Abstract

Objective: The aim of the current study was to examine the perceptions of classroom teachers regarding the benefits and outcomes of their PE programs.

Design: Cross-sectional

Setting: Thirty eight randomly selected primary schools in New South Wales (NSW), Australia.

Method: A mixed-mode methodology was utilized incorporating semi-structured interviews of 31 classroom teachers and questionnaire responses of 189 teachers from 38 randomly selected schools in NSW.

Results: Results indicated teachers believed PE (i) provides children with opportunities to improve fitness and be active to counter societal trends towards obesity and increased sedentary behaviours (ii) impacts positively on learning and behaviour in the classroom (iii) helps children to improve social skills and allows some children an opportunity to experience success in a unique learning environment. The teachers in the current study believed their programs were only somewhat successful in achieving outcomes relating to physical activity, self esteem, motor skills and fitness.

Conclusion: Teachers believed PE was beneficial as a vehicle for physical activity and positively impacted on learning and behaviour in the classroom. However, the reasons provided for including PE in their daily programs were reflected in the delivery of programs of little educational value.

Key words: physical activity, children, beliefs, fitness, learning.
The Benefits of Physical Education

Physical education (PE) has been widely acknowledged as a key vehicle for promoting physical activity among children\textsuperscript{1,2}. The physical, social and emotional benefits of physical activity during childhood are well established\textsuperscript{3} and it is claimed that PE provides the opportunity for children to develop the knowledge and skills to lead a physically active lifestyle\textsuperscript{4}. The important role of PE has also been highlighted with the recent marked increase in the prevalence of childhood obesity worldwide\textsuperscript{5}. In Australia, the prevalence of childhood obesity tripled between 1985 and 1997\textsuperscript{6} and is currently increasing at an alarming rate\textsuperscript{7}. In 1985, 11\% of boys and 12\% of girls were considered overweight or obese. In 2004, 26\% of boys and 24\% of girls were overweight or obese\textsuperscript{7}.

Research has indicated several short-term benefits of PE including the prevention of risk factors for cardiovascular disease\textsuperscript{8}, improvements in physical fitness components\textsuperscript{9}, improvements in self-esteem\textsuperscript{10} and enhancement of academic performance\textsuperscript{11}. Studies that have examined the relationship between PE and academic achievement have been relatively positive. It appears that, at the very least, involvement in PE or physical activity at school is unlikely to adversely affect grades in other subjects.

While many short-term benefits of PE have been reported, the viability of any long-term influence has been questioned\textsuperscript{12}. Similarly, the notion that any one PE program can achieve a number of forecasted objectives has been criticised\textsuperscript{12}. Koslow\textsuperscript{13} claimed that “…physical educators have become so engrossed with the idea of justifying their existence through the claiming of a seemingly infinite number of primary objectives, that it has become exceedingly difficult to attain any objective standards at all” (p.75).

Recently, Bailey\textsuperscript{14} sought to review the scientific evidence of the benefits of PE. Bailey\textsuperscript{14} concluded that PE can have a positive effect on children in physical, lifestyle, affective, social and cognitive domains. However, Bailey\textsuperscript{14} noted that further research is still necessary to appreciate the
exact nature of these benefits. He emphasised that the quality of the PE program, and not just the
quantity, was a key determining factor in the realisation of many of these benefits. Bailey also
cautioned that these effects do not occur automatically and emphasised the importance of committed
and trained teachers in determining whether children experience these benefits.

Teacher Perceptions of the Value of PE

Despite research highlighting the potential of PE, the successful delivery or effectiveness of any
curriculum area in primary schools may be limited by the perceptions and values of those responsible
for its delivery. In Australia, classroom teachers generally teach all areas of the primary curriculum.
However, serious issues have been raised regarding the difficulties teachers face delivering PE
programs. Major inhibitors include lack of time, expertise, interest, training and resources. Some
studies have found that teacher’s hold quite negative feelings towards PE\textsuperscript{15,16}. However, other
researchers have suggested that many teachers value PE but lack confidence rather than hold negative
attitudes towards PE. For example, Morgan\textsuperscript{17} found that teachers believe in the benefits of PE but
would rather teach other subjects due to a lack of confidence, time and equipment. Some researchers
have found that classroom teachers do not believe participation in PE leads to any benefits for
students\textsuperscript{18}.

Aim

The teacher’s affective disposition may have a profound effect on a student’s attitude to PE\textsuperscript{19}
which subsequently may exert a significant influence on a pupil’s PE experience\textsuperscript{20}. Similarly, teacher
behaviour can influence students’ attitudes towards physical activity\textsuperscript{21} and physical activity behaviour\textsuperscript{22}.
Given the considerable influence of the teacher, the purpose of the current study was to determine the
perceptions of teachers regarding the benefits and outcomes of their PE programs. Studying teacher
perceptions may help to improve understanding of teacher behaviour relating to PE including the nature
and frequency of programs delivered. This may highlight areas of need which could advantageously be
targeted as part of teacher education and/or teacher professional development. It is also of interest to
compare teachers’ perceptions of PE benefits with findings from previous external evaluations.

Specifically, the aim of the current study was to examine teacher perceptions regarding:

- the role of the school in the provision of physical activity for children
- the benefits of PE
- PE program success

Methods

Subjects

The study was approved by the research ethics committee of both the University of Newcastle and the NSW Department of Education and Training. A total of 72 primary schools from the ten educational regions in New South Wales (NSW), Australia were randomly selected and consent was received from 40 school principals. Upon receiving principal consent, the school was sent the indicated number of teacher information packs for distribution to teachers in the second term of a four-term school year. Principals were instructed to distribute questionnaires to teachers at either a staff meeting or via school internal mail. Teachers willing to participate were then requested to return their completed questionnaire. A total of 189 out of 316 teachers from 38 different schools returned a completed consent form and questionnaire (response rate = 60%).

Fifty six teachers indicated a willingness to participate in an interview. However, not all teachers were interviewed due to budget constraints. As such, a purposive sampling strategy was employed to select 31 of these teachers for interview, which were all conducted via telephone and audio-taped. Teachers were selected for interviews based on questionnaire responses so that a range of teachers were interviewed who had described both positive and negative PE programming practices. The selection criteria were based on overall scores for the quality of their PE program (refer Morgan and Hansen for further detail of scoring system). This strategy ensured that a range of teachers were interviewed who implemented both poor and high quality PE programs. Telephone interviews were conducted by either the chief investigator or a trained research assistant and lasted for approximately
35-40 minutes. Verbatim transcripts of all interviews were generated. The total sample consisted of
78.5 per cent female teachers and 21.5 per cent males, which is representative of the gender bias
inherent in primary school settings. The median age category was 46-50 years for teachers.

Instruments

A mixed-mode methodology was utilized in the current study. The data source triangulation
achieved by the combination of both qualitative (interview) and quantitative (questionnaire) methods
was expected to increase confidence in the validity of the data. A semi-structured interview framework
was developed, which focused on teachers’ perceptions of success and outcomes of school PE and their
attitudinal disposition towards PE. While this framework guided the interview topics, specific questions
were asked and topics discussed based on each teacher’s specific responses to the questionnaire. This
allowed more detailed insight into the reasons for the perceptions indicated.

The questionnaire used in the current study was developed to examine teachers’ perceptions of
PE program success and attitudes and practices towards teaching PE. The questionnaire was developed
by the research team and field tested with primary school preservice teachers at the University of
Newcastle who answered questions by reflecting on their previous school practicum PE experiences.
The questionnaire also asked teachers to indicate whether they would be willing to participate in a
telephone interview as part of the study. The questionnaire consisted of the following domains:

- Perceived Success of PE programs - teachers responded to 15 items relating to how successful they
felt their PE programs had been in achieving general content and more specific student outcomes in the
previous 12 months. Specific outcomes related to improved levels of physical activity, self esteem,
basic motor skills, enjoyment, fitness, attitudes and knowledge. A six-point Likert scale was utilized
from (1) very unsuccessful to (6) very successful.

- Frequency and Duration of PE lessons - teachers were asked to indicate (i) whether they taught PE on
a frequent basis which was assessed on a six-point Likert scale from (1) strongly disagree to (6)
strongly agree and (ii) minutes spent teaching PE per week.
- *Attitudes to Teaching PE* - a five-item instrument were used to determine teachers’ feelings towards PE which utilized a six-point Likert scale from (1) strongly disagree to (6) strongly agree and has been previously found to be a reliable ($\alpha = 0.92$) and valid instrument.  

**Data Analysis**

Initially, inductively derived codes were formulated based on an examination of thematic content from three interview transcripts. On the basis of this initial analysis, a draft of a more detailed non-hierarchical coding scheme was developed. This draft was revised after the coding of a further two transcripts, and a final coding scheme was developed. Coding of the remainder of the data was performed. During the coding, more detailed code descriptors were developed and continually revised. This formed the basis of a thematic analysis, applying the constant comparison method.

Simple univariate analyses were used to screen the quantitative data. A normality check was undertaken for discrete variables to ensure distributions were not seriously skewed. Frequency distributions and other descriptive statistics were also examined. Statistical tests were used to determine group differences among selected variables including $t$-tests and analysis of variance (ANOVA). Scheffe’s $t$-test for multiple comparisons was utilized in this investigation, helping to reduce Type I error. Pearson Product Moment correlation coefficients were used to investigate relationships between key variables.

**Results**

**Teacher Beliefs Regarding Benefits and Importance of PE**

Without exception, all teachers identified various benefits for their students from PE programs in physical, social, emotional and cognitive domains. Teachers believed PE was an important component of the primary school curriculum.

*Physical and social benefits.*
Many teachers believed PE is beneficial as it increases student physical activity at school. Most
teachers viewed it as the school’s responsibility to provide physical activity opportunities as many
children would otherwise not be adequately active:

“I think a lot of students spend a lot of time sitting down and I believe if the school doesn’t
provide the opportunity for physical activity, some of those children won’t get anything.”
(Teacher 11)

Some also believed early experiences in physical activity in PE would lead to increased
physical activity later in life:

“the health benefits are pretty important.... You know if they’re able to participate in things
like it in primary school and they enjoy themselves then they are more likely to carry on
with those later in life.” (Teacher 10)

A number of teachers viewed PE as integral in the children’s social development (sportsmanship,
teamwork, life skills). However, the majority stated one of the major benefits was influencing physical
outcomes such as prevention of obesity and increased coordination (gross and fine motor skills):

“I mean with all these reports coming out about obesity.... we need to be doing more about it
because down the line we’re gunna [going to] have all these overweight people that can’t do
anything...you know having heart attacks.” (Teacher 31)

Cognitive and behavioural benefits.

One of the most common beliefs of teachers was that PE positively affected behaviour and
learning in the classroom. Many teachers noted that daily incorporation of PE acted as a release for the
more energetic children, hence making the remainder of the day more manageable for the teacher:

“... it allows them then to come in and settle down to get some work done... if they don’t run
around, they’re climbing the wall. They need to get out and let off that steam and have a run and
have a play and be with their mates.” (Teacher 17)
Many teachers described a negative impact of skipping daily PE in terms of increased behaviour problems:

“\textit{I think it has a positive impact on learning, we find after PE of a morning that the children when they come in to the classroom, they’re more settled, believe it or not, after they’ve done all that physical activity...they’re more ready to get on with their work.}” (Teacher\textsuperscript{12})

Some teachers admitted using PE as a reward for good classroom behaviour. PE was also perceived to allow non-academically minded children to excel at something and hence provide an important source of confidence and self-esteem for these children.

“I see children who are not as competent in the classroom who have trouble academically...excelling in PE field because they’re very good at sport....so it’s good for them to show that that they’ve got a bit of excellence or expertise.” (Teacher\textsuperscript{17}).

A common theme to emerge was teachers’ descriptions of the effects of PE on children’s performance in academic tasks. A number of teachers described benefits to learning, readiness to learn, and retention of learned material immediately following PE lessons. Improved student ability to concentrate was a strong rationale for including PE in the daily program:

“I still claim that they read better once they have been out running around for half an hour, because of the oxygen in their blood. Even their concentration – once they’ve got that 30 minutes out of their system, running around and having a little bit of fun, they are ready to focus again.” (Teacher\textsuperscript{11})

Some teachers claimed a notable difference in concentration span and hand writing (fine motor skills) between physically fit/coordinated children and those deemed not fit:

“The physically active kids are well ahead of other kids in terms of physical fitness, ability to work at school for longer periods. I think it organises their brain somehow. I mean, left and right coordinating, even in their handwriting you can tell a physically fit kid actually writes better ...if they are coordinated, they are physically fit, they will do better in the classroom.” (Teacher\textsuperscript{18})
Some teachers held quite strong beliefs regarding the relationship between PE and academic outcomes, several describing ‘evidence’ of the benefits:

“I had the kids running while they were reciting their spelling words... and the performance and increase was just massive, it was just unbelievable. It was almost like 100% increase in the children’s ability. I can’t understand that. I’ve never followed up on or talked about much but there’s something there you know.” (Teacher22)

And:

“In a study years ago I read that if you took your children out as a reward at the end of lots of academic stuff and played a game with them, that they would learn better. And a friend of mine and I tried it. She didn’t take her class out at the end of every hour and I did. And we did a test at the end and my class achieved better in that test than her children and yet were taught the same.” (Teacher2)

Commonly, teachers believed there were additional benefits and incentives to timetabling PE first thing in the morning:

“I believe that if we do it first thing in the morning, then it’s actually woken them up today and it’s made them receptive to learning. Because that tends to release endorphins then it means that the kids are in a frame of mind where they’re receptive to the things I’m about to do... so by getting that oxygen flow to the brain, we’re optimising that particular situation.” (Teacher27)

Perceptions of Success and Attitudinal Disposition towards PE

As part of the quantitative component to the study, teachers were asked to indicate how successful they believed their PE programs had been in achieving syllabus-related outcomes in primary school PE. In general, teachers believed they were only somewhat successful in achieving outcomes in Games and Sports (M = 4.48, SD = .89), Active Lifestyle (M = 4.36, SD = .91) and Dance (M = 3.85, SD = 1.31). They believed they were unsuccessful in achieving outcomes in Gymnastics (M = 2.42, SD = 1.46). Teachers were also asked to indicate their levels of success in achieving specific student
outcomes in PE. In general, teachers believed that their PE programs had been successful in allowing
students to improve their basic motor skills ($M = 4.68$, $SD = .80$) but only somewhat successful in
improving self-esteem ($M = 4.47$, $SD = .80$), physical activity ($M = 4.44$, $SD = .78$), fitness ($M = 4.41$,
$SD = .81$), interpersonal skills ($M = 4.39$, $SD = .83$), attitudes towards physical activity ($M = 4.38$, $SD
= .79$) and developing an ability to lead healthy and active lifestyles ($M = 4.28$, $SD = .86$). No gender
or age differences were found for the perceived outcome variables.

For the *Attitude to Teaching PE* variable, all items from the scale were examined using
principal components factor analysis with varimax rotation and internal consistency reliability analysis.
Results indicated a reliable construct ($Cronbach’s Alpha = 0.91$, $n = 4$). In general, teachers held
somewhat positive attitudes towards PE in terms of their enthusiasm for teaching PE ($M = 4.10$, $SD =
1.54$), enjoyment teaching PE ($M = 4.67$, $SD = 1.21$) and held particularly strong beliefs about the
importance of PE in the curriculum ($M = 5.38$, $SD = 0.74$) strongly supporting the qualitative findings.
Males possessed significantly more positive attitudes towards teaching PE than females ($t[180] = 2.25$, $p = 0.03$) but no significant age differences were apparent.

Overall, PE lessons were generally taught on a somewhat frequent basis ($M = 4.66$, $SD = 1.06$)
and the average lesson time reported per week was 1 hour and 10 minutes. Correlational analyses
revealed that teachers were more likely to teach PE if they held a positive attitude towards PE teaching
($r = 0.24$, $p < .01$), and perceived their lessons were successful in achieving key outcomes ($r = 0.46$, $p
< .01$). Moreover, a strong relationship existed between attitude to teaching PE and perceived success
of PE in terms of student outcomes ($r = 0.53$, $p < .01$).

Discussion

Examining teachers’ perceptions about the benefits of PE may provide insights into
understanding the nature of the lessons they present, their commitment to teaching PE and program
effectiveness. The findings of this study have confirmed that teachers strongly believe PE leads to a
number of benefits for children. The perceived benefits of PE could be summarised into three major
categories: (i) Enhanced Learning – teachers believed PE impacts positively on learning in the
classroom through a range of mechanisms; improved behaviour, greater student capacity to concentrate
and greater retention of learned material (ii) Physical Benefits – PE provides children with
opportunities to improve fitness to counter societal trends towards obesity and increased sedentary
behaviours (iii) Social and affective benefits – PE experiences help children to improve social skills.
Moreover, some children who may be less gifted academically have an opportunity to experience
success in a different learning environment in PE lessons.

The teachers in the current study taught PE relatively frequently but believed their programs
were only somewhat successful in achieving outcomes relating to physical activity, self esteem, motor
skills and fitness. The frequency of lessons delivered was positively related to a teacher’s perceived
success in PE and attitude to teaching PE. Similarly, those teachers who held more positive attitudes to
teaching PE were more likely to believe their PE programs were successful. Causality cannot be
determined from these findings. It is unclear whether teachers develop positive attitudes due to
delivering successful lessons or whether successful lessons lead to more positive attitudes. However, it
is probable that teachers with more positive attitudes teach PE more frequently and experience more
success as they become more experienced and effective teachers of PE.

Teachers believed that PE was the main context for physical activity for many of their students.
Bailey\textsuperscript{14} also described schools as one of the main sources for the provision of regular, structured
physical activity. Parental safety concerns and economic pressures have contributed to lower levels of
physical activity outside of school.\textsuperscript{14} The health benefits of physical activity were a major reason
provided by teachers for participation in PE lessons. The benefits of physical activity are well
established in the literature\textsuperscript{24}.

Although a causal link between PE and academic performance has not been established,
teachers in the current study were adamant that this relationship existed and was a prime motivator for
delivering PE. Some scholars have established an association between scholastic achievement and PE lessons, exercise, and fitness, albeit as a result of improved self-esteem and well-being\textsuperscript{25}. In an extensive review of literature concerning the impact of daily PE lessons upon the academic performance of primary school students, Shephard\textsuperscript{26} concluded that students’ ability to learn and improve academic skills could be enhanced by receiving extra PE lessons. At the very least, Shephard\textsuperscript{26} noted that students could be involved in daily PE without jeopardizing academic growth.

The finding that many teachers rationalized PE as a ‘break’ from formal curriculum to help students concentrate better in class is important. Almost 15 years ago, Hickey\textsuperscript{27} reported similar results in his study of PE in primary schools. However, Kirk\textsuperscript{28} has previously warned of the dangers of rationalizing PE on the basis of academic benefits. He claimed that by contrasting physical activity with academic or cognitive work and justifying the place of PE based on this contrast – the mind and body are separated and the cognitive benefits of physical activity and PE may not be recognized. Furthermore, he explained that by also rationalizing PE on the sole basis of physiological and physical health purposes, there is an implicit (or even explicit) acceptance that PE has no educational purpose or benefits other than getting children moving.

The description of lessons provided by teachers in the current study confirmed that many PE programs had little educational focus. Only few references were made to planned/structured lessons with syllabus aims and appropriate PE pedagogies implemented. It was common for teachers to describe PE lessons where the main objective was to ‘get children outside and running’. PE lessons that resemble fitness sessions may actually turn students off physical activity. As Kirk\textsuperscript{28} has previously suggested, PE activities with no clear learning focus may inhibit the promotion of positive attitudes towards physical activity and exercise. Ideally, PE should not just focus on the physical effect of fitness exercises but teach students about fitness in terms of how it is defined, attained and maintained\textsuperscript{29}.

As the educational value of PE appears to be poorly understood amongst classroom teachers, pre-service education and professional development needs to focus on the key aims of PE and
strategies to improve program success. A narrow viewpoint of the purpose of PE may be a key factor in
the delivery of poor quality programs. The value of PE needs to be promoted in terms of its
contribution to education. PE is devalued when it is rationalized in terms of how it enhances a child’s
achievements in more academic subjects. This leads to lower its status. PE has key educational
outcomes and is able to educate in, through and about movement.

In the current study, it appeared that teachers’ perceptions of various benefits of PE did not
necessarily mean that syllabus outcomes were a focus of programs or that quality programs were being
delivered. DeCorby, Halas, Dixon, Wintrup and Janzen found that teachers perceived PE as important
to the development of the whole child, particularly in terms of physical and social development.
However, it was similarly found that a belief in the value of the program did not translate to the
delivery of a quality program nor that students would develop the knowledge and skills to be
considered physically educated children.

Limitations

Although selected schools were considered representative and a random sample of the total
population, teacher participation was conditional upon principal consent being given. Similarly, it is
important to acknowledge that a selection bias was possibly introduced by the self-selected
convenience sampling used, possibly causing more confident PE teachers to volunteer for the
qualitative part of the study.

Conclusions

The finding that teachers believe PE is a valuable component of the curriculum is encouraging.
Teachers believed PE was beneficial as a vehicle for physical activity and positively impacted on
learning and behaviour in the classroom. However, the reasons provided for including PE in their daily
programs were reflected in the delivery of programs of little educational value. Strategies need to be
devised to ensure appropriate PE programs are implemented where key educational outcomes in PE are
the focus.
References


