

Workout for mind and body

Naperville Central tests notion that exercise makes learning easier

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Freshmen who struggle in reading class have a new assignment this fall at Naperville Central High School: more time in the gym.

Long regarded as a leader in physical education reform, the Naperville school's latest effort involves trying new research linking increased physical activity with academic success. A small group of students with lower reading scores takes a specially designed gym class immediately before their literacy course.

The program is being closely watched nationally by leading researchers studying the impact of exercise on brain function. Among them is Harvard psychiatrist Dr. John Ratey, who includes a study of Naperville's program in his upcoming book on exercise and the brain.

"I've said for years that exercise is like Miracle-Gro for the brain," Ratey said. "But now we're learning so much more about it, and just how much exercise causes a huge increase in the growth factors in the brain."

Ratey said research has uncovered that exercise allows brain cells to bind together faster, making students more ready to learn.

He and some educators say such findings are critical now because physical education programs are under attack in the U.S. Many schools are cutting back or eliminating gym to squeeze in more time for core academics and the strict demands of the federal No Child Left Behind law.

Even as the nation grapples with growing childhood obesity rates, the percentage of students in daily physical education classes has declined from 42 percent in 1991 to 33 percent in 2005, according to the Centers for Disease Control.

Illinois is the only state that requires daily physical education for every grade, though about one in four districts gets waivers for less-frequent classes or no classes because of money or time constraints. Many Chicago public schools don't offer recess anymore, although the city school system is encouraging its return.

"There's just a tremendous amount of pressure on schools to achieve ... and the strategies are to eliminate recess and physical education," said Darla Castelli, assistant professor at the University of Illinois at Urbana-Champaign and a leading researcher on the impact of exercise on student achievement.

"Even in schools that do have phys ed, students are pulled from P.E. for remediation. Children are sitting for six or eight hours with minimal activity, and that's just not what kids need."

Naperville Central's longtime physical education leader, Paul Zientarski, had Ratey's research in mind when he decided to try a morning physical education class last year for freshmen with below-average reading scores. Students who opted into the 7 a.m. class took a remedial literacy class immediately afterward, while others with similar skills had their reading class several hours after gym.

Eleven students took the early morning class last year and the results were promising, Zientarski said. Standardized reading scores edged up the equivalent of 1.4 grade levels. As a result, school officials decided to study the idea further this school year with a larger group.

Thirty freshmen with below-grade-level reading scores enrolled in Central's remedial literacy class. All of them are taking early morning physical education with above-average aerobic activity, but only half will have reading class immediately afterward. The rest will take reading in the afternoon, when the effects of the early exercise may have worn off.

Naperville is one of a number of schools nationally now uncovering strong evidence of a link between exercise and better academic performance, Castelli said.

She conducted a 2004 study of 9-to 11-year-olds in Downstate Illinois. Students who scored higher on fitness tests were more likely to do better on standardized tests in reading and math. Another study in California of more than 1 million students had similar results.

"Most people kind of understand that exercise is good for the brain in various ways, but to understand that more specifically, mechanistically, is very important because there's so much pressure on schools to improve test scores," said Dr. Antronette Yancey, director of the Center to Eliminate Health Disparities at the University of California at Los Angeles. "To compromise physical education in service of test scores and learning is completely backward thinking."

At the same time, many advocates say schools need to do a lot more than just increase time or reschedule the gym class. Instead, they need to rethink how to teach gym.

The old method with gym teacher as drill sergeant forcing kids to run a mile or endure humiliation in a dodge ball game has to make way for a new model, they said. Instead, the focus should be on fun games that develop a lifelong love of fitness.

Zientarski is a former football coach and has been a physical educator for 37 years. Although he once prodded kids with countless push-ups and laps around the gym, he said, he realized that approach was turning them off and that he needed to change. He's now trained 58 school districts from around the U.S. and five foreign countries in his new approach.

Naperville Central students can square dance and scale a climbing wall to fulfill their daily gym requirement. They wear heart monitors and chase rubber chickens on a field, giggling and sweating as they do. They learn about nutrition and measure their body mass index to ensure their height is in proportion to their weight. They can even take a gym leadership class and work on skills as coach and motivator.

The department has a slew of innovative exercise equipment, including exercise bikes attached to game machines that simulate raceways and ski slopes. Students get a workout without even realizing how hard they're working, Zientarski said.

In a recent leadership class, he assigned a group of kids to hold hands in a contorted circle, then find a way to untangle themselves, working as a team to solve the problem.

After much struggle and a lot of laughs, most groups figured it out.

"You do a lot of different things that are fun in here," said sophomore Jordon Poll. "It's less like straight exercise and more about learning to cooperate more, not just running a boring mile."

Now, Zientarski said, brain research may be the latest evidence that gym period needs to promote his mini-revolution.

"We need to let people know that a strong physical education program is a core part of the education process and helps learning," he said. "We've just got to make people aware of how it all works hand in hand."

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