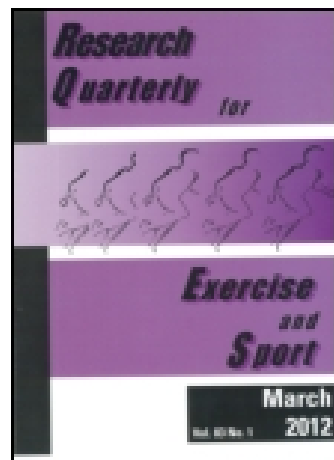


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Classroom Teachers' Perceptions of the Impact of Barriers to Teaching Physical Education on the Quality of Physical Education Programs

Philip J. Morgan and Vibeke Hansen

A major aim of the current study was to determine what classroom teachers perceived to be the greatest barriers affecting their capacity to deliver successful physical education (PE) programs. An additional aim was to examine the impact of these barriers on the type and quality of PE programs delivered. This study applied a mixed-mode design involving data source triangulation using semistructured interviews with classroom teachers (n = 31) and teacher-completed questionnaires (n = 189) from a random sample of 38 schools. Results identified the key factors inhibiting PE teachers, which were categorized as teacher-related or institutional. Interestingly, the five greatest barriers were defined as institutional or out of the teacher's control. The major adverse effects of these barriers were evident in reduced time spent teaching PE and delivering PE lessons of questionable quality.

Key words: consequences, physical activity, primary school, program success

Despite the strong rationale for physical education (PE; Sallis & McKenzie, 1991), the quality of primary school PE has been seriously criticized worldwide (Hardman & Marshall, 2001). PE is generally delivered by classroom teachers or nonspecialists. Over the past 20 years, researchers have highlighted the difficulties primary school teachers face in delivering PE lessons. In Australia, a key recommendation from a Senate Inquiry Into Physical and Sport Education (SSCERA, 1992) was that urgent professional development strategies and/or specialist PE teachers were needed to overcome the significant barriers teachers faced. Barriers considered the most amenable to change were directly related to the

classroom teacher, such as their attitudinal disposition to and confidence in teaching PE.

Previous research has shown that many teachers generally do not feel confident teaching PE (Xiang, Lowy & McBride, 2002). Lack of confidence, knowledge, and expertise has been found to be related to the quality of PE teacher education teachers receive (Morgan & Bourke, 2005). Tremblay, Pella, and Taylor (1996) found that lack of teacher preparation was the greatest barrier to quality PE programs. PE teacher education has been described as inadequate in many countries worldwide, including the United States (McKenzie, Alcaraz, Sallis, & Faucette, 1998), Britain (Carney & Armstrong, 1996), and Australia (Moore, Webb & Dickson, 1997). In Australia, most universities offer one or two compulsory courses in PE as part of the preservice classroom teacher training, although it often only represents a small percentage of the total course work required for their degree (Morgan & Bourke, 2005).

Problems with the quality of PE teacher education may be exacerbated when teachers hold negative attitudes toward PE and question its value for children. This finding has been reported in the literature (Andrews,

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1987; Faucette & Patterson, 1989; Howarth, 1987), although it is not conclusive. Other researchers have suggested that many teachers value PE but lack confidence. For example, Morgan (2008) found that teachers believe in the benefits of PE but would rather teach other subjects. Xiang et al. (2002) reported that many preservice classroom teachers were unwilling to teach PE but value it as an important curriculum component.

Studies examining the impact of PE methods courses on preservice classroom teachers have reported mixed results (Curtner-Smith 2007; Tsangaridou, 2005; Xiang et al., 2002). Xiang et al. (2002) described how preservice teachers believed they did not possess the knowledge or ability to teach PE after observing a number of PE lessons during a field-based course. Tsangaridou (2005) found that two students reflected more deeply on their teaching after a methods course but indicated the results may have been confounded by previous physical activity experiences. Curtner-Smith (2007) reported that preservice teachers modified their traditional conceptions of PE teaching due to the reflective nature of a methods course but did not adopt a more socially critical perspective.

In an investigation of the problems classroom teachers faced teaching PE at one elementary school, DeCorby, Halas, Dixon, Wintrup and Janzen (2005) reported two main obstacles: (a) lack of training or knowledge of developmentally appropriate lessons, and (b) lack of planning and informed leadership for the overall program. They concluded that teachers' belief in the importance of PE was an asset, but they were ultimately inhibited by a number of interrelated factors that adversely affected children's capacity to achieve key PE outcomes.

Despite a number of studies highlighting the most substantial barriers to teaching PE relative to a teacher's attitudinal disposition, others have claimed institutional factors, or factors outside a teacher's control, are more salient impediments. In a report on the state and status of PE in schools in an international context, Hardman and Marshall (2001) summarized the key issues hindering primary school PE. They identified reduced time, poor financial and material support, and increasing marginalization. Similarly, Mandigo et al. (2004) described how teachers believed lack of funding and time were the two biggest factors influencing PE program delivery. In a study of nonspecialist preservice teachers, Faulkner, Reeves, and Chedzoy (2004) found lack of both time and space/equipment as the largest barriers.

A suggestion in the literature is that more highly trained or specialist PE teachers recognize different barriers to teaching PE. The barriers reported by specialists tended to be more institutional than teacher related. Barroso, McCullum-Gomez, Hoelscher, Kelder, and Murray (2005) described the barriers reported by specialist PE teachers trained in a school-based intervention to reduce risk factors for cardiovascular disease. The two

top barriers were large class size and low academic value. Other items were inadequate financial resources and inadequate facilities.

Identifying the Most Significant Barriers

Figure 1 provides a summary of key factors perceived to have an impact on primary school PE programs. They are defined here as *teacher-related* or *institutional*. That is, commonly cited difficulties or barriers include factors directly related to the teacher (e.g., lack of confidence, lack of knowledge, lack of interest) or institutional factors not within the teacher's control (e.g., crowded curriculum, inadequate equipment/resources, funding issues). There is contention throughout the literature about the greatest inhibitors to implementing quality PE programs. A number of studies worldwide have reported on the most substantial constraints, with results often contingent on the data collected. Some studies reported teacher-related barriers as the most substantial to overcome, while others recognized institutional factors as the source of greatest frustration for teachers. Currently, it is not known which specific barriers teachers perceive to be the greatest inhibitors in teaching PE in primary schools. Identifying whether teachers perceive barriers as inside or outside their control has important implications for appropriately targeting resources, support, and interventions for teachers and schools. In particular, there is an urgent need to reexamine the current primary school context in Australia, given the paucity of research in this area and the unknown impact of concerns about the child obesity epidemic on school programs.

Consequences of Teaching Barriers on PE Programs

The theory of planned behavior (Ajzen, 1991) proposes that attitudes, subjective norms, and perceived behavioral control (PBC) are key determinants of behavior. Notably, Ajzen and Madden (1986) explained how PBC can determine behavior. Faulkner et al. (2004) adapted these theories to the PE teaching of nonspecialist teachers and highlighted that self-efficacy (perceptions of ability or teacher-related barriers) and PBC (external aspects of control or institutional barriers) significantly influenced behavior intent. The perceived difficulty or ease of performing a behavior is strongly reflected in anticipated barriers. Exploring these constructs may improve understanding of teachers' decisions and actions regarding appropriate PE programs and inform teacher educators in designing meaningful learning experiences in teacher training courses. However, the influence of teaching barriers on PE programs has received little attention in the literature.

When Hardman and Marshall (2001) summarized their findings on the worldwide state and status of physical

education, they deduced that major barriers to teaching PE (including lack of time and resources) resulted in PE lessons resembling “supervised play” taught on an infrequent basis. Similarly, DeCorby et al. (2005) spoke of negative consequences from the lack of teacher knowledge and training, including informal and poorly structured lessons taught on an ad hoc basis. Evidently, children in the DeCorby et al. study had reduced opportunities to develop motor skills in a team-based sports curriculum model that disadvantaged girls and placed students at risk of injury. Additional negative consequences of poor leadership, particularly around equipment organization and purchase, included the tendency to present curriculum that suited available resources rather than one that was developmentally appropriate or programmed for students. Notably, the researchers indicated teachers were doing as well as could be expected with substantial impediments. Therefore, investigating the perceived impact of self-reported barriers on the type/quality and perceived success of PE programs could inform future research and the development of feasible, appropriate, and targeted interventions.

Aims

An important step in improving the quality of school PE is careful consideration of practitioner or teacher perceptions of barriers to implementing PE. Faulkner et al. (2004) demonstrated that teachers who are confident in their control over various barriers are more likely to teach PE. Amid a renewed spotlight on PE resulting from concern about physical inactivity and childhood obesity, it was considered important to revisit these issues to investigate what factors currently impede classroom teachers. It is not known whether teachers still perceive the same barriers, how their PE teaching experiences

have changed, or whether they feel they can overcome the most significant barriers. It is important to establish what are considered the major barriers as a prelude to examining the feasibility of change for improvement. Furthermore, this study sought to more fully understand the impact of factors that may constrain teachers in delivering and implementing quality PE lessons.

Method

Selection and Recruitment

A total of 72 primary schools from the 10 educational regions in New South Wales (NSW), Australia, were randomly selected from regional lists provided by the NSW Department of Education and Training. Principals from each school received an information pack about the study and were invited to volunteer their school for participation. Following principal consent, the school received teacher information packs for distribution to teachers in the second term of a four-term school year. Teachers willing to participate returned their completed questionnaire together with a consent form. Informed consent was received from 40 school principals.

A total of 189 teachers from 38 different schools returned a completed questionnaire, with 56 teachers indicating a willingness to participate in an interview. Due to budget constraints, not all teachers were interviewed. However, a purposive sampling strategy was used to select 31 for interviews, which were conducted via telephone and audiotaped. Teachers were selected for interviews based on a range of questionnaire responses describing both positive and negative PE programming practices. Either the chief investigator or a trained research assistant conducted the interviews, which lasted

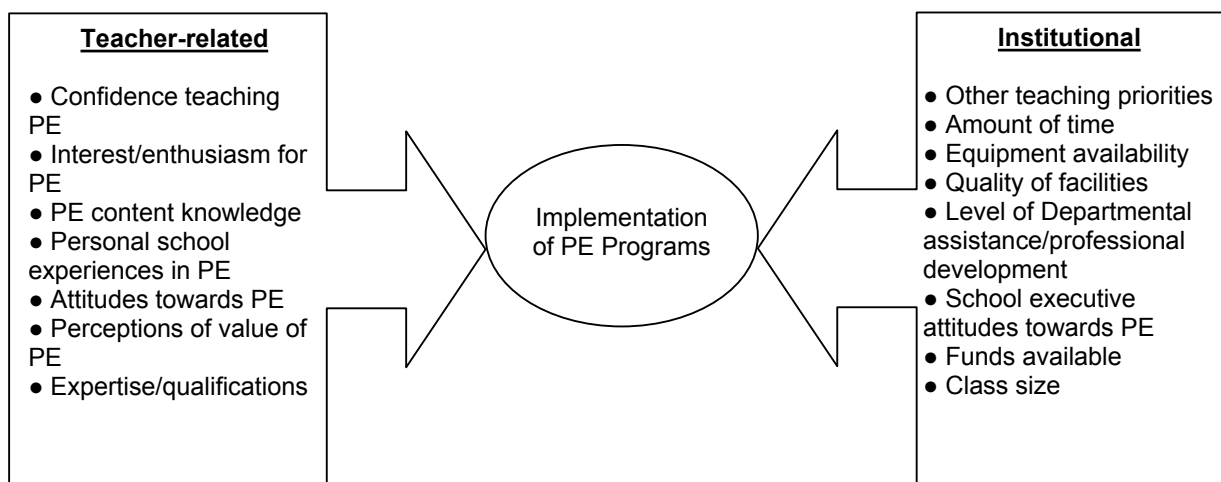


Figure 1. Factors influencing the delivery of physical education programs in the primary school.

approximately 30–40 min. Teachers could select a convenient time to be interviewed. Verbatim transcripts of all interviews were generated.

The sample consisted of 78.5% female teachers and 21.5% male teachers, which is representative of the gender bias in primary school settings. The median age category was 46–50 years. The average number of years spent teaching was 18.4 ($SD = 10.4$). Teachers were from both urban (51.8%) and rural (48.2%) areas in all 10 regions of NSW. There was also a relatively even spread of teachers across children's age levels (approximate age in brackets): kindergarten (5–6 years old; 16.8%), grades 1–2 (7–8 years old; 20.7%), grades 3–4 (9–10 years old; 18.5%), grades 5–6 (11–12 years old; 19%), composite classes (25%).

Design and Measures

A mixed-mode methodology was used in the current study. The study was approved by the research ethics committees of both the University of Newcastle and the NSW Department of Education and Training. Both quantitative (questionnaire) and qualitative (interviews) data collection procedures were used to obtain a more detailed understanding of important issues. The data source triangulation achieved by combining these two methods would strengthen the findings. Teachers were not required to identify themselves on the questionnaire. A 6-point Likert-type scale was used, as an even number of categories generates greater scale reliability (Bourke & Frampton, 1992). Bourke and Frampton justified the generation of interval data from 6-point scales used to elicit some allegiance to a statement from respondents. At the University of Newcastle, the questionnaire was field tested with primary school preservice teachers, who answered questions on their previous school practicum PE experiences. The questionnaire used in the current study was developed to gather basic demographic information and data in the following domains.

Major Barriers Inhibiting the Delivery of PE. A nine-item instrument was developed to determine the factors teachers perceived to be the most substantial. The NSW PE curriculum comprises four major subject areas: games and sports, gymnastics, dance, and active lifestyle. Items were selected based on an extensive review of the literature. Teachers were asked to indicate the strength of each barrier on a scale of 1 to 6 with 1 = no barrier or does not inhibit and 6 = a major barrier or strongly inhibits (e.g., “inadequate facilities and equipment” and “low levels of teaching confidence”). Teachers could also elect to add barriers. All items from the PE teaching barriers instrument were examined using principal components factor analysis with varimax rotation. Results revealed two distinct factors, confirming the existence of reliable constructs for teacher-related (Cronbach's

alpha = 0.86, $n = 4$) and institutional (Cronbach's alpha = 0.73, $n = 5$) barriers.

Teacher Attitudes Toward PE. A 5-item scale was used to determine teachers' feelings toward PE, which used a 6-point Likert-type scale from 1 = strongly disagree to 6 = strongly agree. For example, “I enjoy teaching PE.” All items were subject to factor and reliability analysis. Results indicated a reliable construct for Attitude to Teaching PE (Cronbach's alpha = 0.91, $n = 4$).

Adequacy of Preservice Education in PE. Teachers were asked to indicate, from 1 = very poor to 6 = excellent, for four content areas: gymnastics, dance, active lifestyle, and games and sports. Teachers were also asked to respond to a single item statement: “My PE teacher education prepared me to teach K–6 PDHPE effectively” (where 1 = strongly disagree and 6 = strongly agree).

Confidence Teaching PE. Teachers were asked to indicate, from 1 = strongly disagree to 6 = strongly agree, for four items relating to PE content areas: gymnastics, dance, active lifestyle, and games and sports.

Perceived Success of PE Programs. Teachers responded to 11 items relating to how successful they felt their PE programs had been in achieving specific student outcomes in the previous 12 months. For example, “improved basic motor skills (e.g., catching, throwing etc.)” and “improved attitudes toward physical activity.” Outcomes related to improved levels of physical activity, self-esteem, basic motor skills, enjoyment, fitness, attitudes, and knowledge. A 6-point Likert-type scale was used, with 1 = very unsuccessful to 6 = very successful.

Frequency of PE Lessons. Teachers were asked to indicate whether they taught PE on a frequent basis, which was assessed on a 6-point scale from 1 = strongly disagree to 6 = strongly agree.

The questionnaire also asked teachers to indicate whether they would be willing to participate in a telephone interview as part of the study. For the qualitative component, the research team developed a semistructured interview framework that focused on teachers' perceptions of specific aspects of PE teaching, including barriers, attitudes, and practices. The major categories were: (a) current PE programs and practices, (b) experiences teaching PE, (c) confidence teaching PE, and (d) factors influencing the delivery of PE. An example of a question was, “Can you identify any specific reasons for the success/non-success of your PE program?” While the interviewers used this framework to guide interview topics, specific prompts were tailored to each teacher's specific responses to the written survey. This allowed more detailed insight into the reasons and justifications for their feelings, attitudes, and practices.

Data Analysis

For the qualitative component, a thematic analysis was used, applying the constant comparison method.

In the early stage, two researchers independently coded the transcripts from one interview and met to discuss and reach agreement. Data were initially organized according to categories in the interview schedule, and inductively derived codes were formulated. When agreement was reached on the primary codes, a more detailed hierarchical scheme was developed based on this initial analysis. This draft was revised after coding a second transcript, and a final coding scheme was developed. The second author coded the remaining data. During coding, detailed descriptors were developed and continually revised after discussion with the first author. The second author independently generated themes after reading the coded data, which both authors discussed and agreed on. Recording and continually reflecting on this process ensured transparency in the process.

The quantitative data were analyzed using SPSS (version 14.0). In this study, there was a small amount of missing data (less than 0.25% of the total input). Items were examined for missing values and substitution decisions were made, as recommended by Anderson and Bourke (2000). An item was given a value based on the mean value of other similar responses, comprising the same scale. All variables satisfied normality criteria and were examined using parametric tests. Frequency distributions and other descriptive statistics were also examined. Pearson product-moment correlation coefficients were generated to establish bivariate relationships between all variables. Several statistical tests were used to analyze the relationships among selected variables, including *t* tests and analysis of variance (ANOVA). We used independent sample *t* tests to contrast mean scores for key variables between male and female participants. We also used one-way ANOVAs to examine differences between teachers' age categories. We conducted post hoc analysis for multiple comparisons to locate the statistically significant difference after the null hypothesis had been rejected.

Results

Teaching Responsibility for PE

Approximately 62% of the teachers were solely responsible for the PE programs at their school, with a further 36% receiving some assistance from others, including external providers, sports development officers, part-time specialists, or parents. Notably, every school in the study used an external provider in some capacity, generally a sports development officer or private organization specializing in an activity such as Gymnastics or Aquatics. Contact varied from one-visit sessions to full-term programs.

Barriers to the Delivery of Quality PE Lessons

The questionnaire required teachers to indicate the degree to which certain factors were barriers or inhibited PE program delivery. Table 1 provides a summary of the nine most substantial factors that influenced the teachers surveyed. Institutional factors were the greatest perceived barrier. Notably, the quantitative data strongly supported findings from the qualitative data collected from the semistructured interviews.

Institutional Factors. As illustrated in Table 1, the five major barriers were institutional factors teachers considered beyond their control and were perceived as moderate to major strength barriers. The crowded curriculum and pressure to teach a number of subjects made the implementation of PE programs particularly difficult. This was also the most discussed impediment in the semistructured interviews, in which competition with other subjects was the main barrier preventing teachers from incorporating regular and sufficient PE into their weekly program. Most teachers perceived the curriculum to be far too crowded and felt they were more accountable to the Department of Education and Training, school executives, and parents for delivering outcomes in literacy and numeracy. They perceived that pressures to produce measurable performance outcomes in basic skills tests prevented time dedicated to PE:

There is so much pressure, time wise, to get everything done...if we were to do

Table 1. Ranking of barriers to teaching physical education

| Key barriers (<i>n</i> = 186) | I or T | <i>M</i> ^a | <i>SD</i> |
|--|--------|-----------------------|-----------|
| 1. Lack of time/ crowded curriculum | I | 4.93 | 1.40 |
| 2. Lack of departmental assistance/ professional development | I | 4.11 | 1.60 |
| 3. Lack of money | I | 3.81 | 1.48 |
| 4. Inadequate facilities and equipment | I | 3.72 | 1.58 |
| 5. Class size too big | I | 3.67 | 1.70 |
| 6. Poor expertise/ qualifications | T | 3.47 | 1.66 |
| 7. Low levels of teaching confidence | T | 3.08 | 1.69 |
| 8. Poor personal experiences in PE | T | 2.83 | 1.66 |
| 9. Low levels of personal interest/enthusiasm in PE | T | 2.62 | 1.62 |

Note. I = institutional; T = teacher related; *M* = mean; *SD* = standard deviation; PE = physical education.

^a1 = no barrier or does not inhibit, 4 = moderate barrier, 6 = a major barrier or strongly inhibits.

what they tell us to do in English, maths, science and all the rest of it—we actually need to come to work 10 days a week. What they are asking us to do across all subjects, not just PE, it's too much. (Teacher 11)

Many teachers argued they could not fit in the required hours across all subjects, and most admitted PE was the first to suffer. Some pointed out this was due to PE not being properly timetabled, hence, it became the easiest subject to cut from a busy week. Similarly, a lack of time to deliver quality learning experiences in the allotted slot affected incorporation of PE on a regular basis. The time factor was commonly related to how long it took to source and collect needed equipment to prepare for the lesson. Teachers perceived that this “wasted” preparation time somehow justified cutting out PE:

I mean, you feel frustrated that you could do more, but the time is restricted—no much you can do in half an hour...and getting all the equipment organized. Like, you walk out, you grab all the equipment, you set everything out, by that stage, 10 or 15 minutes are up. (Teacher 10)

Lack of funding to support the PE programs was also considered a major barrier. A common complaint was not having a full set of the needed equipment, therefore making class management more difficult. Additionally, many teachers had virtually no opportunities to attend professional development in PE, which was perceived as a key barrier to improved knowledge and confidence: “I haven't done an in-service on PE for...3 years now. Prior to that I had had no in-service for PE for 16 years” (Teacher 1). Teachers also mentioned inadequate facilities as a moderate strength barrier, such as difficult/cumbersome access to appropriate outdoor spaces in urban areas and ever decreasing playground space due to expanding buildings to accommodate an increasing student population.

Teacher-Related Factors. Quantitative analysis revealed that teacher-related factors were considered weak to moderate barriers, with poor expertise/qualifications being the largest inhibitor. Teachers were also asked to rate the quality of their preservice education relative to specific PE strands outlined in the syllabus. Teachers considered their training in games and sports ($M = 3.90$, $SD = 1.31$) and active lifestyle ($M = 3.55$, $SD = 1.26$) to be fair-to-average and their training in dance ($M = 3.19$, $SD = 1.25$) and gymnastics ($M = 2.99$, $SD = 1.36$) to be only fair. Teachers felt they had received the least training in gymnastics and voiced considerable condemnation of its worth in primary school PE if they were solely responsible for instruction. Nearly all the teachers expressed

complete avoidance of teaching gymnastics, because they felt it was synonymous with a high risk of injury and they claimed not to have the required skills: “I mean, I don't even touch gymnastics. I'd hate to see anyone hurt.” (Teacher 12).

Teachers were also asked to respond to the statement: “My PE teacher education prepared me to teach K–6 PDHPE [Personal Development, Health, and Physical Education] effectively” (where 1 = strongly disagree and 6 = strongly agree). The mean score was 3.48 (1.33), suggesting most teachers only slightly disagreed or slightly agreed. One of the greatest criticisms of their training was not being taught how to teach a skill to a primary school class. Other criticisms centered around not having spent enough time on PE. The few who felt their teacher training had prepared them well for the profession felt their experiences had taught them the individual skills involved in PE (e.g., how to catch a ball), together with how to teach these specific skills to children.

The other key teacher-related barrier centered mainly on a teacher's lack of confidence in physical ability and motor skills. A common thread of discussion was that many teachers did not feel confident/competent enough or physically fit to take kids out for PE:

...other teachers don't feel that they have the expertise and...knowledge, so they don't want to take their kids out of the classroom....They are getting a bit older, don't feel they have the fitness, and so don't want to be embarrassed. (Teacher 20)

Some were aware of the limitations of their PE teaching ability and indicated they felt a more appropriate teacher or role model was necessary:

I don't feel confident to supervise and demonstrate properly. But, I have to be perfectly honest, what I'm going to be able to do with children is not necessarily going to be the best role model for them. And I think that because role modeling is so important, and if you want kids to actually embrace PE, then they need a role model. (Teacher 7)

Teachers felt most confident teaching games and sports ($M = 4.76$, $SD = 1.07$) and active lifestyle ($M = 4.72$, $SD = 1.10$) and less confident teaching gymnastics ($M = 2.59$, $SD = 1.46$) and dance ($M = 3.90$, $SD = 1.34$). The correlation between quality of preservice education in PE and level of confidence teaching it was significant and of moderate strength ($r = 0.42$, $p < .01$).

Gender and Age Differences. Men perceived significantly fewer teacher-related barriers than women, $t(177) = 2.4$, $p = .02$, but there were no significant differences between genders for institutional barriers, $t(178) = 0.86$,

$p = .39$. Men also possessed significantly more positive attitudes toward teaching PE, $t(180) = 2.25$, $p = .03$, but there were no significant gender differences for confidence in teaching PE, $t(183) = 1.7$, $p = .09$. There were no significant differences between age categories for any of the four constructs: teacher-related barriers, institutional barriers, attitude toward teaching PE, and confidence teaching PE.

Impact of Barriers on Quality of PE Programs

Teachers face an array of barriers that substantially affect their capacity to deliver effective PE programs in the primary school. When asked to describe their PE programs and indicate the key consequences of any perceived barriers, teachers described two major impacts: (a) reduced time spent teaching PE, and (b) variations in the type and/or quality of PE programs delivered.

Reduced Time Spent Teaching PE. The crowded curriculum meant PE was often not taught at all or only sporadically. A lack of time to prepare and teach PE had a profound influence on the number of PE lessons teachers felt they could deliver. Many said that PE was one of the first subjects to be cancelled when time was limited, "If something happens, I miss out PE before anything else, like reading groups and maths, and everything else. It's kind of the first thing to get bumped" (Teacher 10). A lack of confidence also led to a reduced enthusiasm to take children outside for PE lessons, because teachers felt inadequate to present meaningful and worthwhile learning experiences: "I'm not confident enough with the rules or how to teach those skills to sort of make it interesting for them. Unless you have confidence, you can't teach it. See, for me, going outside for sport is just awful" (Teacher 10). Teachers expressed that confidence and attitude to teaching PE were strongly related to time spent teaching PE: "Teachers who are really good at art and craft, they do heaps of it. But some teachers hardly do any of it. There will be some teachers who are great at teaching PE, so they do lots of it" (Teacher 2).

When the relationship between the nine previously identified barriers and frequency of PE lessons were examined, four significant correlations strongly supported the qualitative findings. Lack of time ($r = -.36$, $p < .001$) and lack of departmental assistance ($r = -.24$, $p < .002$) were inversely related to the number of PE lessons being taught. Additionally, the developed constructs attitude to teaching PE ($r = .24$, $p < .01$) and confidence teaching PE ($r = .18$, $p < .05$) were significantly, albeit weakly, related to the frequency of PE lessons delivered.

Variations in Type and/or Quality of PE Programs. The nature of programs delivered was affected in two ways:

1. Reliance on outside agencies to deliver physical activity-related programs in place of some/all PE

lessons/programs—a lack of teacher confidence and time has led to an increasing trend for schools to use external providers to deliver various PE activities. However, some teachers expressed concern about the cost of some of these programs to the students/parents and believed it was an equity issue and a significant disadvantage.

2. Poor quality lessons/programs delivered by teachers—various factors, such as reduced time to implement meaningful lessons, inadequate equipment, and low levels of expertise and confidence, have led to PE programs the teachers described as inadequate in achieving key syllabus outcomes. For example:

You know you've got 15 minutes here and there; you might do a quick PE activity just outside; you know, you might play a game, you know, duck duck goose or do relays or something like that when it fits in their timetable...you just don't get time. (Teacher 2)

In some cases, teachers believed they were teaching PE but actually described programs unlikely to present students with quality learning experiences. Notably, many were aware of the educational limitations of their lessons but believed PE was justified as a cathartic rationale or simply to get children outside and moving:

I think it's touch and go whether I'm actually doing anything valuable, other than having them out in the fresh air. I'm not competent myself. I don't want to put children in a position where I might tell them something that is entirely wrong. (Teacher 7)

Many teachers only taught subjects they felt comfortable with and rarely taught gymnastics and dance. They described PE in many schools as resembling games or large-sided team sports with little focus on skill development or promoting physical activity. One teacher spoke of the danger of these types of lessons in reinforcing gender stereotypes and discouraging participation from girls, "The girls actually don't bother, 'oh no we won't pick up a ball, somebody might laugh at me if I don't miss the hoop or something'" (Teacher 31). Furthermore, lack of time and knowledge meant many PE lessons resembled a physical activity or fitness session:

...if you're going to go out, even if you're just going to go for a run around the oval just to fill their air, their lungs with air, and get a drink...I don't think it's successful enough. (Teacher 1)

A number of teachers said that low levels of confidence/expertise resulted in poor levels of student engagement and less individualized instruction/feedback for students. Teachers believed it was difficult to make lessons interesting for their students:

...you know catching and throwing a ball for 45 minutes to an hour is really, really boring. I took the children out today to throw and catch a ball—how boring, they did it in 10 minutes and they wanted to go back inside. What else do I do with them? They go: what a waste of time. (Teacher 24)

Lack of equipment was another factor contributing to management issues and poor class behavior:

One of the most frustrating things for me is the lack of equipment; it becomes really difficult, and the management skills become harder, and when you only have five frisbees and a class of 30, you can only let five kids do it at once, and the rest of the class you got to manage, and so then the teacher becomes frustrated with having to try and show this person the skills while the 20 other kids are mucking up in the background....lack of equipment is a huge frustration for me. (Teacher 6)

Many of the teachers leveled harsh criticism at their colleagues regarding attitudes and competence in teaching PE. For example:

Some of the teachers aren't competent in wanting to get out and run around with the ball.... They take their children out and say, "go and play on the climbing equipment for half an hour," and they just stand back and mark books or something. (Teacher 31)

Other teachers spoke of difficulties they faced when fellow colleagues did not feel confident to teach PE:

Other teachers don't feel that they have the expertise and they don't have the knowledge, so they don't want to take their kids out of the classroom. They get self-conscious, they feel silly. They are getting a bit older, don't feel they have the fitness, and so don't want to be embarrassed. (Teacher 6)

Some teachers expressed frustration about being committed to teaching PE to their class only to realize their students may not experience PE the following year, "Oh, terribly so, when you see all the efforts that the infants' teacher put in to it, and then people say, 'oh, no, we don't really do PE, we haven't got time.' It just does not have value" (Teacher 27)

When examining the relationship between the nine identified barriers and perceived success of PE lessons, many significant correlations were found that strongly supported the qualitative findings. The barriers significantly and inversely related to perceived success of PE programs included: lack of time ($r = -.30, p < .01$); poor level of staff support ($r = -.31, p < .01$); inadequate facilities/equipment ($r = -.27, p < .01$); poor personal experiences in PE ($r = -.35, p < .01$); inadequate preservice education ($r = -.41, p < .01$); and lack of departmental assistance ($r = -.26, p < .01$). Additionally, the developed constructs attitude to teaching PE ($r = .53, p < .01$) and confidence teaching PE ($r = .43, p < .01$) were significantly related to perceived success and of moderate strength.

Discussion

This study confirmed that classroom teachers in NSW still experience difficulties teaching PE. A number of major barriers inhibit their efforts and capacity to implement regular and developmentally appropriate PE lessons. It is of concern that many of the barriers addressed in the current study were also identified (SS-CERA, 1992) almost 15 years ago. Some of these are not original; however, this study found the greatest perceived inhibitors were related to institutional factors, such as lack of time/professional development/equipment, which teachers believed were mostly beyond their control.

Teachers work in an increasingly problematic school climate, are expected to achieve outcomes in a number of subjects, and feel pressured to prioritize subject areas, such as literacy and numeracy. Despite some teachers' best efforts, it is difficult to deliver effective PE lessons when time, training, and resources are so limited. It is also feasible to suggest that some teachers' confidence in teaching PE has waned due to unsuccessful attempts at teaching effective PE lessons under difficult circumstances. For example, serious time and resource limitations, coupled with competing demands, significantly reduce teachers' ability to deliver meaningful learning experiences on a frequent basis. This demonstrates how institutional barriers can have a negative impact on teacher confidence, attitudes, and enthusiasm, which highlights the importance of lobbying to reduce the effect of these barriers. Strategies aimed at improving

the support provided to schools and teachers should focus on the major barriers identified by teachers. In the DeCorby et al. (2005) study of classroom teachers' challenges in delivering PE, they identified similar barriers impeding program implementation after an in depth analysis of two schools. They stated that even specialist PE teachers would find it difficult in primary schools if they had multiple curriculum demands each day. They believed the cycle of marginalization was difficult to fix, with access to resources and training only a partial solution. They endorsed the value of a school leadership team to overcome planning and program organization issues and provide leadership and direction for other staff. It is possible that no amount of training or improved knowledge would allow teachers to overcome institutional barriers.

It is, therefore, imperative that other solutions be explored to alleviate some barriers teachers experience and enable them to accommodate PE in their weekly schedule. This could include: (a) teaching teachers how to integrate PE with other subjects (b) use of delivery models where teachers can up-skill or be assisted by specialists or outside agencies, and (c) class rotation systems (in which teachers can focus on one area of PE, and teachers with specific skills can be used). Other factors could be improved through appropriate intervention at a policy and/or government level. Governments should seriously reconsider the level of support currently offered to schools and teachers in terms of financial and professional development opportunities. Faucette, Nugent, Sallis, and McKenzie (2002) previously demonstrated that significant barriers in PE can be overcome through extensive, well supported professional development programs for teachers. Additionally, a greater understanding of current barriers should also be used to inform teacher educators to think about the structure and content of courses delivered. Teacher educators need to be aware of perceptions of barriers and look to lead discussions on problem-solving strategies, such as improving preservice teachers' capacity to integrate PE with other subjects more effectively. As suggested by Faulkner et al. (2004), teacher educators may need to rethink course objectives to ensure preservice teachers develop knowledge and skills in teaching PE as well as competencies about how to teach PE, given the context of the current PE teaching environment in primary schools.

A unique and important finding of the current study was the impact perceived barriers had on the amount and type of PE provided. It was evident the barriers had a negative impact on the amount of time spent teaching PE and on the type and/or quality of programs delivered. Teachers believed these two consequences adversely affected the achievement of student outcomes. First, the crowded curriculum often caused PE to be left out of the weekly schedule or taught infrequently. Second,

low teacher confidence levels meant some teachers felt there would be no benefit in involving their students in PE lessons of inadequate standard. A trend for schools to use outside agencies for PE-related programs was one effect of these barriers. However, equity issues regarding the cost of some programs and/or the use of external providers to deliver a "surrogate" PE program is a concern. Unfortunately, teachers also described programs that focused on playing large-sided team games due to minimal time, low levels of expertise/confidence, and inadequate equipment.

This finding is of particular significance, given the likely adverse effect on students involved solely in team sports in PE with probable low engagement time and/or skill practice. As Ashton (1988) highlighted, such PE programs are generally dominated by a few competent students and may have harmful social effects for many students (Evans & Roberts, 1987). Sallis and McKenzie (1991) believed these programs did not lead to out-of-school participation in student physical activities. Furthermore, in the current study, teachers who substituted PE lessons with physical activities, such as walks/runs around the school campus, rationalized the lessons as "getting children outside and moving." However, lessons of this type did not provide students with meaningful and appropriate learning experiences in PE or enable them to develop important fundamental movement skills. It is unlikely that students would adopt positive attitudes to physical activity through experiences of this nature. Additionally, some aspects of the PE syllabus were not taught at all. Gymnastics was virtually nonexistent in the current study. Webster's (2002) survey of classroom teachers also described the realities of primary schools, in which teachers were constrained by a crowded curriculum and subsequently did not involve students in all PE subjects. Perhaps the requirements for expected content coverage in primary school PE needs to be rethought to include areas teachers feel competent teaching. Alternatively, strategies must be developed to ensure teachers have the necessary knowledge, skills, and support to develop and deliver activities in gymnastics appropriately and safely.

Limitations

Although the schools selected were considered a representative and random sample of the total population, teacher participation was conditional on principal consent. A selection bias may have been introduced by the self-selected convenience sampling used, causing more confident PE teachers to volunteer for the qualitative part of the study. Additionally, this study took place in only one state in Australia.

Another limitation of the current study was that the PE teaching practices of classroom teachers were not observed. As such, teachers' perceptions of their programs

may not have accurately represented the type and quality of PE programs they delivered. Furthermore, teachers may have been more likely to perceive that institutional barriers had an adverse impact on their efforts to teach PE rather than attribute a lack of success to their own shortcomings.

Conclusion

Recently, at the 2nd World Summit on PE in Switzerland, participants emphasized the urgent need for governments and the PE profession to address many barriers facing classroom teachers, including teacher expertise, scheduling time for PE, improving preservice education, and ensuring the allocation of appropriate and safe space and resources. Now more than ever, the PE profession must react to the impediments that inhibit primary school PE. This study has described that teachers believe a number of barriers significantly affect the quality and quantity of PE programs offered and invariably leads to PE programs of questionable quality. Education authorities, schools, and teacher educators must advocate to ensure these matters are seriously addressed and teachers are appropriately supported in terms of resources, skills, and environments for teaching PE. Future research should focus on the practices of primary schools and teachers implementing successful PE programs and study and disseminate the factors and/or strategies that lead to quality PE. Moreover, interventions must be designed and tested that target identified barriers to ensure children experience quality PE.

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