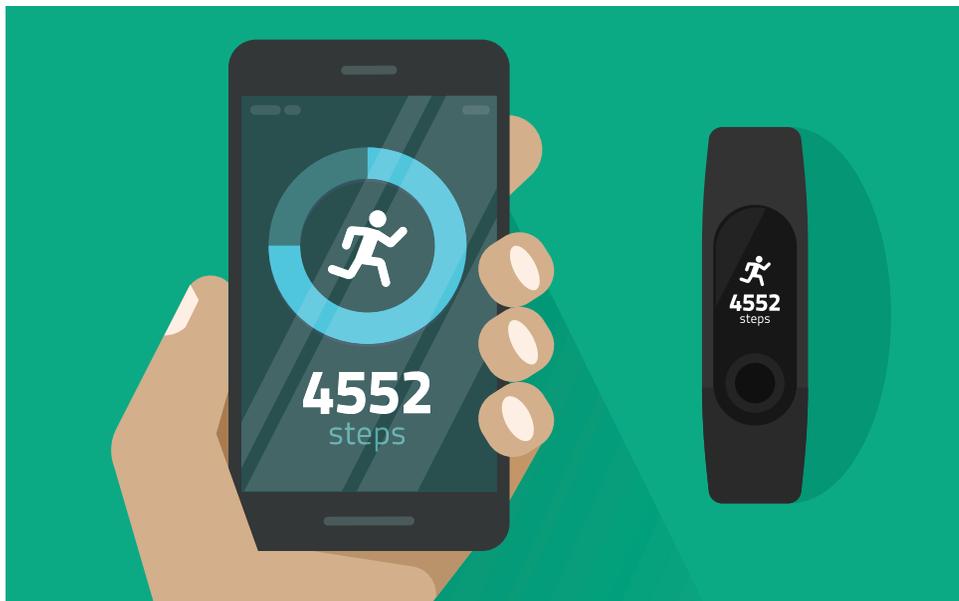


Electronic School



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Health Tracker

Wearable devices can increase student fitness

SCHOOLS SEARCHING FOR WAYS TO curb child obesity rates are increasingly turning to wearable devices and software that provide data on student health and fitness. And when the technology is used appropriately, it is working.

Stephanie Sparkman Barbee, an adjunct professor at the University of North Texas-Denton, recently studied how wearable devices and health monitoring software can be used to evaluate students' physical fitness levels. Working with 127 fifth-graders in six physical education (PE) classrooms over 11 weeks, she found that wearing the devices promoted increased physical activity and improved students' motivation and goal-setting skills.

This is important, especially since less than half of high school

students meet the federal standard of 60 minutes of daily physical activity. By meeting kids halfway, using tools today's digital natives innately know how to manipulate, schools can engage them on a topic we all need more of: physical activity.

"While schools are really focused on academics, they also have to look at the elements that go into a student's learning," Barbee says. "Wearables are not a panacea. It's not going to solve all of our problems. But it's a way we can start to make students more aware that they can manage their heart rate. And that's a start to better health."

PHYSICAL LINK TO ACADEMICS

By now, you've heard the statistics about the state of childhood fitness: 1 in 3 children is overweight or obese,

making them at increased risk for heart disease, type 2 diabetes, high blood pressure, and high cholesterol.

Being overweight or obese also can have "serious ramifications for kids' cognitive development and affect school attendance," according to a 2015 research brief by Active Living Research, a nonprofit funded by the Robert Wood Johnson Foundation and administered by the University of California at San Diego.

The brief, which reviewed more than a decade of study about the effect of obesity on learning, did have some encouraging findings.

"Physical activity can have both immediate and long-term benefits on academic performance," the brief states. "Almost immediately after engaging in physical activity, children are better able to concentrate on classroom tasks, which can enhance learning. Over time, as children engage in developmentally appropriate physical activity, their improved physical fitness can have additional positive effects on academic performance in mathematics, reading, and writing."

Aaron Beighle, an associate professor at the University of Kentucky, says technology can play a role in helping students to become more active, but he cautions against the one-size-fits-all approach.

"We have to meet young people where they are," Beighle says. "Technology integration is critical, but the key is using it in an authentic manner. Technology may change some kids, but it might turn others off. You have to find out what makes each kid tick and use that information to create a quality PE program."

WEARABLE REVOLUTION

Wearables such as Fitbit, Garmin,

Jawbone, and Nike have been part of consumer fitness for the past decade, but the devices only recently started trickling down to schools. In 2016, Adidas and Interactive Health Technologies (IHT) introduced the first wrist-based fitness tracker specifically designed for K-12 students.

The trackers, which cost \$3,995 for a classroom set of 28, measure a student's heart rate from any PE activity. Goals are set based on the student's personal fitness level, and data is sent via the cloud to the teacher to track progress. After each class, students get an email with information about their heart rate, activity level, calories burned, and if they met their goals.

Students use the trackers only during PE, although IHT released an app this past September that allows them to track progress on their smartphones at home as long as they wear the device.

Many districts already use software from companies such as IHT and Focused Fitness/WELNET to gather data on physical fitness. Kim Cooke, a health and physical education specialist with North Carolina's Charlotte-Mecklenburg Schools, logs in "almost daily to collect data to convince schools and the district why we need funding to support PE programs."

Cooke, whose district has used Focused Fitness/WELNET since 2011, says pedometers and wearables can help monitor whether students are meeting standards for moderate physical activity. She uses data from these types of tests to determine whether students who meet fitness standards have an academic advantage over those who don't.

Barbee started work on her study as Fitbits became all the rage among adults. She wanted to know if the

wearables would encourage students to move more while in PE and learn valuable lessons about regulating their heart rates. Students self-reported their results, and received digital badges on an app when they met certain targets.

Comparing two groups of students, she found the children who used the technology "significantly" outperformed those who didn't. Students said the technology made them work harder in class, and teachers reported the kids were supportive rather than competitive with their classmates. Problem behaviors also were reduced.

"It became clear, when looking at the data, that students can learn to self-regulate their heart rate," she says. "They knew what it meant and felt when they were in a high-performance zone (where the heart rate is elevated) and they can do the same now without the technology."

TECH CAVEATS

Given that wearables are all the rage—\$19 billion is expected to be spent on them in 2017 alone—why aren't more schools using them? Here are some issues to consider:

Privacy and pressure on students: Can the use of trackers, which collect data about a student's height, weight, and fitness level, put too much pressure on students to compete with their classmates? Will students have a choice about using the wearables? How will you use the data you collect? Who has access to the data?

"There are lots of benefits, because you get a lot of personalized data, but how you set this up is critical," Barbee says. "Make sure you know all the pieces that are going into the system. Ensure how you identify the student is safe, which is something you have to do to get parents on board. Students

and parents have to know kids are not being evaluated based on how fast they ran or how many digital badges they received that day."

Student engagement: How do you keep students motivated to use the trackers instead of succumbing to, as Beighle describes it, "the fad of the moment"? Chances are you'll have more success with introducing them at the lower grades.

"There are so many variables when you're talking about students and fitness," Beighle says. "This technology can work for some kids, but you've got to have options out there if it doesn't work, and you have to reassure students and parents that you'll keep searching for other things when it doesn't work."

Sustainability and relevance: Just like any other technology purchase, these trackers have a relatively short shelf life, and they can be inconsistent outside a contained environment, such as a gym, Barbee says. While cost is coming down and the trackers only have to be used to measure one class at a time, you still will have to replace them every two to three years.

Still, if a fitness tracker helps increase physical activity and engages students in a safe manner, they can be well worth the investment.



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