

Loving and Loathing Physical Education: An Exploration of Students' Beliefs

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This article describes a recent study that investigated the physical education (PE) beliefs of a particular population of students (i.e., female and male students in Grades 4 through 10 from a single school stream). Through their completion of an adapted survey, students (N = 506) were able to share their PE beliefs in relation to five separate subscales: PE Interest, PE Status, PE Connotations, PE Teachers, and PE Curriculum. Results suggest that grade and gender differences exist with respect to these subscales. Consequently, it is herein suggested that the discovery of such differences within this case study merits considerations for educational change, as well as continued and deeper inquiries into understanding the nature of PE beliefs for female and male students in various grade levels.

Cet article décrit une étude récente qui a porté sur les croyances qu'a une population particulière d'élèves (c.-à-d. filles et garçons, de la 4^e à la 10^e année, d'une école à voie unique) par rapport à l'éducation physique. Par le biais d'une enquête adaptée, les élèves (N = 506) ont partagé leurs croyances sur l'éducation physique en fonction de cinq sous-échelles séparées: intérêt, statut, sens affectifs, enseignants et curriculum. Les résultats donnent à penser qu'il existe, par rapport à ces sous-échelles, des différences liées à l'année scolaire et au genre. On propose donc que les différences révélées par cette étude de cas méritent d'être considérées dans le contexte de changements pédagogiques et d'être étudiées en profondeur et à long terme pour comprendre la nature des croyances d'élèves, filles et garçons et à divers années scolaires, relatives à l'éducation physique.

Through many years' experience teaching and observing coeducational and gender-grouped elementary and secondary physical education (PE), it has been possible to make some observations and generalizations about students' PE beliefs and attitudes, especially with respect to how they might differ between grade level and/or gender. In many instances, these differences have been evidenced (and admittedly interpreted) through personal observations and considerations of students' behaviours and unsolicited feedback. On numerous occasions it has been personally noted that students' desire to participate and actively engage in PE seems to differ with gender and wane with age. Perhaps not so surprisingly, these sorts of observations have also been repeatedly shared by many teaching colleagues and supported by various research findings (Couturier, Chepko, & Coughlin, 2005; Gibbons, 2009; Gibbons & Humbert, 2008; Lowry, Wechsler, Kann, & Collins, 2001).

All PE teachers in Canada should be familiar with the notion that some students "forget" their gym strip, exhibit minimal effort, or feign illness or injury to avoid participation. Although

these types of avoidance strategies may enable some students to steer clear of PE, they rarely lead to any meaningful explorations of their negative beliefs about the subject. While many disengaged students might find themselves on the sidelines (both literally and figuratively), opportunities to gain an improved understanding about such students and their negative PE beliefs are unfortunately repeatedly missed. By purposely attending to present students' PE beliefs, it may be possible to address, and ultimately improve upon, the teaching and learning of PE for students in the future. With such information in hand, one might be enabled to establish a vision of PE that is more appealing, inviting, and inclusive, if not to all, then at least to many more, students.

There is considerable room for improvement within PE programs (Active Healthy Kids Canada, 2011; Janzen, 2004; Siedentop & Locke, 1997). For example, since its inception in 2005, the *Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth* has never assigned a grade higher than C- (and has assigned a grade as low as F) for PE quality within Canadian schools (Active Healthy Kids Canada, 2011). Previous efforts to address programs' shortcomings have included professionals' introduction of quality daily physical education (QDPE) initiatives (Canadian Association for Health, Physical Education, Recreation, and Dance [CAHPERD], 2006). Currently, there is limited evidence suggesting participation in daily PE has a positive impact on students' physical activity levels outside of school (Hunt, 1995; Lincourt, 2011; Trudeau, Laurencelle, Tremblay, Rajic, & Shephard, 1999). For example, Lincourt (2011) demonstrated that on days in which students have PE they are more physically active outside of school, Hunt (1995) demonstrated that students enrolled in daily PE have higher physical activity levels than those who do not, and Trudeau et al. (1999) demonstrated that daily PE in elementary school has a long-term positive impact on adult physical activity levels. Notwithstanding this limited evidence, for sure, the implementation of QDPE in Canadian schools has the potential to improve the structure of PE programs in two important ways. QDPE (a) ensures students have daily PE experiences, and (b) QDPE participation occurs for students within all grade levels (CAHPERD, 2006). Although such an initiative admittedly has honest intentions, it is important to recognize that the introduction of daily PE would not necessarily have entirely positive results: requiring students to participate in daily PE classes will not improve the *quality* of their PE experiences; it will only increase the *quantity* of them.

When given the choice about enrolment in optional PE, the majority of students have elected to opt out (Gibbons & Gaul, 2004; Spence, Mandigo, Poon, & Mummery, 2001). Traditionally more females than males have been making these types of decisions (Allison et al., 2005; Gibbons & Gaul, 2004). Understanding that attracting females to PE is a very legitimate topic of concern, most educational literature dedicated to PE "dropouts" has been with preadolescent and adolescent females (Humbert, 2006). Herein lies a limitation within the current literature. Partly for this reason, it is particularly important to investigate the perspectives of males within PE as well. Since the majority of research focusing on students and PE has been with females (Fenton, Frisby, & Luke, 1999; Gibbons & Gaul, 2004; Gibbons, Wharf Higgins, Gaul, & Van Gyn, 1999), Humbert (2006) recognized,

it is unfortunate that little is known about the thoughts, feelings, and attitudes of boys and young men regarding their physical education experiences. More attention must be paid to listening to and understanding the experiences of boys in physical education classes. (p. 4)

Purpose and Research Question

The purpose of this study was to inquire into the PE beliefs of a particular population of female and male students so that a deeper understanding could be gained from them. It is in this sense that this study could be considered an intrinsically motivated inquiry. That is, for “all its particularity and ordinariness, [the] case itself [was] of interest” (Stake, 2000, p. 437). Although a deeper understanding of these PE beliefs was of personal and particular interest, it would be misleading to claim all research motivations were intrinsic in this manner. This study was also purposely implemented so that the insights of PE students (and the researcher) might help conceptualize possible changes to PE so that it might be improved upon in the future. This point must be made clear: A deeper understanding of students’ grade and gender-related PE beliefs was sought so that the teaching and learning of PE might be reconsidered, and so that future students might benefit from the shared perspectives of their predecessors. For these reasons this study can be viewed as an instrumentally motivated inquiry; the purpose of this study was both intrinsic and instrumental.

These two purposes, related to understanding the present and contemplating the future, require a deeper understanding of the PE beliefs students hold. Though the current body of literature does provide some insights into students’ attitudes and experiences within PE, there still exists a gap with respect to some arguably important topics. In addition to the previously mentioned absence of understanding related to male students and PE, for both female and male students there remains a gap in the literature when one considers PE beliefs related to a number of relevant variables. For example, there is little understanding about students’ beliefs about the relative status of PE. How does this belief differ between female and male students and between younger and older students? Similarly, there is limited understanding about students’ beliefs as they relate to possibilities for gender-aligned activities. Do female and male students believe gender-aligned activities to be more enjoyable? Does this belief change with age/grade? It is unanswered questions such as these that have provided the impetus for this study. With this rationale and the potential significance, the specific research question guiding this study was, “How do female and male students’ PE beliefs, especially as they relate to interest in PE, the status of PE, connotations of PE, PE teachers, and PE curriculum, differ in the years between Grade 4 and Grade 10?”

Relevant Literature

Increasing consciousness and concern about sedentary lifestyles, and the related health risks to children and youth within Canada, have been extensively evidenced through recent literature (Canadian Institute for Health Information, 2004; Cragg & Cameron, 2006; Janssen & LeBlanc, 2010; Lobstein, Baur, & Uauy, 2004; Tremblay, 2007). With today’s students being both heavier and less physically active than those a generation ago (Health Canada, 1999; Tremblay, 2007), parents and the public are rightfully concerned about the well-being of youngsters within Canada. For example, the proportion of children exercising more than once a week outside of school declined from 1990 through 1998 (Health Canada, 1999). The Canadian Fitness and Lifestyle Research Institute (CFLRI) has reported that only 12% of children and youth met Canada’s physical activity guidelines in the 2007-2009 time period (CFLRI, 2009).ⁱ Indeed, an alarming percentage of students within Canada have been found to be insufficiently active for their optimal growth and development (CFLRI, 2009; Cragg, Cameron, Craig, & Russell, 1999).

Participation in PE programs that includes moderate to vigorous physical activity (MVPA) has the potential for immediate and long-term wellness benefits for students. Sallis and McKenzie (1991) have reported that physically active people live longer while physical inactivity is one of the primary reasons for loss of body functions. Regular physical activity has been shown to (a) improve children's blood pressures, (b) lower their body fat, and (c) increase their levels of HDL-cholesterol (Sallis & McKenzie, 1991). Through participation in physical activity, teenagers have been able to (a) improve their strength, (b) decrease their body fat, and (c) build stronger bone density (Khan et al., 2000; Sallis & McKenzie, 1991). Moreover, students' positive self-esteem and healthy self body images have both been found to be strongly correlated with physical activity levels (Kirkcaldy, Shephard, & Siefen, 2002; Tremblay, Inman, & Willms, 2000).

With fewer PE consultants and specialists available to support and provide meaningful learning experiences for students in today's PE classes, it has become increasingly difficult for schools to provide PE, rather than physical activity (Robinson & Melnychuk, 2006). Understanding that few students within Canada participate in quality PE programs is in itself troublesome, consider that many Canadian students do not participate in PE programs at all (Luke, 2000; Spence et al., 2001). Once PE becomes an optional subject, enrolment significantly decreases with females exhibiting a more noticeable decline in participation than do their male counterparts (Cameron, Craig, Coles, & Cragg, 2003; Gibbons & Gaul, 2004; Spence et al., 2001). For example, although only 10% of British Columbia's female students choose to participate in elective high school PE, 20% to 22% of their male counterparts do so (Gibbons & Gaul, 2004). Within Alberta and Newfoundland, research has indicated that the same trend exists, with the large majority of students not selecting PE when afforded a choice (Eastman, Hostetter, & Carroll, 1992; Spence et al., 2001). These low enrolments in optional PE are not specific to small or unique demographics but, rather, are evidenced throughout North America and other Western nations such as Australia, New Zealand, and England (Brown, 2000; Centers for Disease Control and Prevention, 1997; Hardman & Marshall, 2000; Park & Wright, 2000; Sleaf & Wormald, 2001). The gender differences in enrolments are also consistent throughout many geographical regions. In Canada and the United States, the proportion of "males enrolled in PE, across grades [is] approximately 10 percentage points higher than for females" (Spence et al., 2001, p. 98).

In an effort to understand students' attitudes (as they relate to other constructs such as experiences, beliefs, and feelings) about PE and physical activity, a limited number of studies have recently been conducted (Chung & Phillips, 2002; Humbert, 2006; Sleaf & Wormald, 2001). The results of research into females' perceptions and experiences suggest that in order for females to choose to enroll in elective PE, the experience must be self-identified as fun (Humbert, 1995, 2006; Park & Wright, 2000). Students find physical activities to be fun when personal objectives and *intrinsic* factors such as (a) skill development, (b) improvement, (c) optimal challenge, (d) control over the environment, and (e) constructive feedback are emphasized over *extrinsic* factors such as winning (Mandigo & Couture, 1996). Humbert (1995, 2006) explained that students' notions of fun calls for (a) non-traditional PE activities, (b) a reduced emphasis on competition, and (c) the use of more individualized assessment techniques.

Students' shared positive experiences in PE often include feedback about PE programs characterized by (a) a variety of activities, (b) achieved success, (c) being included, and (d) opportunities for teamwork (Tannehill, Romar, O'Sullivan, England, & Rosenberg, 1994;

Tannehill & Zakrajsek, 1993). Tannehill and Zakrajsek (1993) have suggested, “if it is true that young people are more likely to participate now and in the future if they enjoy their experiences, then we [should] encourage physical education teachers to include ‘enjoyment’ in their planning” (p. 82). Understanding that fun, in and of itself, is not a singular adequate goal of PE, its ability to motivate students to participate suggests that it is in the best interests of educators to make learning PE as enjoyable as possible (Tannehill & Zakrajsek, 1993).

Sometimes, for teachers, the goal of having fun becomes more important than skill development or personal challenge (O’Reilly, Tompkins, & Gallant, 2001; Placek, 1983). While for some, this may not suggest a need for improvement, it is important to recognize that the idealization of fun as an explicit goal of a quality PE program ought not to supersede the prescribed outcomes related to knowledge, skills, and (other) attitudes. Efforts toward increased planning and teaching that incorporate fun into lessons must nonetheless retain a focus on meaningful skill development and education.

Interested in gaining an insight into why only 10% of British Columbia’s female students enroll in optional PE, Gibbons et al. (1999) organized small group discussions with 50 high school students. Students believed that in order for PE to be more enjoyable, a number of structural changes would be required. Among other things, the participants revealed that (a) the content should change, (b) students should have greater choice and control over activities, (c) assessment should focus more on participation than on skill, and (d) enjoyment should be a priority (Gibbons et al., 1999).

Olafson (2002) described female students’ resistance to PE to include institutional barriers such as the activities and their instruction and cultural and social barriers associated with looking good, and being popular and feminine. Students also suggested that by (a) increasing their involvement in activity selection, (b) eliminating whole-class student demonstrations, and (c) introducing gender-grouped classes, they would increase their levels of participation (Olafson, 2002).

Figley’s (1985) critical incident study revealed curriculum content and teacher behaviour were the two greatest factors to influence both positive and negative PE attitudes. Similarly, Luke and Sinclair (1991) found curriculum was the greatest determinant for positive and negative attitudes in females and males, including those who elect to take optional PE and those who do not. Luke and Sinclair defined curriculum to signify the movement activities that comprised the lived PE program. Though these movement activities were identified 20 years ago, they are clearly familiar to those engaged within the current PE context. For example, they included such things as team games, individual activities, sports, aquatics, and fitness tests. For both female and male students, in-class activities such as fitness testing and long runs were often cited as specific curricular examples of highly unfavourable activities contributing to their negative attitudes (Luke & Sinclair, 1991).

Couturier et al. (2005) surveyed over 5,000 students in middle schools (Grades 6-8) and high schools (Grades 9-12) and found some differences between the two gender and grade-level groups. High school students were more likely to indicate they would prefer greater choice in activities, while middle school students indicated they would prefer greater choice with respect to in-class groupings. Middle school students also ascribed greater status to PE among other subjects such as English Language Arts and Mathematics (Couturier et al., 2005). Almost half of the middle school students (45%) indicated that they might choose to avoid PE because they did not “feel comfortable changing in front of others” (Couturier et al., 2005, p. 173), while only 28% of the high school students shared this same sentiment.

In PE classes, students have reported that they perceive teachers' injustices to influence their own interest in class. These perceived injustices by teachers are related to (a) discipline, (b) teacher support, (c) teachers' judgment, (d) monotonous activities, and (e) wasted time (Martel, Gagnon, & Tousignant, 2002). Students' memories of PE are often heavily shaped by their perceptions of their PE teachers; their teachers play a large role with respect to students' recalled enjoyment of PE (Sleap & Wormald, 2001). Sleap and Wormald found that female students perceive that some PE teachers pay more attention to students who are good athletes or on school teams at the expense of other students. While PE teachers have contested many of these perceived injustices, it is nonetheless important that teachers often reconsider (a) the nature of the learning experiences offered, (b) team-forming strategies, (c) procedures for implementing classroom rules, (d) methods for assigning rewarding tasks, and (e) classroom management strategies (Martel et al., 2002).

Students can increase their belief in the importance of physical activity and exercise through their participation in PE programs if programs are designed to promote that belief; PE teachers are an important factor in this relationship because of their contact with students. That is, "they are capable of designing an enjoyable learning environment that may influence students' attitudes toward physical education" (Chung & Phillips, 2002, p. 131). Such improvements to current practice require both an identification of "an enjoyable learning environment" (Chung & Phillips, 2002, p. 131) and a supportive system for this information to reach educators.

Research Design

Research Framework

The function-structure model of attitude development (Maio, Esses, Arnold, & Olson, 2004; Maio & Olson, 2000) was used as a guiding framework for this study (see Figure 1).

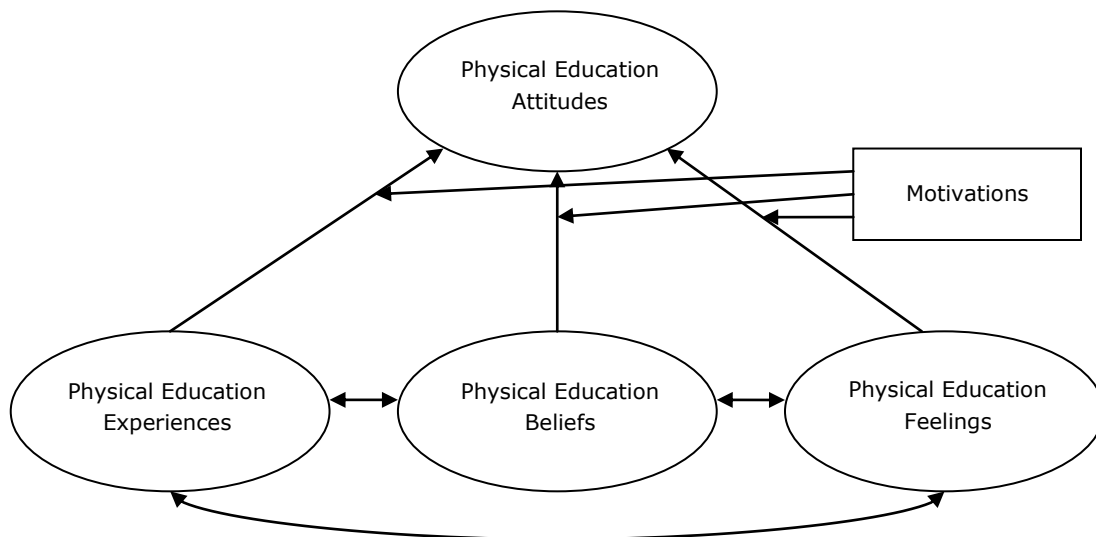


Figure 1. Maio et al.'s (2004) function-structure model of attitudes as it relates to PE.

According to this model,

attitudes are based on experience with the attitude object, beliefs about the positive and negative features of the attitude object, and affective reactions to the attitude object. The experience component contains the episodic memories of positive and negative experiences with the attitude object; the belief component represents perceptions of the positive and negative features of the attitude object. (Maio & Olson, 2000, p. 434)

Though attitude is a multidimensional concept, this research focused on a single unidimensional construct. While the function-structure model has three attitudinal components (in addition to motivations), this research focused primarily on students' PE beliefs. The survey questions posed were meant to enable the development of a deeper understanding of students' beliefs only; subsequent qualitative research further explored the two other attitudinal components – experiences and feelings. The qualifying assertion that “this research focused primarily on students' beliefs” is made with the recognition of the overlapping nature of these three attitudinal components. Although PE experiences, beliefs, and feelings all contribute to PE attitude development, they certainly do not occur independently of one another. For example, if a student believes that athletically awkward students are ignored or mistreated by PE teachers, this belief is related to that same student's experiences with past teachers and the feelings that such experiences elicited. This model: (a) recognizes the overlapping nature of these attitudinal components, (b) privileges none of them, and (c) makes clear that discerning between the three can, at times, be an especially difficult task (Maio et al., 2004). Although students' PE experiences and feelings are undoubtedly related to the data collected through the survey instrument, their PE beliefs were the “targeted” constructs.

Methodology

Social constructivism's relativistic ontology and subjectivist epistemology privilege the use of naturalistic forms of inquiry. As Denzin and Lincoln (2003) have suggested,

the constructivist paradigm assumes a relativistic ontology (there are multiple realities), a subjectivist epistemology (knower and respondent cocreate understandings) and a naturalistic (in the natural world) set of methodological procedures. . . . terms such as credibility, transferability, dependability, and confirmability replace the positivist criteria of internal and external validity, reliability, and objectivity. (p. 35)

Understanding that such an orientation rejects the notion of an objective reality, this research did not have as its intent uncovering an objective “truth,” of determining and reporting, “the way things are.” The reported data should be understood to be interpretations (of research participants, the researcher, *and the reader*), rather than an objective truth. Likewise, it is important to recognize that the generalization of findings to all other situations was not an explicit goal of this research. Rather, with the insights generated from the perspectives of a group of students, educational researchers and practitioners might be inclined to consider new possibilities and to purposely enter into new dialogues.

This article is limited to discussing the methods and results from an initial *quantitative* inquiry; this inquiry was part of a larger sequential explanatory mixed-methods case study (Creswell, 2003). As explained by Patton (1990), the advantage of a quantitative aspect of such a study,

is that it's possible to measure the reactions of a great many people to a limited set of questions, thus facilitating comparison and statistical aggregation of the data. This gives a broad, generalizable set of findings presented succinctly and parsimoniously. (p. 12)

Data Collection Methods and Procedures

Quantitative data for this study were collected through the utilization of a survey related to PE beliefs (*see* Appendix). This survey was culturally adapted from one previously developed and utilized by van Wersch, Trew, and Turner (1992). The requirement for cultural adaptation was due to minor differences in PE language and structure between Irish schools and students in 1992, and the current Canadian PE context. For example, students in Canada: (a) do not routinely change into "PE kits," (b) do not know what a "GCSE subject" is (General Certificate of Secondary Education), and (c) do not have co-requisite Sport as a mandated course. This survey had seven questions for each of five different subscales (PE Interest, PE Status, PE Connotations, PE Teachers, and PE Curriculum).

Following Jackson's (1988) suggestions to maintain validity when utilizing a questionnaire-type survey, a number of practices were followed:

1. The survey's language was refined so as to reflect the current Canadian context.
2. In order to ensure age-appropriate language, the survey instrument was further modified with the assistance of a school district reading consultant (a Flesch-Kincaid Grade Level assessment also determined the language to be within the range of the youngest students).
3. The then-revised survey was discussed, evaluated, and reworded with the input from three separate focus groups (students from three different grade levels). These lengthy two-hour focus group sessions were planned with the goal of removing "any ambiguity in the questionnaire" (Jackson, 1988, p. 93). With these efforts, "the goal [was] to minimize differences in how respondents [understood] the questions. The goal, *although impossible to achieve* [italics added], [was] to have all respondents understand each and every question in an identical manner" (Jackson, 1988, p. 93).
4. A panel of four experts (all tenured faculty members from the PE field) provided feedback and direction on the survey's appearance, relevance, and representativeness of elements.

All of these efforts were introduced so as to ensure greater face and content validity of the survey instrument.

Participants

The bounded system (Stake, 2006) for exploration that made up this case included the Grades 4 through 10 female and male students within a single school stream. This school stream included students from one senior high school and that school's lone two "feeder" elementary/junior high schools. All elementary students were taught PE by their generalist homeroom teachers and all junior and senior high students were taught PE by a designated male PE specialist teacher. All PE classes were mandatory and coeducational.

All students from within the school stream were initially invited to participate in the research study. However, only those students who returned signed consent forms from their

Table 1

Participation Rates by Grade

Grade	Grade Size	Participants	Absent	Opt Out	No Form	Rate
4	96	70	9	11	6	73%
5	92	62	8	2	20	67%
6	119	93	5	4	17	78%
7	124	106	6	1	11	85%
8	103	72	4	2	25	70%
9	90	58	4	3	25	64%
10	84	45	0	0	39	54%
All	708	506	36	23	143	71%

guardians, and who were present on the scheduled survey date, were permitted to participate; the participation rate was 71% (see Table 1). The researcher led each class of students through the surveys during a regularly scheduled class, answering and clarifying any questions the students posed.

Data Analysis

All data from the quantitative surveys were stored, recoded, and analyzed using Statistical Package for the Social Sciences (SPSS®) 16.0 software. Using the recoded data and SPSS, basic descriptive statistics (i.e., means, frequencies, and distributions) and bivariate statistics (i.e., Pearson product moment correlations) were calculated. The gender and grade differences related to PE Interest and four additional subscales (PE Status, PE Connotations, PE Teachers, and PE Curriculum) were compared and contrasted through a consideration and comparison of means and correlations. Reliability measures ranged from as low as $\alpha = .60$ for PE Curriculum to as high as $\alpha = .76$ for PE Interest. Whereas the PE Interest subscale had the greatest reliability at $\alpha = .76$, PE Status at $\alpha = .71$ and PE Teacher at $\alpha = .69$ also had “respectable” reliability coefficients approaching, or exceeding, $\alpha = .70$.ⁱⁱ

Results

Recognizing that the lowest possible individual score for any subscale was 7 whereas the highest possible score was 28, each subscale, as expected, had different ranges and means. An individual score of 7 would indicate that a student gave the lowest possible numerical-equivalent response (i.e., 1) for each of seven subscale questions whereas an individual score of 28 would indicate that a student gave the highest possible numerical-equivalent response (i.e., 4) for each of seven subscale questions. In fact, the lowest individual score for any subscale was 8 (female student’s PE Teacher score) and the highest individual score was 28 (female and male students’ PE Teacher, PE Curriculum, and PE Interest scores). The lowest mean score for any grade level and gender was $M = 16.97$ ($SD = 3.09$); this was for female students in Grade 10 (PE Curriculum). The highest mean score for any grade level and gender was $M = 26.30$ ($SD = 2.23$); this was for male students in Grade 7 (PE Interest).

Included within the following figures (Figures 2-6) are linear trend lines and equally scaled y-axes (varying, however, in minimum and maximum y-values). These figures include the students' mean scores for each grade level on the subscale measures. Different ranges for the y-axes are presented so that information may be presented most clearly. Had the five figures all had a range of 16 to 27 (as would have been necessary if all figures were to have identical y-axis ranges), each figure would have had considerable "empty" space; differences and changes, as a result, would have been less discernable. With this understanding, one must nonetheless resist any temptation to compare students' scores from one subscale with their scores in another; this was neither a research goal nor is it now possible given the format of the survey. However, comparing female and male students (and/or younger and older students) within the same subscale is entirely possible and, in fact, a purpose of the following figures. Finally, when considering these students' scores in the various subscales, it is not possible to label certain scores as "benchmarks" for success or as acceptable levels.

Female students had their highest PE Interest scores in Grade 4 ($M = 25.88, SD = 2.09$) and their lowest PE Interest scores in Grade 10 ($M = 22.24, SD = 4.35$). Male students had their highest PE Interest scores in Grade 7 ($M = 26.30, SD = 2.23$) and their lowest PE Interest scores in Grade 9 ($M = 25.43, SD = 3.28$). The slope of the trend line for females was $B_f = -0.42$ and the slope of the trend line for males was $B_m = -0.22$. Although female students "begin" with similar PE Interest scores to their male counterparts, their mean PE Interest scores decreased by almost four times as much as did their peer male scores. Whereas both the graphed results and the trend lines illustrate that females believe PE to be less interesting in all seven grade levels, the final two years of junior high school seem to be characterized by an especially pronounced change in male students' PE Interest scores (see Figure 2).

With respect to the status of PE, higher PE Status scores indicate that students hold PE in high regard (see Figure 3). Students who have reported higher status for PE have indicated that, for them, it carries similar status as other schoolwork (including the "academic" courses). Lower PE Status scores indicate that PE is held in lower regard, as a lower-status subject relative to students' other classes. These scores have revealed relative information about students' beliefs about the importance, and value, of PE.

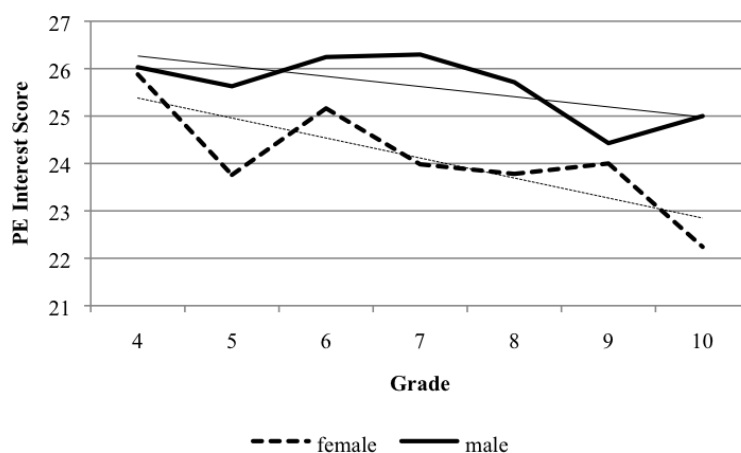


Figure 2. Mean PE Interest scores by gender and grade.

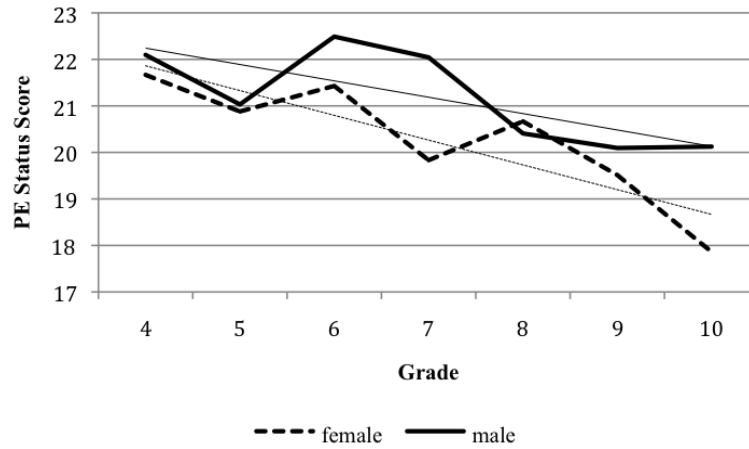


Figure 3. Mean PE Status scores by gender and grade.

Female students had their highest PE Status scores in Grade 4 ($M = 21.67, SD = 3.30$) and their lowest PE Status scores in Grade 10 ($M = 17.86, SD = 2.94$). Male students had their highest PE Status scores in Grade 6 ($M = 22.49, SD = 2.25$) and their lowest PE Status scores in Grade 9 ($M = 20.10, SD = 3.30$). The slope of the trend line for females was $B_f = -0.53$ and the slope of the trend line for males was $B_m = -0.35$. From Figure 3, one may recognize that for both female and male students, their positive belief in the status of PE also generally decreases as they progress through school. As the female students' trend line has a steeper slope, one should also recognize that this decrease is somewhat more pronounced for female students. Students in junior high school or Grade 10 do not have the same positive beliefs of PE as an equivalent-status subject as do the students in upper elementary school. Furthermore, although females and males both exhibit this steady decline in PE Status scores in all but one grade level (a minor difference in Grade 8), the males believed PE to be a higher status subject than did their female peers.

The PE Connotation scale measures the degree to which students believe PE to be more enjoyable when it has either masculine or feminine connotations (see Figure 4). High PE Connotation scores reveal that students believe PE to be more enjoyable when it evokes

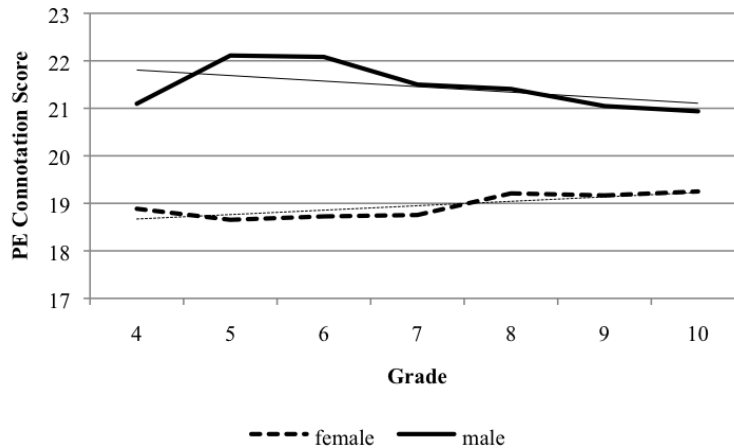


Figure 4. Mean PE Connotation scores by gender and grade.

masculine connotations; for these students enjoyable PE activities include such elements as (a) risk taking, (b) beating opponents, and (c) experiencing pain as part of a positive movement experience. Lower scores indicate a belief that feminine PE activities are more enjoyable; for these students enjoyable PE activities are those with beauty in movement, less competition, and success without a requisite need for size or strength.

Female students had their highest PE Connotation scores in Grade 10 ($M = 19.25, SD = 3.01$) and their lowest PE Connotation scores in Grade 5 ($M = 18.65, SD = 2.86$). Male students had their highest PE Connotation scores in Grade 5 ($M = 22.11, SD = 2.52$) and their lowest PE Connotation scores in Grade 10 ($M = 20.94, SD = 2.32$). The slope of the trend line for females was $B_f = 0.09$ and the slope of the trend line for males was $B_m = -0.12$. Although it may not be altogether surprising that males enjoyed PE with more-masculine connotations (and females enjoyed PE with more-feminine connotations), it is worthy to note one other observation. While the difference between masculine and feminine appreciations in PE was generally greater in upper elementary school than it was in junior or senior high school, the “gap” between the female and male beliefs seemingly slightly decreases as one moves to higher grades. This sort of “funnel” illustrated by the trend lines within Figure 4 suggests that as students age, the gender-lines which they encounter as youngsters become challenged by both the females and males (one might also wonder what such a figure might look like if extrapolations to Grades 3 and 11 were made). In these seven grade levels, the older females become (slightly) more likely to indicate they believe such things as playing rough games or getting sweaty are preferable whereas older males become (again, slightly) more likely to believe such things as strenuous activity or rough play are less preferable.

Student responses to the PE Teacher subscale reveal the extent to which students believe their teachers to be individuals who fairly give their attention to all students, as opposed to focusing on a select few “good” students (see Figure 5). High PE Teacher scores indicate students believe their teachers give similar help, attention, and encouragement to all students whereas a lower score indicates a belief their teachers give preferential attention and treatment to the strongest students.

Female students had their highest PE Teacher scores in Grade 5 ($M = 24.64, SD = 3.61$) and their lowest PE Teacher scores in Grade 10 ($M = 19.62, SD = 4.05$). Male students had their highest PE Teacher scores in Grade 6 ($M = 24.47, SD = 3.27$) and their lowest PE Teacher scores

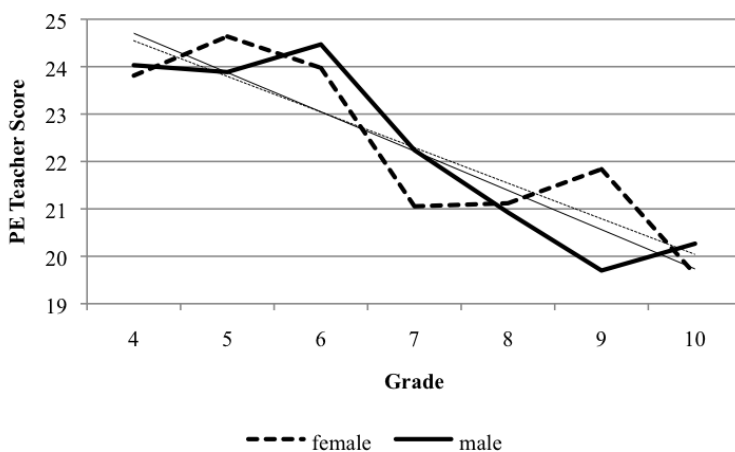


Figure 5. Mean PE Teacher scores by gender and grade.

in Grade 9 ($M = 19.70$, $SD = 4.04$). The slope of the trend line for females was $B_f = -0.75$ and the slope of the trend line for males was $B_m = -0.83$. Of all four subscales, the PE Teacher results are perhaps the most striking. With the steepest-sloped (and nearly identical) trend lines for female and male students, one can appreciate the degree to which students' beliefs about their teachers' fairness changes throughout these years. During Grades 4 through 6, when students' PE teachers were their generalist homeroom teachers, students were most likely to believe they had fair teachers who dedicated their time equally to all students within their class regardless of students' ability. While there was a very clear decrease in students' positive beliefs concerning their teachers between elementary school and Grade 10, the transition from Grade 6 to Grade 7 marked the greatest change for both females and males.

Finally, students' responses to the PE Curriculum subscale were meant to allow for an understanding of students' satisfaction of the actual movement activities that made up a games-dominated PE program (see Figure 6). High scores indicate students believe current activities, focused largely on sports and games, to be satisfactory. Conversely, lower scores indicate a belief that these activities are less than satisfactory, and show a preference for less traditional activities such as those characterizing individual, fitness, and alternative domains.

Female students had their highest PE Curriculum scores in Grade 4 ($M = 20.31$, $SD = 3.30$) and their lowest PE Curriculum scores in Grade 10 ($M = 16.97$, $SD = 3.09$). Male students had their highest PE Curriculum scores in Grade 4 ($M = 21.70$, $SD = 2.60$) and their lowest PE Curriculum scores in Grade 6 ($M = 18.67$, $SD = 3.30$). The slope of the trend line for females was $B_f = -0.33$ and the slope of the trend line for males was $B_m = -0.26$. Although there was very little variation between single grades for students in Grades 5 through 9 (and hence two very-close-to horizontal trend lines), the two extreme grade groups (i.e., Grade 4 and Grade 10) differed from others. Those youngest students in Grade 4 had the highest satisfaction in their PE movement activities whereas the Grade 10 students had some of the lowest satisfaction scores. Furthermore, both female and male students in the three elementary grades showed a steady decrease in PE Curriculum scores across the three years.

The students' PE Interest scores were also compared to their scores on the four subscales in order to enable a consideration of the correlations that existed (see Table 2).

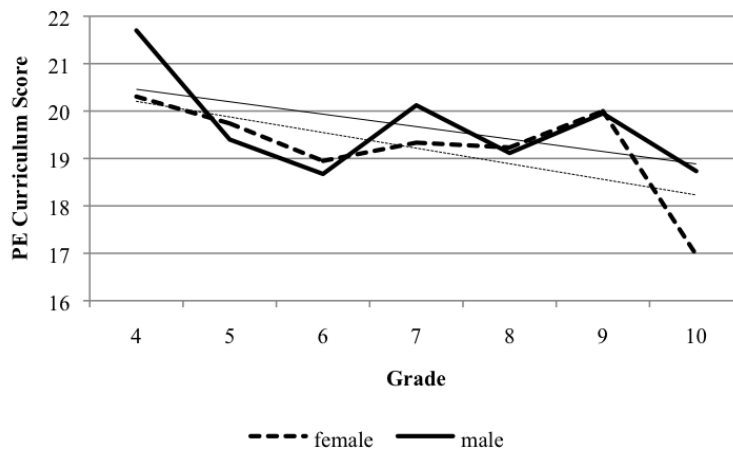


Figure 6. Mean PE Curriculum scores by gender and grade.

Of the four subscales, PE Interest had the weakest correlation with PE Teacher (and to a lesser degree with PE Curriculum). By referring to the correlations in Table 2, one can recognize a small (but increasing with grade) correlation between PE Interest and PE Curriculum. There existed a weak relationship between students' satisfaction with class activities and their reported PE interest. Whether or not students enjoyed the activities that they were engaged in during PE class, their PE interests were apparently minimally related in the younger years. Unlike junior high school students, students in Grades 4 through 6 had an interest (or lack of interest) in PE despite their appreciation (or lack of appreciation) of the actual content of their classes. Many of these younger students in Grades 4 through 6 who believed PE to be enjoyable, held this belief almost regardless of what activities they were taught. As they age, however, this becomes less true. These correlations do increase with age so that once students reach junior or senior high school the curriculum becomes a more important factor.

Similarly, PE Connotation is increasingly related to PE Interest as students reach Grades 9 and 10. In Grades 4 through 6, students' appreciation of masculine or feminine PE activities has little relation to their interest in the subject. Once students do reach Grades 9 and 10, PE Connotation and PE Interest begin to show a stronger correlation for males than for females. What this means is that male students with more-masculine appreciations are the ones most likely to also have an interest in the subject. Those males with more-feminine appreciations (i.e., they appreciate dance and gymnastics instead of overly aggressive competition in traditional sports) are less likely to also have an interest in PE (which should be no surprise within a games-dominated program). Finally, some of the strongest correlations were between PE Interest and

Table 2

Correlations between PE Interest and Other Subscales for Females and Males

Grade	Gender	Status	Connotation	Teacher	Curriculum
Grade 4	male	0.245, <i>ns</i>	0.335, <i>ns</i>	0.445, $p < 0.012$	0.510, $p < 0.005$
	female	0.170, <i>ns</i>	0.392, $p < 0.026$	-0.006, <i>ns</i>	0.141, <i>ns</i>
Grade 5	male	0.508, $p < 0.004$	0.339, $p < 0.049$	0.294, <i>ns</i>	0.224, <i>ns</i>
	female	0.562, $p < 0.004$	0.521, $p < 0.008$	0.458, $p < 0.032$	0.253, <i>ns</i>
Grade 6	male	0.324, $p < 0.028$	0.407, $p < 0.004$	0.353, $p < 0.013$	0.279, <i>ns</i>
	female	0.707, $p < 0.000$	0.162, <i>ns</i>	0.415, $p < 0.008$	0.360, $p < 0.024$
Grade 7	male	0.313, $p < 0.034$	0.323, $p < 0.028$	0.277, <i>ns</i>	0.433, $p < 0.005$
	female	0.726, $p < 0.000$	0.731, $p < 0.000$	0.364, $p < 0.008$	0.377, $p < 0.008$
Grade 8	male	0.354, <i>ns</i>	0.185, <i>ns</i>	0.237, <i>ns</i>	0.411, $p < 0.037$
	female	0.433, $p < 0.007$	0.493, $p < 0.001$	0.310, $p < 0.049$	0.427, $p < 0.006$
Grade 9	male	0.777, $p < 0.000$	0.655, $p < 0.001$	0.233, <i>ns</i>	0.683, $p < 0.001$
	female	0.484, $p < 0.003$	0.570, $p < 0.000$	0.364, $p < 0.029$	0.161, <i>ns</i>
Grade 10	male	0.822, $p < 0.000$	0.721, $p < 0.002$	0.242, <i>ns</i>	0.472, <i>ns</i>
	female	0.624, $p < 0.000$	0.506, $p < 0.006$	0.330, <i>ns</i>	0.543, $p < 0.002$

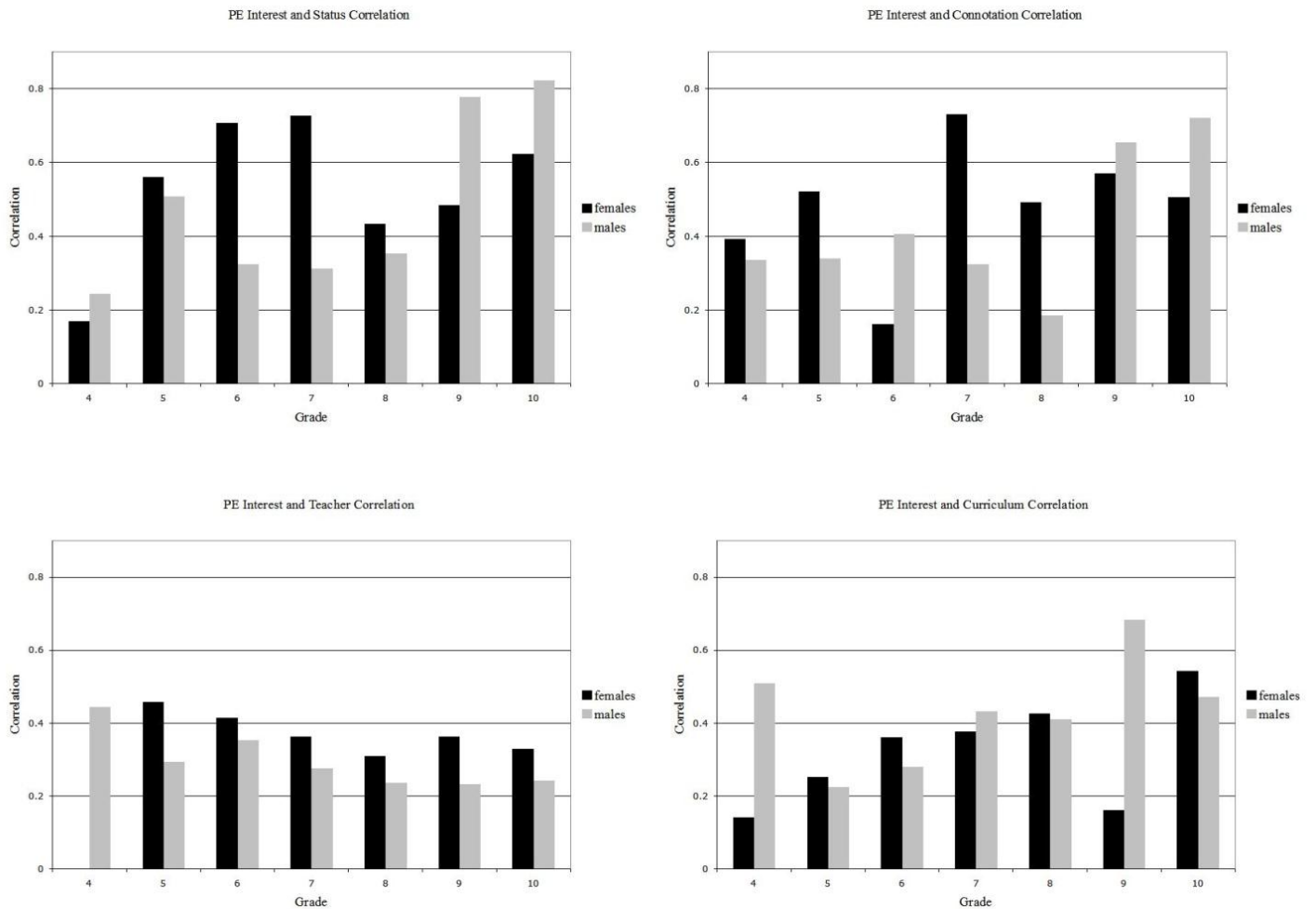


Figure 7. Correlations of PE Interest with other four subscales.

PE Status. This was especially true of females in Grades 5 through 7 and of males in Grades 9 and 10. The correlations for PE Interest and all four of these subscales are represented in Figure 7.

Discussion

The female students within this case study consistently expressed less interest than their male peers in PE; this is entirely consistent with the findings and suggestions from the literature (Gibbons & Gaul, 2004; Olafson, 2002). This research has also demonstrated that females' interest in PE wanes with age. In this case study, the male students at every grade level reported a higher interest in PE. Given the results from past research (Couturier et al., 2005), this might not be altogether surprising; however, it is certainly worth noting that the difference between female and male students' PE Interest scores increased with age/grade level. While female and male students had similar PE Interest scores in Grade 4 (albeit with the male students reporting slightly higher scores), the observable trend was for this difference to become more pronounced with each year of schooling. Decreasing interest in PE was, therefore, a more pronounced trend

for female students. While it is not possible to attribute this observation to any specific factors, highlighting previously mentioned contextual information might prove informative. For example, although many secondary schools within Canada currently offer gender-grouped PE classes, all of these students in this study were enrolled in coeducational classes. That such a factor might play a role is certainly possible; research has indicated that the presence of males in a PE class can have an especially negative impact on female students' enjoyment of PE (Humbert, 2006; Gibbons & Gaul, 2004; Olafson, 2002).

The results related to students' beliefs about the relative status of PE add to the limited observations offered by Couturier et al. (2005). While Couturier et al. found younger students to find PE in lower relative regard, they did not find the same gender differences as suggested here. Similar to the PE Interest subscale, female students consistently believed PE to be of lower status than did their male peers. This difference was especially minor in Grade 4. It was also especially pronounced in Grade 10. That is, while in the earliest grades, female and male students both believed PE to be of high status, the oldest students (particularly the females) believed it to be of a lesser status. Again, while it may not be possible to attribute this observation to any specific factors, additional contextual information provides possibilities for discussion. In these schools, and indeed most schools in Canada (Active Healthy Kids Canada, 2011), instructional time for PE was greatest in the elementary grades, limited (especially relative to the other core subjects) in junior high, and, with the exception of Grade 10 PE, entirely optional in senior high. In such an environment, one might recognize that older students' beliefs that PE is of a lower status is not altogether surprising. That PE is afforded minimal instructional time and is not a required subject for college or university entrance is indeed suggestive that it is of lesser importance than other subjects, such as Mathematics or English Language Arts.

The female and male students had clear differences in their beliefs about PE being more or less enjoyable with feminine or masculine connotations. It is worth noting that at all grade levels students preferred gender-aligned activities. While this gender-aligned observation occurred at all grade levels, it is also somewhat telling that the trend was for this difference to decrease with age/grade level. That is, with every year, female students' beliefs about ideal PE connotations became more masculine while male students' beliefs about ideal PE connotations became more feminine. This observation deserves serious attention. PE teachers who focus on ensuring that their female and/or male students have positive PE experiences might suppose that the inclusion of appropriate gendered activities would lead to increased satisfaction. This research suggests that while this assertion may be true for younger students, it is less true for older ones. Consequently, this might prove to be a successful strategy in elementary school, but should be considered more critically in the later years. Furthermore, that the female and male students' PE Connotation scores approached one another may also be indicative of an increasing number of individuals expressing a strong belief (rather than a general trend of the entire group). It is also worth noting that in the past, when given a voice about which sorts of activities are most and least enjoyable, students have often remarked on the novelty of movement possibilities rather than actual (gendered) activities themselves (Humbert, 2006).

While previous research indicated that the PE teacher is one of the most influential variables with respect to students' interest in PE (Luke & Sinclair, 1991), this research has indicated the especially pronounced decline in students' beliefs about the PE Teacher (of all subscales, these trend lines had the steepest slopes). Also worthy of note is that in Grades 4 through 6, where there were no significant changes in students' beliefs about the fairness of their teachers, every

homeroom had a different teacher for PE. That is, there were no elementary PE specialists and so all students were taught by different generalist homeroom teachers. The especially pronounced decrease in students' beliefs about their teachers between Grades 6 and 10 occurred with students all having the same PE teacher (i.e., there was a lone PE teacher at each of the three secondary schools). Consequently, understanding that the teacher might be considered as a controlled/constant variable in this instance, these differences in PE Teacher scores might be interpreted to be a matter entirely related to perception (i.e., the teacher did not change). When students spend considerably more time with their generalist PE teachers (who also teach them the majority of other subjects), they find their teachers to be more fair—to share their attention and interest with all students rather than a select few. When students spend considerably less time with their specialist PE teachers (who only teach PE), they find their teachers to be less fair—to share their attention and interest with a select few. That the elementary students regarded their PE teachers as more fair suggests that advocacy efforts for PE specialists (CAHPERD, 2006; Rahim & Marriner, 1997; Sallis et al., 1997) might, at the very least, take such an observation into consideration.

Though students' beliefs about the appropriateness of the curriculum changed very little, some trends deserve mention. In the final years of elementary school (i.e., Grades 4 through 6), female and male students reported decreasing PE Curriculum scores. This was followed by an immediate increase in Grade 7 and a sharp decrease in Grade 10. In Grades 4 through 6, it is possible the elementary students became less satisfied with the content as they became more and more aware of the increased PE activity possibilities being afforded to students in junior high. This would seem to be further supported by the observation that both female and male students in Grade 7 believed the curriculum to be more enjoyable; their Grade 7 year would have introduced them to a specialist PE teacher for the first time and it would have also likely exposed them to teaching and learning practices not necessarily present during their years with a generalist homeroom teacher. That the Grade 10 year is characterized by a clear drop in these scores suggests that students may have evidently been "unimpressed" with the change of program afforded in high school PE. These changes included, among other things, the introduction of a number of off-campus field trips and lifetime leisure activities. These results are in many ways contradictory to past research (Gibbons et al., 1999; Humbert, 2006). As suggested by such research (and as prescribed in many high school curricula across Canada), this school's high school PE program provided a number of novel activities (e.g., broomball, curling, scuba diving) and lifetime leisure possibilities (e.g., aerobics, rollerblading, weight training) to students. Consequently, it is difficult to explain students' declining PE Curriculum scores, and it is worth repeating that this subscale had the lowest reliability score ($\alpha = .60$). Certainly, some of the survey questions within this subscale are admittedly relatively unclear and may be interpreted many ways. For example, the question, "I would prefer to play fewer games and have more keep-fit activities in physical education" presupposes that students were engaged in a PE program that privileged games over "keep-fit" activities—this was clearly less true of senior high than it was for the other grade levels.

Conclusion

This study provided evidence that female students believe PE to be less interesting than do male students (when they are in a coeducational PE class). It is important to explore this observation further in the future. Do female students lose interest in the same way (or, perhaps, less or more

so) when they are in a gender-grouped PE class? That both female and male students believed PE to be less interesting as they age is also worthy of future research. What, specifically, causes students to lose interest? In the meantime, schools and PE teachers might engage with their students, so as to listen to their needs, interests, and suggestions so that their interest might be maintained and/or increased.

If students are to believe that PE is an equal-status subject (or, at the least, are to maintain the belief about PE status they seem to hold in elementary school), institutional efforts might play a role. For example, perhaps increased instructional time and/or requirements might signify an increased status amongst the other subjects. Irrespective of whether or not such changes might impact students' beliefs about the relative status of PE, they would certainly make the implicit suggestion that PE is more important than it currently is. It would be a worthwhile venture to explore if such environmental changes might impact the beliefs students hold with regard to the status of PE.

A well-balanced PE program is supposed to include movement activities from a number of dimensions (e.g., dance, gymnastics, alternative activities, games, etc.). The games-dominated programs currently privileged throughout the province (Mandigo et al., 2004) clearly do not lend themselves to a balance of various gendered activities. While this research suggests that female and male students clearly hold a preference for gender-aligned activities, the obvious suggestion for practice might (unfortunately) be given as, "make sure PE teachers teach the PE curriculum." If nothing else, this research supports the notion that quality PE programs ought to address all of these movement domains in a more-balanced way (as already required by curricula, yet not often followed by PE teachers). One might also pursue an understanding about why these aging females prefer more masculine activities while these aging males prefer more feminine activities.

Although elementary students clearly believed that their generalist homeroom teachers were the most fair, this alone does not provide enough of a rationale to replace specialists with generalists. One might assume elementary students developed much stronger interpersonal relationships with their PE teachers (i.e., these teachers taught their students all day, every day of the week) than did the junior or senior high students with their PE teachers (i.e., these teachers taught their students two or three classes each week). What is worth considering is the idea that increased contact time (e.g., through increased PE instructional time and/or classroom time in other subjects) might enable students and teachers to build the same positive relationships apparently being created in elementary school.

PE teachers and PE teacher educators ought to attend to these students' shared beliefs. It must also be noted that this article, in many ways, presents more questions than answers. Although an attempt has been made to address the previously mentioned research question, continued studies with this group has occurred through an analysis of students' qualitative survey responses and follow-up focus group interviews with "low-interest" students and their teachers. With these interviews, it will be possible to more clearly establish an understanding of female and male students' specific (and general) PE beliefs (and experiences and feelings) as they move through school. However, in the meantime, one might wonder, "Where to from here?"

By sharing this research with pre-service teachers, teachers, and teacher educators, continued learning, discussion, and research might allow for focused attention on improving the teaching and learning of PE for all students. With this information, pre-service teachers, teachers, and teacher educators might be enabled to be more critical of PE practice or,

preferably, *their own* PE practice. This might include questioning some long held taken-for-granted assumptions. To the reader, reaction is both important and unavoidable. That is to say, it would be highly unlikely for those committed to quality PE for all students to read about these students' beliefs without asking themselves such questions as, "Do my students have these beliefs?"

Some, undoubtedly, do.

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Notes

- i. This conclusion was based on the Canadian Society for Exercise Physiology's (CSEP) earlier physical activity guidelines (i.e., 90 minutes of daily physical activity). CSEP's updated guidelines call for only 60 minutes of daily physical activity.
- ii. In Wersch et al.'s (1992) initial study, the PE Interest scale reliability measures were greatest (reliability: $\alpha = .77$, split-half reliability: $r_{sb} = .78$). The measures of reliability and split-half reliability for the four subscales were lower, ranging from $\alpha = .62$, $r_{sb} = .61$ (PE Connotation subscale) to $\alpha = .74$, $r_{sb} = .74$ (PE Teacher subscale).

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Appendix

Physical Education Interest Questionnaire

Section I: Background Information

What is your gender? Male Female
What is your age? 1 2 3 4 5 6 7 8 9
What is your grade? 1 2 3 4 5 6 7 8 9

Section II: Physical Education

VERY TRUE SORT OF TRUE NOT VERY TRUE NOT AT ALL TRUE

1. Sometimes I pretend to be sick or hurt so that I do not have to do Physical Education.
2. Physical Education is not for me because I am not strong or big enough.
3. I do not go to school to do Physical Education but to learn more important subjects.
4. I find the activities in Physical Education boring because we always do the same thing.
5. My Physical Education teacher does not treat students who are good at Physical Education differently from others.
7. I would take part in Physical Education even if I did not have to.
8. I do not like Physical Education because it is only about winning and beating your opponent.
9. Physical Education at school is not important because you can play sports, games, and other activities in your own spare time.
10. I wish we could choose what we do in Physical Education.
11. When we learn new skills in Physical Education my teacher only helps the good students.
12. I never forget to bring my Physical Education shoes or clothing to Physical Education class.
13. I prefer activities in Physical Education that are exciting and involve some risk.
14. If I could, I would choose Physical Education as a course to get into university or college.
15. I would prefer to do sports or activities at a recreation centre than to do Physical Education at school.
16. My Physical Education teacher does not pay much attention to the students who are not very good at class games or activities.
17. Even when I do not feel very well, I do not want to miss Physical Education.
18. I like physical activities that are strenuous and painful.
19. Physical Education is not important because you cannot get a job by doing it.
20. I do not like competing against others in Physical Education; I'd rather compete against myself as in fitness tests.
21. The Physical Education teacher usually gives more help to the students who are good at Physical Education than to the ones who are not good at it.
22. I wish that they did not make us do Physical Education because it is not important.
23. I prefer physical exercises that have beauty in movement such as in dance and gymnastics.
24. I would not like it if we spent more time learning subjects like Language Arts, Mathematics, Science, and Social Studies instead of Physical Education.
25. I would prefer to play fewer games and have more keep-fit activities in Physical Education.
26. My Physical Education teacher does not pay more attention to the students who are good at Physical Education than to the ones who are less good.
27. I frequently miss a Physical Education lesson because I forget my Physical Education shoes or clothes.

[Large blue rectangular area for marking responses]

Please continue on the back.

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VERY TRUE SORT OF TRUE NOT VERY TRUE NOT AT ALL TRUE ○

- 28. I prefer those activities in Physical Education that do not make me tired and sweaty.
- 29. I would prefer it if Physical Education was as important as other school subjects.
- 30. I do not like doing the same activities every Physical Education lesson.
- 31. Only the good students are picked for a school-team or club by the Physical Education teacher.
- 32. I like doing Physical Education because it is fun.
- 33. I do not like playing games because they are too rough.
- 34. I would rather do Physical Education than other school subjects.
- 35. I think the activities learned and played in Physical Education are fine.
- 36. Physical Education would be more fun if the Physical Education teacher did not praise only the good students.

Section III: Critical Incident(s) in Physical Education

Take a little time to think about the positive and negative experiences you have had in Physical Education. Describe in detail the place, persons (please do not include names), conditions, situations, and activities that turned you on to or turned you off from physical education in your school physical education experiences. Please give an honest answer.

Name: _____

(Please Print)

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