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CLASSROOM TEACHERS' PERCEPTIONS OF STUDENTS WHO PARTICIPATE IN DAILY PHYSICAL EDUCATION

presented by

Dennis Merrill Scruton Jr.

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of the requirements for the

Ph.D. degree in Kinesiology

Major Professor's Signature

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CLASSROOM TEACHERS' PERCEPTIONS OF STUDENTS WHO PARTICIPATE IN DAILY PHYSICAL EDUCATION

By

Dennis Merrill Scruton Jr.

A DISSERTATION

Submitted to
Michigan State University
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Kinesiology

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ABSTRACT

CLASSROOM TEACHERS' PERCEPTIONS OF STUDENTS WHO PARTICIPATE IN DAILY PHYSICAL EDUCATION

By

Dennis Merrill Scruton Jr.

Daily physical education impacts the format and nature of the school day. The classroom teacher deals firsthand with this impact. This study examined classroom teachers' perceptions of the impact of daily physical education programs on their students and analyzed what they believe are the true educational benefits or detriments of their students' participation in physical education. The Delphi method was used to survey observed outcomes within the cognitive, physical, behavioral, and social domains. The National Association for Sport and Physical Education, the Centers for Disease Control and Prevention, the National Association for State Boards of Education, and the American Academy of Pediatrics all recommend daily physical education. Classroom teachers' perceptions of physical education programs may have a profound effect on both the learning environment and the continued existence of physical education programs in schools that have been faced with budget cuts.

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DEDICATION

For my wife, Kimberly: without her none of this would have been possible. For my parents, Debbie and Denny: Without them nothing would be possible. And finally for my children, Kiden and Kolby, because I want them to know that anything is possible.

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ACKNOWLEDGMENTS

From the beginning of this dissertation, to the final draft, I owe an immense debt of gratitude to my advisor, Dr. Crystal Branta. Her sound advice and careful guidance were invaluable as I attempted do something I wasn't sure I could do. I would also like to thank my committee, Marty Ewing, John Haubenstricker, and Brian Delany: It's been a long road; thanks for traveling it with me. Finally, I would be remiss without mentioning the teachers who participated in this study. Without your time and cooperation, this project would not have been possible. To each of the above, I extend my deepest appreciation.

TABLE OF CONTENTS

1. The 10-

2. Grade D

3. Years o

4. Domains

5. Frequen
Classro

6. Mean Sc
Survey

LIST OF TABLES

1. Perc nta
   educ tio

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LIST OF FIGURES

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Chapter 1

Introduction

Statement of the Problem

Daily physical education impacts the format and nature of the school day as time is set aside for directed physical activity. The students are physically active at various times each day, which in turn can lead to different moods or energy levels throughout the day. The classroom teacher deals firsthand with this aspect of the school day. Classroom teachers prepare students for physical education, teach content before and after physical education class, monitor student behavior, and notice direct or indirect outcomes in both socialization and academics.

Classroom teachers may be the best resource for understanding how daily physical education affects students in the classroom. It is the responsibility of investigators to measure variables in order to enhance the learning environment. Classroom teachers' perceptions of physical education programs may have a profound effect on both the learning environment and the continued existence of physical education programs in schools that have been faced with budget cuts. Therefore, the purpose of this investigation was to examine the perceptions of classroom

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teachers regarding effects of physical education on students.

Classroom teachers' interest in the amount of physical education afforded to their students is valuable for various reasons. First, structured activity time could be beneficial in preparing students for the next classroom learning experience. Second, increased physical education time also could provide classroom teachers with additional planning time. Finally, many teachers have been witness to the current trend of child obesity in America and may believe that physical education can help.

Physical education is an important subject for school-age children and is endorsed by numerous professional organizations. The National Association for Sport and Physical Education (NASPE), the Centers for Disease Control and Prevention (CDC), the National Association for State Boards of Education (as cited in NASPE, 2006), and the American Academy of Pediatrics (2006) all recommend daily physical education. These recommendations equate to 150 minutes per week for elementary school students and 225 minutes per week for middle school and high school students.

Many states and school districts require some physical education for all students (see Figure 1). However, most

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students are not receiving the amount of physical education recommended by the national agencies (NASPE, 2006). National organizations have continued to urge state and local education agencies to implement daily physical education classes for all students in kindergarten through 12th grade.

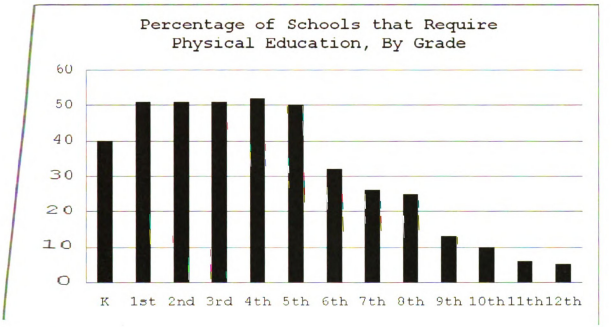

Figure 1. Percentage of U.S. schools that require physical education by grade. *Note.* From "Shape of the Nation: A Position Paper From the National Association for Sport and Physical Education" by NASPE, 2006, Reston, VA: Author. Copyright 2006 by NASPE. Reprinted with permission.

Although physical education enrollment in the total student population did not change over the past 10 years, the prevalence of students who attended daily physical

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education has decreased substantially (NASPE, 1999) . According to Brink (2002), 94% of elementary schools currently do not provide daily physical education to their students. In addition, Brink also states that the number of students who are physically active in daily physical education classes has decreased in the past decade as well.

The recommendation to provide daily physical education addresses many important issues facing Americans today. First, physical inactivity has become a serious problem in the United States. More than half of U.S. adults do not meet recommended levels of moderate physical activity, and one-fourth engage in no leisure-time physical activity at all (Surgeon General, 1996).

Current recommendations state that children and adults should strive for at least 30 minutes of moderate-intensity physical activity daily (Pate, Heath, Dowda, & Trost, 1996). Inactivity is more prevalent among those with lower incomes and less education, and beginning in adolescence, affects females more than males (Surgeon General, 1996). A pattern of sedentary behavior begins early in life, making the promotion of physical activity among children imperative.

Physical inactivity is a major cause for concern, especially because it affects healthy weight. More U.S.

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children are overweight or obese today than ever before (Figure 2). It is common for health problems to develop among obese individuals. Obesity-related diseases such as hypertension, type II diabetes, and cardiovascular disease cost the U.S. economy more than $100 billion every year (Centers for Disease Control and Prevention [CDC], 1997). Inactivity and poor diet cause at least 300,000 deaths a year in the United States. Only tobacco causes more preventable deaths.

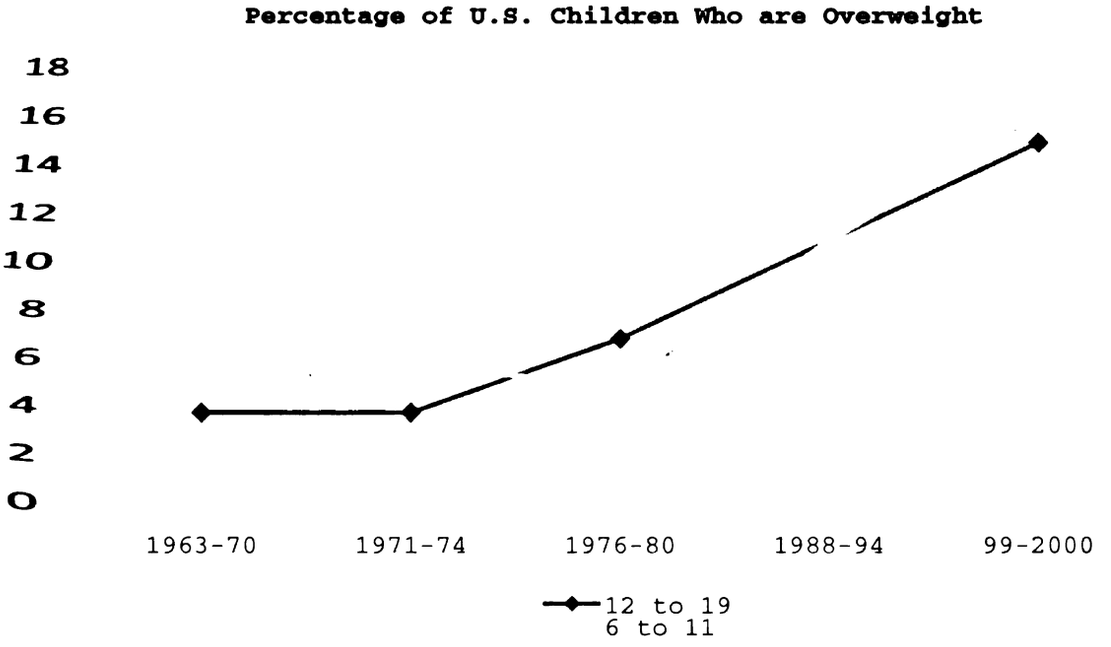

Figure 2. Percentage of U.S. children who are overweight. *Note.* From "Shape of the Nation: A Position Paper From the National Association for Sport and Physical Education" by NASPE, 2006, Reston, VA: Author. Copyright 2006 by NASPE. Reprinted with permission.

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There is no debate that regular physical activity has significant health benefits, and even modest increases in energy expenditure can have health-enhancing effects. Individuals who are active have a lowered risk of colon cancer, an increase in bone density, a reduction of anxiety, an improvement in body image and mood, better development of physical fitness, and improved weight control through caloric expenditure (Blair & Hardman, 1995). Weight control is of particular importance to children, who, like adults, are also experiencing the epidemic of obesity (62% and 34%). These health benefits can be derived simply from becoming more physically active, but the greatest benefits come from engaging in planned and structured exercise, such as daily physical education.

Although the numbers are relatively low, schools that have implemented daily physical education, have done so with great success. Research shows that daily physical education makes good sense. Beyond the obvious physical health benefits of regular activity, there are many other reasons that physical education should be a core component of the curriculum in every school. Quality physical education programs have been shown to increase the physical competence, health-related fitness, self-esteem, and enjoyment of physical activity for all students,

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encouraging them to be physically active for a lifetime (Seefeldt & Vogel, 1986).

Studies also have shown various benefits in the classroom, including improved test scores and higher grades (Young, 2003), as well as development of social skills such as compromising, accepting differences, and encouraging other students (Dorne, Holian, & Kaplan, 2001). Canadian studies of daily physical education also have found improved self-discipline, peer relationships, and goal-setting strategies (Canadian Institute of Public Health Inspectors, 2005).

Children learn through a variety of methods. Academic material may have greater meaning for children when they are taught across the three domains of learning: cognitive, affective, and psychomotor. Greater depth and relevance can be achieved when the subject matter is related to each domain of learning. Physical education is one of the few places in school where all three learning domains are consistently used. Physical education learning experiences also offer a unique opportunity for problem solving, self-expression, socialization, and conflict resolution.

Many studies have examined the effects of daily physical education. Most of these studies have been conducted using physical educators and students. The

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classroom teachers' input and perceptions about physical education have been largely ignored in research.

Perception is defined in Merriam-Webster's Online Dictionary (2009) as an "attitude or understanding based on what is observed or thought." A teacher's perception, like anyone else's, is ultimately a product of his or her belief system. Unveiling these beliefs about physical education could provide further insight into the effects of daily physical education.

Teachers' beliefs have long been regarded as critical to the reform of schools. Furthermore, attitudes, beliefs, and expectations have been found to guide and direct teachers' responses toward various students (Pajares, 1992). Teachers hold beliefs about students based on race or ethnicity, language, social class, gender, religion, ability or disability, and other distinctions that lead teachers to differential expectations and treatment of their students (Sparapany, Abel, Easton, Edwards, & Herbster, 1995).

Currently, no studies have examined classroom teachers' perceptions about the beneficial or detrimental effects of daily physical education programs. This lack of regard for teachers' thoughts on this issue may be a serious omission. In contexts in which educational changes

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are being implemented, teachers' attitudes take on tremendous importance. Teachers' attitudes and beliefs are the single strongest guiding influence on teachers' instruction (Cuban, 1993).

Fortunately, there have been a few studies that provide a glimpse of what teachers believe about daily physical education. Recent national surveys by the NASPE (2004) and the Robert Wood Johnson Foundation (2004) show that parents, teachers, and students believe that physical education should be a critical component of the school day. The Robert Wood Johnson poll found that 85% of parents and 81% of teachers believe that students at every grade level should be required to take physical education every day, and more than 75% of parents and teachers believe that school boards should not eliminate physical education for budgetary reasons or because of the need to meet stricter academic standards. These studies show promise that teachers believe physical education is important, but why teachers hold this belief remains to be investigated.

Daily physical education programs have been studied and recommended by various agencies. However, most school districts still do not require daily physical education in their schools. Until this situation is remedied, research

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must examine the effects of daily physical education on students.

Because this study explored teachers' perceptions about the effects of physical education instruction on students, it was necessary to clarify the relationship, if any, that is observed by classroom teachers who have taught in schools with daily physical education. To discover whether daily physical education facilitates any change in students, it would seem logical to ask the teachers who are teaching these same students during the rest of the school day. Teachers who have taught where physical education is taught daily could provide the most insight into the potential benefits that daily physical education provides to students after they leave the gymnasium.

In addition, this study examined whether years of experience or perceptions of teachers' own physical education experience played a role in the teachers' perceptions of the effects of daily physical education on their students. Teachers who have more experience, especially teaching students with daily physical education, may be able to attribute outcomes easily based on the amount of times these outcomes have presented themselves in the classroom. Less experienced teachers may be younger and experience less health problems overall. Younger teachers

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may also be more fit and healthy which may allow them to observe outcomes they themselves are experiencing during their own physical activity.

The teachers' experiences during their own school physical education may also impact the results. Teachers who had negative physical education experiences may still view physical education negatively, and therefore, would not attribute outcomes to the physical education program. Conversely, a logical construction of events would suggest that teachers with positive physical education experiences, would perceive the program more beneficial to their students. These topics were explored to see how potential biases could affect the results.

This study examined classroom teachers' perceptions of the impact of daily physical education programs on their students, in order to analyze what they believe are the true educational benefits or detriments of their students' participation in physical education. The research question that guided this study was "What are teachers' perceptions of the impact of daily physical education on students in the classroom?" This study was interested in observed outcomes within the cognitive, physical, behavioral, and social domains.

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This study also aimed to explore the following sub-questions:

1. Do teachers who had positive physical education experiences in school identify more positive benefits related to daily physical education than those who had negative physical education experiences?
2. Does teaching experience (years of teaching) play a role in how teachers view the impact of daily physical education?

Definition of Terms

Two common terms were used throughout the study, *classroom teachers* and *analysis team,* and understanding the difference between the two groups involved was vital to providing clarity for the reader.

Classroom teachers taught at schools that provide daily physical education to their students, but they themselves were not physical educators.

The *analysis team* for this study included three professors from Shenandoah University and one professor from Michigan State University. Three of the four members had experience using the Delphi Method in previous research studies. Team members were chosen based on their

familiarity with physical education and sports as well as their past research experience using the Delphi Method.

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Chapter 2

Review of Literature

Daily Physical Education is associated with many positive outcomes for children of all ages (U.S. Department of Health and Human Services, 1996). When physical education classes end, the classroom teachers usually have first contact with children in both learning and social settings. Therefore, it was worthwhile to examine the perceived outcomes that teachers attributed to daily physical education. This review examined two main sets of research that led to the question, "What are classroom teachers' perceptions of their students who attend daily physical education?"

First, we explored teacher perception research. Teacher perceptions, beliefs, motivations, and attitudes are constantly changing. The intention has been to find out why a teacher behaves in some ways and not in others. What observations or beliefs shaped the classroom environment? If we were looking to uncover the perceptions teachers have of their students that are directly related to physical education, we first investigated topics that have emerged within teacher perception research that may affect our findings. The first half of the literature review explored teacher perceptions, and examined how teacher bias, teacher

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judgments, and differences in social capital may influence the study under investigation.

Research has explored teacher perceptions in various areas including their teaching strategies, careers, and competency levels (Cochran-Smith & Lytle, 1999). The self-reflection of teachers has made information accessible to both practicing and prospective teachers. This study examined the importance of looking at an issue or policy from the teacher's point of view and what that means from an educational standpoint. The second area that the literature review investigated includes research concerning the impact of physical education.

While there are three commonly recognized domains of learning (cognitive, affective, and psychomotor), for this study the affective domain was labeled "social" and the psychomotor domain was divided into the physical and behavioral areas. Exploring these four domain areas allowed the researcher to define the areas of research more precisely for the participants. These domain topics also served as the outline for the impact of physical education research review.

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Teacher Perceptions

Teacher Bias

The perceptions that teachers and students bring with them into the classroom influence every aspect of the school environment (McLaughlin & Talbert, 1992). Teacher ratings of student achievement are related to physical attractiveness and to classroom behaviors such as attentiveness, neatness, and independence (Dusek & Joseph, 1983; Pedulla, Airasian, & Madaus, 1980). In the one study that controlled for achievement differences, Doherty and Conolly (1985) found that London grade-school teachers gave higher estimates of achievement to boys whom they perceived as tidy and to both boys and girls with whom they had a more positive relationship.

However, data obtained from 173 students and 7 teachers regarding teacher bias revealed that teacher expectations had weak self-fulfilling effects, strongly predicted student achievement mainly because they were accurate, and had no biasing effects on teacher judgments (Trouilloud, Sarrazin, Martinek, & Guillet, 2002). In a meta-analysis of 16 studies that focused on teacher expectations, Dusek and Joseph (1983) concluded that gender was not directly related to teacher expectations of

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achievement. Findings from more recent research varied according to the grade level and subject area examined.

A number of studies have shown that teachers rate boys lower than girls on reading ability (Hartley, 1982), even when boys and girls have identical achievement (Ross & Jackson, 1991). Palardy (1969) found that when teachers believed that boys were less successful than girls in reading, these boys performed more poorly than did male students about whom teacher beliefs were more favorable. Others have found that teachers may overestimate the ability of boys (Doherty & Conolly, 1985; Jussim, 1989; Jussim & Eccles, 1992), and still others showed no gender bias in teacher judgments of elementary and junior high school students (Dusek & Joseph, 1983; Hoge & Butcher, 1984; Hoge & Coladarci, 1989).

Sadker and Sadker (1994) have conducted over 20 years of research on sexism in American classrooms. They explored the hidden curriculum, namely, the effect of gender bias on self-esteem, test results, and the professional orientation of girls from primary education through college. The results suggested that girls are systematically denied opportunities in areas where boys are encouraged to excel, often by well meaning teachers who are unaware that they are transmitting sexist values. Girls are taught to speak

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quietly, to defer to boys, to avoid math and science, and to value neatness over innovation, appearance over intelligence (Sadker & Sadker, 1994). Further research findings demonstrated that male students were given more attention in classrooms, that educators were unaware of the impact of this bias, that brief training could eliminate gender bias from the classroom, and that increasing equity in the classroom increased teacher effectiveness (Sadker & Sadker, 1986).

Teacher expectations for ethnic minority children or children from lower socioeconomic groups were generally lower than those for other children (Dusek & Joseph, 1983). Studies in which achievement differences among students have been controlled showed that these lowered expectations may reflect bias.

A meta-analysis of experimental studies on teacher expectations (Baron, Tom, & Cooper, 1985) found that teacher judgments about White and middle-class students were more favorable than those about Black and lower-socioeconomic-status students, despite comparable achievement. Other studies also revealed ethnic bias. Hall, Howe, Merkel, and Lederman (1986) showed that teachers in junior high school science classes rated the ability of White students higher than that of Black students who were

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similar in achievement. Moore and Johnson (1983) found that teacher judgments and grouping assignments were biased against low-socioeconomic-status Black students when compared with other groups of students with similar grades.

During the 1990s research evolved into a cultural phenomenon where teachers inquired into their own practices and student learning (Cochran-Smith & Lytle, 1999). Researchers moved to a more socialist approach. The investigators stopped talking themselves and listened to what teachers had to say concerning their teaching. Several new terms for teacher research were encountered in education literature, including: action research, practitioner research, teacher-as-scholar, practical inquiry, interactive research, classroom inquiry, and practice-centered inquiry (Williamson, 1992). The common thread running through various conceptions of teacher research during that period was that the teacher is an active constructor of knowledge rather than a passive consumer of it (D. M. Miller & Pine, 1990; Williamson).

Another study demonstrated how teachers working in different settings viewed the same student in dramatically different ways, and yet constructed different conceptions of the students as learners (McLaughlin & Talbert, 1992). The focus was on contemporary, nontraditional students

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whose academic backgrounds, families, values, or life circumstances differ from those of White, middle class students. The findings suggested that different conceptions of students within and between schools challenged the coherence of education policy (McLaughlin & Talbert, 1992) Some low-level policies could implemented by teachers themselves. Examples included class discipline and grading formats. Therefore, policies could be implemented, executed, or supported differently based on perceptions of the school's teachers. Schools in this study had adopted a policy of daily physical education. Teachers' perceptions of these programs became increasingly important due to the power of teachers' perceptions on the educational experience.

Teacher Judgments

Teachers make judgments on a regular basis about the ability of students, and their appraisals can have critical implications for curricular and instructional opportunities and for the messages about ability conveyed to children. Theorists of social perception have long been fascinated with the potential of such judgments to become self-fulfilling prophecies (Merton, 1948). The Pygmalion effect (Rist, 1970) refers to situations in which students perform better than other students simply because they are expected

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to do so. The Pygmalion effect required students to internalize the expectations of their teachers. It was a kind of self-fulfilling prophecy, and in this respect, students with poor expectations internalized their negative label, and those with positive labels succeeded accordingly.

However, researchers suggest that Rist provided a wealth of observations concerning teacher treatment, but he provided few regarding student performance (Jussim & Eccles, 1995). The differential treatment alone is not evidence of self-fulfilling prophecies. Differences in student outcome measures are also needed. IQ scores were measured but did not change. A study that included more than 10,000 high school students (Williams, 1976) provided a much more rigorous analysis of the role of social class in educational self-fulfilling prophecies. He found teachers held higher expectation for students from upper socioeconomic backgrounds. However, these finding proved the expectations to be accurate instead of self-fulfilling prophecies. Williams's study rigorously tested for self-fulfilling prophecies and found none (Jussim & Eccles, 1995).

Despite limitations with regard to drawing causal conclusions, studies are critical in strengthening the

validity of findings and providing an ethically sound way to explore negative or positive teacher expectations. In many studies, researchers examining self-fulfilling prophecies have typically focused on false beliefs to distinguish teacher-driven effects from student-driven effects. At issue in the study of false beliefs was both the degree and the meaning of a teacher's so-called inaccuracy in judging student performance.

One contributor to teacher judgments of ability was actual student performance. Teacher estimates of children's intelligence or ability have been shown to be consistent with performance on standardized tests (Hoge & Coladarci, 1989), including IQ (Hoge & Butcher, 1984; Svanum & Bringle, 1982) and achievement tests (Doherty & Conolly, 1985; Egan & Archer, 1985). This relationship has been found as early as preschool (Stoner & Purcell, 1985) and has been demonstrated across elementary school subject areas (Hopkins, George, & Williams, 1985).

A 2001 study by Givvin, Stipek, Salmon, and MacGyvers examined the nature and accuracy of teachers' judgments about students' motivation related to mathematics. Seventeen fourth- through sixth-grade teachers and 100 of their students participated in this study. Teachers were asked to rate six target students' motivation four times

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during the school year. At each of these times students also rated their own motivation. Teachers' ratings were more stable over time and were less differentiated concerning motivation than were the students' ratings. The findings suggest that teachers need to pay careful attention to evidence related to children's motivation that might contradict their perceptions and, therefore, support more effective interventions.

Teacher judgments were strong predictors of future achievement. Perry, Guidubaldi, and Kehle (1979) demonstrated that kindergarten teacher ratings of children's social competence predicted the children's third-grade spelling and math achievement as well as IQ scores. Alexander, Entwisle, and Dauber (1993), in their examination of teacher ratings of classroom behavior, found that first-grade teacher ratings on interest/participation and attention span/restlessness scales were correlated with student achievement test scores at the end of that year and with student grades over the next 3 years.

Other studies have also shown the efficacy of early teacher ratings in predicting achievement in elementary school (Feshbach, Adelman, & Fuller, 1977; Kohn & Rosman, 1972). Although their results highlight the accuracy of teachers in predicting their students' future achievement,

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these studies did not specifically explore the possibility that teacher judgments of student ability may influence student performance and hence the self-fulfilling prophecy.

Consistent empirical support existed for teacher expectancy effects on student performance, both under experimental conditions and in naturalistic studies (Babad, 1993; Raudenbush, 1984; Rosenthal & Rubin, 1978). Some researchers suggested that the largest effects are student driven rather than teacher driven and that expectancy effects resulting from bias in perceptions were relatively small, accounting for only about 5% to 10% of the variance in student achievement (Brophy, 1983; Jussim, 1989; Jussim & Eccles, 1992). Moderating factors played a critical role in increasing or decreasing the magnitude of such effects (Babad, 1993; Weinstein, 1993).

Factors that have been examined to date include, the time period of instruction and the credibility of teacher expectancy (Raudenbush, 1984), classroom differences in the degree of child-reported differential teacher treatment (Brattesani, Weinstein, & Marshall, 1984), and teacher differences in susceptibility to stereotypically biasing information (Babad, Inbar, & Rosenthal, 1982). For example, Brattesani et al. found that after controlling for prior achievement, teacher expectations explained 9% to 18% of

the variance in year-end student achievement in high differential treatment classrooms, versus 1% to 5% in low differential treatment classrooms.

The empirical evidence for carryover or accumulation of expectancy effects was limited but suggestive. In a sample of 3,000 male high school students across four school years, West and Anderson (1976) found that the linkage over time between grade point average and subsequent teacher expectations was stronger than that between expectations and subsequent grades. Crano and Mellon (1978) concluded the opposite in their study of 4,300 elementary school students; they found that teacher expectations drove student grades. O'Connell, Dusek, and Wheeler (1974) identified a strong relationship between teachers' expectations in one school year and student achievement at the end of a second year. However, given the substantial correlation between teachers' expectations and children's previous achievement, they concluded that the evidence suggested that the correlation was more of a predictive measure and less of direct relationship to achievement.

In the experimental study *Pygmalion in the Classroom* (Rosenthal & Jacobson, 1968), students were randomly identified to teachers as late bloomers. Two years after

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the initial educational expectancy was provided, there were no overall expectancy effects for children across grade levels. However, among fifth-grade students, those identified as late bloomers had a significant expectancy advantage among the teachers who had not received the biasing information, suggesting a carryover effect. The carryover became evident because these late bloomers avoided being labeled as low-performing students.

The most compelling example of the accumulation of teacher expectancy effects was found in Rist's (1970) qualitative study of one urban kindergarten class of African American students. Rist documented a teacher's differential seating assignments and treatment, which were based on social class but not on IQ differences among the children. In the first and second grades, there was little movement of children from the lower-achieving tables to the fast-learner table, where children received the most positive teacher treatment and challenging curriculum. Although this case study was suggestive of bias in teacher perceptions of student ability and of the maintenance of differential treatment across subsequent school years, in the absence of achievement data it said little about relationships to student performance.

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Issues of accuracy and bias were of interest in regards to teacher decision making and teacher expectancy effects. Judgments by teachers could result in curricular and instructional decisions and could be used in studies of student behavior, where teacher ratings were used as proxies for standardized measures of achievement. In most studies of teacher judgment of student ability, standardized achievement or IQ scores were the criterion used. Bias has been typically defined "in terms of directional deviations (e.g., positive or negative) from a criterion" (Robins & John, 1997, p. 650).

In studies of teacher expectancy effects, the difference between teacher expectations and student prior achievement has become, by definition, evidence of the false beliefs necessary for self-fulfilling rather than self-maintaining prophecies (Brattesani et al., 1984). When these scores are used, discrepancies have been described either as perceived-tested ability discrepancies (Cooper, Findley, & Good, 1982) or as over- and underestimates of ability relative to prior achievement (Soulé, 1993). The perceptions teachers attributed to daily physical education programs have the opportunity to carry over into other aspects of the classroom.

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Social Capital

Teachers, like students, bring their own social and cultural capital to the classroom. The concepts of social and cultural capital explain how inequality is reproduced in schools. High-status cultural practices and knowledge, and access to elite social networks, are often indications of how success is recognized and rewarded. The dynamics of negotiating social and cultural capital is what provides the opportunity to make social reproduction less prevalent in the future.

Bourdieu (1986) defined cultural capital as the way in which schools reflect standards of cultural expression and define the abilities that are valued by the socially and economically dominant class in society. Students who bring a highly valued cultural capital to the school are apt to be most successful in meeting criteria set by the schools. This situation could result in the school system supporting and justifying the privileges of children of the wealthy and powerful.

A study by Putnam (1993) found that child development is powerfully shaped by social capital. Reciprocity within a child's family, school, peer group, and larger community provided trust, norms, and social networks that effect

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opportunities, choices, educational achievement, and—hence—behavior and development.

The subjective diversity in teachers' understanding of the students obviously affected the ultimate concern of policy makers and the public, which is students' academic performance and accomplishment (McLaughlin & Talbert, 1992). If teachers are to implement change, then reformers must consider the distribution of social capital in any school in which they seek to implement change. Teachers' perceptions of students are influenced by how teachers' and students' cultural capital correspond. With similar cultural and social capital, teachers and students were more likely to have a more successful learning experience. In regards to physical education, teachers who have had positive physical education experiences and are currently physically active, should be able to get through to the student that excels physically but struggles academically.

The following section reviewed the literature regarding teacher perceptions and physical education research within the cognitive, behavioral, physical, and social domains. Investigation in each domain area provided further insight into the question under investigation.

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Impact of Physical Education

The Cognitive Domain

Children in elementary school acquired knowledge through physical exploration of their environment. Physical education may have provided children with learning experiences essential to the formation of mental schemes or the building blocks of thinking. Children formed more effective schemes by physically interacting with their environment. Quality physical education programs facilitated exploration of movement in various capacities, enhancing knowledge acquisition.

A positive relationship between physical activity and academic performance also has been explored in several studies conducted by the California Department of Education (Shephard, 1997). Various studies have supported one another in suggesting that when a substantial amount of school time is dedicated to physical activity, academic performance met and even exceeded that of students not receiving additional physical activity (Dwyer, Sallis, Blizzard, Lazarus, & Dean, 2001; Linder, 2002; Shephard, 1997; Tremblay, Inman, & Williams, 2000).

A more recent study conducted at Michigan State University suggested that vigorous physical activity outside of school also contributed to higher academic

achievement (Coe, Pivarnik, Womack, Reeves, & Malina, 2006). The findings of this study also suggested that vigorous activity in physical education classes played a role in increasing academic performance. However, because most children do not participate in vigorous activity outside of school, it became increasingly important to provide students with opportunities for physical activity experiences within the school day.

In addition to the health and social effects of daily physical education, there were many proven cognitive benefits that occur as a result of increased activity time for children. Research has revealed the effects of physical activity on the brain and neural connections. Physical activity was a key influence on problem-solving ability and academic achievement among children (Jensen, 1998). In part, this may be because children learn through a variety of teaching modes—visual, auditory, tactile, and physical. Academic constructs have greater meaning for children when they are taught across the three realms of learning, including the cognitive, affective, and psychomotor domains. Greater depth and relevance could be achieved when the subject matter constructs are related to each domain of learning (Keays & Allison, 1995).

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Research studies have repeatedly shown a positive relationship between physical activity and academic achievement (Caterino & Polak, 1999; Pate et al., 1996; Sibley & Etnier, 2003). The most prominent study on physical education and academic achievement began in 1951, in Vanves, France. The school day was divided so that four hours were devoted to academics and one to two hours were devoted to physical education, art, music, and supervised study (Hervet, 1952). By 1960, not only were health, fitness, discipline, and enthusiasm superior in the experimental program but also academic performance surpassed controlled classes.

The positive relationship between activity and academic performance also was shown in Trois Rivieres, Ontario, Canada. Primary school students (N = 546) received an additional 5 hours per week of physical education. At the end of 6 years and throughout the final 5 years of the study, the children with increased physical education had consistently better academic grades and achievement in physical education than did their counterparts with less physical education (Shephard et al., 1984).

In the United Sates, the California Department of Education (2002) conducted a research study that individually matched scores from the Stanford Achievement

Test with scores on the Fitnessgram. The Stanford Achievement Test is given as part of California's Standardized Testing and Reporting Program. The Fitnessgram is a state-mandated physical fitness test, given to students in Grades 5, 7, and 9. In the study, reading and mathematics scores were matched with fitness scores of 353,000 fifth-graders, 322,000 seventh-graders, and 279,000 ninth-graders.

There were four main findings of the Stanford (2002) study. First, higher achievement was associated with higher levels of fitness at each of the three grade levels measured. Second, the relationship between academic achievement and fitness was greater in mathematics than in reading, particularly at higher fitness levels. Third, students who met minimum fitness levels in three or more physical fitness areas showed the greatest gains in academic achievement at all three grade levels. And finally, girls demonstrated higher academic achievement than boys, particularly at higher fitness levels (California Department of Education, 2002). In the school setting, these benefits could help to create an environment conducive to learning and a readiness to learn on the part of the student. Exercise led to a state of relaxation that lasted up to 2 hours (Sallis & Owen, 1999). Cabot (1997)

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concluded that relaxation enhanced student achievement by reducing stress, increasing attention span, and helping students learn more effectively.

Further research suggested that teacher-led relaxation exercises contribute to reduced stress levels and improved learning (Credit & Garcia, 1999). Exercise also was accompanied by improved concentration, enhanced creativity and memory, better task performance and problem solving, and improved mood state (Credit & Garcia, 1999). Other benefits included relief of frustration, reduced aggression, and decreased anxiety and depression (Canadian Fitness and Lifestyle Research Institute, 2002). These studies confirmed that increased time for physical education would not jeopardize academic learning.

It was important to examine if the teachers in this study agreed with the outcomes discussed within the cognitive domain. It was from this domain, which is directly related to thinking and learning, that teachers' perceptions could provide strongest support. It was equally important to uncover if teachers believed that daily physical education was taking away from more academic pursuits. With standardized testing (that does not include physical education or health related items) becoming increasingly important, it became important for school to

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find the right mix of activity and academics that would most benefit the students.

The Physical Domain

Quality daily physical education programs improved both health-related and skill-related fitness. They developed health-related fitness by improving cardiovascular endurance, muscular endurance, body mass, strength, and flexibility. Skill-related fitness, which includes speed, balance, agility, power, coordination, and reaction time, was also improved by the repetition that can occur during a daily program.

There are many other benefits gained from physical activity, including development of fundamental movement skills, sports skills, and movement concepts. Physical education addressed the learning of motor skills, as described in the NASPE (2001) standards. When children participated in a variety of movements, they had a foundation of motor skills that they could build upon and refine throughout their school years (Wade, 1992). Students needed to develop basic physical skills and a degree of competence that could lead to a desire to continually participate in physical activity. Student perceptions about physical activity, often formed during physical education, provided the key to future motivation and participation.

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Sports skills and fundamental movement patterns develop largely as a result of learning. Children who do not developed their physical skills tended to become adults who did not participate in regular physical activity (Peddie, 1995). Because motor skills are necessary precursors of participation in physical activity later in life, these immediate outcomes could be useful in motivating physical activity practices for long-term benefit (Sallis, 1993).

Motor skills, when appropriately presented, could support the development of social skills and behaviors, self-esteem, pro-school attitudes, and in certain circumstances, academic and cognitive development (R. Bailey, 2006). A major component of motor skill development was acquisition of sports skills, which are prerequisites to sport participation.

Researchers indicated that "increased sports participation may reduce risks in other areas, such as smoking, drug use, and teenage pregnancy" (Brown & Brown, 1996, p. 19). In addition, physical education students benefited from disease prevention, safety and injury avoidance, a decrease in morbidity and premature mortality, and increased mental health (NASPE, 2001). The physical education program was where students should learn about all

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of the benefits of physical activity as well as the skills and knowledge to incorporate physical activity into their daily lives. The classroom teachers' perceptions in the physical domain could provide valuable insight. The physical and health benefits of daily physical activity were numerous. How these benefits carried over to the classroom has not been explored.

The Behavioral Domain

Research (e.g. Cowen, Wyman, Work, & Parker, 1990, Pianta, Egeland, & Sroufe, 1990) on resilience in children has demonstrated that a positive family environment can help children maintain good functioning in spite of adverse circumstances. Warm, supportive, and invested parental relationships and an organized, cognitively stimulating home environment have been linked with social competence and adjustment in children experiencing chronic illness (Hauser, Vieyra, Jacobson, & Wertlieb, 1985), poverty (Pianta, Egeland, & Sroufe, 1990), and other stressors (Cowen, Wyman, Work, & Parker, 1990).

Resilience also has been examined in children at risk of low academic achievement (Zimmerman & Arunkumar, 1994). Garmezy (1981) found that inner-city African American children who maintained high academic achievement generally came from homes in which the mother encouraged independence

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and ambition and supported the child's academic efforts. In a study of children identified at birth to be at risk of poor cognitive development, Duncan, Brooks-Gunn, and Klebanov (1993) found that the learning environment but not other home characteristics such as the physical environment or level of warmth was a significant predictor of IQ score at age 12. Thus, academic resilience could be fostered by home environments that encourage cognitive efforts but not necessarily by those that provided general support without an intellectual focus.

The concept of resilience also could be applied to the effects of teacher expectations. Children differ in their susceptibility to teacher expectancy effects, with some children more likely to conform to teacher beliefs and others more resilient in the face of low teacher expectations (Madison, 1992; Madon, Jussim, & Eccles, 1997; Soulé, 1993). However, it was not known whether the home environment of children could act as a buffer against low teacher expectations in the same way it buffers other adverse circumstances or, if it does, what features of the home environment moderated this relationship between early teacher expectations and subsequent achievement.

The notion that time was an important variable in learning has been attributed to Carroll's (1963) model of

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school learning. Simply put, the idea has evolved that the more time students spend working on school-related material, the greater their potential for achievement. However, brain function also could indirectly benefit from physical activity, due to increased energy generation, as well as from time outside of the classroom. The increased energy levels and time outside of the classroom could give relief from boredom, resulting in higher attention levels during classroom instruction (Linder, 1999).

Skill development programs have also proven to be effective outside of the school day. The Canadian Housing Project implemented Participate And Learn Skills (PALS), a nonschool skill-development program offered to all children 5-15 years of age living in a publicly-supported housing complex in Ottawa, Ontario. The findings of this study indicated that clear and statistically significant changes occurred on unobtrusive measures of antisocial behavior outside home and school. A cost-benefit analysis indicated that potential savings accrued, primarily in reduced vandalism but also in reduced police and fire costs (Jones & Offord, 1989). Incorporating daily physical education that includes skill development as a core component could change student behavior in the classroom as well.

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Assessing student behavior was an everyday part of the teacher's job. Uncovering what teachers noticed about their students' behaviors before and after class would speak greatly to which behaviors they attributed to the daily physical education program.

The Social Domain

Physical education also could improve aspects of the affective or social domain. Physical competence has been shown to build self-esteem in students (Gruber, 1985). Physical education programs also have been proven to enhance the development of both competence and confidence in motor skills performance (Evans & Roberts, 1987). Confidence was a factor that could lead to continued participation in physical activity, one of the goals outlined in *Healthy People 2010* (U.S. Department of Health and Human Services, 1996). Daily physical education has the potential to develop a desire to be active and physically fit that would keep children active into their adult lives.

Summary

Separate bodies of literature existed on (a) teachers' perceptions of their students and (b) impact of physical education on students in various domains. To date, though, no study has examined the classroom teachers' perception of the impact that physical education has on children in the

classroom. If students are indeed changed in some way as a result of participation in regular physical education, classroom teachers are in the best position to document those effects. However, relying on teacher perceptions was tricky and more likely to be accurate when teachers valued the cultural and social capital of their students. Because teachers' beliefs are important to the reform of schools (McLaughlin & Talbert, 1992), classroom teachers' perceptions of the effects of physical education could help more schools adhere to recommendations of daily physical education by major professional organizations.

The current study was unique because it documented the perceptions of classroom teachers regarding the impact of daily physical education on students in the classroom. The documentation and dissemination of the information could help parents, administrators, and policy makers understand the influence of daily physical education on students. These understandings could lead to school-wide changes in the availability of physical education for all children.

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Chapter 3

Methods

Research Question

The purpose of this investigation was to answer the question "What are teachers' perceptions of the impact of daily physical education on students in the classroom?" This study focused on observed outcomes within the cognitive, physical, behavioral, and social domains.

Study Design

This study used a qualitative approach to understanding the perceptions of classroom teachers. Open-ended questions were asked, and the responses were collated into themes. Teachers were asked to respond to the themes to help determine the degree to which they rank the items generated. The process was guided by the Delphi method (Fowles, 1978).

Delphi Process

This study utilized a Web-based modification of the Delphi method to collect classroom teachers' opinions and achieve consensus on the perceptions of classroom teachers related to the effects of daily participation in physical education. The objective of most Delphi applications is the reliable and creative exploration of ideas, or the production of information suitable for making decisions.

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The Delphi method is a way of structuring a group communication process so that a group of experts could gather information effectively (Linstrone & Turoff, 1975).

A primary objective of a Delphi study is to obtain consistent opinions from a group of experts on a given subject, in two or more successive rounds (Dajani, Sincoff, & Talley, 1979). The technique was fairly straightforward. It comprised a series of questionnaires sent to a preselected group of experts, by mail or by computerized systems.

The Delphi method was an exercise in group communication among a panel of geographically dispersed experts (Adler & Ziglio, 1996). After a panel of experts was identified and selected, the experts were asked to provide opinions on an open-ended question, and later, on a structured questionnaire. The Delphi method could overcome the disadvantages of conventional committee action. Fowles (1978) suggested that anonymity, controlled feedback, and statistical response were what characterize Delphi.

The group interaction in Delphi was anonymous, in the sense that opinions of individual panelists were not shared with other members of the panel. The outcome of a Delphi sequence was to determine the opinion of experts. The results of the sequence were only as valid as the opinions

of the experts who made up the panel (Martino, 1983). The panel viewpoint was summarized statistically rather than in terms of a majority vote.

The panelists' responses to the questionnaire were subjected to qualitative analysis, and a Likert-type questionnaire was then developed using the results of this analysis. The next phase asked the same panelists to rank items, measuring their relative importance using a Likert scale.

Wissema (1982) stated that the Delphi method has been developed in order to facilitate discussion between experts without permitting certain social-interactive behavior, which happens during a normal group discussion and hampers opinion formation. Furthermore, it allowed anonymity to participants and thereby facilitated the formation of group judgments while eliminating pressure from individuals who may dominate the process (Rowe, Wright, & Bolger, 1991). The Delphi method also helped to minimize the effects of group interactions and maximize the ability to elicit expert knowledge (Linstrone & Turoff, 1975; Woudenburg, 1991). The 10 steps in the Delphi method described by Fowles (1978) were followed in the current study as outlined in Table 1.

Table 1

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Table 1.

The 10-Step Delphi Method

1.	Formation of an analysis team to undertake and monitor a Delphi on teacher perceptions.
2.	Selection of a group of teachers to participate in the study.
3.	Development of the First-Round Delphi questionnaire. The initial questionnaire was created by the analysis team.
4.	Test of the questionnaire for proper wording.
5.	Transmission of the first questionnaires to the teachers.
6.	Analysis of the First-Round responses.
7.	Preparation of the Second-Round questionnaires by the analysis team.
8.	Transmission of the Second-Round questionnaires to the teachers.
9.	Analysis of the Second-Round responses.
10.	Preparation of a report by the analysis team to present the conclusions of the exercise.

A Web-based application was used as an economical and efficient method for conducting the survey, eliminating the time normally spent on postal mailing and data entry. A list of research questions for evidence-based review was generated through the first round survey. Both rounds were posted and sent via e-mail to a site hosted by Survey Monkey. Individuals located throughout the nation were able to participate in group consensus and the determination of issues related to daily physical education and the classroom teacher.

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Participants

Teachers were identified based on their students attending daily physical education with a specialist. Schools throughout the United States that require daily physical education were identified through the use of educational databases, journal and newspaper articles, and school Web sites. Twenty such schools were identified and principals at those schools were invited to participate in this study. Six principals originally agreed to participate, although one school did not have any respondents. Thus, the teacher panel was drawn from five schools throughout the country that required daily physical education. One hundred and fifty invitation e-mails were sent to teachers at the five target schools. Forty-three teachers (28.7%) participated in Round 1 and 37 (24.7%) of that group responded in Round 2 of the research project. All 37 teachers in Round 2 completed Round 1; therefor, 86% of the teachers from Round 1 participated in Round 2.

The 43 classroom teachers whose students participate in a daily physical education program became the Delphi panel. During Round 1, these panel members were asked to fill out a brief background demographic section on the questionnaire (see Appendix A). A summary of that information indicated that 38 females and 5 males comprised

the Classroom Teachers' Delphi Panel. The teachers taught grades K-6 representing the elementary spectrum (see Table 2). The highest percentage of respondents taught first grade with only one panel member teaching fifth grade. In addition two of the teachers who participated in the study also had a major or minor degree in physical education.

Table 2.

Grade Distribution of Classroom Teachers

Grade	Response Count	Percent of Total Panel
Kindergarten	5	12
First	11	26
Second	7	17
Third	6	14
Fourth	6	14
Fifth	1	2
Sixth	6	14
No response	1	2
Total	43	101

Ages of the classroom teachers varied from 23-61 years. Twelve were 20-29 years, 18 were 30-39 years, 5 were 40-49 years, 12 were 50-59 years, and 1 was over 60. A wide range in years of teaching experience (1-33 yrs) provided this study with various perspectives (see Table 3).

Table 3.

Years of Experience of Classroom Teachers

Range	Number of Teachers	Percent of Participants
0-5	11	25
6-10	10	23
11-15	6	14
16-20	7	16
21+	9	20
Total	43	98

Teachers also reported their current activity levels and their perception of their own past physical education experience. Activity levels for the teachers were positive with 7% reporting that they always exercise, 45% exercise very often, 41% exercise sometimes, and only 7% indicated they rarely exercise. Most teachers reported that their own physical education experience was good (49%). Of the remainder, 14% rated it very good, 35% indicated acceptable, and only 2% reported poor.

Instrumentation

Demographic Survey

The demographic survey (see Appendix A) was used to obtain background information from the classroom teachers. We were also interested in the teachers' experiences in

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sports and physical education, to determine whether these experiences influenced their perceptions.

Research Question

The research question of this study was "What are teachers' perceptions of the impact of daily physical education on students in the classroom?" This study was interested in observed outcomes within the cognitive, physical, behavioral, and social domains.

Procedures

Institutional review board approval was obtained from Michigan State University. The study was initiated by sending invitation letters to principals of elementary schools with daily physical education programs (Appendix B). This letter included an introduction to the study, described the purpose of the study, and explained the incentive plan for the schools (the incentive plan is described in Appendix C).

Teachers employed at the schools where the principal agreed to participate in the study were then contacted via e-mail. The teacher invitation letters (see Appendix D) included a description of the purpose of the study as well as a brief introduction. The teachers' e-mail also contained two attachments and the survey link needed to complete the study. Attachment 1 was the incentive plan

(Appendix C); Attachment 2 requested consent to participate in this study (Appendix E); and the survey link directed the participants to a brief demographic survey and the research question along with instructions on how to answer the research question (Appendix F).

The first-round data collection consisted of only one question. The 150 invited classroom teachers were asked to list observations about their students who attend daily physical education. The initial question was, "What are your observations of the impact of daily physical education on students in your classroom? Please list as many relevant positive or negative outcomes within each domain that you have observed." The initial research question sent to the teachers included examples to help guide the participants' thought process (see Table 4).

Table 4.

Domains with Examples of Perceived Outcomes

Domain	Perceived Outcome
Cognitive	Improved grades
Physical	Better appearance
Behavioral	More trips to restroom
Social	More outgoing

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Teachers were provided with instructions on how to answer the question (see Appendix F). This technique was utilized to minimize ambiguity on the part of the investigators and to gather data that were more specific and appropriate to the development of the survey subsequently administered during the second round. The question was phrased in an open-ended manner so the classroom teachers were not influenced by the bias inherent in a closed-ended question when generating their responses. In addition, the teachers were also be asked to expand on the areas they perceive to be worthy of further explanation. Participants were given 2 weeks to generate responses.

Reminder e-mails were sent to both the principals (Appendix G) and the teachers (Appendix H) 2 weeks after the initial e-mail was sent out. One week after the reminder e-mails, construction of the second-round survey began.

The analysis team for this study included three professors from Shenandoah University and one professor from Michigan State University. Three of the four analysis team members had experience using the Delphi method in previous research studies. Team members were chosen based on their familiarity with physical education and sports as

well as their past research experience using the Delphi method.

The analysis team gathered and reviewed all data. During this process all the data were organized and cataloged. Digital copies were made of the entire data set. All e-mails and questionnaires were put into files in order of their dates of response. Survey Monkey sorted data based on school, grade level, and demographics. Participant responses were re-coded so all potential identifiers were eliminated. Everything in this step was labeled and indexed in order to perform the data analysis.

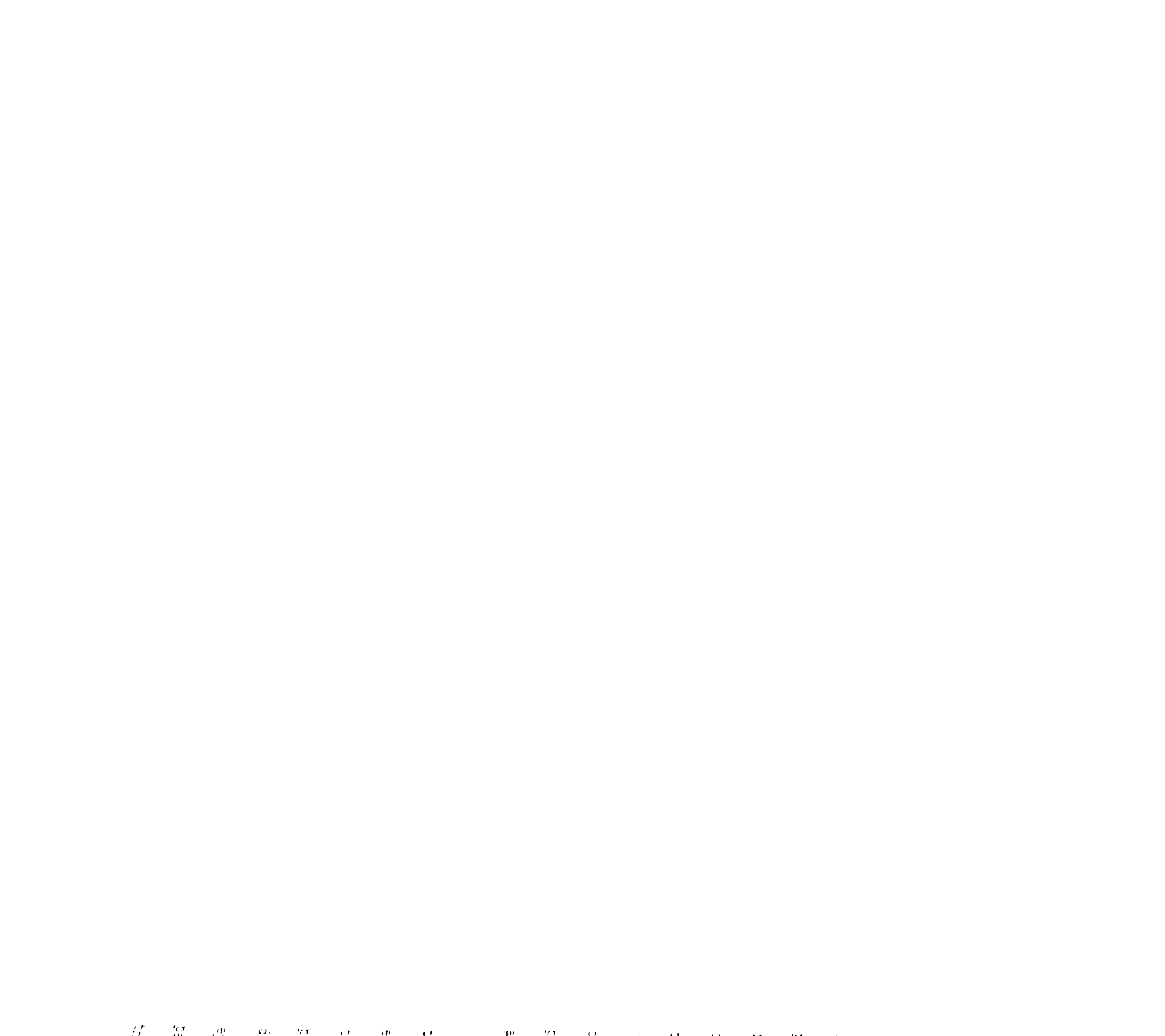
After the initial organization was completed, the analysis team compared the research question against the data collected. This allowed the researcher to determine whether collected data actually answered the research question. This process allowed the researcher to make a preliminary assessment of the data set under study.

A comprehensive list of responses was constructed (see Appendix I), with similar responses combined and listed only once. Domain analysis (Spradley, 1980) was the qualitative method used to determine the themes and categories from the first-round Delphi query. Data were listed using frequency counts of the combined responses.

Frequency scores were calculated in both Round 1 and Round 2 of the study. Participant counts were used to reflect the number of responses from individual participants that fit into particular categories. In this analysis, a participant could have multiple response items in a single category, but the participant frequency count for that category was 1.

Data were further examined by repeated reading of responses to develop sets of taxonomies. Taxonomic names were written on each sheet and then each data set was sifted through for relevant items. After stable taxonomies of relevant items were created, patterns were identified. Pattern identification involved seeing how taxonomies could be grouped together in meaningful ways. Patterns were made up of taxonomies that seem to fit together or could be related to one another. The report also included a summary of the most frequently occurring items from the original response set. These items were used as themes in developing the Round 2 survey (Appendix J).

All 150 teachers were included in the second round, regardless of whether they submitted questions in the first round. E-mails were sent to the teachers (Appendix K), again explaining the purpose of the study and the incentive plan for their schools. This e-mail included a link to the



Round 2 survey instrument. Teachers were given 2 weeks to respond.

During Round 2, participants were given a survey containing the list of responses from Round 1 and the summary of the most common themes. They were asked to (a) rate each of the items in order of relevance using a 5-point Likert scale, (b) select the five most relevant items from the list, and (c) provide a brief explanation for choosing each of the top five. Reminder e-mails were sent to both the principals (Appendix L) and the teachers (Appendix M) after week two. Teachers were offered the opportunity to comment on the responses and to clarify or provide additional comments to support any of their answers.

The goal of this study was to provide insight into teachers' perceptions of the impact of daily physical education on their students in the classroom. The analysis team located patterns and reassembled them in ways that provided a description of the influence of participation in daily physical education on students, as seen through the eyes of classroom teachers. Identifying the most important patterns helped to clarify teacher perceptions regarding the impact of physical education programs on students.

During the next step of analysis, frequency scores were tallied for all of the items chosen by the participants as their top five choices. This information was used in the description of the response material. In addition, the frequency scores of the categories and themes were tallied. The Likert scale information was analyzed using both mean scores and standard deviations. Reverse coding was used on questions that attributed negative outcomes to daily physical education. This allowed the researchers to compare all responses equally using the same Likert scale. For example, the question; daily physical education takes too much time away from academics, would have correlated with negative outcome of daily physical education. However, since the teachers mainly disagreed with the statement, their response showed support for daily physical education. In turn the question was reverse coded and became daily physical education does not take too much time away from academics.

A mean score was calculated for each item to describe the relative importance of that particular item. The Delphi team looked for patterns seen in the data. After the patterns were identified, they were then grouped into structures. These analyses were combined to create an

overall description of the teachers' perceptions of students in daily physical education programs.

Chapter 4

Results

This study examined classroom teachers' perceptions of the impact of daily physical education programs on their students. The purpose of the study was to analyze what teachers perceive to be the true educational benefits or detriments of their students' participation in physical education. The following research question guided the study. What are teachers' perceptions of the impact of daily physical education on students in the classroom? This study used the Delphi method to survey observed outcomes within the cognitive, physical, behavioral, and social domains.

The Round 1 questionnaire was divided into two parts. The first part, titled "Demographic Information," contained 10 questions. Seven of the questions addressed demographics and three questions related to physical education experiences. The second part of the Round 1 questionnaire was the Delphi Question, which was broken into four areas that will be presented later in this section.

During Round 2, participants were given a survey containing the list of responses from Round 1 and the summary of the most common themes. They were asked to rate each of the items in order of relevance, using a 5-point

Likert scale. To help determine a level of consensus for specific items, the following data were considered: (a) data with a number of similar responses that were aggregated into a single item rated in the top five from Round 1, and (b) data that had an average score of at least 4.2 during Round 2. The score 4.2 was chosen as a cutoff because 5 items had a higher average than 4.2.

The analysis resulted in only three items that appeared in the list of highest-ranking items for Round 1 and in the list of highest-ranking items from Round 2. The three general areas of consensus were (a) students were perceived healthier by the teachers, (b) increased focus in the classroom, and (c) contributed to diversified friendships.

Two other items from Round 2 will also be discussed due to the high Round 2 responses: (a) Teachers overwhelmingly believed that physical education has an overall positive impact, and (b) more schools should implement daily physical education. These summation questions had the third and fourth highest response scores for Round 2.

Round 1 Results

The domains for this study were predetermined in order to guide the participants' thinking as well as add structure to the study. Participants were asked to list as many possible outcomes that they could attribute to daily physical education. Outcomes were measured in the following domain areas: Cognitive, Social, Physical, and Behavioral. The physical domain had the most overall responses (40 total) from teachers. Both the cognitive and social domain tallied 36 items, whereas the behavioral domain received the least amount of perceived outcomes with 32.

After the teachers' responses were received, they were separated into themes within each domain. All similar items, thus, were easily identifiable. An aggregated item was created by the analysis team to represent these similar items, resulting in reducing the list from 144 to 15 items. These 15 items were identified by more than one classroom teacher. Their answers were then content analyzed. The Analysis Team followed the procedures described in Chapter 3. They individually analyzed survey summaries which contained the full comments of the participants. Analysis included item frequencies, top five items, and domain analysis.

Item Frequencies

Responses were pre-grouped into domain categories and then the subcategories were grouped into themes. Frequencies were calculated for items, categories, and themes based on the number of separate responses they represented.

Items were ranked based on their frequencies. The item frequency was calculated on the number of responses the aggregated items represented. For example, the following responses were combined:

1. Students learn to work and play together
2. Better understanding of teamwork
3. Able to work as a team, helping each other

An aggregate item, *Teamwork*, represented all of these items and would have a frequency count of 3. See Appendix I for a complete list of combined responses. The frequency breakdown of each response item is reported in Table 5.

Table 5.

Frequency of Responses to Aggregate Items from Round 1 Survey of Classroom Teachers (n = 43)

Aggregate Item	Number of Teachers	Percent
Focus	22	51.1
Healthier	17	39.5
Cooperation	12	27.9
Reduced class interruptions	11	25.6
Diversified friendships	8	18.6
More positive attitude	6	13.9
Better coordination	6	13.9
Higher grades	6	13.9
Lower rate of obesity	5	11.6
Better appearance	5	11.6
More competitive	4	9.3
More confident	4	9.3
Goal setting	2	4.6
Higher self-esteem	2	4.6
More creative	2	4.6

Top Five Aggregate Items

Five items were reported with at least 18% of the classroom teachers contributing to these items. After number 5, three items tied for 6th place at 13.9%. The top five aggregate items (see Table 5) were as follows:

1. Focus—The increased ability to focus and remain focused longer, especially when returning from physical education, was the highest reported items from Round 1. Twenty-two of the 43 teachers (51.1%) included this outcome from the cognitive domain. Several teachers felt strongly about the relationship to physical activity and focus. One teacher said, "We have PE every day. I know it helps students focus better. If we didn't, I'm sure we would see a drop in their ability to focus and that would hurt how much they could learn."
2. Healthier—Teachers identified students as being more fit, stronger, and able to play for longer periods of time. Seventeen of the 43 teachers from Round 1 identified healthier students (39.5%) as an outcome of daily physical education. They believed that the physical education program was vital to many of the students. One teacher noted, "Many times this is the only physical activity some students receive."
3. Cooperation—Teachers reported students were more likely to cooperate and have better cooperation skills as a result of their physical education program. Twelve teachers (27.9%) listed cooperation as an outcome. One teacher saw a direct translation

to the classroom, saying, "Students who get daily PE are better at cooperating and problem solving."

4. Reduced class interruptions—Eleven teachers (25.6%) reported that as a result of the physical workout, students were less likely to interrupt class after physical education. Providing these students with a daily scheduled break for activity paid dividends in how the teachers could structure their day. One teacher said,

> My students understand the difference when it is time to get up and move around and when it is time to do seat work. Because they get time each day to move in the gym, they are content the rest of the day and very calm and cooperative.

5. Diversified friendships—Eight teachers (18.6%) noticed that students in their classes were hanging out or making friends with students outside of their normal groups. The physical education programs were effective at bringing the children together. One teacher reported, "Working in teams during gym allows students to work with kids they normally wouldn't work with during the day."

In addition to these top five items, there were 10 more aggregate items (15 total) that two or more teachers reported as an outcome. The overall purpose of the analysis was to reduce the raw data (classroom teacher comments) to

a manageable number of representative items in order to integrate those in the second round survey. This allowed the teachers to further refine their responses through the use of Likert scales. The 15 aggregate items generated from the Round 1 analysis became the basis of the Round 2 survey.

Round 2 Results

In Round 2 (see Appendix J), participants were asked to rate 15 aggregate items along with 3 summation items (daily physical education should be implemented in more schools, daily physical education has an overall positive impact, daily physical education has my support) on a 5-point Likert scale as follows: 5 = *strongly agree*, 4 = *agree*, 3 = *no opinion*, 2 = *disagree*, or 1 = *strongly disagree* (see Table 6). On the 15 items related to positive benefits (e.g., increased attention span) of daily physical education, the mean score was 4.1. The six items that reflected more negative perceptions (students academic work suffers, daily physical education has taken too much time away from academics, daily physical education has caused competition that is harmful, students interrupt class more often, students exhibit increased unacceptable behavior, daily physical education does not have my support) related to participation in physical education had an average score

of 2.2. Therefore, the teachers generally agreed with the positive outcomes and disagreed with the more negative effects. Reverse coding of the negative questions allowed the researchers to compare all responses equally using the same Likert scale. For example, the question; students exhibit increased unacceptable behavior, scored a 2.2, disagree. However, because the teachers mainly disagreed with the statement, their response showed support for daily physical education. In turn the question was reverse coded and the final mean score became 3.8. In addition, the negative items were re-stated affirmatively so that the mean scores could be compared (see Table 6).

The mean scores from the Likert scale provided a more clear image of the teachers' perceptions (see Table 6). Based on data from all participants, there were 17 items that had a mean score of 4.0 or better. The two items with the highest means were support for more daily physical education (4.7) and daily physical education makes students healthier (4.6). Of the items with an average score of 4.0 or higher, three fell under the theme *Summation*, four items were in each of the physical, cognitive, and behavioral domains and one from the social domain (see Table 6).

Of the 22 questions in Round 2, five were highly supported by the teachers by having a mean response rate of 4.50 or greater. These highly rated item responses were

1. Students are healthier
2. Students are more physically fit
3. Daily physical education has an overall positive impact
4. More schools should implement daily physical education
5. Daily physical education has my support

The responses from the classroom teachers provided strong support for daily physical education. Although *agree* and *strongly agree* had the most responses, teachers mainly agreed with the benefits of daily physical education and disagreed with the negative outcomes associated with participation.

Sub-Questions

There was not a meaningful difference in responses between teachers who had positive or negative physical education experiences. Only 1 teacher (2%) claimed to have a negative physical education experience. The average aggregate scores for this individual were the same as the average scores for the rest of the classroom teachers (4.1, 4.1). A further breakdown between domain areas was also

consistent (cognitive 4.0, 4.1, physical 4.4, 4.4, social 4.0, 4.0, behavioral 4.0, 3.9). There also was not a significant difference in the responses from teachers based on the years that they had taught in schools (1-5 yrs, 6-10 yrs, 11-15 yrs, 16-20 yrs, and 21+ yrs). A one-way analysis of variance (ANOVA) confirmed that the teachers' years of experience did not have an impact on the perceptions of daily physical education programs for any domain, specifically, cognitive, $F(4,217)=.43$, $p>.05$, physical, $F(4,144)=.42$, $p>.05$, social, $F(4,103)=.61$, $p>.05$, behavioral, $F(4,216)=.28$, $p>.05$, and summation items, $F(4,107)=.24$, $p>.05$. In fact, all 5 age groups reported mainly positive outcomes regarding their daily physical education programs regardless of the domain area examined.

Summary

Results from this study showed a strong support from classroom teachers for daily physical education. Teachers believed their students to be healthier and more physically fit. In addition teachers responded overwhelmingly that daily physical education has an overall positive impact on the students in their classes. And finally, teachers in this study believed in their school's daily physical education program and suggested that more schools implement daily physical education.

Table 6.

Mean Score and Standard Deviation for Round 2 Survey Questions

Domain/Question	Mean Score	St. Dev.
Cognitive		
Students demonstrate more creativity	3.4	.644
Students academic work does not suffer	4.3	.500
Students are more focused in the classroom	4.2	.661
DPE does not take too much time away from academics[a]	4.2	.874
Students have a greater attention span	4.1	.683
DPE has helped my students earn better grades	3.5	.810
Physical		
Students are healthier	4.6	.487
DPE has made my students physically fit	4.5	.654
Students are more coordinated	4.3	.717
DPE has lowered childhood obesity	4.1	.747
Social		
DPE encourages diversified friendships	4.2	.696
Students are more cooperative	3.9	.747
DPE has does not include competition that is harmful[a]	4.0	.893
Behavioral		
Students have a more positive attitude	4.0	.731
DPE has made my students more confident	4.0	.654
Students do not interrupt class more often[a]	4.0	.755
DPE has improved my students' self-esteem	4.0	.717
Students do not exhibit increased unacceptable behavior[a]	3.8	1.0
DPE has helped my students set goals	3.7	.668
Summation		
DPE should be implemented in more schools	4.7	.471
DPE has an overall positive impact	4.6	.503
DPE has my support[a]	4.6	.632

Note. DPE = daily physical education. All questions used a 5-point Likert scale of 1 = *strongly disagree*, 2 = *disagree*, 3 = *no opinion*, 4 = *agree*, 5 = *strongly agree*

[a]Reverse-coded item.

Chapter 5

Discussion

Daily physical education has been recommended by the National Association for Sport and Physical Education, the Centers for Disease Control and Prevention, the National Association for State Boards of Education (as cited in NASPE, 2006), and the American Academy of Pediatrics (2006). These recommendations equate to 150 minutes per week for elementary school students and 225 minutes per week for middle school and high school students.

Although many states and school districts require some physical education for all students, most students are not receiving the amount of physical education recommended by the national agencies (NASPE, 2006). National organizations have continued to urge state and local education agencies to implement daily physical education classes for all students in kindergarten through 12th grade.

However, some school districts throughout the United States, such as the schools in this study, have mandated daily physical education at their schools. The intent of this study was to examine classroom teachers' perceptions of their students who participated in daily physical education. Their insight provided a different lens under which to examine daily physical education programs.

Examining how daily structured activity effects the students and the classroom environment has the potential to effect parents, educators, and policy makers.

This study contributes to the research and practice of physical education in two noteworthy ways. First, we identified and reported on perceptions of classroom teachers on daily physical education programs. The study was successful in detecting consensus about important ideas and concerns regarding effects of daily physical education in the classroom. Of secondary importance, this research illuminated the Web-based Delphi study design as a useful methodology for acquiring input and analyzing knowledge from educators efficiently.

Response Rates

This study achieved only a low return rate in Round 1 (29%) of this study. However, a large initial sample (i.e., 150 teachers) was identified to ensure an adequate number of classroom teachers for this study (n=43). The minimum number of participants to ensure a good group performance is somewhat dependent on the study design. Based on logistical considerations, optimum group size has been suggested at between 10 and 15 (Delbecq, Van de Ven, & Gustafson, 1975). A more recent analysis of Delphi studies shows that they typically have between 15-20 participants

(Ludwig, 1997). In addition, Delphi studies have been shown to be effective with as few as 4 participants (Brockhoff, 1975). Round 2 fared significantly better, with an effective return rate of 86% of the 43 Round 1 participants. The return rate for Round 2 (86%) was acceptable in terms of what is necessary to achieve a reliable and valid data set within a Delphi method (Hiltz & Turoff, 1993).

Round 1 Discussion

The domains for this study were predetermined in order to guide the participants' thinking as well as add structure to the study. Participants were asked to list as many possible outcomes as they could attribute to daily physical education within the four domain areas of cognitive, social, physical, and behavioral. The top five items (i.e., the five aggregate items with the highest frequency counts) were focus (22), healthier (17), cooperation (12), reduced class interruption (11), and diversified friendships (8) (see Table 5). The following discussion will be based on the Round 1 results from each domain and focuses on the top five item responses.

The Cognitive Domain

The cognitive domain was chosen as a theme for this investigation because there is growing evidence that

physical activity can support intellectual development in children (Young, 2003). However, there is also the general viewpoint that physical education takes too much time away from academics. Standardized test results have become a measuring stick for schools which makes it even more important to examine how physical education can contribute to the cognitive development of children.

Researchers have suggested that physical education can enhance academic performance by increasing the flow of blood to the brain and improving mental alertness (Hills, 1998). Focus and increased attention span were outcomes related to this domain that teachers cited most often during the Round 1 questionnaire (51.1%)(see Table 5). Teachers in the current study suggested that students' attention span and focus are increased which puts the student in the proper mind set for learning. Increased focus also corresponded with the outcome of higher grades, which was the third most reported item from this domain (13.9%)(see Table 5). Shephard (1997) found that academic performance increases with daily physical education. The evidence base of such claims is varied and more research is still required.

A few of the teachers (4.6%)(see Table 5) reported that their students demonstrated more creativity because of

their participation in daily physical education. Park and Heisler (1995) suggest that, creativity can be fostered through physical education programs and can then be utilized in other areas. In physical education class, students may engage in physical exploration. Creativity may be fostered in physical education because the coursework contains challenge, involvement, freedom, openness, idea time, playfulness, conflict resolution, and risk taking. Simpson (2001) claims these areas create the climate most appropriate for creativity development.

Studies (Shephard, 1997; Coe, Pivarnik, Womack, Reeves, & Malina, 2006) also have suggested a positive relationship between intellectual functioning and regular physical activity in children. These studies have provided an avenue to connect with the classroom teacher. Expanding on this connection provides more opportunity to understand the cognitive benefits that can result from movement and physical activity. Teachers in this study showed support for the positive influence that participation in daily physical education has on their students related to the cognitive domain.

The Physical Domain

Physical education in school is the main societal institution for the development of physical skills and the

provision of physical activity in children and young people (Sallis et al., 1997). For many children, school-based physical education programs provide the only physical activity setting in which they participate during the day (Telama, Yang, Laakso, & Viikari, 1997). Daily physical education offers the opportunity for teachers to introduce physical activities and lifestyle skills in a structured educational environment on a regular systematic basis. The physical nature of the class made the Physical domain an obvious choice for investigation.

The physical health benefits of regular physical activity are well established (World Health Organization, 1995). Regular participation in such activities is associated with a longer and better quality of life, and reduced instances of disease (Sallis & Owen, 1999). Evidence is starting to appear suggesting a favorable relationship between physical activity and a host of factors affecting children's physical health. These factors include diabetes, high blood pressure (Malina & Bouchard, 1991), bone health (D. Bailey & Martin, 1994), and obesity (Gutin, Barbeau, & Yin, 2004). These health factors all correspond to the teachers' top response in the physical domain that the students seem healthier. Students who are healthier are less likely to miss school and are more

equipped to handle the stresses of the school day. The teachers' perception that the students are healthier can be inferred from their marking "lower rate of obesity" (11.6%)(see Table 5). This item had the third highest rate of Round 1 responses related to the physical domain.

Only in the last decade has physical inactivity been included among the highest risk factors for heart disease and obesity (American Heart Association [AHA], 2008). Obesity is in turn a risk factor for other health-related issues such as Type II diabetes, high blood pressure, and high cholesterol (Field, Coakley, & Must, 2001; Must et al., 1999). Obesity-related medical expenditures due to these risk factors have been reported to be $117 billion annually in the United States (Finkelstein, Fiebelkorn, & Wang, 2004). There is a likelihood that obesity beginning in early childhood will persist through the life span (Epstein, Wing, Koeske, & Valoski, 1987).

Obesity presents numerous problems for the child. In addition to increasing the risk of obesity in adulthood, childhood obesity lowers self-esteem and affects relationships with peers (Epstein et al., 1987). Some authorities feel that social and psychological problems are the most significant consequences of obesity in children.

Daily physical education programs assure that overweight children have the opportunity to burn calories each day and maintain healthy weight levels. Exercise has other health benefits, too. Even when children's body weight and fatness did not change following 50 minutes of aerobic exercise three times per week, blood lipid profiles and blood pressure did improve (Becque, Katch, Rocchini, Marks, & Moorehead, 1988). Classroom teachers' observations in this study support the belief that students involved in daily physical education appear healthier and have better physical appearance (11.6%)(see Table 5).

Better coordination (13.9%)(see Table 5) was the second most common item reported in the physical domain. Basic movement skills, like those developed in daily physical education, form the foundation of almost all sports and physical activities (Clark & Metcalfe, 2002; Gallahue & Ozmun, 1998). There is evidence that those who have developed a strong foundation in fundamental movement skills are more likely to be active, both during childhood and later in life (Okely, Booth, & Patterson, 2001). Conversely, children who have not been able to develop movement skills effectively are more likely to be excluded from participation school athletic teams (Ignico, 1990).

Teachers in this study believed that daily physical education made their students healthier (39.5%)(see Table 5). Although teachers were not asked to define *healthier* in this study, their perception is most likely due to lower cases of obesity and improved physical skills (such as coordination, 13.9%)(see Table 5). The positive attributes related to the physical domain are expected due to the physical nature of the class itself. Physical education along with art and music classes are currently the only classes in school that use the psychomotor domain in their evaluation process.

The Social Domain

The social domain was chosen as a theme for this study because physical education classes may be the best opportunity for social development to occur because both naturally-occurring and contrived social interactions frequently emerge (Bailey, 2000). The public nature of participation usually makes both socially appropriate and inappropriate behaviors evident (Miller, Bredemeier, & Shields, 1997). In physical education, students often perform skill movements in front of an audience of their peers. The interactions that result between the performers and the audience can contribute to the child's social development.

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However, it does not seem to be the case that social behavior necessarily improves as a result of engagement in daily physical education (Reddiford, 1981), and some studies indicated that social relationships were damaged during physical education (Belier & Stoll, 1995). The interactions between the performer and audience can sometimes be negative. This is especially true for the students who are low skilled.

Social inclusion and exclusion can be issues in physical education with some arguing that physical education can be beneficial but can also contribute to some groups' social exclusion (Collins & Kay, 2003). For example, students involved in social groups in the classroom, may reach out to new friends with common interests inside the gymnasium. On the contrary, students who are very low skilled may have trouble obtaining the benefit of making new and diverse friendships, as they do not excel in physical activity.

However, Svoboda (1994) demonstrated that appropriately structured and presented activities can make a contribution to the development of social behavior. During Round 1 of this study classroom teachers cited increased cooperation (27.9%)(see Table 5) as the greatest social outcome. Cooperation among students and between

students and teachers could have very high rewards in classrooms.

Cooperation enhances learning in several ways that benefit all students. For example, strong students may have the opportunity to explain and clarify material to weaker students, which can enhance their own understanding of the subject matter. Weaker students, when working cooperatively, have the opportunity to receive points of view other than the instructor's. This alternate point of view may be the difference in their understanding of the material. Students working alone who are having difficulties with certain topics tend to delay completing assignments, or not turn them in at all; but when they know that others are counting on them, they may have more motivation to complete the work. Students working competitively have incentives not to help one another; working cooperatively, they are rewarded for helping.

Research strongly supports the advantages of cooperative learning for teachers over competition and individualized learning in a wide array of learning tasks (Harmin, 1994). Compared to competitive or individual work, cooperation leads to higher group and individual achievement, higher-quality reasoning strategies, more frequent transfer of information from the group to

individual members, more meta-cognition, and more new ideas and solutions to problems (Quinn, 2002). Physical education is able to capitalize on cooperation benefits, as many aspects of the curriculum such as team games and sports, require cooperation by students in order to achieve their educational goals. However due to the nature of team and individual sports, competitive outcomes (9.3%)(see Table 5) were also evident from the teachers' responses.

The second highest Round 1 social domain response, centered on diversified friendships (18.6%)(see Table 5). Daily physical education has students working together in order to achieve goals on a regular basis. A quality physical education program encourages positive, cooperative behavior in students, makes teamwork and sportsmanship an everyday part of the program, and makes cooperative activities fun and challenging. Daily physical education class adds to the frequency of these experiences and, therefore, may lead to higher cooperative outcomes. Experiences between students from a variety of social and economic backgrounds help to form bonds by developing social networks through teamwork and competition (Bailey, 2004). The physical education classroom should be a dynamic social space where students experience physical activity in a context that demands teamwork through peer relationships.

Implications for teaching include the need to reflect on the link between activities and social relationships, the possibility of incorporating critical reflection, and the influence of social networks.

Behavioral Domain

The outcomes in the behavioral domain were measured to determine how student behaviors or actions are perceived differently by their participation in daily activity. Research suggests that a number of factors contribute to the establishment of physical activity as part of a healthy lifestyle (CDC, 1997). There is some evidence that health-related behaviors learned in childhood are often maintained into adulthood (Kelder, Perry, Klepp, & Lytle, 1994). Conversely, studies also show how inactivity in youth continues into adulthood (Raitakari et al., 1994). Daily physical education can be a method where the behaviors are learned and valued. Studies have found that physical education programs can contribute to increased physical activity levels, both during youth and later in life (Trudeau, Laurencelle, Tremblay, Rajic, & Shephard, 1999).

The classroom teachers' perceptions in this domain were primarily related to classroom behaviors. The most common response from the behavioral domain during Round 1 was that teachers had less class interruptions (25.6%)(see

Table 5). This is another important benefit to teachers as class interruptions often lead to inefficient teaching and difficulty keeping the class on task. Moreover, disruptions impact the learning of other students. Teachers can focus more time and energy on material and the learning process when students are more attentive and on-task.

An additional perceived benefit from the teachers was that students had a more positive attitude (13.9%)(see Table 5). A positive attitude can help students to cope more easily with the daily affairs of their lives. It brings optimism into their life, and makes it easier for students to avoid worry and negative thinking. With a positive attitude one sees the bright side of life, becomes optimistic, and expects the best to happen. It is certainly a state of mind that is well worth developing in children.

There is evidence that regular activity can have a positive effect upon the psychological well-being of children (Dishman, 1995). The evidence was particularly strong with regards to children's self-esteem (Fox, 1996). Self-esteem can affect the way children respond to other people and themselves. It also may have a direct effect on their relationships with others. Exercise in physical education classes can help students learn ways to handle the emotional, social, and mental stresses that children

face (CDC, 2002). One goal of daily physical education programs aims to instill lifelong exercise habits in individuals. These habits may have a direct impact on improved self-esteem. Exercise has been proven to help raise self-esteem (Myers, Sweeney, & Zitmer, 2000). By creating strong self-esteem, these young children may be able to overcome the obstacles that they may face during their often emotional growing period (Coopersmith, 1967).

Self-esteem and self-confidence (9.3%)(see Table 5) often go hand in hand. Children who are confident are usually happy with themselves, outgoing, and positive. They take pride in accomplishments and are able to stand up for themselves. They are not afraid of taking on new challenges and are not afraid of failure. Researchers have found that physical activity and exercise can increase both self-confidence and self-esteem (Myers, Sweeney, & Zitmer, 2000). These perceived benefits lend support to the claim that daily physical education can contribute to the overall well-being of children.

A small amount of teachers also reported that their students were better able to set goals (4.6%)(see Table 5). This may be due to the goal-oriented outcomes in many physical activities such as, making a basket in basketball or scoring a goal in soccer. Another contributor to this

outcome may be the goal-setting strategies used by many physical educators to teach topics and change behaviors related to healthy eating or weight loss.

In physical education students should be exposed to experiences that encourage them to enjoy and value physical activity and its effect on lifelong health and well-being. Students are encouraged to explore, take risks, exhibit curiosity, work with others cooperatively, and achieve a personal functional level of physical fitness. Most movement experiences provide opportunities for the development of positive personal and social behaviors. During Round 1 of this study, teachers generated responses that indicated positive outcomes from each domain area. Outcomes from the teachers were used to formulate the Round 2 survey. Round 2 analysis provided deeper insight to teacher perceptions of daily physical education programs.

Round 2 Discussion

Round 2 analysis resulted in 17 items about which the teachers "agreed" or "strongly agreed" (see Table 6). The mean scores for these items ranged from 4.7 (daily physical education should be implemented in more schools) to 4.0 on 5 items (daily physical education does not include competition that is harmful, students have a more positive attitude, daily physical education has made my students

more confident, students do not interrupt class more often, and daily physical education has improved my students' self esteem). These highly-ranked items came from each of the four domains and the summation items, indicating that the teachers perceived benefits across numerous areas.

A comparison of the top five response items from Round 1 with these highly-ranked items from Round 2 resulted in 3 common items. The three areas of consensus were (a) students were perceived healthier by the teachers, (b) increased focus in the classroom, and (c) contributed to diversified friendships. In addition, 7 additional high ranking items from Round 2 were discussed.

The first consensus item with the highest aggregate score from Round 2, as well as the second highest response item in Round 1, came from the physical domain. Teachers of students with daily physical education that participated in this study perceived their students to be healthier and more physically fit because of participation in daily physical education program (Round 1 = 17, Round 2 = 4.6). These results are not surprising. Lack of physical activity is detrimental to the growth of a child (AHA, 2008). Physical activity is important to build up the immune system and fight off diseases in order for a growing child to develop properly. As discussed in the literature review,

some of the direct benefits of being active as a child include healthy growth, strong heart and lungs, high energy levels, a healthy weight, reduced risk of heart disease, and overall well-being (Blair & Hardman, 1995).

The second consensus item from was increased focus in the classroom (Round 1=22, Round 2=4.2). This was also the highest rated item in Round 1 with a majority of the teachers reporting this outcome. Physical activity most likely allows students to relieve stress, thereby bringing better focus to the classroom. In fact, three teachers commented in their surveys that they used additional physical activity breaks to help students better engage in the material (see Appendix L).

Research published in *Pediatrics* (Barros, Silver, & Stein, 2009) studied the links between recess and classroom behavior among about 11,000 children ages 8 and 9. Those who had more than 15 minutes of recess a day showed better behavior in class than those who had little or none. Such studies provide growing support that students should not miss physical activity time such as physical education or recess as a punishment in school. *The Journal of School Health* (Chomitz et al., 2009) reported that the more physical fitness tests children passed, the better they did on academic tests. These results were similar to the

California Fitnessgram study (2002) and provided the same results, children can benefit academically from physical activity during physical education class. The teachers in this study agreed with this outcome as well. Possibly, an increased focus after activity benefits children in their classroom performance.

In addition, sport and physical activity require attention to be focused on different skills and different cues. Not only must students learn to focus on their own movement patterns, they must also learn to focus on their opponent and their environment as well often while manipulating equipment. Students learn the cues that provide instruction for their own movements and cues that can give away intentions of their opponent. For example, foot movements, glances in a particular direction, or flexing of supporting muscles can give away the fact that someone is about to kick in a certain direction. Similarly the opponent may give cues as to defensive tactics to be used that will be most effective.

This study indicated that the focus required on movement tasks may carry over into the classroom. Increased focus may have many implications for the teacher. Teachers are constantly using strategies to keep students on task. Keeping students on task can be difficult with the length

of classes and amount of total time spent in school. The attention span of students varies with age, with older children capable of longer periods of attention than younger children. Research findings suggest that the average attention span for children is 1 to 5 times their age (Ruff & Lawson, 1990). This information would indicate that some 8-year-old children can only focus for 8 minutes at a time. The amount of focus time becomes particularly important when planning for the school day.

The teacher will have students of various ability and maturity levels at one time. Each child will have individual needs and strengths. Teachers must develop strategies that will help all students, even those with attention deficit disorder or attention deficit hyperactivity disorder, to focus, stay on task, and learn to their full capabilities. Participation in physical education may aid classroom teachers in this regard. Improved grade performance has been linked to physical activity and various studies (Sibley & Etnier, 2003). The acknowledgement that teachers are observing increased focus and more students staying on task may influence the students' academic performance.

The outcome of *diversified friendships* was a pleasant surprise and was the final consensus item (Round 1=18.6%,

Round 2=4.2). Diversity is a growing topic in the field of education (Leeman & Volman, 2001). Educators are being trained on how to teach in diverse classrooms and are often required to participate in the process of changing classrooms to accommodate diverse situations. Classroom activities are being designed to incorporate lessons on diversity in order to promote the idea of accepting people's individual differences. In addition, courses for pre-teachers are now required that focus primarily on the concept of diversity.

The United States is becoming an increasingly diverse society (Carr-Ruffino, 1996; Henry, 1990). Today's neighborhoods and communities contain a wide array of races, cultures, languages, and religious affiliations. These trends have significant implications for the educational needs of American youth. Youth today are more likely than in the past to face the challenges of interacting with and working with people different from themselves. Understanding, accepting, and valuing diverse cultures will help prepare youth to excel in an ever-changing society (Gamino & Sneed, 1992). Physical education promotes diverse friendships through teamwork and cooperation strategies that are unique to its field. The opportunity to enhance such skills increases when daily

physical education is provided. Educating students about diversity and actually having them practice diverse interactions in physical education, could improve the educational process both inside and outside of the classroom.

A racially diverse student body is necessary for preparing students to be citizens in a multicultural society. The more contact children have with other ethnic and racial groups, the more diverse friendships are possible. In turn, today's students may be less prejudiced than previous generations. The importance of culturally diverse friendships is significant for the social well-being of children and society. Children are attempting to learn, work, and live together free of racial, ethnic, sexual, class, ability, religious, and community prejudice. One of the challenges in modern developed countries is whether or not various individuals can interact effectively (Deegan, 1996).

One of the hopes of having diverse friendships is that the daily interaction with students from different backgrounds will promote interracial understanding. A previous study showed that racial diversity in the friendship group is important for increasing a student's commitment to racial understanding and is associated with

interracial interaction outside of the friendship group (Antonio, 2001). It is important to create an atmosphere in schools where people are tolerant, respectful, and open to establishing new friendships. The key to good race relations may be establishing good diverse friendships early in life. Teachers in this study believe that daily physical education is helping with this effort.

The final two response items that received scores above 4.2 were that daily physical education has an overall positive impact (M=4.6, see Table 6) and more schools should implement daily physical education (M=4.7, see Table 6). This study had identified many positive impacts for students as perceived by the classroom teacher. Areas of specific contribution include health, academic performance, weight control, physical fitness, motor skill development, self-esteem, and social development. Experts (NASPE, 2006) have also noted that results will not occur unless programs are regular, frequent, developmentally appropriate, success-oriented, and instructed by trained physical education teachers. Daily physical education is regular and frequent by definition. An effective school-based and integrated physical activity and physical education program contributes to the health and well-being of all children and youth.

The overwhelming response from teachers that physical education should be implemented in more schools is a voice that should not be ignored. Teachers typically support reform-oriented policies and practices whose outcomes will produce positive results. More specifically, they support policies that deal with improved and sustained student achievement and improved working conditions for teachers. Teachers in this study strongly recommended that more schools implement daily physical education. This recommendation alone should speak volumes to administrators and policy makers on the impact of daily physical education programs in the schools.

Sub-Questions

This study also aimed to explore the following sub-questions:

1. Do teachers who had positive physical education experiences in school identify more positive benefits related to daily physical education than those who had negative physical education experiences?
2. Does teaching experience (years of teaching) play a role in how teachers view the impact of daily physical education?

The fact that the teachers, who had negative experiences in physical education, could overcome past biases and recognize the positive benefits of daily physical education is of note. Because the percentage of teachers who indicated that their physical education experience was negative (2%) was so low, it is impossible to form any concrete conclusions. However, in this study, teachers overwhelmingly cited positive benefits related to daily physical education. This suggests that these daily physical education programs are making a difference for students and such benefits are recognized by the teachers.

Teachers apparently draw on many experiences, not just their own, to create their perceptions. For example, the less experienced teachers (yrs < 5) in this study reported many of the same conclusions and shared some of same perceptions as the more experienced teachers. This suggested that the benefits that teachers see their students receiving from daily physical education are easily noticed. The teachers in this study were very supportive for daily physical education across all domain areas regardless of their experience.

Delphi Method

The Web-based Delphi method was an efficient method for conducting this research. The goal was to identify

knowledge through the consensus of experts. The Delphi technique has been established in the literature as a useful research method across various disciplines (Brill, Bishop, & Walker, 2006). The Internet makes the Delphi a more effective technique by providing an efficient means for surveying a large group of experts from around the country, anonymously, and over two rounds, via e-mail. The Delphi technique before the Internet would have been very labor intensive and time consuming for collecting and analyzing data. Combining the Delphi technique and the efficiency of the Internet provides a potentially useful tool for the instructional designer to engage in analysis more efficiently (Brill et al., 2006).

The Delphi technique proved to be a dynamic mechanism to bring together teachers from schools that require daily physical education in order to uncover their perceptions of their students who participate in a regular activity program. Based on our experience it seems that a Web-based Delphi is certainly a method that more researchers might add to their arsenal of more common techniques, such as observations, individual interviews, and focus groups. Research that uses the Internet, whether it is the Delphi technique or another method, would allow researchers to conduct their work in more efficient and effective ways.

Limitations

Although this study found the Web-based Delphi as a useful process tool, four major limitations to this study were apparent. First, the participant pool was largely restricted to suburban area schools where the participants were white. The research team was concerned about the potential bias of such a participant pool early on as we designed the study and made an initial effort to include diversity. However, no urban school that was contacted for the study agreed to participate. Given that teachers' perceptions have not been documented at all in regards to physical education and in order to engage respondents with daily physical education experience (per Delphi method guidelines), we acknowledged this restriction and decided to continue with the study. In addition, our sample was also biased toward women. Of the Round 1 respondents, 88% were women, as well as 83% in Round 2. This was due to the fact that an overwhelming majority of elementary school teachers are female (91%) (U.S. Census Bureau, 2008). This result was expected by the research team. A useful follow-up to this study would be to minimize such bias at the outset, planning for a participant pool that compared groups of teachers from different races to have a more balanced representation of all teachers. Such a study would

even allow for the comparison of respondent perceptions between subgroups to determine if different races, school type (urban, rural), or gender differences view daily physical education differently.

Second, this study failed to take into account the differences in the various school schedules across the country. Unfortunately, both Round 1 and Round 2 data collection corresponded with spring break schedules at the schools included in this study. The Delphi team was forced to extend both Rounds of data collection in order to allow for all subjects to have the same amount of time to respond. This was made much easier with the use of the Delphi method as extending the time only took an e-mail to achieve. Coordinating school schedules is a necessary step that should not be overlooked when researchers need teachers as participants. This could be avoided by understanding and planning for longer data collection times.

A third limitation of the study was that the design of the Round 2 instrument supported confirmatory data but not discriminatory data. That is, the tendency of participants to rank almost every item as *agree* to *strongly agree* confirmed agreement but provided little opportunity to differentiate between them. Perhaps if we had designed the

survey to enable respondents not only to rate each item but also supply rankings between items, the data collected would have allowed for richer analysis and interpretation. In addition, a revised survey could include brief descriptors for all items to further facilitate respondents' differentiation between items. For example, each question could be clearly labeled and grouped within each domain area to allow respondents to focus their thoughts on each domain as they answered the survey. A follow-up study incorporating such a modified survey might enhance the ability to distinguish between perceptions.

A final limitation in this study involved an error in the initial teacher invitation letter. The letter stated: This study is interested in observed outcomes within the following domains: Behavioral, Cognitive, Social, Academic, and Physical. The Cognitive and Academic domains were later combined and Academic was not taken out of the initial email. However, the research questions were consistent with four domains throughout the study. None of the classroom teachers brought the error to our attention.

Conclusion

This research provided an overview of what classroom teachers perceive as the benefits of daily physical

education. The priorities in education continue to be on the development of the mind, often to the detriment of the body. A balance between both entities appeared to be a logical goal because both are needed and used throughout one's lifetime. Research suggested that physical activity enhances academic performance. Physical education class once or twice per week can only do so much with regard to the promotion of physical activity and the development of fitness and motor skills.

In response to these studies and the growing epidemic of obesity in the United States, a recommendation was provided by the National Association of State Boards of Education (2006) to all public schools. The recommendation calls for 150 minutes per week of physical education instruction for elementary students and 225 minutes per week for middle and high school students, which follows the federal Center for Disease Control guidelines for quality physical education. Schools should also offer daily, unstructured physical activity, such as recess, for students from pre-kindergarten to sixth grade.

These recommended school health policies were developed with a broad cross section of interests, including local school boards, administrators, teachers, state and local public health officials, physicians, school

nurses, clergy, and parent groups. However, financial assistance is necessary for these policies to become reality. Unfortunately, the recommendations have not been backed by any financial incentives.

Issuing a mandate that requires everyday physical education has intentions for both the short term and, even more importantly, over the long haul. A policy that requires elementary students to have physical education everyday has many benefits for children. The most obvious benefit is that children will stay active throughout their elementary school years. Children will now have more time to learn about their own bodies and how they work. This type of program would also show students directly and indirectly that staying active is an important part of their health and well-being. With everyday physical education the school will actually be backing what the physical education teachers are preaching; kids need to exercise everyday.

There are many physiological benefits for kids with everyday physical education programs. Studies have shown increased academic achievement of children with increased physical activity (Caterino & Polak, 1999; Pate et al., 1996; Sibley & Etnier, 2003). Children are able to release excess energy as well as stress that can be built up during

the school day. Requiring a structured physical education class instead of an extra recess provides students with an opportunity to increase skills, knowledge, and overall health.

There are, however, arguments against daily physical education. Taking time for physical education will take away part of the learning time that is designated for other subjects. Some the instructional minutes will decrease but a child that has had the opportunity to exercise may be better prepared for engagement during their next academic class. Studies have shown that test scores are actually higher at schools that require more physical education (Young, 2003).

Another argument against daily physical education is that it competes with other extra or specialty classes such as art, music, or band. This competition is a true fact of today's educational climate. However, schools need to begin to think of physical education as a core curriculum class in order to produce intended benefits for children. Proving physical education's worth has proven to be a difficult task because some physical education programs are failing their students. Opponents to this mandate cite these failing programs as a reason to keep physical education as a *frill* class and not require it for their children.

However, classroom teachers indicated that daily physical education has the potential to make significant contributions to the development of children in many ways. Further research will help us better understand the benefits more clearly. Nevertheless, in each of the domains discussed—cognitive, physical, social, and behavioral—there is evidence that daily physical education can have a positive influence in the classroom and for individual students.

Continued research regarding the effects of daily physical education programs is necessary, especially using teachers from all parts of society that will allow us to look at teacher perceptions through different lenses. However, based on the positive evidence to support daily physical education, teachers, parents, administrators, and policy makers that value these outcomes need to advocate for the inclusion of daily physical education in their schools as well.

Recommendations

The teacher perceptions examined in this study can serve as a foundational base for future studies regarding the impact of daily physical education programs. Further efforts are needed to establish the voice of all classroom teachers in regards to daily physical education programs.

The following recommendations are proposed as possible next steps in this research process.

1. Examine teacher perceptions at schools that require varying amounts of physical education. Compare and contrast perceptions of classroom teachers at schools that require 1, 3, or 5 days of physical education. Exploring each physical education schedule provides an in-depth look at the amount of physical education required and how teachers perceive each program.
2. Analyze the students within each domain before and after physical education class. Develop specific instructional activities that measure the cognitive, physical, behavioral, and social domain. Each of these domain areas contributes to the educational goals. Issues concerning best time for test taking, physical activity, or relationship building are of concern to educators. A comparison between before and after physical education class would further measure what we can actually attribute to the program.
3. The results from this study could be used to further investigate educational benefits of daily physical education. Existing curricula could be analyzed to

determine the extent that physical education is emphasized. Based on this evaluation, educators could enhance or revise their existing curriculum to take advantage of the perceived benefits of the teachers. Further insight into areas such as, when students are most focused, and how to help diversify friendships in schools, could be extremely beneficial.

Finally, we did not intend to create an exhaustive list of teacher perceptions of daily physical education programs. Our consensus items represented the loudest voice of the classroom teachers although the perceptions of the individual teachers were different from person to person and from school to school. However, our analysis does provide educators with an indication of important benefits a daily physical education program may provide and how these benefits may impact the classroom.

APPENDICES

APPENDIX A

DEMOGRAPHIC SURVEY

Demographic Survey

1. I have read the consent form and agree to participate in this survey

   Yes/No

2. What is the name of the school where you are currently employed?

3. What is your gender?

   Male/Female

4. What is your age?

   20-29/30-39/40-49/50-59/60+

5. What is your ethnic background?

   White/Multi-racial/African American/Hispanic/Asian/Native American

6. What grade level do you currently teach?

   K/1st/2nd/3rd/4th/5th/6th

7. How many years have you been teaching?

8. How many years have you been teaching students who attend daily physical education?

9. In addition to your primary teaching area, did you major or minor in physical education?

   Yes/No

10. How would you rate your physical education experience?

    Very Poor/Poor/Acceptable/Good/Very Good

11. What is your level of physical activity?

    Never/Rarely/Sometimes/Very Often/Always

APPENDIX B

INVITATION LETTER TO PRINCIPALS

Hello! My name is Denny Scruton. I am an assistant professor at Shenandoah University and doctoral student at Michigan State University. I am currently working on a research project dealing with daily physical education programs. Your school has been chosen as a potential participant in this study based on your dedication to daily physical education at your school. I am asking your permission and support in investigating your classroom teachers' perceptions of the effect of daily physical education on students in the classroom. Only 20 schools have been invited to participate in this study. Your participation would be greatly appreciated. As an incentive, each school that has a 70% or greater teacher response rate will be entered in a drawing for a $500 activity package from GOPHER, a physical education equipment company that is contributing to this study. The specific Incentive Plan is attached. My goal is to contribute to the body of literature examining daily physical education, so that more schools may consider daily physical education for their students.

please respond via e-mail if your school would like to be included in this research project. Thank you for considering participation in this study and I look forward to your response.

APPENDIX C

INCENTIVE PLAN

Each school that has a response rate of 70% or more from its classroom teachers will be entered into a drawing for a $500 activity pack from GOPHER. The package includes all the equipment needed for before and after school activities for up to 100 students. The set contains:

- Set of 6 Rainbow® DuraBalls™ (8.5" dia)
- Set of 6 Rainbow® SuperBounce™ Balls (3.5" dia)
- Set of 6 Rainbow® Rubber Basketballs (Size 6)
- Set of 6 Rainbow® Rubber Footballs (Size 4)
- Set of 6 Rainbow® Rubber Soccer Balls (Size 4)
- 3 ea Gripper™ Soccer Ball (Size 5)
- 6 ea Hurlie Gertie® Football (Size 4)
- Set of 12 Rainbow® Discs
- Set of 4 Softball Bases
- 2 ea SuperBat (30"L)
- Set of 6 Rainbow® Air-Lite™ Balls (4" dia)
- Set of 12 Rainbow® Nylon Jump Ropes (6 ea 8'L and 9'L)
- 1 set Foam Horseshoes
- Set of 6 Rainbow® Rigid Plastic Cones (12"H)
- 4 ea Mesh Bag (36" x 45")

The study will be conducted over two rounds. Response rates will be determined after each round and each school has the opportunity for two chances in the drawing. Of the 20 schools invited to the study, only schools with at least 70% classroom teacher response rate during either round will be included in the drawing.

APPENDIX D

INVITATION LETTER TO TEACHERS

Hello! My name is Denny Scruton, an assistant professor at Shenandoah University and doctoral student at Michigan State University. Your principal has given permission for your school to participate in this study and for me to contact you. I am currently working on a research project dealing with the effects of daily physical education programs. I am interested in your opinions regarding your students who participate in daily physical education. More specifically, I am interested in your perceptions of the impact of daily physical education on students *in your classroom?* This study is interested in observed outcomes within the following domains: Behavioral, Cognitive, Social, Academic, and Physical.

Input from classroom teachers on this subject has been largely ignored in the research. However, you are with children during most of the school day, including before and after physical education class. Your voice in this matter needs to be heard. If at least 70% of the classroom teachers in your school participate in this study, your school will be eligible to win a $500 activity package from

GOPHER, a physical education equipment company who is contributing to this study.

This e-mail includes two attachments as well as a Web site link to the Round 1 survey. The first attachment contains consent information which explains that by completing this survey, you agree to participate in the study. The second attachment outlines the incentive plan available to your school. The Web site link will contain the research question which includes a short demographic survey along with response instructions. Completion of both the demographic survey and research question will take approximately 10 minutes. The results from this process will be used to create a second Round survey that will be e-mailed to you in about four weeks. Your participation is greatly appreciated. Thank you for considering being a part of my study. Remember that to help your school to become eligible for the prize, you must return the surveys within the designated time frame.

APPENDIX E

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM

You are being asked to participate in a research project. Researchers are required to provide a consent form to inform you about the study, to convey that participation is voluntary, to explain risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Classroom Teachers' Perceptions of Student who Participate in Daily Physical Education

Denny Scruton and Dr. Crystal Branta

Department of Kinesiology, Shenandoah University and Michigan State University

1. PURPOSE OF RESEARCH:

- You are being asked to participate in a research study of classroom teachers' perceptions of students who participate in daily physical education. This study is a doctoral dissertation by Denny Scruton a doctoral student at Michigan Sate University and a Lecturer at Shenandoah University.
- You have been selected as a possible participant in this study because of your experience teaching students who attend daily physical education class. Your name was obtained through your school and the state department of education Web site.
- From this study, the researchers hope to learn how teachers believe physical education affects students in the classroom environment.
- In the entire study, 200 teachers are being asked to participate.
- Your participation in this study will take approximately 15 minutes on 2 separate occasions, Round 1 and 2 of the study.

2. WHAT YOU WILL DO:

- Round 1. You will be sent a link to a 10 question demographic survey along with the initial research question. You will be asked to respond to both the demographic survey and the research question via Survey Monkey.

- Round 2. You will be sent a link to the Round 2 survey. You will respond via Survey Monkey.

3. YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW

- Participation in this research project is completely voluntary. You have the right to say no.
- You may change your mind at any time and withdraw. If you choose to withdraw, simply do not return the survey.
- You may choose not to answer specific questions or to stop participating at any time.

4. CONTACT INFORMATION FOR QUESTIONS AND CONCERNS

If you have any questions about this study, such as scientific issues, or how to do any part of it, please contact:

[redacted] or [redacted]

If you have any questions about your role and rights as a research participant, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Director of MSU's Human Research Protection Programs, [redacted], or regular mail at: [redacted]

APPENDIX F

SURVEY LINK AND RESEARCH QUESTION WITH INSTRUCTION FOR TEACHERS

http://[redacted]

Based on your observations, what are the impacts of daily physical education on students in your classroom on the four domains listed below? For each domain, list as many relevant outcomes as you can.

Please take a few moments to think about each domain and what you have observed in your classroom that could be a direct result of the children's' participation in daily physical education. One example has been provided for each domain. Please list as many outcomes as you can for each domain. If you do not observe any changes for a particular domain, mark that box with N/A. Thanks!

Cognitive Domain
List all perceived outcomes (ex.: improved grades)

Physical Domain
List all perceived outcomes (ex.: better appearance)

Behavioral Domain
List all perceived outcomes (ex.: more trips to the restroom)

Social Domain
List all perceived outcomes (ex.: more outgoing)

APPENDIX G

REMINDER E-MAIL TO PRINCIPALS

Mr. Mrs.

I would like to thank you again for agreeing to participate in my study, Classroom Teachers' Perceptions of Students who Attend Daily Physical Education. Your teachers' input will be a major contribution to the literature regarding daily physical education. Currently, your teachers have responded with a ??% rate. We will be collecting data for one more week before the creation of the final survey. Remember, to be eligible for the drawing you must have a 70% classroom teacher response rate. Please encourage your teachers to participate. Your help in this regard would be greatly appreciated.

Thank you for your time and I look forward to sharing my results with you!

APPENDIX H

REMINDER E-MAIL TO TEACHERS

Teachers!

There is only 1 week left to respond to my research question regarding daily physical education and make your school eligible for a $500 activity package from GOPHER. Please help me share the voice of the classroom teachers with the physical education community. I have included another copy of the survey link in case you have yet to respond.

I look forward to hearing from you soon.

APPENDIX I

THEMES WITH INDIVIDUAL RESPONSE ITEMS FROM ROUND 1

Cognitive Domain

Focus n=22

1. Thinking more clearly
2. Improved concentration
3. Oxygen stimulates the brain. Movement is good for the brain. Cross lateral exercise is good for the brain.
4. Increased ability to focus
5. I think students work better and focus more after physical activity.
6. Increased focus increased motivation
7. We have PE every day I know it helps students focus better. If we didn't I'm sure we would see a drop in their ability to focus and that would hurt how much they could learn.
8. Students seem to be able to release built up stress from classroom work and seem refreshed after gym class allowing them to refocus their attention and concentrate on classroom matters.
9. Greater focus on work. Improved development of large motor skill.
10. Improved focus. Increased motivation.
11. Increased focus on lessons as they are being taught Increased concentration while doing work
12. Students seem better able to focus upon return to the classroom
13. More focus in the classroom
14. After my students come back from gym they seem more focused and ready to learn. They are able to pay attention for longer periods of time. They seem to have the "wiggles" out and that makes it easier to reach students.
15. Improved focus. Improved assertiveness and drive. Knowledge of game rules
16. Improved attention, release of energy, better attitude.
17. I think the extra time in gym allows students to get some energy out so they can concentrate on their school work.

18. Attention span in loner/higher. Calmer and more relaxed Better concentration
19. Longer attention span, better reading scores
20. Students who are in PE everyday are more attentive during class time.
21. More alert. Less restless in class.
22. Students need physical outlet in order to give more attention mentally. I give my students physical activity breaks in order to help and increase their focus during lessons.

Improved Grades n=6

1. Kids who get a chance to exert themselves each day are much better workers (better students)
2. Usually try to do well in school
3. Improved grades, improved fine and large motor skills, working together
4. Improved grades better attention span able to follow directions better
5. Improved grades much better ability to focus
6. Better test scores

Social Domain

Confidence n=4

1. Confidence builder
2. Confidence cooperation goal setting having fun together belonging
3. Students who feel better about themselves are more socially confident. Physical education provides activities in which students must work on teamwork, goal setting, problem solving and good sportsmanship.
4. More confident better attitude

Cooperation n=12

1. Cooperation with other
2. Has been great for cooperation and learning to solve problems.
3. Able to work as a team helping each other having fun doing something physical interaction
4. Opportunities to build relationships in a different environment cooperative learning

5. Students who get daily PE are better a cooperating and problem solving in team sports
6. Happier, better understanding of teamwork
7. Learn to work and play together, have fun together
8. Greater sense of community. Interest in helping one another succeed.
9. My students understand the concept of teamwork. They work well with others and are always encouraging other to do their best.
10. Willingness to work in cooperative groups, diverse friendships
11. Cooperation, Competitiveness, Bullying, acceptance of individual differences
12. They are able to work well with others as well as independently. They trust their physical abilities to succeed.

Competitive n=4

1. More competitive
2. For the most part, physical education highlights al student abilities as it's an environment for everyone to participate in. However, some negative attributes in students are heightened in when they are challenged to cooperate in competitive play.
3. Enjoys competition, happy time to play
4. Cooperation, Competitiveness, Bullying, acceptance of individual differences

Goal Setting n=2

1. Confidence cooperation goal setting having fun together belonging
2. Students who feel better about themselves are typically more socially confident Physical education also provides activities in which students must work on teamwork, goal setting, problem solving and good sportsmanship

Diverse Friendships n=8

1. Get along better with others since they must practice this when kids play games.
2. Working in teams during gym allows students to work with kids they normally wouldn't work with during the day.

3. Students get to mix with a variety of other students. They learn about sportsmanship, cooperation, team building skills
4. More ready to listen, play with other students, expand friendships
5. Students get along better, work together more
6. Students improved in teamwork, seemed to along better
7. Willingness to work with others in cooperative groups
8. Diverse friendships

Behavioral domain

Self-esteem n=2

1. Sense of pride with personal physical accomplishments Better able to sit and listen
2. Able to concentrate in school Better self-esteem

Creativity n=2

1. I have seen the students exposed to more games and as a result they are more creative when coming up with their own games during free play.
2. Creativity improves

Class Interruptions n=11

1. Have an easier time sitting in the classroom, kids look forward to gym time
2. It helps they release energy so they can be more settled during class work
3. Sometimes it can bring out the negative side of a student, especially those with a hard time with cooperation. This has been good to help guide the student in improved behaviors. Student drink more water
4. Not as antsy
5. Physical education each day helps students that have ADHD and behavioral issues in particular focus during the rest of the school day.
6. Better able to settle down opportunity to let off steam
7. Better able to sit and attend to classroom lessons, better able to pay attention in class

8. Less energy and activity-calmer after getting energy out. More trips to the drinking fountain Get hungry more often before lunch hour (asking for snack) Happier
9. Less interruptions
10. My students understand the difference when it is time to get up and move around and when it is time to do seat work. Because they get time each day to move in the gym, they are content they rest of the day and very calm and cooperative.
11. Students are not so wiggly and can sit and focus much better

Attitude n=6

1. Lack of gym or outside time adversely affects behavior
2. Less time to focus on tasks better attitude to try new things
3. Less behavior problems Strengths are visible whereas academics might be a weakness for them
4. Less frustration and anger. Ability to problem solve. Working together
5. There are less problems with behavior because they are able to burn off energy
6. When students become antsy they tend to act out. Periods of physical activity help to prevent boredom, frustration and other negative situations in which students may behave poorly.

Physical Domain

Appearance n=5

1. Better health, better appearance
2. Better appearance
3. Appearance posture strength stamina coordination
4. Better appearance happier feel better
5. Students are more confident feel better appearance loss of weight more energy better attitude

Coordination n=6

1. Better endurance, More alert, Strength, Great coordination
2. Appearance Posture Strength Stamina Coordination

3. Better physical fitness. More flexibility, better endurance, improved skills required for sports (kicking, catching, throwing…)
4. Stronger, Improved Coordination, Increased stamina
5. Runs off energy so able to sit better in class and pay attention stronger ties things they would never try without PE class stronger bodies better balance and coordination
6. Better overall physical fitness Improved coordination

Healthier n=17

1. Better health, better attendance
2. Improved health
3. Better endurance More alert Strength, Great coordination
4. Better physical fitness. More flexibility, better endurance, improved skills required for sports (kicking, catching, throwing…)
5. Better physical fitness improved ability at skills able to exercise without getting winded easily, healthy
6. Being active helps student stay physically fit and healthy
7. Stronger muscles able to play longer periods of time
8. Stronger healthier
9. Healthier, more fir, better endurance and muscle tone
10. Students that participate in gym class everyday seem to be healthier and tend to stay within the normal range of weight. I have had students in past years who have entered the classroom half way through the year and have left the year looking (weight-wise) better than when they started.
11. Healthier many times this is the only physical activity some students receive. Develop better coordination.
12. Stronger Improved Coordination Increased stamina
13. Runs off energy so able to sit better in class and pay attention stronger ties things they would never try without PE class stronger bodies better balance and coordination

14. Increased physical fitness Strength and endurance
15. Better overall physical fitness, Improved coordination
16. Stronger, healthier
17. Overall fitness Better physical skills

Obesity n=5

1. Obesity is a growing concern among students. Many students do not get much activity if they are not involved in organized sports. This may be their only time for physical activity.
2. Fewer weight problems
3. Students that participate in gym class everyday seem to be healthier and tend to stay within the normal range of weight. I have had students in past years who have entered the classroom half way through the year and have left the year looking (weight-wise) better than when they started.
4. Physical activity helps student stay fit. With the rising percentage of childhood obesity, I believe it is essential for students to have the opportunity for school physical activity (especially for children in northern states where cold winter weather prevents children from being outside much)
5. Students are more confident feel better appearance loss of weight more energy better attitude

APPENDIX J

ROUND 2 SURVEY

All questions used a 5- point Likert scale of 1 = strongly disagree, 2 = disagree, 3 = no opinion, 4 = agree, 5 = strongly agree

1. Please answer the following questions based on your perceptions of your school's daily physical education program.

   After my students return from their daily physical education program...

   They are more focused in the classroom
   They have a greater attention span
   Their academic work suffers
   They are more cooperative
   They are more coordinated
   They are healthier
   They exhibit increased unacceptable behavior
   They interrupt class more often
   They demonstrate more creativity
   They have a more positive attitude

2. Please respond to the following questions based on your overall perceptions of your school's physical education program.

   Daily physical education...

   Encourages diversified friendships
   Has helped my students earn better grades
   Has made my students more confident
   Has helped my students set goals
   Has made my students physically fit
   Has lowered childhood obesity
   Has improved my students self esteem
   Has caused competition that is harmful
   Has an overall positive impact
   Has taken too much time away from academics
   Should be implemented in more schools
   Does not have my support

APPENDIX K

TEACHER E-MAIL WITH FINAL SURVEY

Teachers!

The results from part one of my study on teacher perceptions of students who attend daily physical education have been tallied. Your responses were used to create a final survey that is linked to this e-mail. The questions are in Likert scale form but feel free to expand via e-mail on any questions as you deem appropriate to do so.

Remember, your school will be eligible for the prize drawing if 70% participation is reached.

I would like to thank you again for participating in this study. I am anxious to share the results with all of you!

Final Survey:

http://[redacted]

APPENDIX L

REMINDER E-MAIL TO PRINCIPALS II

Mr. Mrs.

Thank you again for all your help regarding the study entitled: Classroom Teachers' Perceptions of Students who Attend Daily Physical Education. I e-mailed the final survey to the teachers on Oct. ??. Only surveys sent back by Oct.?? will be included in the final analysis. Remember, you can earn another chance in the drawing for the $500 GOPHER package with a 70% classroom teacher return rate on the final survey as well. Your school currently has responded at a ??% rate. I look forward to hearing from the rest of your teachers as well.

Thanks again for all of your support.

APPENDIX M

REMINDER E-MAIL TO TEACHERS II

Teachers!

There is only 1 week left to respond to my survey regarding daily physical education. You can also give your school another chance to be eligible to win a $500 activity package from GOPHER. Please help me share the voice of the classroom teachers with the physical education community. I have attached another copy of the final survey in case you missed the last e-mail.

I look forward to hearing from you soon.

REFERENCES

REFERENCES

Adler, M., & Ziglio, E. (1996). *Gazing into the oracle.* Bristol, PA: Jessica Kingsley.

Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (1993). First-grade classroom behavior: Its short- and long-term consequences for school performance. *Child Development, 64*(3), 801-814.

American Academy of Pediatrics. (2006). *Active healthy living: Prevention of childhood obesity through increased physical activity.* Retrieved April 23, 2009, from http://aappolicy.aappublications.org/cgi/content/full/pediatrics;117/5/1834

American Heart Association. (2008). *Physical inactivity as risk factor for heart disease.* Available from http://www.americanheart.org

Babad, E. Y. (1993). Pygmalion—Twenty five years after interpersonal expectations in the classroom. In P. D. Blanck (Ed.), *Interpersonal expectations: Theory, research, and applications* (pp. 125-153). Paris: Cambridge University Press.

Babad, E. Y., Inbar, J., & Rosenthal, R. (1982). Pygmalion, Galatea, and the Golem: Investigations of biased and unbiased teachers. *Journal of Educational Psychology, 74*(4), 459-474.

Bailey, D., & Martin A. (1994). Physical activity and skeletal health in adolescents. *Pediatric Exercise Science, 6*(4), 348-360.

Bailey, R. (2006). Physical education and sport in schools: A review of benefits and outcomes. *Journal of School Health, 76*(8), 397-401.

Bailey, R. P. (2004). The value and values of sport. In R. Bailey (Ed.), *Teaching values and citizenship across the curriculum* (pp. 105-115). London: Kogan.

Baron, R. M., Tom, D. Y. H., & Cooper, H. M. (1985). Social class, race, and teacher expectations. In J. B. Dusek (Ed.), *Teacher expectancies* (pp. 251-270). Hillsdale, NJ: Erlbaum.

Barros, R. M., Silver, E.J., & Stein, R. E.(2009). School Recess and Group Classroom Behavior. Pediatrics. Vol. 123 (2), 431-436.

Becque, M. D., Katch, V. L., Rocchini, A. P., Marks, C. R., & Moorehead, C. (1988). Coronary risk incidence of obese adolescents: Reduction by exercise plus diet intervention. *Pediatrics, 81*(5), 605-612.

Belier, J., & Stoll, S. (1995). Moral reasoning of high school student athletes and general students: An empirical study versus personal testimony. *Pediatric Exercise Science*, 7(4), 352-363.

Blair, S. N., & Hardman, A. (1995, December). Special issue: Physical activity, health and well-being—An international scientific consensus conference. *Research Quarterly for Exercise and Sport, 66*(4).

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). NY: Greenwood Press.

Brattesani, K. A., Weinstein, R. S., & Marshall, H. H. (1984). Student perceptions of differential teacher treatment as moderators of teacher expectation effects. *Journal of Educational Psychology, 76*(2), 236-247.

Brill, J. M., Bishop, M. J., & Walker, A. E. (2006). The competencies and characteristics required of an effective project manager: A Web-based Delphi study *Educational Technology Research and Development, 54*(2), 115-140.

Brink, S. (2002). Phys ed redux. *U.S. News and World Report, 132*(19), 50-52.

Brockhoff, K. (1975). The performance of forecasting groups in computer dialogue and face-to-face discussion. In H. A. Linstone & M. Turloff (Eds.), *The Delphi method: Techniques and applications* (pp. 291-321). Reading, MA: Addison-Wesley.

Brophy, J. E. (1983). Classroom organization and management. *Elementary School Journal, 83*(4), 264-286.

Brown, W. J., & Brown, P. R. (1996). Children, physical activity and better health. *The Australian Council for Health, Physical Education and Recreation Healthy Lifestyles Journal, 43*, 19-24.

Cabot, K. L. (1997). *The effects of relaxation and visualization on information retention in fifth grade science students*. Retrieved April 23, 2009, from Luster Learning Institute Web site: http://www.lusterlearning.org/images/effects%20of%20viusalization%20and%20relaxation%20on%20info%20retention%20in%205th%20graders.pdf

California Department of Education. (2002). News release.

Canadian Fitness and Lifestyle Research Institute. (2002). *2001 physical activity monitor*. Ottawa, Ontario: Author

Canadian Institute of Public Health Inspectors. (2005, April). *Position statement on health protection: Cornerstone of public health by the National Executive Council.*

Carr-Ruffino, N. (1996). *Managing diversity: People skills for a multicultural workplace*. International Thomson.

Carroll, J. (1963). A model of school learning. *Teachers College Record, 64*(8), 723-733.

Caterino, M. C., & Polak, E. D. (1999). Effects of two types of activity on the performance of second-, third-, and fourth-grade students on a test of concentration. *Perceptual and Motor Skills*, 89, 245-248.

Centers for Disease Control and Prevention. (1997, March). *Guidelines for school and community programs: Promoting lifelong physical activity*. U.S. Department of Health and Human Services.

Centers for Disease Control and Prevention. (1999). *Youth risk behavior surveillance*.

Centers for Disease Control and Prevention. (2002). Physical activity levels among children aged 9-13. *Morbidity and Mortality Weekly Report, 52*(33), 785-788.

Chomitz, V. R., Slining, M. M., McGowan, R. J., Mitchell, S. E., Dawson, G. F., & Hacker, K. A. (2009). Is there a relationship between physical fitness and academic achievement? Positive results from public school children in the northeastern United States. *Journal of School Health, 79*(1), 30-37.

Clark, J. E., & Metcalfe, J. S. (2002). The mountain of motor development: A metaphor. In J. E. Clark & J. H. Humphrey (Eds.), *Motor development: Research and reviews, Vol. 2* (pp. 163-190). Reston, VA: The National Association for Sport and Physical Education.

Cochran-Smith, M., & Lytle, S. (1999). The teacher research movement: A decade later. *Educational Researcher, 28*(7), 15-25.

Coe, D. P., Pivarnik, J. M., Womack, C. J., Reeves, M. J., & Malina, R. M. (2006). Effect of physical education and activity levels on academic achievement in children. *Medicine and Science in Sports and Exercise, 38*(8), 1515-1519.

Collins, M., & Kay. T. (2003). *Sport and social exclusion*. London: Routledge.

Cooper, H. M., Findley, M., & Good, T. (1982). Relations between student achievement and various indexes of teacher expectations. *Journal of Educational Psychology, 74*(4), 577-579.

Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: Freeman & Company.

Cowen, E. L., Wyman, P. A., Work, W. C., & Parker, G. R. (1990). The Rochester Child Resilience Project: Overview and summary of first year findings. *Development and Psychopathology, 2*(2), 193-212.

Crano, W. D., & Mellon, P. M. (1978). Causal influence of teachers' expectation on children's academic performance: A cross-lagged panel analysis. *Journal of Educational Psychology, 70*(1), 39-49.

Credit, A., & Garcia, M. (1999). *A study of relaxation techniques and coping skills with moderately to highly stressed middle and high school students.*

Cuban, L. (1993). *How teachers taught: Constancy and change in American classrooms, 1880-1990* (2nd ed.). New York: Teachers College Press.

Dajani, J. S., Sincoff, M. Z., & Talley, W. K. (1979). Stability and agreement criteria for the termination of Delphi studies. *Technological Forecasting and Social Change, 13*(1), 83-90.

Deegan, J. (1996). *Children's friendships in culturally diverse classrooms.* London: Falmer Press.

Delbecq, A., Van de Ven, A., & Gustafson, D. (1975). *Group guide to nominal group and Delphi processes.* Glenview, IL: Scott, Foresman and Co.

Dishman, R. (1995). Physical activity and public health: Mental health. *Quest, 47*(3), 362-385.

Doherty, J., & Conolly, M. (1985). How accurately can primary school teachers predict the scores of their pupils in standardized tests of attainment? A study of some non-cognitive factors that influence specific judgment. *Educational Studies, 11*(1), 41-60.

Dorne, L., Holian, E., & Kaplan, D. (2001). *Social skills at the elementary level through cooperative learning and direct instruction.* IL.

Duncan, G. J., Brooks-Gunn, J., & Klebanov, P. K. (1993, March). *Economic deprivation and early-childhood development*. Paper presented at the biennial meeting of the Society for Research in Child Development, New Orleans, LA.

Dusek, J. B., & Joseph, G. (1983). The bases of teacher expectancies: A meta-analysis. *Journal of Educational Psychology, 75*(3), 327-346.

Dwyer, T., Sallis, J. F., Blizzard, L., Lazarus, R., & Dean, K. (2001). Relation of academic performance to physical activity and fitness in children. *Pediatric Exercise Science, 13*(3), 225-237.

Egan, W., & Archer, P. (1985). The accuracy of teachers' ratings of ability: A regression model. *American Educational Research Journal, 22*(1), 25-34.

Epstein, L. H., Wing, R. R., Koeske, R., & Valoski, A. (1987). Long-term effects of family-based treatment of childhood obesity. *Journal of Consulting and Clinical Psychology, 55*(1), 91-95.

Evans, J., & Roberts, G. (1987). Physical competence and the development of children's peer relationships. *Quest, 39*(1), 23-35.

Feshbach, S., Adelman, H., & Fuller, W. (1977). Prediction of reading and related academic problems. *Journal of Educational Psychology, 69*(4), 299-308.

Field, A., Coakley, E., & Must, A. (2001). Impact of overweight on the risk of developing common chronic diseases during a 10-year period. *Archives of Internal Medicine, 161*(13), 1581-1586.

Finkelstein, E., Fiebelkorn, I., & Wang, G. (2004). State-level estimates of annual medical expenditures attributable to obesity. *Obesity Research, 12*(1), 18-24.

Fowles, J. (1978). *Handbook of futures research*. Westport, CT: Greenwood Press.

Fox, K. (1996). Physical activity promotion and the active school. In N. Armstrong (Ed.), *New directions in physical education* (pp. 94-109). London: Cassell.

Gallahue, D. L., & Ozmun, J. C. (1998). *Understanding motor development: Infants, children, adolescents, adult* (5th ed.). Boston: McGraw-Hill.

Gamino, M., & Sneed, J. (1992). Cross-cultural training practices and needs in the hotel industry. *Hospitality Research Journal, 15*(13), 13-26.

Garmezy, R. (1981). Children under stress: Perspectives on antecedents and correlates of vulnerability and resistance to psychopathology. In A. I. Rabin, J. Aronoff, A. M. Barclay, & R. A. Zucker (Eds.), *Further explorations in personality* (pp. 196-269) New York: John Wiley and Sons.

Givvin, K. B., Stipek, D. J., Salmon, J. M., & MacGyvers, V. L. (2001). In the eyes of the beholder: Students' and teachers' judgments of students' motivation. *Teaching and Teacher Education,* 17(3), 321-331.

Gruber, J. J. (1985). Physical activity and self-esteem development in children: A meta-analysis. *The Academy Papers*, 19, 30-48.

Gutin, B., Barbeau, P., & Yin, Z. (2004). Exercise interventions for prevention of obesity and related disorders in youth. *Quest, 56*(1), 120-141.

Hall, V. C., Howe, A., Merkel, S., & Lederman, N. (1986). Behavior, motivation, and achievement in desegregated junior high school science classes. *Journal of Educational Psychology, 78*(2), 108-115.

Harmin, M. (1994). *Inspiring active learning: A handbook for teachers.* Alexandria, VA: Association for Supervision and Curriculum Development.

Hartley, D. (1982). Ethnicity or sex: Teacher definitions of ability and reading comprehension in an E.P.A. primary school. *Research in Education*, 28, 9-24.

Hauser, S. T., Vieyra, M. A. B., Jacobson, A. M., & Wertlieb, D. (1985). Vulnerability and resilience in adolescence: Views from the family. *Journal of Early Adolescence, 5*(1), 81-100.

Henry, W. A., III. (1990). Beyond the melting pot. In V. Cyrus (Ed.), *Experiencing race, class and gender in the United States*. Mountain View, CA: Mayfield.

Hervet, R. (1952). Vanves, son experience, ses perspectives [Vanves, its experiment and outline]. *Revue de l'Institut de Sports,* 24, 4-6.

Hills, A. (1998). Scholastic and intellectual development and sport. In K.-M. Chan & L. Micheli (Eds.), *Sports and children* (pp. 76-90). Champaign, IL: Human Kinetics.

Hiltz, S. R., & Turoff, M. (1993). *The network nation.* Cambridge, MA: MIT Press.

Hoge, R. D., & Butcher, R. (1984). Analysis of teacher judgments of pupil achievement levels. *Journal of Educational Psychology, 76*(5), 777-781.

Hoge, R. D., & Coladarci, T. (1989). Teacher-based judgments of academic achievement: A review of literature. *Review of Educational Research, 59*(3), 297-313.

Hopkins, K. D., George, C. A., & Williams, D. D. (1985). The concurrent validity of standardized achievement tests by content area using teachers' ratings as criteria. *Journal of Educational Measurement, 22*(3), 177-182.

Ignico, A. (1990). The influence of gender-role perception on activity preferences of children. *Play and Culture, 3*(4), 302-310.

Jensen, A. R. (1998). The g factor and the design of education. In R. J. Sternberg & W. M. Williams (Eds.), *Intelligence, instruction, and assessment: Theory into practice* (pp. 111-131). Mahwah, NJ: Lawrence Erlbaum.

Jones, M. B., & Offord, D. R. (1989). Reduction of antisocial behavior in poor children by non-school skill development. *Journal of Child Psychology and Psychiatry, 30*(5), 737-750.

Jussim, L. (1989). Teacher expectations: Self-fulfilling prophecies, perceptual biases, and accuracy. *Journal of Personality and Social Psychology, 57*(3), 469-480.

Jussim, L., & Eccles, J. (1992). Teacher expectations II: Construction and reflection of student achievement. *Journal of Personality and Social Psychology, 63*(6), 947-961.

Keays, J., & Allison, R. (1995). The effects of regular moderate to vigorous physical activity on student outcomes: A review. *Canadian Journal of Public Health, 86*(1), 62-66.

Kelder, S., Perry, C., Klepp, K., & Lytle, L. (1994). Longitudinal tracking of adolescent smoking, physical activity and food choices behavior. *American Journal of Public Health, 84*(7), 1121-1126.

Kohn, M., & Rosman, B. L. (1972). Relationship of preschool social-emotional functioning to later intellectual achievement. *Developmental Psychology, 6*(3), 445-452.

Leeman, Y., & Volman, M. (2001). Inclusive education: Recipe book or quest. On diversity in the classroom and educational research. *International Journal of Inclusive Education, 5*(4), 397-379.

Linder, K. J. (1999). Sport participation and perceived academic performance of school children and youth. *Pediatric Exercise Science, 11*(2), 129-143.

Linder, K. J. (2002). The physical activity participation–Academic performance relationship revisited: Perceived and actual performance and the effect of banding (academic tracking). *Pediatric Exercise Science, 14*(2), 155-169.

Linstrone, H. A., & Turoff, M. (1975). *The Delphi method: Techniques and applications*. Reading, MA: Addison-Wesley.

Ludwig, B. (1997). Predicting the future: Have you considered using the Delphi methodology? *Journal of Extension, 35*(5), 233-239.

Madison, S. M. (1992). *Pathways to the disconfirmation of teacher expectations*. Unpublished master's thesis, University of California, Berkeley.

Madon, S., Jussim, L., & Eccles, J. (1997). In search of the powerful self-fulfilling prophecy. *Journal of Personality and Social Psychology, 72*(4), 791-809.

Malina, R., & Bouchard, C. (1991). *Growth, maturation and physical activity*. Champaign, IL: Human Kinetics.

Martino, J. (1983). *Technological forecasting for decision making*. New York: Elsevier Science.

McLaughlin, M. W., & Talbert, J. E. (1992, April). *Social constructions of students: Challenges to policy coherence*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco.

Merriam-Webster online dictionary. (2009).*Perception*. Retrieved March 15, 2009, from http://www.merriam-webster.com/dictionary/perception

Merton, R. (1948). The self-fulfilling prophecy. *Antioch Review, 8*(2), 193-210.

Miller, D. M., & Pine, G. J. (1990). Advancing professional inquiry for educational improvement through action research. *Journal of Staff Development, 11*(3), 56-61.

Miller, S., Bredemeier, B., & Shields, D. (1997). Sociomoral education through physical education with at-risk children. *Quest, 49*(1), 114-129.

Moore, H. A., & Johnson, D. R. (1983). A re-examination of elementary school teachers' expectations: Evidence of sex and ethnic segmentation. *Social Science Quarterly, 64*(3), 460-475.

Must, A., Spadano, J., Coakley, E., Field, A., Colditz, G., & Dietz, W. (1999). The disease burden associated with overweight and obesity. *Journal of American Medical Association, 282*, 1523-1529.

Myers, J. E., Sweeney, T. J., & Zitmer, J. M. (2000). The wheel of wellness counseling for wellness: A holistic model for treatment planning. *Journal of Counseling and Development, 78*(3), 251-266.

National Association for Sport and Physical Education. (1999). *Sport and physical education advocacy kit 11*. Reston, VA: National Association for Sport and Physical Education.

National Association for Sport and Physical Education. (2001). *Physical education is critical to a complete education council of physical education for children: A position paper from the National Association for Sport and Physical Education*. Retrieved April 23, 2009, from the American Alliance for Health, Physical Education, Recreation, and Dance: http://member.aahperd.org/sandbox/generationXXX/naspe/pdf_files/pos_papers/pe_critical.pdf

National Association for Sport and Physical Education. (2004). *Physical activity for children: A statement of guidelines for children ages 5-12* (2nd ed.). Reston, VA: Author.

National Association for Sport and Physical Education. (2006). *Shape of the nation: A position paper from the National Association for Sport and Physical Education.*

National Association of State Boards of Education. (2006). http://www.nasbe.org

O'Connell, E. J., Dusek, J., & Wheeler, R. J. (1974). A follow-up study of teacher expectancy effects. *Journal of Educational Psychology, 66*(3), 325-328.

Okely, A., Booth, M., & Patterson, J. W. (2001). Relationship of physical activity to fundamental movement skills among adolescents. *Medicine and Science in Sports and Exercise, 33*(11), 1899-1904.

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3), 307-332.

Palardy, J. M. (1969). What teachers believe—what children achieve. *Elementary School Journal, 69*(7), 370-374.

Park, R. J. & Heisler, B. A. (1995). School programs can foster creativity through physical education. *Education, 95,* 225-229.

Pate, R. R., Heath, G. W., Dowda, M., & Trost, S. G. (1996). Associations between physical activity and other health behaviors in a representative sample of U.S. adolescents. *American Journal of Public Health, 86*(11), 1577-1581.

Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., et al. (1995). Physical activity and public health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *Journal of the American Medical Association, 273*(5), 402-407.

Peddie, B. K. (1995). What underlies the teaching of motor skills. *Physical Educator, 52*(3), 119-124.

Pedulla, J. J., Airasian, P. W., & Madaus, G. F. (1980). Do teacher ratings and standardized test results yield the same information? *American Educational Research Journal, 17*(3), 303-307.

Perry, J. D., Guidubaldi, J., & Kehle, T. J. (1979). Kindergarten competencies as predictors of third-grade classroom behavior and achievement. *Journal of Educational Psychology, 71*(4), 443-450.

Pianta, R., Egeland, B., & Sroufe, L. A. (1990). Maternal stress and children's development: Prediction of school outcomes and identification of protective factors. In J. E. Rolf, A. Masten, D. Cicchetti, K. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 215-235). Cambridge, MA: Cambridge University Press.

Putnam, R. D. (1993). The prosperous community: Social capital and public life. *American Prospect, 4*(13)

Quinn, M. M. (2002, August). Changing antisocial behavior patterns in young boys: A structured cooperative learning approach. *Education and Treatment of Children, 25*(4), 380-395.

Raitakari, O., Porkka, K., Taimela, R., Telama, R., Rasanen, L., & Viikari, J. (1994). Effects of persistent physical activity and inactivity on coronary risk factors in children and young adults. American Journal of Epidemiology, 140, 195-205.

Raudenbush, S. W. (1984). Magnitude of teacher expectancy effects on pupil IQ as a function of the credibility of expectancy induction: A synthesis of findings from 18 experiments. *Journal of Educational Psychology, 76*(1), 85-97.

Reddiford, G. (1981). Morality and the games player. *Physical Education Review*, 4, 8-16.

Rist, R. C. (1970). Student social class and teacher expectations: The self-fulfilling prophecy in ghetto education. *Harvard Educational Review, 40*(3), 411-451.

Robert Wood Johnson Foundation. (2004). *National polls show parents and teachers agree on solutions to childhood obesity*. Retrieved April 23, 2009, from http://www.rwjf.org/pr/product.jsp?id=21648&topicid=1301

Robins, R. W., & John, O. P. (1997). The quest for self-insight: Theory and research on accuracy and bias in self-perception. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 649-679). San Diego, CA: Academic Press.

Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom*. New York: Holt.

Rosenthal, R., & Rubin, D. B. (1978). Interpersonal expectancy effects: The first 345 studies. *The Behavioral and Brain Sciences, 1*(3), 377-386.

Ross, S. I., & Jackson, J. M. (1991). Teachers' expectations for Black males' and Black females' academic achievement. *Personality and Social Psychology Bulletin, 17*(1), 78-82.

Rowe, G., Wright, G., & Bolger, F. (1991). Delphi: A reevaluation of research and theory. *Technological Forecasting and Social Change, 39*(3), 235-251.

Ruff, H. A., & Lawson, K. R. (1990). Development of sustained, focused attention in young children during free play. *Developmental Psychology, 26*(1), 85-93.

Sadker, M., & Sadker, D. (1986). Sexism in the classroom: From grade school to graduate school. *Phi Delta Kappan, 67*(7), 512-515.

Sadker, M., & Sadker, D. (1994). *Failing at fairness: How America's schools cheat girls*. New York: Simon & Schuster.

Sallis, J. (1993). *Health and human behaviour*. New York: McGraw Hill.

Sallis, J., McKenzie, T., Alcaraz, J., Kolody, B., Faucette, N., & Hovell, M. (1997). The effects of a 2-year physical education (SPARK) program on physical activity and fitness of elementary school children. *American Journal of Public Health, 87*(8), 1328-1334.

Sallis, J., & Owen, N. (1999). *Physical activity and behavioral medicine*. Thousand Oaks, CA: Sage.

Sallis, J. F., & Patrick, K. (1994). Physical activity guidelines for adolescents: Consensus statement. *Pediatric Exercise Science, 6*(4), 302-314.

Seefeldt, V., & Vogel, P. (1986). *The value of physical activity*. Reston, VA: American Alliance for Health, Physical Education, Recreation, and Dance and National Association for Sport and Physical Education.

Shephard, R. J. (1997). Curricular physical activity and academic performance. *Pediatric Exercise Science, 9*(2), 113-126.

Shephard, R. J., Volle, M., Lavallee, H., La Barre, R., Jequier, J., & Rajie, M. (1984). Required physical activity and academic grades: A controlled study. In J. Hmarinen & L. Valimaki (Eds.), *Children and sport* (pp. 58-63). Berlin, Germany: Springer Verlag.

Sibley, B., & Etnier, J. (2003). The relationship between physical activity and cognition in children: A meta-analysis. *Pediatric Exercise Science, 15*(3), 243-256.

Simpson, L. (2001). Fostering creativitiy. *Training, 38,* 54-58.

Soulé, C. R. (1993). *Predictors of children's susceptibility to teacher expectations: Developmental, classroom, and child perception factors*. Unpublished doctoral dissertation, University of California, Berkeley.

Sparapany, E. F., Abel, F. J., Easton, S. E., Edwards, P., & Herbster, D. L. (1995). *Pre-service teacher education majors' understanding of issues related to diversity and exceptionality*. Detroit, MI.

Spradley, J. P. (1980). *Domain analysis: Participant observation*. Fort Worth, TX: Harcourt Brace.

Stoner, S., & Purcell, K. (1985). The concurrent validity of teachers' judgments of the abilities of preschoolers in a daycare setting. *Educational and Psychological Measurement, 45*(2), 421-423.

Surgeon General of the United States. (1996). *Physical activity and health: A report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

Svanum, S., & Bringle, R. G. (1982). Race, social class, and predictive bias: An evaluation using the WISC, WRAT, and teacher ratings. *Intelligence, 6*(3), 275-286.

Svoboda, B. (1994). *Sport and physical activity as a socialisation environment: Scientific review part 1*. Strasbourg, France: Council of Europe.

Telama, R., Yang, X., Laakso, L., & Viikari, J. (1997). Physical activity in childhood and adolescence as predictor of physical activity in adulthood. *American Journal of Preventive Medicine, 13*(4), 317-323.

Tremblay, M. S., Inman, J. W., & Williams, J. D. (2000). The relationship between physical activity, self-esteem, and academic achievement in 12-year-old children. *Pediatric Exercise Science, 12*(3), 312-323.

Trouilloud, D. O., Sarrazin, P. G., Martinek, T. J., & Guillet, E. (2002). The influence of teacher expectations on student achievement in physical education classes: Pygmalion revisited. *European Journal of Social Psychology, 32*(5), 591-607.

Trudeau, F., Laurencelle, L., Tremblay, J., Rajic, M., & Shephard, R. J. (1999). Daily primary school physical education: Effects on physical activity during adult life. *Medicine and Science in Sports and Exercise, 31*(1), 111-117.

U.S. Department of Health and Human Services. (1996). *Physical activity and health: A report of the Surgeon General*. Atlanta, GA: Centers for Disease Control and Prevention.

U.S. Census Bureau. (2008). http://www.census.gov

Wade, M. G. (1992). Motor skills, play and child development. *Early Report, 19*(2),

Weinstein, R. S. (1993). Children's knowledge of differential treatment in school: Implications for motivation. In T. M. Tomlinson (Ed.), *Motivating students to learn: Overcoming barriers to high achievement* (pp. 197-224). Berkeley, CA: McCutchan.

West, C. K., & Anderson, T. H. (1976). The question of preponderant causation in teacher expectancy research. *Review of Educational Research, 46*(4), 613-630.

Williams, T. (1976). Teacher prophecies and the inheritance of inequality. *Sociology of Education, 49*(3), 223-236.

Williamson, K. M. (1992). Relevance or rigor—A case for teacher as researcher. *Journal of Physical Education, Recreation and Dance, 63*(9), 17-21.

Wissema, J. G. (1982). Trends in technology forecasting. *R&D Management, 12*(1), 27-36.

World Health Organization/Federation Internationale de Medecine du Sport—Committee on Physical Activity for Health. (1995). Exercise for health. *Bulletin of the World Health Organization, 73*(2), 135-136.

Woudenburg, F. (1991). An evaluation of Delphi. *Technological Forecasting and Social Change, 40*(2), 131-50.

Young, J. C. (2003). Does your P.E. meet today's needs? *Principal, 82*(3), 26-30.

Zimmerman, M. & Arunkumar, R. (1994). Resiliency research: Implications for schools and policy. *Social Policy Report, 4*(8), 1-17.