Barriers to Providing Physical Education and Physical Activity in Victorian State Secondary Schools

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Abstract: An on-line questionnaire was completed by 115 physical education teachers to establish the barriers to their implementation of physical education in Victorian state secondary schools. In addition, the barriers perceived by teachers to impact on students' participation in school-based physical education and physical activity were examined. The barriers to the provision of physical education were found to be largely institutional, although two-thirds of respondents recognised their own difficulties in engaging students when teaching as potential obstacles to student participation. Students were also perceived to be influenced by their own (45 per cent) and their peers (62 per cent) low levels of interest when choosing to participate. An awareness of these barriers has implications for physical education teaching, curriculum design, teacher training and adolescent participation in the school environment.

Introduction

With exercise and activity habits commencing early in life and the development of healthy lifestyle behaviours among children and adolescents translating into reduced health risks in adulthood (Dobbins, De Corby, Robeson, Husson, & Tirilis, 2009), quality education at an early age is paramount. Hence, schools have been identified as key health settings and are being called upon to give greater attention to their physical education and physical activity programs (Naylor & McKay, 2009; Pate et al., 2006).

The combination of the decline in fitness standards of young people, high drop-out rates, and inadequate pathways to accessing physical activity (Hardman, 2008) and the substantial increase in the prevalence of overweight and obesity among children and adolescents around the world (Eisenmann, 2006) undoubtedly equates to a growing concernTherefore, it is not only schools that have been identified as having a key role to play, but it is also apparent that physical educators are becoming more accountable than ever before as their role continues to evolve and they pursue opportunities to facilitate activities that engage students and provide education on lifestyle choices and healthy behaviours. Schools are learning environments with the capacity to equip students with these attributes; however, it is the quality of the programs in schools that will ensure that young people are given the opportunities to

become physically-educated individuals (Lee, Burgeson, Fulton, & Spain, 2007). The provision of quality physical education curriculum can be affected by many factors, some of which can assist or hinder delivery and participation.

Literature

Institutional and Teacher-related Barriers to Physical Education Provision

Barriers within schools that restrict teachers providing physical education programs have been classified by Morgan and Hansen (2008) as being either *institutional* (outside the teachers' control) or *teacher-related* (arising from the teachers' behaviour). The simplicity of this classification enables it to be applied to both primary and secondary school settings.

Previous research has highlighted many *institutional* barriers including budget constraints, scarce resources, reductions in time provisions in the curriculum, the absence of professional development, the crowded curriculum itself and the lack of facilities and equipment (Commonwealth of Australia, 1992; Hardman, 2008; Le Masurier & Corbin, 2006; Morgan & Hansen, 2008). Similarly, Dwyer et al. (2003) reported that the lower priority given to physical education, the absence of performance measures for physical education and activity, and insufficient infrastructure were the three major *institutional* barriers identified by generalist elementary teachers in Canada to the provision of a curriculum that was capable of meeting the health and physical education guidelines.

Most *teacher-related* barriers have been reported in primary school studies (Barroso, McCullum-Gomez, Hoelscher, Kelder & Murray, 2005; DeCorby, Halas, Dixon, Wintrup & Janzen, 2005; Dwyer et al., 2003; Morgan & Hansen, 2008). The barriers described include possessing low levels of confidence or interest in teaching physical education, being unable to provide safely planned and structured lessons, having had personal negative experiences in physical education and lacking training, knowledge, expertise and qualifications to provide physical education (De Corby, Halas, Dixon, Wintrup & Janzen, 2005; Morgan & Bourke, 2005; Xiang, Lowy & McBride, 2002).

The comprehensive primary school-based findings reflect not only the lack of research across the secondary levels in schools, but could possibly be attributed to both secondary and specialist primary school teachers having dedicated physical education units as part of their training. This specialisation should equip teachers with the skills to overcome barriers more easily and enable them to plan and implement programs accordingly.

A summary of *institutional* and *teacher-related* barriers to physical education and physical activity that compares primary and secondary school environments can be found in Figure 1.

Barrier	Primary Schools	Secondary Schools
Institutional	**Access to and lack of facilities [1, 7]** **Lack of time [1, 7]** **Crowded curriculum [7]** **Funding [1, 7]** **Access to and lack of equipment [1]** **Support from other staff [1]** **Support from administration [1, 7]** **Access to professional development [7]** **PE/Sport not priorities in school [1, 5]** **Large class sizes [1, 7]** **Budget constraints [7]** **Insufficient infrastructure [5]** **Other teaching priorities [1, 5]** **Quality of facilities [1]** **Level of professional development [7]** **School executive attitudes toward PE [1]** **Insufficient number of PE staff [1, 5]** **Lack of performance measures for PE [5]**	**Access to and lack of facilities [6]** **Lack of time [2]** **Restricted curriculum [2]** **Funding [6]** **Ethos of PA for life within the school[2]** **Socioeconomic status of school [3]** **Timetabling [6]**
Teacher-related	**Lack of training and knowledge [4]** **Difficulty of providing safely planned and structured lessons [4]** **Gender stereotyping of activities [4]** **Poor planning [4]** **Perceptions of the value of PE [4]** **High level of accountability for other subjects [5]** **Confidence in teaching PE [7, 8, 12]** **Interest in/enthusiasm for PE [7]** **Personal school experiences in PE [7, 8]** **Attitudes toward PE [5]** **Expertise/qualifications [7, 8, 12]**	**Colleagues undervaluing activities [2]** **Ethos of performance/élitism of PE department or school as a whole [2]**
Student-related	**Lack of student engagement [9]** **Expressed dislike for activity [9]** **Lack of intrinsic and extrinsic motivation [9]** **Intrapersonal barriers [11]**	**Student engagement [6]** **Lure of sedentary behaviour [2]** **Low fitness levels therefore potentially lower ability [2]** **Socioeconomic status of student [3]** **Levels of encouragement and motivation [3]** **Peer support [3,10]** **Peer pressure [10]** **Intrapersonal barriers [11]** **Lack of motivation/laziness [11]**

Note: PA = physical activity; PE = physical education; Sport = sport education.
[1] Barroso, McCullum-Gomez, Hoelscher, Kelder, & Murray, 2005; [2] Boyle, Jones, & Walters, 2008; [3]Dagkas & Stathi, 2007; [4] DeCorby, Halas, Dixon, Wintrup, & Janzen, 2005; [5]Dwyer et al., 2003; [6]Dwyer et al., 2006; [7]Morgan & Hansen, 2008; [8]Morgan & Bourke, 2005; [9]Mowling, Brock, Eiler & Rudisill, 2004;[10]Salvy et al., 2009; [11]Sherar, Gyurcsik, Humbert, Dyck, Fowler-Kerry & Baxter-Jones, 2009;[12]Xiang, Lowry, & McBride, 2002.

Figure 1: Barriers to the delivery of physical education (PE) and physical activity (PA) programs to primary and secondary school students

Student-related Barriers to Participation in Physical Education and Physical Activity

In contrast to the barriers experienced by generalist teachers, a recent study from the United Kingdom investigated heads of physical education and heads of schools' perceptions of barriers to providing physical education and physical activity in secondary school environments (Boyle, Jones & Walters, 2008). Despite reporting

some *institutional* and *teacher-related* barriers similar to those found in the primary school studies, Boyle, Jones and Walters (2008) also found that teachers perceived some *institutional* and *teacher-related* barriers similar to those found in the primary school studies, Boyle, Jones and Walters (2008) also found that teachers perceived that students were lured by the greater availability of sedentary opportunities and consequently suggested that lower levels of fitness and lower physical ability in students might be impacting on both delivery and participation in physical education and physical activity. Therefore, further consideration of other barriers in secondary schools that inhibit the delivery of and students' participation in physical education is warranted; *student-related* barriers are further obstacles that teachers must be able to plan for and overcome when providing educational opportunities for students.

Previous research on children's and adolescents' self-reported barriers to participation in physical education and physical activity has reported changing attitudes to activity and physical education, adolescents' decision making favouring more sedentary activities, the importance of peer pressure or desire for peer approval when choosing activities, the changing fitness levels of students, student unwillingness to participate, a dislike of activity, a lack of understanding of the benefits of physical activity and a decline in student interest (Boyle et al., 2008; Commonwealth of Australia, 1992; Dagkas & Stathi, 2007; Sherar et al., 2009; Trudeau & Shephard, 2005).

The barriers to student learning and participation may in part be explained by social cognitive theory (Bandura, 1986), which highlights the relationship between cognitive, behavioural and environmental factors that influence an individual's choices, including those relating to physical activity behaviour. These three factors are not independent, but are mutually dependent and all influence learning and activity choices within a host of contexts. Due to the large amount of time dedicated to schooling, students are influenced greatly within the school environment by many elements, including their teachers, their peers, the programs provided, their participation in classes and their engagement in curriculum and extra or co-curricular activities. The interaction and influence of all three factors on preferred behaviour is certainly most evident at the secondary school level, where adolescents begin to cement their own attitudes and beliefs regarding physical activity. A summary of *student-related* barriers is included in Figure 1.

The benefits of participation in physical education are numerous and have been highlighted by Bailey et al. (2009), who categorise them as being physical, lifestyle, affective, social, and cognitive. However, it becomes increasingly difficult to provide quality physical education and physical activity opportunities in schools when constrained by many *institutional, teacher-* and *student-related* barriers.

The majority of previous research has focused on primary schools therefore, it is important to understand the barriers to physical education and physical activity provisions in secondary schools more clearly. The limitations identified by teachers responsible for providing school-based opportunities need to be examined, as an understanding of these barriers is essential to making improvements and developing quality physical education programs in secondary schools, both now and into the future.

The purpose of this study was (i), to investigate the barriers experienced by physical education teachers that influence their provision of school-based physical education and physical activity in Victorian state secondary schools; and (ii), to determine the teachers' perceptions of barriers that students experience in accessing physical education and physical activity opportunities in their schools.

Method

Recruitment

Some 270 state secondary schools (Year 7-Year 12) and preparatory to Year 12 state schools were considered as potentially providing participants for the study. Thirty-eight schools that did not:

- provide physical education programs;
- provide programs across the Victorian mandated levels of physical education (Year 7- Year 10);
- report on VELS (Victorian Curriculum and Assessment Authority, 2008) levels as required by the Victorian Department of Education and Early Childhood Development (DEECD); or
- provide physical education programs that did not require combining classes across multiple year levels,

were excluded, resulting in 233 schools being contacted and invited to take part in the study.

Schools representative of metropolitan, rural and remote demographic areas as defined by the DEECD were included. Prior to the data collection, the DEECD required that all eight Regional Education Directors be informed of the study, and this was sent by fax or email. The database of schools' contact information was established by viewing regional databases or individual schools' websites. Principals of each school were then informed via email of the on-line questionnaire and were asked to forward relevant details to the Physical Education heads of department. These heads of department were also individually emailed and were asked to make their physical education staff aware of the questionnaire and encourage them to complete it.

After the initial four-week recruitment period, further reminders were emailed to all Physical Education heads of department and physical education teachers. Schools that had not responded to the questionnaire after four weeks were also mailed letters in an attempt to enlist their participation. The collection period totalled eight weeks.

Questionnaire

The on-line questionnaire was administered between October and December 2008. Ethics approval was obtained from RMIT University and the DEECD. Piloting of first a printed questionnaire and then the on-line version of the same questionnaire was undertaken to enable any difficulties associated with the format and instructions to be assessed before it was made available to schools. Minor adjustments were made to the layout and structure of the web pages, but no changes were made to the content.

Teachers could complete the questionnaire at their convenience, although internet access was required. The links to the questionnaire, which took approximately 20-30 minutes to complete, were provided in the initial email contact with principals. The format was designed for ease of completion: it included 'yes' or 'no' responses, list selections with 'other' options available, numerical rankings and limited free text responses. When accessing the web page, respondents were introduced to the purpose of the study, the approximate time required to complete it,

access to the Plain English Statement and an assurance that they could remain anonymous should they choose to do so.

Specifically, the questionnaire attempted to gain information relevant to the individual teachers' positions and school demographic information, including size, location, structure, number of staff and priority areas. Teachers were asked to rate the facilities and equipment; the school culture and how physical education was positioned within the school context; and how they thought physical education was perceived by the whole school community, other staff and the management or leadership team.

Participants were asked to rank the most ('10') to least ('1') influential factors that influenced their teaching and the five most significant barriers that they perceived restricted their students from being active inside the school from most ('5') to least ('1') significant. Finally, teachers were asked how they perceived fitness levels of students across all secondary Year levels (Year 7 to senior school). Options included rating students' fitness levels as poor, below average, average, above average or high.

Upon completion, participants were asked to include the last four digits of their six- digit Victorian Institute of Teaching (VIT) registration numbers as a checking measure to ensure all data submitted by respondents were gathered in one data file. Respondents could include their school or personal email addresses, but not including this information did not exclude them from the study or prevent them from completing the questionnaire.

Data Analysis

Analysis consisted of frequency statistics including means, standard deviations and percentages for all demographic variables, the barriers experienced by physical education teachers as well as those perceived by teachers to be experienced by students inside the school environment.

Cross tabs with Pearson's chi square analysis were used to investigate the associations between gender, school size, school location (rural/remote or metropolitan) and the perceived level of respect for the subject of physical education by the school management or leadership team, other colleagues and the whole school community. Perceived fitness levels of students were compared across Years 7 and 8 (n=92, n=92), Year 9 (n=93) and Year 10 (n=91) by location and size of school.

To investigate the strength of these relationships, the standard residual was calculated, with ±1.96 defined as being statistically significant. A p-value of <0.05 was accepted as being statistically significant. Furthermore, ratings of facilities and equipment were also analysed, using Pearson's chi square in an attempt to establish any relationships between teachers' gender, years of teaching experience, school location, school size or position of responsibility held.

There were no missing data from the demographic section of the questionnaire (n=115). Some ranking data sets were incomplete and were therefore excluded from analysis for that aspect. Complete data sets were available from teachers ranking their own barriers from '10' to '1' (n=70) and ranking from '5' to '1' perceived barriers for students inside their schools (n=73). All data were analysed using Statistical Package for Social Sciences (SPSS for Windows, Version 17).

Results

The questionnaire was responded to by 115 state secondary school specialist physical education teachers (male=62, female=53). Of the 233 schools that employed potential participants, responses were obtained from 54 schools, while 35 respondents did not report which school they were from. There were multiple responses from some schools. The mean age range of teachers who responded was 31-35 years. In total, 67 respondents were physical education teachers and the remaining 48 held physical education heads of department positions.

Of the teachers surveyed, 78 per cent held leadership positions as either physical education heads of department or in other leadership roles. Of all teachers surveyed, 32 per cent had 18 years or more of teaching experience, 27 per cent had between less than six months and four years' experience, 22 per cent had between five and eight years' experience, and small numbers had between 9 and 12 years (9.5 per cent) and 13 and 17 years (9.5 per cent) of teaching experience.

Forty-one per cent of teachers taught in schools that had student populations of over 1001; by contrast, 13 per cent of teachers taught in schools with fewer than 200 students. Four respondents were from girls-only schools and the other 111 taught in co-educational schools. Eighty-one respondents taught in schools that were defined as metropolitan, 29 in rural schools and five in remote schools.

Teachers reported a perceived trend of increasingly 'poor' levels of fitness (3-9 per cent from Year 7 to Year 10) and 'below-average' levels of fitness (21-34 per cent from Year 7 to Year 10), indicating that as students get older their level of fitness is perceived to decline. There was a significant association between the location of the school (metropolitan or rural/remote) and the perceived level of fitness at Years 9 ($\chi^2(2)=6.295$, $p=0.043$) and 10 ($\chi^2(2)=8.679$, $p=0.013$). Analysis of the standardised residuals revealed that students in Year 9 ($z=-1.6$) and Year 10 ($z=-1.8$) who attended rural or remote schools were more likely than students in metropolitan schools to be perceived as having 'below-average' fitness levels.

There was a significant association between perceived level of fitness and school size at Year 9 ($\chi^2(2)=11.894$, $p=0.003$) and Year 10 ($\chi^2(2)=8.318$, $p=0.016$), with no associations noted at Year 7 ($\chi^2(2)=0.754$, $p=0.686$), or Year 8 ($\chi^2(2)=2.290$, $p=0.318$). The standardised residuals show that students were more likely to be perceived as having 'below-average' levels of fitness in schools with fewer than 800 students in Years 9 ($z=-2.1$) and 10 ($z=-1.6$) than in larger schools.

Physical Education Teachers' Perceptions of the Status of Physical Education in their Schools

When respondents were asked what their schools' teaching priority areas were, 42 per cent reported that all subjects had equal priority and a further 27 per cent believed that their schools focused on the academic success of their students. A variety of other priority areas were reported by teachers, including english (9 per cent), information technology (8 per cent), mathematics (4 per cent), literacy and numeracy (3 per cent), music (2 per cent) and arts (2 per cent). By contrast, only three per cent of respondents reported that physical education and sport education were the main priority within their school.

Despite most respondents' schools not having physical education as a priority, nearly half (45 per cent) reported that they would rate physical education as being 'extremely' or 'very' important in the whole school community. There were no

significant associations between school size (having ≤ 800 students or ≥ 801 students) and how important physical education was perceived by the whole school community ($\chi^2(2)= 0.235$, p=0.889) or how respected teachers perceived physical education to be considered by the management or leadership team within the school ($\chi^2(2)=3.248$, p=0.197) (Figure 2).

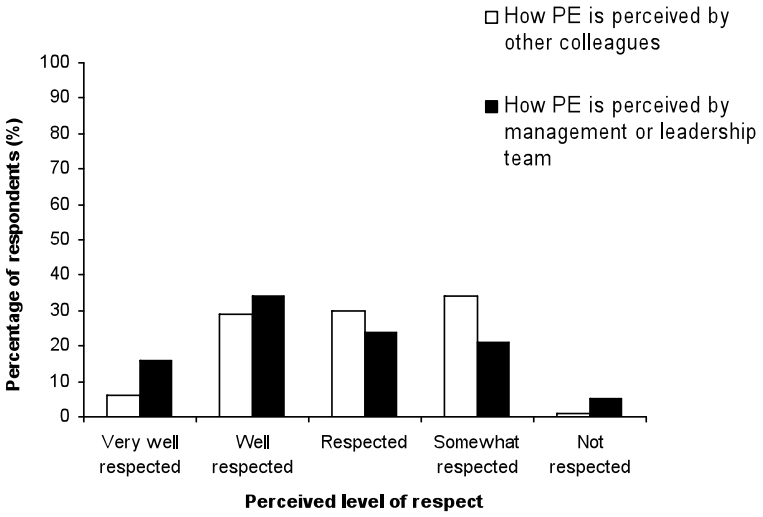

Figure 2:Victorian state secondary school physical education teachers' perceived level of respect for physical education in schools by other colleagues and the management or leadership team

However, there was a trend toward a significant association between school size and the perceived level of respect for physical education by other colleagues ($\chi^2(2)=9.785$, p=0.008). There was also an association between the location of the school (metropolitan or rural/remote) and the perceived level of respect for physical education by other colleagues ($\chi^2(2)=7.347$, p=0.025). Subsequent analysis revealed that teachers in rural and remote schools were more likely (z=-1.7) to report that their colleagues perceived physical education as only 'somewhat' respected or 'not at all' respected.

A significant relationship between the gender of the teachers and their perception of how physical education was viewed by the management or leadership team in the school ($\chi^2(2)=7.192$, p=0.027) was found. The association was most apparent between females and their perceptions that physical education was 'well' respected or 'very well' respected by those in management or leadership positions (z=1.7). There was no relationship between gender and how physical education was perceived to be regarded by the school community or by other colleagues.

Barriers to the Delivery of Physical Education in State Secondary Schools in Victoria

Teachers ranked from most ('10') to least influential ('1') the barriers to their delivery of quality physical education programs. The accessibility of facilities $\bar{x}$=8.10 (2.3) was ranked the greatest barrier to their provision of physical education, with

access to professional development perceived as the least influential $\bar{x}$=3.17(2.19) (Table 1).

Barriers to providing quality physical education (n=70)	Rank order most ('10') to least ('1') important	Mean	SD	Barrier category
Access to facilities	10	8.10	2.30	I
Access to suitable teaching spaces	9	7.95	2.15	I
Access to equipment	8	7.37	2.10	I
Timetabling	7	6.17	2.50	I
Support from other staff	6	5.15	2.56	I
Funding for the subject	5	4.74	2.43	I
Support from management and administration	4	4.17	2.30	I
Leadership from heads of department	3	4.15	2.59	I
Access to professional development that is appropriate	2	4.00	2.13	I
Access to professional development from school management or leadership team	1	3.17	2.19	I

Note: I = Institutional barrier

Table 1: Physical education teachers' ranking of barriers to providing quality physical education (PE) in Victorian state secondary schools

Despite access to facilities being perceived as the greatest barrier to teaching, 81 per cent of respondents rated facilities as 'acceptable' (36 per cent), 'very good' (35 per cent) or 'exceptional' (10 per cent). In contrast to the respondents who were satisfied with their facilities, the remaining respondents thought their facilities were 'barely acceptable' (16 per cent) or 'unacceptable' (3 per cent).

Although access to equipment was the third highest ranked barrier reported (Table 1), 91 per cent of respondents reported that their standard of equipment was acceptable or better, with no teachers reporting having unacceptable equipment. There were no associations found between the rating of equipment or facilities and respondents' gender, years of teaching experience, school location, school size or position of responsibility held.

Perceived Barriers to Student Participation

Teachers were asked to select from a list including an 'other' option and rank the top five barriers they perceived as restricting student participation. These included *institutional*, *student-* and *teacher-related* barriers (Table 2: Figure 3). The crowded curriculum, an *institutional* barrier, was ranked as the most influential by 29 per cent of respondents in restricting students' access to physical education and physical activity in the school environment.

By contrast, the most frequently chosen barrier (ranked most within the top five) by respondents was difficulty in engaging students (67 per cent), with only a third of respondents not ranking it at all within their top five barriers to students in schools accessing physical education or physical activity (Table 2: Figure 3).

Barriers INSIDE school (n=73)	Ranking[a]	Influential barrier					% of respondents ranking barrier in their top 5	Barrier category[b]
		Most				Least		
		5	4	3	2	1		
Crowded curriculum	1	21	6	6	5	5	59	I
Lack of facilities	2	10	7	4	2	4	37	I
Difficulty engaging students	3	9	10	11	11	8	67	T
Students have low level of interest in PE[c] and PA[d]	4	7	11	5	5	5	45	S
Peer pressure	5=	5	7	9	13	11	62	S
PE[c]/Sport[e] not priorities in the school	5=	5	6	5	3	9	38	I
Focus on too many traditional sports	6	4	1	4	5	1	21	I
Past negative experiences with PE[c]	7	3	6	7	6	5	37	S
Large class sizes	8	2	6	7	5	2	30	I
The school environment does not encourage PA[d]	9	2	0	0	3	6	15	I
Cost of subject	10	1	5	8	5	3	30	I
Staff use outdated teaching methods	11	1	2	2	2	2	12	T
PE[c]/Sport[e] staff provide limited activity time	12	1	2	1	1	2	10	T
Semesterisation of units	13	1	1	0	1	3	8	I
Outdated curriculum	14	1	0	0	1	2	5	I
Lack of equipment	15	0	3	4	5	5	23	I

Note: [a]Ranking = based on most frequently ranked as number 1 barrier; [b] I= institutional barrier, T=teacher-related barrier, S= student-related barrier; [c]PE= physical education; [d]PA= physical activity [e]Sport=sport education

Table 2: Perceived barriers to student participation in physical education and physical activity in Victorian state secondary schools: physical education teachers' ranking from most ('5') to least ('1') influential

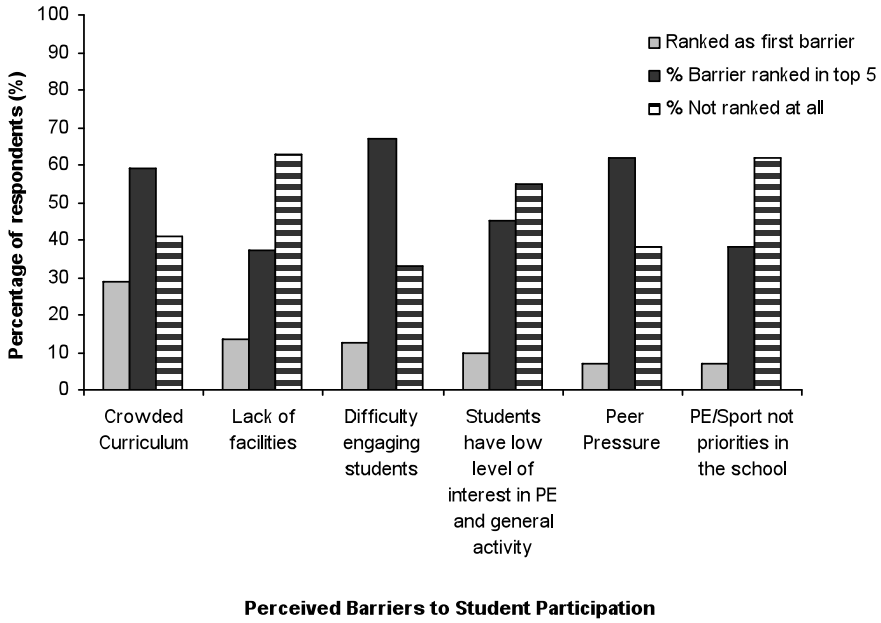

Figure 3: Victorian state secondary school specialist physical education teachers' perceived top five barriers to students accessing physical education and physical activity in schools

Discussion

Schools are well placed to promote health and physical activity behaviours because of the amount of time students spend in this environment and the elements of the school curriculum that are adaptable to include such content. However, barriers experienced by teachers and students and those imposed by the school as an institution are increasingly impacting on the role that physical education plays within schools. We have identified both *institutional* and *teacher-related* barriers that are similar to and complement the many primary school-based studies (Barroso et al., 2005; DeCorby et al., 2005; Dwyer et al., 2003; Morgan & Hansen, 2008). However, this study provides further insights, demonstrating that there are different barriers that teachers may encounter when providing physical education in secondary schools, including those imposed by the students themselves.

The three highest-ranked barriers identified by teachers that specifically affect the provision of physical education are unique to physical education or any learning area that requires additional resources outside the four classroom walls. Access to facilities $\bar{x}$=8.10(2.3), suitable teaching spaces $\bar{x}$=7.95(2.15) and equipment $\bar{x}$=7.37(2.10) were the most highly-ranked barriers, underpinning the specificity of resources that are required in physical education (Table 1). These barriers are also acknowledged as considerable impediments to the provision of physical education in primary schools (Figure 1).

Although *institutional*, these are all barriers that can, if carefully considered (and with good lesson planning and creativity, and departmental support and organisation) be overcome by teachers across all curriculum areas. In large schools in particular (in which many respondents teach), it is important to timetable so access to

facilities is rotated, students experience learning in a range of environments and lessons can be planned appropriately to use the available space most effectively.

Furthermore, if appropriate quantities of equipment are not available, teachers can be creative and improvise activities using similarly shaped or sized pieces of equipment (Mowling, Brock, Eiler & Rudisill, 2004) or, alternatively, network with neighbouring schools to exchange equipment and spaces. It is also essential to investigate local facilities and programs that may add value to school programs, are easy to access and are cost effective. Teachers may be able to build or expand partnerships with local physical activity and wellness communities and create opportunities for students to be active inside and outside schools (Faber, Hodges Kulinna, & Darst, 2007).

Of interest in this study is the finding that over two-thirds of respondents perceived that their own difficulty in engaging students, and therefore their own teaching, could impact on student participation (Table 2; Figure 3). No primary-based studies have comprehensively identified the difficulty experienced by teachers in engaging students in physical education, although Mowling, Brock, Eiler and Rudisill (2004) and Sherar et al. (2009) imply that intrinsic and motivational barriers influence participation at elementary levels (Figure 1).

Tinning (2007) suggests that teachers must know what to do to provide engaging experiences for all young people in physical education. However, their ability to do so is influenced largely by the many factors identified by teachers as *institutional* barriers affecting their provision of physical education, such as a lack of equipment, facilities and teaching spaces (Table 1). Dwyer et al. (2006) and Mowling, Brock, Eiler and Rudisill (2004) suggest it is essential to engage students by developing and evaluating strategies to ensure their interests are met. This necessitates teachers developing activities that are attractive to a wide range of adolescent sub-cultures. Doing so may overcome some of the difficulties and barriers to student participation. However, the simple offering of physical education opportunities that are innovative and well planned may not be enough to engage, excite or encourage participation and may even alienate students (Carlson, 1995). Similarly, Dwyer et al. (2006) also confirm that provision alone is not enough to guarantee participation and engagement.

Teachers claimed that students were responsible in part for their own barriers in secondary schools; a low level of interest in physical education and physical activity (45 per cent) and, more notably, peer pressure (62 per cent) were among the most frequently ranked barriers to participation (Table 2). Mowling, Brock, Eiler and Rudisill (2004) found primary-aged students made connections between exercise, boredom and not having fun in physical education as early as the third grade. Trudeau and Shephard (2005) argue that most young children have a positive perception of physical education, but as they grow older, that perception becomes more ambiguous.

During the transition to and immersion in secondary school, adolescents are often taking greater ownership of their own decisions and attitudes toward both academic learning and physical activity, and this transition itself highlights that different influences will affect their choices to participate, including cognitive, behavioural and environmental factors (Bandura, 1986).

The school environment is a very influential social determinant of physical activity and constant interaction with peers can greatly affect choices, including participation in physical education and physical activity. Salvy et al. (2009) found that peers and friends may promote physical activity and increase motivation to participate. This finding, taken with the views of the respondents in the present

survey, suggests that partner and group work or peer-led activities may be useful in attempting to engage students in physical education and physical activity. Empowering students by offering elective topics, non-traditional activities or initiative games and increasing their role and responsibilities in class with sport education (Siedentop, 1994) can provide positive peer interaction that encourages and promotes activity.

In addition to peer pressure, previously self-reported influences on adolescent physical activity choices have included not being in the mood; lacking energy, motivation, interest or desire; and having other interests not related to physical activity (Allison, Dwyer & Makin, 1999; Dagkas & Stathi, 2007; Kohl III & Hobbs, 1998). Boyle et al. (2008) described teachers' concerns that the limited provision of primary school physical education and play opportunities may be affecting the participation and fitness levels of students as they venture into secondary school. Furthermore, teachers reported that students at secondary school were increasingly being faced with the lure of sedentary behaviour that could lead to lower fitness levels and physical ability and that this in itself might affect participation (Boyle et al., 2008).

In the present study, teachers reported that they perceived students' levels of fitness declined as they got older and consequently there were a decreasing number of students who were perceived to have an 'average' or 'above-average' level of fitness. This trend has also been reported by previous studies (Dollman, Norton & Norton, 2005; Hills, King & Armstrong, 2007; Kohl III & Hobbs, 1998). The significant drop in fitness levels perceived by teachers at the Years 9 and 10 levels, particularly in smaller (≤ 800 students) and rural or remote schools could be attributed to changes in interests or attitudes, a greater focus on academic and career progression, or, possibly, fewer physical education and sport programs being offered at higher Year levels (Jenkinson & Benson, 2009). The implications for teachers of these decreases in fitness levels is quite substantial, particularly as a decline in general fitness in students can often result in a reluctance to participate due to an inability to complete physical tasks.

The crowded curriculum (Table 2: Rank1) and timetabling (Table 1: Rank 7) are symbiotic in their relationship, with one often having a great effect on the other. As early as 1992, the Senate Inquiry (Commonwealth of Australia, 1992), followed by the Moneghetti Report (Directorate of School Education, 1993) identified the crowded curriculum as a major barrier to Australian teachers providing physical education. Kahan (2008) suggests that in primary schools, physical education timetabling may be reduced or even eliminated as it is often deemed a peripheral subject.

Changes to the structure of secondary schooling represent an attempt to meet the needs of diverse populations and ensure that many options are available for all students. However, at times this can be to the detriment of physical education. The identification in this study of timetabling as a barrier may relate to decreases in time allocation, split periods for classes or perhaps too many classes on at once, which means increasing competition for equipment and facilities. Both were considered the biggest barriers to providing physical education in schools (Table 1).

Victorian state secondary schools are required to timetable and provide compulsory physical education from Year 7 to Year 10 (approximate ages 12-16). However, despite this assurance and teachers' concern that physical education should be implemented, this mandate is not always met (Jenkinson & Benson, 2009). This is a notion reported by Hardman (2008) as not uncommon: the gap between actual

policy and implementation is widespread and interests compete for timetable and curriculum space. It is essential that teachers be able to justify why physical education is in the school curriculum (beside the fact that it is 'compulsory') and be knowledgeable about the value of physical education to the school, to students, other colleagues, management and leadership teams and those who make public and school policy decisions (Le Masurier & Corbin, 2006).

Despite ranking many of these components as being less significant (Table 1), to address some of the barriers they rate more highly, physical education teachers must be in a strong position to negotiate, lobby and embed physical education in their schools and school curriculum. Access to professional development, strong leadership and support from all staff is imperative. With colleagues from smaller and rural schools being perceived as having less respect for physical education, a strong understanding of the rationale for physical education becomes imperative.

Limitations

Teacher participation in the present study was conditional on the Principals agreement, who, by forwarding relevant information to heads of department, expressed their consent. The researchers assumed that all schools had access to the internet and that each school's email mailbox was cleared daily and directed to the appropriate people. This chain of communication may have been hampered by technology problems or the failure of someone to pass on information.

A potential limitation of this study is that it obtained self-reported data and therefore teachers may not have accurately represented the physical and sport education programs delivered in their schools. However, obtaining teacher perceptions of their curriculum areas necessitates the utilisation of self-reported data.

Teachers may have tended to claim that institutional or student-related barriers had a greater influence on student participation than their own teaching or decisions made in the physical education department, to avoid reflecting poorly on their teaching or their schools. Nevertheless, teachers' own ability to engage students was rated highly as a barrier to providing quality physical education.

Implications for teacher education

An awareness of these barriers and the impact they may have on day to day teaching is essential for both practicing and pre-service teachers. The following should be considered in pre-service and professional development programs:

- An understanding of the historical aspects and philosophical rationale underpinning physical education are imperative to the ability to negotiate, lobby and embed physical education in their schools and school curriculum.
- Primary training of generalist teachers needs to incorporate physical education units that enable pre-service teachers to develop the confidence and basic skills to plan, provide and promote physical activity. The recognition of how physical education can be integrated across the curriculum is essential.
- Secondary & primary physical education specialists need to understand and critically reflect on the barriers that may be encountered in schools and develop strategies to overcome these. Identifying the impediments they have

control over and those outside their control can potentially lead to shifts in planning, organisation and facilitation of programs.
- Pre-service teachers need to gain experience in a wide range of schools and environments, including independent and government schools with varying levels of administration, equipment and facility access, support for physical education and student and teacher demographics to enable their repertoire of strategies to be practiced and developed.
- Teachers should develop the capacity to draw on diverse models of teaching to provide positive and active learning opportunities for students that cater for all learning styles and develop the cognitive, affective and the psychomotor domains.

Conclusion

Teachers are participants in an institutionalised system influenced by a myriad of complex factors. This research provides evidence that in physical education, which operates outside the traditional classroom, barriers are largely *institutional.* Some of these barriers can be planned for and overcome, but others require considerable negotiation, lobbying and strong leadership: in particular, to gain access to and funding for equipment, facilities, teaching spaces and curriculum positioning.

It is evident that many barriers to providing quality physical education programs have not changed over time: they have merely evolved and become more complex in their own context, in both primary and secondary settings. A focus on addressing *institutional* barriers alone is no longer possible, particularly as teachers report that students are increasingly responsible for their own educational and physical activity choices and, consequently, their participation or non-participation in physical education. A plethora of influences in the school environment now vie for each student's time, attention and participation. The role to which physical educators should aspire involves developing creative, well-planned, engaging and responsibility-focused lessons, and the confidence and ability to do so is recognised by many teachers as a challenging barrier to their own teaching.

Although there are both differences and similarities between the experiences of primary and secondary physical education teachers, an increased awareness of these barriers among teachers at both levels and among practising and pre-service teachers is of vital importance. This awareness will support the continuing development of quality physical education programs, teaching strategies and teaching skills to overcome these barriers, both now and into the future.

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