

A TEACHER'S QUEST TO HELP KIDS PLAY

Play

Webster physical education teacher develops devices for children with special needs

KHRISTOPHER J BROOKS @AMERICANGLOW

Joe Kabes tinkered alone in his garage, measuring, bending and adjusting.

He worked alone, sometimes late into the night while his son slept, hoping to solve a growing problem at his school. Kabes, who teaches physical education at Schlegel Road Elementary School in Webster, has seen the school's disabled student population climb these past six years. On the gym floor, Kabes has watched as these new students struggle to join their peers at playtime.

And so, Kabes toiled in his garage, surrounded by materials he bought at Home Depot, building a device that would help students. Two months later, he had something.

The Overcomer is basically a frame that connects to a child's wheelchair, braces, walker or gait trainer. The frame has seven different attachments designed for bowling, soccer, or other gym-time activities.



Measure, then measure again. Joe Kabes works on his creation, called The Overcomer, in the garage of his Greece home this month. The device will help disabled students take part in a wide variety of activities in gym class and recess.

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Continued from Page [1E](#)

Kabes said he built the devices to fill a need.

“In physical education, when there’s individuals in wheelchairs and things like that, it presents challenges trying to have them be as included as the general population,” Kabes said. “Most individuals take for granted the ability to kick a soccer ball or to dribble a basketball.”

Kabes, a Rush native who lives in Greece, confesses that he has no background in inventing or entrepreneurship. He spent 11 years as a personal trainer before jumping into public education. After talking to designers and engineers, Kabes learned that starting a business based on his invention would cost way more than a teacher’s salary can handle.

“I am a physical educator and personal trainer by trade, so my area of expertise is in how to physically train the body, not mechanical engineering,” Kabes said. “This venture and starting a business has taken me out of my comfort zone to say the least.”

Kabes has started a Go-FundMe account to raise \$30,000 to pay for a patent, attorney fees, a 3D print of his prototype and — hopefully — the first run of mass producing the devices.

Denis Cormier is an engineering professor at the Rochester Institute of Technology and an expert on additive manufacturing, a discipline that encompasses 3D printing. Cormier said Kabes needs to print a 3D model of his device so he can learn if they fit properly, are strong enough for gym time and if they look visually pleasing.

A prototype also will help Kabes snag investors. Venture capitalists might be willing to fork over money if Kabes talks about his device, Cormier said, “but if you have a 3D prototype that you can show people and demonstrate the utility of it, that’s much more convincing.”

Kabes is smart for saving money for a prototype, Cormier said, because no matter how the teacher goes about making one, it’s going to be expensive.

Cormier said Kabes has two options: buy a consumer- grade 3D printer or ask a service bureau to print one. A consumer-grade printer costs \$1,000 to \$2,000. Additionally, depending on which type he uses, the plastic for the print will be \$1 per cubic inch. On the other hand, a service bureau like Finnovation in downtown Rochester will charge “a couple hundred dollars per part,” Cormier said.

“So if he wants to make tens or hundreds of each and it’s one or two hundred dollars, the math doesn’t work

out very well,” the professor said, adding that the cost gets higher depending on how complicated the shapes are.

Kabes wants to make his device out of the same plastic that Little Tikes uses for children’s play products. There are plans later to make adult versions of The Overcomer.

Kabes has two cheaper options, Cormier said, but they aren’t fit for mass production. Kabes could see if any Webster high school has a 3D printer. If not, Kabes could join a maker space community like Rochester Makerspace. For \$40 a month, Kabes can use the equipment there and meet other inventor hobbyists who have a deeper background in manufacturing, Cormier said. “The advantage of the maker community is there are people who can help you get up to speed much quicker,” he said.

If Kabes can scale the manufacturing cost hurdle, he believes his invention could help countless children. He’s hoping to sell The Overcomer to school districts, physical therapy units and hospitals.

Kabes believes his product can help and he’s basing that, in part, on the feedback he received from his students and after taking his invention to the New York Games for the Physically Challenged in Brockport in October.

Susan Maxwell, director of the games, said she gave Kabes a table at the event and remembers “he had quite a crowd around him.”

“There seems to be a lot of interest in the product,” Maxwell said.

Maxwell also thinks there’s a market for Kabes’ device. She said other companies have already invented devices to help the disabled play, but there isn’t much out there that attaches to a wheelchair or braces. “Most individuals take for granted the ability to kick a soccer ball or to dribble a basketball.”

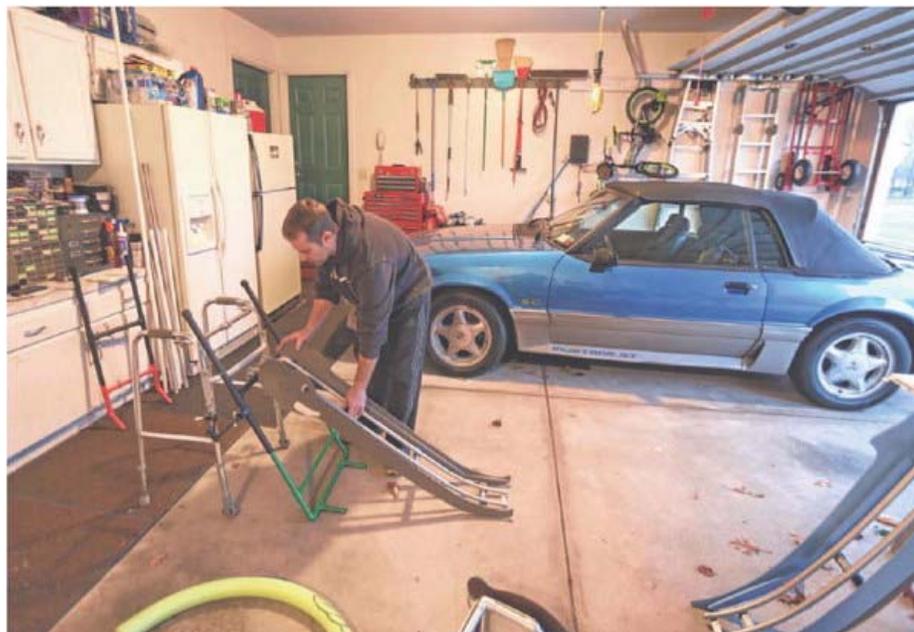
Another reason Kabes will succeed, Maxwell said, is because the teacher isn’t in it for the money.

“He’s coming from the right aspect on this. He did this because he saw the need for it for kids,” she said. “That’s the best way for a product to be developed.”

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JOE KABES, PHYS-ED TEACHER, INVENTOR OF THE OVERCOMER



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