

Fitting Physical Activity into the Elementary School Day

There are many ways to add movement and exercise to classroom instruction.

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First, the bad news: Of all U.S. children aged 6 to 11, 33.3 percent are at risk of being overweight and 17 percent are at risk of being overweight/obese (Ogden, Carroll, & Flegal, 2008). With 473 students in the average elementary school (National Center for Education Statistics, n.d.), it can be hypothetically extrapolated that 158 are at risk of being overweight and 80 are at risk of being overweight/obese.

Since most children spend the majority of their daytime hours at school, that is a logical place to address the obesity epidemic, which may be curtailed by regular physical activity (Strong et al., 2005). There is strong evidence that physical activity positively affects musculoskeletal health, cardiovascular health, and obesity in overweight youths, and also may positively affect children's cholesterol and triglyceride levels, self-concept, anxiety, depression symptoms, and academic performance (Strong et al., 2005).

Physical activity in schools and school-related contexts can occur in a number of ways: physical education; recess activity; physical activity clubs; intramural activities; physical activity breaks; and walking or biking to school. Unfortunately, results from the 2006 School Health Policies and Programs Study indicate that elementary schools have much room for improvement (Lee, Burgeson, Fulton, & Spain, 2007):

- Only 3.8 percent of schools offered daily physical education for students in all grades. (Daily physical education is defined as being offered for 150 minutes a week for 36 weeks, as recommended by the National Association for Sport and Physical Education (NASPE), American Heart Association, American Academy of Pediatrics, and other organizations.)
- Only about half of schools required physical education in

kindergarten, with the percentage topping out at roughly 58 percent for fifth grade.

- Seventy-four percent of schools provided regularly scheduled recess in all grades.
- Approximately 44 percent of schools provided regular physical activity breaks.
- Nearly 50 percent of schools offered intramurals or physical activity clubs.

The loss of physical activity opportunities in schools is regrettable and is often blamed on efforts to meet high-stakes academic standards in core subjects. Many elementary school principals do not prioritize physical education, relative to other subject matter, and do not believe it enhances academic learning (Stevens-Smith, Fisk, Keels-Williams, & Barton, 2006). At this point, I feel obligated to disabuse readers of the notion that physical activity, in whatever forms it is offered in schools, will adversely affect academic performance. Here is the evidence:

- Spending twice as many minutes per week in physical education as a control group, second graders who received SPARK physical education instruction (www.spark.pe.org), did not score any worse on standardized academic tests (Sallis et al., 1999).
- State test scores in language arts and mathematics rose for each of six fitness standards met by California fifth graders (California Department of Education, 2005).
- Kindergarten girls who spent the most time in physical education scored slightly higher on standardized mathematics and reading exams than girls who spent the least time (Carlson et al., 2008).

- In the most recent review, it was concluded that “gains in children’s mental functioning due to exercise training are seen most clearly on tasks that involve executive functions ... which are involved in performing goal-directed actions in complex stimulus environments, especially novel ones, in which elements are constantly changing” (Tomporowski, Davis, Miller, & Naglieri, 2008).

60 Minutes a Day

Hopefully, assured that physical activity can do no harm to students’ academic performance, we can focus on some school-based solutions. First, it is recommended that children between the ages of 5 and 12 accrue at least 60 minutes of daily physical activity of moderate-to-vigorous intensity (NASPE, 2004). It cannot be assumed that students will reach this target outside of school if physical activity opportunities are limited during school hours. In fact, children who engaged in outdoor recess and physical education classes were significantly more active after school than on days when they did not get physical education and were given only indoor recess (Dale, Corbin, & Dale, 2000).

Standard recommendations are scheduling regular physical education classes for at least 150 minutes per week, with 30 and 45 minutes representing the maximum allocation for grades K-2 and 3-5, respectively (NASPE, 2008) and the inclusion of at least one daily 20-minute recess period, in which adequate equipment, play areas, and supervision are provided (NASPE, 2006). There are other, more subtle means for accruing the 150 minutes of recommended physical activity during the school week, three of which are shared below.

Active Transportation. Roughly one in eight students walk or bicycle to school. As one-third of elementary school students live within a mile of school, active commuting could provide them with additional minutes of moderate physical activity. Schools can help create an active transportation-friendly environment by adopting some of the following suggestions by Walk to School in the USA (www.walktoschool.org):

- Participate in Walk to School Day in October and designate one day each week or month for this activity;
- Help organize a walking school bus (www.walking-schoolbus.org), whereby parents volunteer to take turns walking small groups of children to school;
- Perform an environmental audit of the school grounds (e.g., presence of bike racks, access to school grounds from adjacent residential properties) and the surrounding neighborhood (e.g., presence of sidewalks, volume and speed of traffic) to identify factors that may inhibit active commuting and work with PTAs and local officials to remedy any identified problems;
- Teach bicycle and walking safety (i.e., rules of the road,

avoiding danger); and

- Motivate students to walk (e.g., provide pedometers and incentive programs).

Classroom Reconfiguration. Traditional classrooms are oriented toward sedentary behavior, with students often required to sit at ill-fitting desks for lengthy periods of time in a cramped environment. The active classroom is one in which the space is reconfigured to promote movement through activity stations and learning centers, and ergonomically adapted chairs and desks allow for dynamic sitting, standing, and group work.

For example, children attending classrooms with traditional chairs and desks moved significantly less than when they attended an activity-permissive classroom (Lanningham-Foster et al., 2008).

In another example, children who participated in an activity in which their classroom was reconfigured to simulate a workplace that encouraged movement were more physically active than when they were not in such an arrangement (Cardon, De Clercq, De Bourdeaudhuij, & Breithecker, 2004).

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Integration of Physical Activity. The way core subjects are taught in the classroom may be an overlooked source of additional physical activity. Students have different learning styles; however, classroom teachers’ instructional formats sometimes neglect their kinesthetic learners, who learn best through a hands-on approach, actively exploring the physical world around them. Because it is often hard for them to sit still for long periods,

their need for activity and exploration is well served by an active classroom that includes physical activity integration. Moreover, the novelty of teaching core subject matter through activity-based lessons may also appeal to students with other learning styles.

Lessons That Move

Unfortunately, up until very recently there have been no comprehensive research-tested resources available to classroom teachers. That may change with the creation, implementation, and dissemination of Physical Activity Across the Curriculum (PAAC) (www.ebl.ku.edu/paac/paac_index.php), a project conceived by researchers in Kansas City, Missouri, as a means to increase physical activity in the classroom.

In this plan, teachers in grades 2 to 5 deliver existing lessons in math, social studies, science, and language arts while incorporating physical activity of moderate intensity. Initial results from more than 4,900 students using PAAC reinforce its efficacy in enhancing classroom levels of physical activity, compared with students in control schools (Gibson et al., 2008). Moreover, teachers reported that the lessons helped students

learn concepts better; enhanced memorization skills, alertness, and focus; reduced behavior management problems; and on some days provided the only physical activity students engaged in during the school day.

While providing specific strategies is beyond the scope of this article, readers may wish to consider adding elements that can assist in delivering movement-based classroom lessons, such as carpets and floor markers that allow students to move about while solving math, spelling, grammar, and geography problems.

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On the Same Page

Here are suggested questions that principals and teachers can use to spark discussion about how to apply the points made in this article to their particular schools.

1. How does physical activity currently fit into our curriculum?
2. What are some of the barriers to physical activity for the children at our school and how can we alleviate them?
3. How do the majority of our students travel to school? Is there an opportunity for a physically active transportation program?
4. Which classrooms would you reconfigure for a more active environment?
5. How can we integrate physical activity into our classrooms?