

**Robert Wood Johnson Foundation  
Center to Prevent Childhood Obesity**

**NAPERVILLE HIGH SCHOOL**

**INTRODUCTION**

In a political climate where most public schools have reduced or eliminated P.E. entirely in response to budget cuts and increased pressure to improve academic test scores,<sup>1</sup> Naperville High School in Illinois stands out as an anomaly. The school's already robust daily P.E. program is specifically designed around the notion that physical activity enhances rather than detracts from children's intellectual development. As the country confronts the dual challenge of childhood obesity and improving academic outcomes in our public schools, policymakers and educators can learn from Naperville's approach, which treats fitness, health, wellness, and classroom learning as holistically interdependent.

**THE CLIMATE**

Naperville, Illinois is a small suburban city located within the Chicago metropolitan area. Naperville High is a public 4-year comprehensive school serving approximately 3,000 mostly white upper-middle-class students. The school has historically had a strong traditional P.E. program, complemented by a diverse offering of extra-curricular sports such as football, track, volleyball, and swimming, and students receive P.E. daily. Recently, however, school staff made some important changes to the existing P.E. program. These changes were motivated not so much by student health issues, but by a concern for a group of students who were underperforming academically. This case study examines the results of those changes and their implications for public schools more broadly, as well as for policy moving forward.

The story begins in 2003, when school leaders were searching through data in order to identify common patterns in students who were not achieving at grade level, and discovered that they were all poor readers. In response, the school created a special literacy class that would target entering ninth-graders needing intervention. Parents supported the measure, but some were upset that it ruled out taking an elective. As a solution, the principal asked Paul Zientarski, whose current title is "Learning Readiness" P.E. Coordinator at Naperville High, if he would be willing to teach a "zero hour" P.E. class, which would start at 7:00 am before the school day was officially in session (daily P.E is required in the state of Illinois, so foregoing it was not an option for students). While the goal was simply to free up time for students in the literacy class to take an elective if they wanted, Zientarski saw an unexpected opportunity to test whether exercise timed in close proximity to a subject in which students were struggling would have a positive impact on their progress. He accepted the principal's

offer with one caveat: that he schedule the literacy class immediately after zero hour P.E.

Zientarski's inspiration for this idea came partly from Dr. John Ratey, an author and professor of psychiatry at Harvard Medical School who promotes the positive effects of exercise on brain functioning. Dr. Ratey had visited Naperville High in 2004, after learning that the school's prior district coordinator for physical education had been influenced by his work. "One of the things that Ratey told us" says Zientarski, "is that exercise preps the brain for learning. Chemicals the brain creates as a result of cardiovascular exercise help with attention and concentration levels. So if literacy was a class that kids were struggling in, it made sense to put it in close proximity to P.E."

## POLITICAL SUPPORT AND PUBLIC WILL

Naperville parents had high expectations and were willing to push the school to alter its schedule so that their kids could take an elective. To boot, physical activity was already a solid part of the school's culture, with approximately 60 percent of students participating in some form of after-school athletics. "Our community is a healthy community to begin with," says Zientarski. "They promote exercise." Perhaps most importantly, Zientarski himself, a full-time P.E. teacher who has been at Naperville High for 26 years and whose career spans 40 years in education, had the immense experience in his field, seniority, resources, and time to effectively advocate for and implement the program design he believed would produce the best results. It was under these circumstances that a majority of literacy students—11 out of 16 total—opted in to zero hour P.E. (the five students who opted out simply forewent an elective).

Zientarski was committed to accountability and bent on tracking students' progress. "One of the things I told people we had to do is collect data," he says. "We needed to see if what we were doing was working—and if we found that it wasn't making a significant difference, then we would need to change things." After one semester of implementing Zientarski's plan, the school measured student improvement using the Nelson-Denny national reading test, and found that those in the literacy class who had zero-hour P.E. advanced their reading levels by about a third more than those who had P.E. later in the day. Zientarski's ability to produce evidence that demonstrated such promising results helped build school-wide support for expanding the initiative into a more formalized program. The following year, all students required to take the literacy class were placed in morning P.E., which was redubbed "Learning Readiness P.E." ("LRPE" for short), and moved from outside regular school hours to the first official period of the day. The literacy class was still scheduled right afterward; however, a greater number of students meant that some of them had to be accommodated by a second period of literacy added later in the day. Final testing results were roughly similar to the previous year: students who had LRPE *just before* literacy class showed nearly twice as much improvement as those who had several hours of separation in between.

Once again, Zientarski's commitment to sharpening the program's effectiveness and his ability to measure

results inspired the school's confidence to allow him to make further adjustments. To make sure the lagging group's slower progress wasn't just due to the afternoon hour, as some observers charged might be the case, the following year, both afternoon *and* morning literacy class periods were immediately preceded by a section of Learning Readiness P.E. So for example, half the students had LRPE during first period followed by second period literacy, while the other half had LRPE during sixth period followed by seventh period literacy. Results were dramatic: testing showed virtually equal progress, with both groups advancing, over the course of a single semester, approximately two full grade level equivalencies. It appeared from these results that what was critical was the *timing of physical activity* in relation to school work: putting P.E. just before class seemed to be making the difference for struggling students.

Zientarski led the effort to develop and formalize LRPE within the broader curriculum, but other teachers were also encouraged to help build the program, and to view physical activity as relevant to their work as educators rather than a separate discipline. "Our teachers are very innovative," says Zientarski. "At one point, literacy students were given a reading assignment involving a character on a long bike trip. The literacy teachers brought exercise bikes into the classroom to mirror the kinds of experiences students were reading about. In class students charted their mileage as part of their study of this book. That's when they found out it could even enhance the process in the classroom as well."

## Implications

Naperville High School is atypical in that it enjoys a higher level of resources than most American public schools today. But its story is still relevant for a diverse range of educators and policymakers working to make school environments more supportive of children's health and well-being. First, it suggests that *a broad cultural shift in the way we think about the relationship between physical activity and academic achievement is imperative*. This means discarding policies and practices based on the outmoded and harmful assumption that physical activity during the school day interferes with learning. On the contrary, the experience at Naperville High strongly suggests that physical activity provides students with an academic advantage. Fighting childhood obesity and promoting academic excellence are therefore complementary and interconnected goals.

Second, we need to *re-institute daily physical activity at all grade levels nationally, but embrace a new model focusing on health and wellness*. "We need to go back to the old days where PE is required," says Zientarski, "but it can't be just roll the ball out and go play and have fun, it has to be about fitness and health and wellness. Our emphasis is on teaching kids how to keep themselves fit, teaching them the concepts they need to know." But just requiring daily P.E. won't mean schools implement it. Zientarski says administrators need to truly understand the brain science—the relationship between fitness and intellectual capacity—as well as the importance of restructuring the school day to allow students more frequent periods of physical activity, even if that means just taking brief "brain breaks" during which students get up during class and move around.

Finally, as new policies become more closely aligned with the principles Naperville's approach represents, *schools in lower-income districts in particular need more financial resources to translate these principles into practice.* The best research is showing that programs like Naperville's are not luxuries but basics that all children need in order to achieve optimal health and well-being. Not all programs need look alike, but certain fundamentals, such as the ability to hire a full-time P.E. teacher or buy equipment, should be accessible.

## Conclusion

American public schools face an uneven playing field when it comes to building high-quality, modern P.E. programs, and yet evidence increasingly suggests that such programs are necessary both to reversing the costly childhood obesity epidemic and providing an optimal learning environment. By shifting both our cultural attitudes as well as our practical approach to designing new physical activity programs, and by embracing policies that lessen the economic and social disparities inscribed in our school system, we can open up the possibility that Naperville High, currently an exception, becomes the rule.

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<sup>1</sup> Robert Wood Johnson Foundation, Active Living Research, "Active Education: Physical Education, Physical Activity and Academic Performance," Research Brief, fall 2007.

