthwaite, 1986; Scanlan et al., 1989), and where the effort to increase intrinsic motivation has been widely accepted as a desirable educational practice since it leads to long-term motivation, and hence continued participation (Deci and Ryan, 1985). In a large survey in Northern Ireland (Kremer et al., 1997) 69 percent of the sample rated enjoyment as the factor making them more keen about their chosen sport, and 75 percent stated lack of enjoyment as a factor in making them less keen. Furthermore, on being asked what they gained from their 'top sport', 34 percent stated enjoyment, second to fitness (47 percent), while 66 percent said they would definitely continue with their chosen sport, leading Kremer (1997) to the conclusion that 'young people had derived enjoyment from their experience and had every intention of continuing their sporting careers'. In a qualitative study with schoolchildren, Laws and Fisher (1999) suggest that fun and enjoyment are an important frame of reference for young people and seem to encapsulate all that was good and positive about physical education. However, the pupils had a good deal of difficulty getting below the 'real meaning' and could not articulate further. Fun and enjoyment were also rated the most important reasons for rating

physical education by primary schoolchildren in Taiwan (Chung and Leung, 1998). From both within the sport contexts of educational institutions and non-educational organizations, the research evidence indicates that enjoyment is increased by being able to show competence, the resultant consequence of which is likely to be continued participation (Fox and Biddle, 1988; Weiss, 1987).

Of the motivational theories that have been empirically tested in sports and educational settings the one that has received the most attention in recent years is Harter's competence motivation theory (Feltz and Petlichkoff, 1983; Klint and Weiss, 1987). Central to Harter's theory is the desire to show competence. The basic tenets of this theory are that successful independent attempts in mastery experiences bolster perceived competence, which leads to increased intrinsic motivation, and hence to an innate desire to remain involved and exert effort (Harter, 1981). Similarly, Cognitive Evaluation Theory (Deci and Ryan, 1985) contends that one's motivation varies according to changes in perceptions of competence. Specifically, intrinsic motivation is enhanced through a positive appraisal of one's own ability, while events that undermine perceived competence may lead to a loss of intrinsic motivation. Achievement motivation theorists (Duda, 1992; Nicholls, 1989) likewise suggest that the primary focus of individuals in achievement settings is the demonstration of competence. They postulate that individuals perceive themselves as successful when they believe that they have shown competence, whereas feelings of failure are associated with the perception that they have not shown competence. However, the goal perspectives approach underpinning this theory suggests that individuals demonstrate competence through one of two goal orientations, each of which elicits qualitatively different motivational patterns. A mastery goal orientation implying perceived competence is conceived in terms of personal development, so is self-referenced, while an ego goal orientation implies normative referencing with perceived competence only being boosted when favourable comparisons of performance are made with peers.

Studies undertaken to examine specifically the relationship between perceived competence and enjoyment in physical activity generally support theoretical perspectives about the role of perceived competence in influencing interest and enjoyment (Brustad, 1993; Williams and Gill, 1995). Similarly, the findings of the few studies that have examined how perceived competence in physical education relates to enjoyment in the subject have cited perceived competence as a powerful indicator of children's selection of physical education (Luke and Sinclair, 1991). However, it appears that studies have not normally related perceived competence and enjoyment to activity levels and particularly to recommendations for health.

The focus of studies which have examined direct participation in physical activity has been mainly on children participating in structured sports outside school. This research has shown sports participants having higher perceived competence than either non-participants or those who have dropped out of sport (Burton and Martens, 1986; Feltz and Petlichkoff, 1983; Roberts et al., 1981). Of the few studies which have examined the psychological influences of physical activity participation, outside the structured confines of organized sport, the findings further substantiate the role

of competence perceptions in children's motivational processes. Hyams et al.'s (1995) study of leisure-time physical activity, using a sample of American high school students ($n = 555$), showed that perceived competence was significantly related to participation. Similarly, Stonecipher's study (1995) with a sample of 239 found that the less active adolescents considered themselves to be significantly less competent than the more active adolescents. More recently in Finland using a sample of 1108 children, Telama (1998) found that there was a moderate positive correlation for both boys and girls aged 12 and 15 between physical activity and perceived competence, and a slightly lower correlation between physical activity and attitude to physical education for these groups, except for boys aged 12 where there were no significant correlations. This research also showed that the more organized or intensive the physical activity the higher the correlation with perceived competence, while non-organized physical activity did not correlate at all with psychological variables with some of the groups. This finding is supported by the large-scale Northern Ireland survey (Van Wersch, 1997) where young sports participants who were involved at the 'basic' level (family recreation, informal, non-competitive) had lower intrinsic motivation and perceived competence than those involved at 'competitive' and 'elite' levels. Generally, these studies also show that boys exhibit higher levels of perceived competence than girls (Telama, 1998; Van Wersch, 1997).

Acknowledging a lack of research into how perceived competencies influence direct physical activity participation, Biddle and Armstrong (1992) monitored the heart rates of 72 British schoolchildren (aged 12 years) who also completed the Physical Self-Perception Profile (Fox, 1990). Although no evidence was found to support a significant relationship between the activity levels of the girls and their perceived sports competence, a positive and significant relationship between the activity levels of the boys, as measured by their heart rates, and their perceived sports competence was indicated.

There is now a growing body of literature on physical activity levels in young people (see HEA, 1997) and although strict comparisons are difficult because of different methodologies, there are some consistent findings, such as low physical activity levels, boys being more active than girls, reduction of activity levels during adolescence (Armstrong and Welsman, 1997; HEA, 1997). There are considerably fewer data on primary schoolchildren. Reviews and research have led to recommendations of activity levels for health benefits (HEA, 1998; Sallis and Patrick, 1994) and these relate to length of time and frequency and intensity. However, many of the studies on physical activity levels do not relate them to the recommended levels, and Riddoch and Boreham (1995) suggest that this needs to be done. This study includes this aspect in a limited way, with the activity level groupings and the high group approximately reaching the recommended levels in terms of quantity of time and frequency and intensity.

Purpose of the study

This study aimed to examine: (1) the relationship of children's perceived competence in physical education to their enjoyment in the subject; (2) how children with

different levels of physical activity outside school scored on measures of enjoyment and perceived competence in physical education; (3) how children scoring high and low in enjoyment and perceived competence differed in their levels of physical activity; (4) differences between boys and girls in physical activity levels and scores on the enjoyment and competence scales.

On the basis of previous research it was hypothesized that: (a) there would be a significant and positive relationship between the children's perceived competence and enjoyment in physical education; (b) those children categorized as having high perceived competence and high enjoyment in physical education would participate in more physical activity, and would be inclined to spend more time in team and individual sports than those who had either low perceived competence or low enjoyment in physical education; (c) children who participated to the recommended level of physical activity for health reasons (Sallis and Patrick, 1994) can be differentiated from those who do not, on the basis of their perceived competence in, and enjoyment of, physical education, with the former scoring higher on both; (d) boys would be significantly more physically active than girls; (e) boys would perceive physical education as more enjoyable than girls and boys would have higher perceptions of their ability in comparison to girls.

Method

Sample

The sample consisted of 922 Year 6 (aged 10–11) British primary schoolchildren (boys, $n = 468$; girls, $n = 454$) from 32 schools located in one north-west education authority. The selection of the children involved in the present study was determined by the locality of their primary school. All schools followed the National Curriculum and offered activities in the six areas.

Measures

Three self-report questionnaires assessed: enjoyment of physical education, perceptions of competence in physical education and physical activity. In all cases the questionnaires were administered by the researcher in a classroom setting. The researcher made clear what each section of the questionnaire meant and clarified any queries and difficulties. The children were not requested to give their names, and were assured that their responses would remain anonymous and confidential.

Enjoyment of physical education scale

The General Interest (enjoyment) factor of the 'Pre-Adolescent Attitudes toward Physical Education Questionnaire' (PAAPEQ) (Shropshire and Loumidis, 1996) was employed to examine the level of enjoyment in physical education. This factor

consisted of nine items measuring enjoyment, liking, interest and value held for and in physical education. Participants responded to a four-point Likert scale, ranging from 'very true' (4) to 'not at all true' (1). Items were summed to provide a single score, with a low score indicating low enjoyment in physical education. This factor has been reported as having high internal reliability, with a Cronbach alpha level of .87 (Shropshire and Loumidis, 1996).

Self-perceived competence in physical education scale (SPCPES)

The SPCPES was developed using a pilot study of 214 children (aged 10–12 years). The participants in the pilot study were asked to rate their responses to five questions, previously acquired from semi-structured interviews with groups of children aged 11–12 years. All the questions related to perceptions of ability in physical education in school, ability to learn sport skills in physical education, confidence in the physical education environment. The answer format for each of the five questions included in the scale ranged from 'very true' (4) to 'not at all true' (1), where 1 indicated low perceived competence. A total score was calculated by adding the item scores. Results of a principal component factor analysis revealed a single factor solution with all items loading above .60. The reliability of the scale from the pilot-study data was satisfactory, with an alpha coefficient of .78.

Physical activity assessment

The pupils were asked to indicate: (a) how many times in the previous week they had participated in physical activity outside school, (b) the amount of time spent participating each time and (c) the type of activity participated in. Outside school included all activity (informal and formal) undertaken in their own time. This excluded all physical education lessons but included all physical activity undertaken after school hours whether it was organized by the school or not. The type of activity was categorized into individual, where they participated by themselves or with others but did not involve a team, for example, swimming, gymnastics, tennis, or team, which required other members, for example, football, netball. Both individual and team included only those activities which could be normally included in the National Curriculum in the primary school, and total physical activity included all activities. Additionally, they were asked to indicate for each occasion in which they had participated whether it had been at such an intensity to make them tired, out of breath or sweaty. This measure of individual perceived exertion has successfully been used with children of a similar age (Dickenson, 1986; Riddoch et al., 1990) and is recommended as an accurate measure of the relative stress placed on the body when more objective measures, such as heart rate monitoring, are not available (Riddoch and Boreham, 1995). Kowalski et al. (1997) show that measures on a similar seven-day recall physical activity questionnaire (PAQ~A) with 13-year-old children had convergent validity against four other different types of

measure. The seven-day measure was used in this study. In addition, the children were grouped according to the level of physical activity they had participated in the previous week and in accordance with what has been proposed as 'appropriate' activity for children's health (Sallis and Patrick, 1994).

For the present study, in order to identify groups of children who had participated in distinct levels of physical activity, the children were grouped according to the more stringent of Sallis and Patrick's two guidelines into one of three groups. Those children who participated in the recommended amount of physical activity were classified as the 'high activity' group; those who participated in some but not enough physical activity, either in terms of frequency, duration or intensity, were classified as the 'low activity' group and those who failed to participate in any physical activity the previous week were classified as the 'no activity' group.

Analyses

Analyses were conducted (i) to ascertain descriptive statistics for the physical activity variables of overall time spent involved in physical activity, the time spent participating in team sports and individual sports traditionally included in the curriculum and (ii) to calculate internal consistency estimates and establish descriptive statistics for the perceived competence in and enjoyment of physical education factors. Pearson product moment correlations were utilized in order to examine the relationship between perceived competence and enjoyment in physical education.

A three-way ($2 \times 2 \times 2$) ANOVA was conducted to examine the differences in perceived competence, enjoyment in physical education and sex for each of the physical activity variables. Children were categorized as having low or high enjoyment in physical education and as having either low or high perceived competence in physical education. These categories were calculated on the basis of their mean scores for each of the two factors, with those scoring less than the mean being classified as having low enjoyment or low perceived competence and those greater than or equal to the mean as having high enjoyment or high perceived competence. Possible differences between the activity groups were examined employing a three-way (3×2) ANOVA for enjoyment in physical education and perceived competence.

Results

Internal consistencies and descriptive statistics

All of the 922 children involved in the study reported sufficient information concerning their frequency and duration of physical activity for the amount of time they had spent being active to be determined, although 12 children failed to report the intensity of their physical activity. Of the whole sample, after excluding missing data, 876 fully completed the perceived competence in physical education scale, 879 fully completed the enjoyment in physical education scale and 859 fully completed all three questionnaires.

Factor analytic procedures were used to confirm the integrity of the structure underlying both the enjoyment of physical education and the self-perceived competence factors. Results of a principal component factor analysis on the enjoyment of physical education scale employing varimax rotation supported the single factor solution, with all items loading above .50, and revealed adequate reliability with an alpha coefficient of .85. Results of a principal component analysis on the self-perceived competence scale supported the single factor solution for the SPCPES, with all items loading above .50, and indicated satisfactory reliability with an alpha coefficient of .76.

The descriptive statistics revealed that the mean time spent on physical activity by the boys was 254.70 minutes (4hrs 56 m) while that of the girls was 156.46 minutes (3hrs 6m). These figures hid wide variations in activity levels between individuals as expected. According to the classification of activity groups as outlined in the methods section, 36.3 percent ($n = 166$) of the boys and 26.7 percent ($n = 121$) of the girls were categorized as highly active, 53.6 percent ($n = 245$) of the boys and 57.4 percent ($n = 260$) of the girls fell into the low activity group, while 10.1 percent ($n = 66$) of the boys and 15.9 percent ($n = 72$) of the girls were classified as non-active. Those classified as having high and low enjoyment in physical education and high and low perceived competence in physical education are shown in Table 1. Means and standard deviations for the children's scores on enjoyment of and perceived competence in physical education can be seen for the three activity groups and for boys and girls in Table 2.

Perceived competence and enjoyment in physical education

Pearson product-moment correlations were computed to determine the relationships between perceived competence and enjoyment in physical education. The results indicated moderate positive and significant relationships for the whole sample ($r = .39$, $p < .001$), for the boys ($r = .34$, $p < .001$) and for the girls ($r = .41$, $p < .001$).

The effects of sex, perceived competence and enjoyment in physical education on the total amount of time spent participating in physical activity outside school were analysed using a three-way, sex by perceived competence by enjoyment ($2 \times 2 \times 2$), ANOVA. The results indicated a significant main effect for sex $F(1848) = 32.10$, $p < .001$, and a significant main effect for perceived competence $F(1848) = 8.50$, $p < .005$. Neither the main effect for enjoyment nor any of the two- or three-way interactions were significant. An examination of the means indicated that children of high perceived competence participated in significantly more physical activity outside school than those of low perceived competence (see Table 1). Furthermore the boys ($m = 254.70$ minutes) spent significantly more time participating in physical activity the previous week than the girls ($m = 156.46$ minutes).

Independent t-tests examined possible gender differences on perceived competence and enjoyment in physical education. Significant gender differences were revealed on the perceived competence scale ($t = 5.97$, d.f. = 874, $p < .001$) and the

enjoyment in physical education factor ($t = 3.09$, d.f. = 877, $p < .005$). The boys reported a significantly higher level of enjoyment in physical education and a significantly higher perception of their competence than the girls (see Table 2).

A three-way, sex by perceived competence by enjoyment in physical education ($2 \times 2 \times 2$), MANOVA was conducted to examine whether any differences in the time spent participating in specific physical activities outside school (team and individual sports) could be attributed to sex, perceived competence or enjoyment in physical education. The dependent variables, the minutes spent participating in (a) team sports and (b) individual sports, were entered together in order to reduce the chance of making a Type 1 error and to provide a more sensitive measure of the effects of the independent variables.

The results revealed a significant group effect for perceived competence, Wilks's lambda = 0.98, $F(2848) = 9.70$, $p < .001$. The follow-up univariate F-tests revealed that children of high perceived competence spent significantly more time participating in team sports $F(1849) = 9.21$, $p < .005$, and individual sports $F(1848) = 11.55$, $p = 0.001$, than children of low perceived competence (see Table 1).

The multivariate test results also revealed a significant group effect for sex, Wilks's lambda = 0.90, $F(2848) = 48.87$, $p < .001$. The univariate follow-up procedures revealed significant differences between girls and boys on the amount of time spent participating in team sports $F(1849) = 90.62$, $p < .001$ and individual sports $F(1849) = 4.07$, $p < .05$. An examination of the means indicated that the boys ($m = 161.26$ minutes) spent significantly more time participating in team sports than the girls ($m = 49.57$ minutes), while the girls ($m = 40.16$ minutes) spent significantly more time participating in individual sports than the boys ($m = 30.93$ minutes). Neither the main effect for enjoyment in physical education nor any of the two- or three-way interactions were significant.

Physical activity group comparisons

Possible differences between the three activity groups ('high activity', 'low activity' and 'no activity') on their perceived competence and enjoyment in physical education scores were examined through a MANOVA. The dependent variables, perceived competence and enjoyment in physical education, were entered together. Tukey HSD post-hoc comparison tests followed significant results ($p < .05$).

The multivariate test result revealed a significant group effect, Wilks's lambda = 0.99, $F(41710) = 2.86$, $p < .05$, the subsequent univariate follow-up F-test analysis indicated significant differences between the three groups on perceived competence $F(2856) = 3.71$, $p < .02$, and on enjoyment in physical education $F(2856) = 2.98$, $p < .05$. The results of the multiple comparison tests indicated that the group which participated in the recommended level of exercise, the 'high activity' group, perceived themselves as significantly ($p < .05$) more competent than the group which had not participated in any physical activity the previous week, the 'no activity' group. Furthermore the 'high activity' group perceived physical education

Table 1 Minutes spent participating in physical activity the previous week

	Level of Perceived Competence				Level of Enjoyment			
	High (<i>n</i> = 445)		Low (<i>n</i> = 431)		High (<i>n</i> = 516)		Low (<i>n</i> = 363)	
	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
Minutes spent in:								
total physical activity	244.28	237.41	177.62	237.47	227.90	249.43	185.46	208.09
team sports	136.75	180.89	81.03	143.12	124.10	178.61	87.79	143.13
individual sports	44.82	94.51	27.90	59.10	36.10	78.61	36.86	80.07

Table 2 Children's scores on enjoyment and perceived competence in physical education

	Boys		Girls		High activity (<i>n</i> = 275)		Low activity (<i>n</i> = 479)		No activity (<i>n</i> = 105)	
	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
Enjoyment in PE	29.87	5.43	28.73	5.50	29.94	5.49	28.99	5.14	28.83	5.96
Perceived competence in PE	15.80	3.06	14.53	3.23	15.43	3.01	15.16	3.24	14.43	3.48

Note:

Of the boys 445 completed the enjoyment in PE questionnaire and 447 the perceived competence in PE questionnaire. Of the girls 433 completed the enjoyment in PE questionnaire and 429 the perceived competence in PE questionnaire.

as significantly ($p < .05$) more enjoyable than either the ‘low activity’ or the ‘no activity’ groups did (see Table 3).

Discussion

The evidence from this study confirms past research where girls have been found to be significantly less physically active outside school than boys (HEA, 1997). Also confirming earlier findings is the evidence indicating that less than one-third of the children participate in the recommended level of physical activity for health (Armstrong and Welsman, 1997). The findings of this study support motivation theory in that the judgements children make about their abilities in a particular context (school physical education) relate to their enjoyment in that context (Harter, 1981), but are also reflected in their volitional participation in another context (outside school).

Perceived competence

The results of this study emphasize the possible important influence of perceived competence in physical education with regard to participation in out-of-school physical activity by supporting the hypothesis that those who perceived themselves as more competent in physical education would participate in more physical activity and higher levels of intensity than those who perceived themselves to be less competent. This is further substantiated by the evidence that those children who had failed to participate in any physical activity outside school the previous week perceived their competence in physical education to be significantly lower than those who had participated in the recommended amount for health reasons. This is of particular significance to those people in health, sport and physical education interested in children attaining the recommended guidelines for health, and indicates the need to find activities in which children feel more competent or at least reduce their feelings of inadequacy. These findings uphold past research findings where studies have utilized Harter's theory to examine children's participation in organized sports, specifically where perceived competence has been identified as an important predictor of participation (Burton and Martens, 1986; Feltz and Petlichkoff, 1983; Roberts et al., 1981). These findings suggest a dynamic relationship where perceived competence in physical education influences physical activity outside school and vice versa. There is probably a clear and dynamic relationship between perceived competence in physical education and perceived competence in sport outside school more generally, but this was not examined in this study and would be worthy of further study in specific contexts.

Table 3 Proportions of boys and girls in the three activity groups

	Boys	(<i>n</i> = 457)	Girls	(<i>n</i> = 453)
No activity	10.1%	(<i>n</i> = 46)	15.9%	(<i>n</i> = 72)
Low activity	53.6%	(<i>n</i> = 245)	57.4%	(<i>n</i> = 260)
High activity	36.3%	(<i>n</i> = 166)	26.7%	(<i>n</i> = 121)

Perhaps of particular interest to those in physical education is the confirmation of the hypothesis that those who have a high perception of their competence in physical education spent more time participating in team sports traditionally taught in physical education than those with lower perceived competence. These findings support the view that children participate in physical activities that are consistent with their perceived competence and can be explained by reference to Sonstroem's (1978) psychological model of physical activity participation. While the findings show that children with high perceptions of their ability have higher levels of participation, they also indicate that children of primary school age, who have negative perceptions of their competence in physical education, may be making conscious decisions not to participate in specific physical activities which they have experienced at school. This suggests that, in line with the view of Fox (1988) and Fox and Biddle (1989), when experiences in physical education leave children with a low perception of their ability they will be dissuaded from participating in those sports or games traditionally included in the curriculum.

In addition, there appears to be a developmental structure to perceived self-competence. Research in the USA and England has suggested that younger children rely more heavily on adult feedback as a source of their perceived competence and this declines with age as reliance on the peer group increases (Horn and Weiss, 1991; McKiddie and Maynard, 1997; Weiss et al., 1997). However, McKiddie and Maynard (1997) also showed that younger children are less accurate in their judgements. Many children who do not do much exercise or take part in sport outside school rely heavily on their teacher as a source of their judgements. Their self-evaluations of competence at the age in this study are therefore likely to be more fragile than in other situations where they have more to go on. Therefore, teachers have a great deal of responsibility in the formation of these perceptions and evaluations.

Support was found for the hypothesized gender effect on perceived competence, and this was similar to the results found by Williams and Gill (1995), Brustad (1993) and Van Wersch (1997). Boys in the present study perceived their competence in physical education to be higher than the girls. This is possibly epitomized through the sex differences in the amount of time spent participating in physical activity. While girls were found to spend more time in more individual sports than boys, it must be borne in mind that their total participation in physical activity was significantly lower than the boys. Furthermore, in line with past research (Sports Council For Wales, 1990), there were significantly fewer girls than boys participating in the quality of physical activity recommended for health reasons, when taking into account frequency, duration and intensity of activity.

Enjoyment in physical education

The analyses failed to confirm the expected difference between those of low and high enjoyment in physical education and participation related to quantity and type of activity, although they confirmed the difference in terms of intensity of activity. Essentially, those in the group who perceived physical education as less enjoyable did

not spend significantly less time participating in physical activity outside school or less time in those activities traditionally included in the curriculum. This suggests that when mean splits were used, in the present study, to separate children into groups of high and low enjoyment in physical education no differences in physical activity participation were found. It is possible that those who spend less time participating in physical activity still enjoy physical education and that there are other reasons, for instance peer or family influences or opportunities to participate (Brennan and Bleakley, 1997), which may account for their low physical activity levels. It may be worth looking at different groupings other than mean splits. In one sense, it may be regarded as encouraging that enjoyment in physical education is not so closely linked with participation outside school, as this means that children may still participate even when they have negative feelings of physical education.

A further explanation for enjoyment in physical education not being a vitally important variable for physical activity participation outside school could be that for primary school children PE lessons and outside school physical activity are viewed as completely separate entities. The Northern Ireland study showed that 60 percent of primary schoolchildren played their sport away from school (Mahoney, 1997). Although past studies have identified enjoyment or fun as a major reason for children's sports participation, and a lack of such enjoyment has been associated with children's decisions to drop out of organized sports (Gill et al., 1985; Gould and Horn, 1984), these studies have examined the affective state of enjoyment in sport in the same context as participation, while the present study examined the relationship of enjoyment in physical education to participation outside physical education. As Goudas and Biddle (1993) have stated, enjoyment in physical education and enjoyment in physical activity outside school are not synonymous and, as Chalip et al. (1984) concluded, the experience of participating in physical activity differs according to the context in which it takes place.

An important finding relates to the difference between children who had participated in the recommended level of physical activity and those who had not, with the former indicating a higher level of enjoyment than the latter. This infers that enjoyment in physical education, while not having a powerful influence on the amount of time spent participating in physical activity and specific sports, is a factor contributing to the quality (frequency and intensity) of activity participated in outside school. Hence, those who participated in the quality of physical activity known to confer health benefits perceived physical education as more enjoyable than those who failed to meet the criteria for health. It can be argued that to participate in the level of physical activity which meets the criteria for health demands effort from the individual, and to participate at such a level may not be achievable for all children (Riddoch and Boreham, 1995). Research and theory indicate that intrinsic interest or enjoyment and perceived competence are related to the amount of effort exhibited (Nicholls, 1989; Williams and Gill, 1995). Therefore, children who enjoy physical education and perceive themselves as competent are more likely to show a preference for participating at a level which demands a certain amount of physical

exertion and so exhibit effort. Conversely, those who perceive physical education as less enjoyable, and believe they are less able, may be less likely to exhibit effort, hence may be less likely to participate in physical activities at the level known to be beneficial for health.

Also of importance was the support found for the hypothesized gender differences, whereby the boys perceived physical education to be more enjoyable than the girls. Utilizing competence motivation theory, it can be reasoned that a likely cause of girls perceiving physical education as less enjoyable, in comparison to the boys, is because of their lower perceptions of their ability. Specifically, the girls in the present study perceived themselves to be less competent than the boys perceived themselves to be, and they derived less enjoyment from physical education than boys. They spent less time participating in physical activity, and fewer reached the recommended level of physical activity. The reason for this could be related to the traditional male bias and focus on traditional team sports in physical education.

Although theory and research have identified enjoyment as an influential variable in continued participation (Gould, 1987; Weiss and Petlichkoff, 1989), it has also been suggested that enjoyment is positively related to the *desire* to participate (Scanlan et al., 1989; Scanlan and Lewthwaite, 1986). Perhaps, then, it is the positive state of enjoyment in physical education which affects the *motivation* to participate in physical activity, but not direct participation. Moreover, enjoyment is multifaceted and individual. It is about enjoying exercise or the activities per se, but also in a specific context, and influenced by the type of activity and the climate (way it is presented, environment, ego/mastery, external conditions). It is also about fun, challenge, relaxation, social factors, etc. and the individual response to these and the contexts. It is therefore a simple response but there are complex reasons for that response.

Conclusion

This study adds to the body of knowledge on the influences of the psychological variables of perceived competence and enjoyment in physical education on physical activity levels outside school within British primary schoolchildren. It specifically utilizes physical activity levels recommended for health benefits. There was a moderate but significant relationship between the two psychological variables, and one might have expected that this relationship would be higher. However, it does lend support to motivation theory (Harter, 1981). The link between perceived competence in physical education and physical activity participation is now well documented, and this study supports these links, but specifically for the more narrow context of perceived competence in school physical education and the link with volitional participation outside school. In particular, it shows the relation of this psychological variable with the type of physical activity, and to levels related to health benefits. This finding is an important point to be kept in mind by physical educationalists and health professionals who are attempting to help children reach the recommended activity levels for health benefits.

The expected link between level of enjoyment in physical education and physical activity participation (quantity) and type of activity was not found. It is clear that many children with low levels of enjoyment of physical activity still participate to a large extent and in school team type of activities. However, the link between enjoyment in physical education and intensity of physical activity for health should be noted by physical education teachers and health, sport, leisure staff.

To end on a practical note, it must be pointed out that there are other aims and objectives in physical education as well as physical activity levels in and out of school, and the teacher must work to the guidelines of the National Curriculum. Pupils' enjoyment and perceptions of competence are often byproducts, rather than direct objectives, of the learning of motor skills in a range of contexts. The teacher has to provide the right environment for children of all abilities to develop a range of skills. This environment produces the motivational climate (Biddle, 1999), where enjoyment and perceptions of competence are enhanced or decreased. This is particularly challenging in primary schools for non-specialist teachers, often with limited facilities and equipment and with time constraints. Sometimes too, in the short term, the differing aims of physical education, such as physical activity levels and the learning of skills, can be in conflict and cause a dilemma and challenge for those teaching physical education. Primary school teachers often have to take a pragmatic view and enjoyment and perceived competence are not always their first priority.

Note

Thanks are due to the anonymous reviewers who have made suggestions which have been incorporated and have improved this article.

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Résumé

La compétence perçue des élèves et le plaisir éprouvé en éducation physique et en activité physique en dehors de l'école

Cette étude a visé à examiner (1) la relation entre la compétence perçue des élèves en éducation physique (EP) et le plaisir éprouvé dans la discipline, (2) comment les garçons et les filles qui obtiennent des résultats plus ou moins élevés dans le plaisir éprouvé ou la compétence perçue se sont différenciés quant à leur niveau d'activité physique. 922 élèves de l'école primaire âgés de six ans ont renseigné des questionnaires sur leur activité physique hebdomadaire, leur compétence perçue et le plaisir éprouvé en éducation physique. À l'aide de corrélations, d'analyses de variance multivariée et univariée, les résultats ont indiqué: (1) des relations moyennement positives et significatives entre le plaisir éprouvé et la compétence perçue en éducation physique pour l'ensemble de l'échantillon ($r = .39, p < 0.001$); (2) les enfants qui ont une compétence perçue élevée ont participé significativement de manière plus importante à une activité physique en dehors de l'école (quantité et intensité), que ceux qui ont une compétence perçue plus faible; mais il n'a pas eu de différence dans les niveaux de plaisir et la quantité d'activité physique; (3) les garçons ont des résultats plus élevés que les filles dans le temps d'activité physique, la compétence perçue et le plaisir éprouvé. La théorie de la motivation a été utilisée pour examiner la relation entre la compétence perçue et le plaisir éprouvé en éducation physique, et dans l'activité physique en dehors de l'école.

Zusammenfassung

Die von Kindern selbst wahrgenommene Kompetenz und Freude im Schulsport, sowie bei körperlicher Aktivität außerhalb der Schule

Die Studie untersuchte (1) die Beziehung zwischen der von Kindern selbst wahrgenommenen Kompetenz im Schulsport und ihrer Freude in diesem Schulfach; (2) wie Jungen und Mädchen, die besonders viel oder wenig Spaß am Sportunterricht haben und über eine hohe oder niedrige selbst wahrgenommene Kompetenz verfügen, sich in Quantität und Intensität der außerschulischen körperlichen Aktivität unterscheiden. 922 Sechstklässler gaben dazu in einer schriftlichen Befragung ihre körperlichen Aktivitäten in der vergangenen Woche, die persönliche Einschätzung selbst wahrgenommener Kompetenz und ihren Spaß am Sportunterricht an. Die Ergebnisse, die unter Verwendung von Korrelationen, multivariaten und univariaten Varianzanalysetechniken erzielt wurden, zeigen, (1) daß es einen schwach positiv signifikanten Zusammenhang zwischen dem beim Sportunterricht empfundenen Spaß und der selbst wahrgenommenen Kompetenz für die gesamte Stichprobe ($r = .39, p < 0.001$) gibt; (2) daß Kinder mit hoher selbst wahrgenommener Kompetenz außerhalb der Schule signifikant stärker körperlich aktiv (in Quantität und Intensität) sind, als jene mit einer geringeren selbst wahrgenommenen Kompetenz. Kein Unterschied ließ sich feststellen in Bezug auf das Maß an Freude und die Quantität körperlicher Aktivität; (3) daß Jungen durchschnittlich mehr Zeit mit körperlicher Aktivität verbringen, höhere Werte bezüglich selbst wahrgenommener Kompetenz und mehrer Spaß am Sport haben als Mädchen. Die Motivationstheorie wird verwendet, um den Zusammenhang zwischen der selbst wahrgenommenen Kompetenz und dem Spaß am Schulsport in Beziehung zu setzen mit der körperlichen Aktivität außerhalb der Schule.

Resumen

La percepción infantil sobre sus habilidades, capacidades físicas y recreación en la Educación Física y en la actividad física extraescolar

Los objetivos de este trabajo se han orientado a: 1 – La relación que establecen los niños entre habilidades y capacidades en Educación Física y su recreación o disfrute personal. 2 – Verificar las diferentes formas en que niños y niñas perciben este fenómeno y sus competencias y capacidades en diferentes niveles de actividad. El estudio ha supuesto la aplicación de 922 cuestionarios a escolares tras unas semanas de actividad física, preguntándoles sobre sus capacidades y competencias y su grado de satisfacción o diversión sobre la Educación Física. Tras emplear en el estudio una correlación multivariable y un análisis univariable de varianzas técnicas, los resultados han puesto de manifiesto: a) Una moderada, positiva y significativa relación entre el disfrute en Educación Física y la percepción de competencias; por ejemplo ($r = .39, p < 0.001$). b) Los niños y niñas distinguen los niveles de más alta

exigencia cuantitativa y cualitativa de las actividades extraescolares, pero no existe diferencia en cuanto a los niveles de disfrute o satisfacción respecto de la actividad física escolar. c) Los chicos valoran más que las chicas el tiempo empleado en actividades físicas y perciben mejor los niveles de competencia y de recreación. La teoría de la motivación es la empleada en la valoración de la relación existente entre la percepción de las competencias personales y de la recreación en la Educación Física, respecto de las actividades extraescolares.

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