Sportsometry looks at all angles

Town native's organization examines ties between sports, math/physics skills

By Keach Hagey
Staff Writer

Sometimes it takes a blind spot to see the light.

Greenwich native Annick Winokur, 31, dominated the squash courts at Greenwich Academy and later at Yale University without noticing problems with her vision. When an eye test three years ago revealed she had a hole in her peripheral vision on one side, she asked herself a simple but important question:

"How did I know where to hit the ball?"

She realized her brain had been compensating all those years with geometry and physics, calculating the speed and angle of the ball and directing her where to place her racket. She also realized the same cognitive process might be a useful teaching tool.

From these dual epiphanies came Sportsometry, a nonprofit organization she founded in 2003 to investigate how participation in sports can improve students' ability to calculate motion and think in three dimensions.

"Since squash is pretty much geometry and physics, I figured that if you took a group of kids, and half played and half didn't, those who played would do better in geometry," she said.

Using skills she learned while earning her bachelor's degree in cognitive science from Vanderbilt University, she designed an experiment at her alma mater to test her theory. In January 2003, Winokur took a group of approximately 50 Greenwich Academy seventh-graders and split them into two groups — those who played squash and those who didn't — and measured the relative progress in their ability to visualize three-dimensional structures over three months.

"Those who played did better," she said.

The results didn't surprise Karen Schmidt-Fellner, coach of the school's champion squash program, who said she now thinks of things in a new light.

"We always talk about how the angle that the ball goes in (to the wall) is the same angle that the ball goes out, but we never talked about it in terms of degrees," she said.

Encouraged by her results, Winokur, now a New Haven resident, formed a board of directors to help guide her fledgling organization, which seeks to integrate the sports-based teaching methods into the math curricula of public schools and after-school programs.

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> *founder, Sportsometry*

Board member Craig Hirokawa, a 29-year-old high school physics teacher in Woodbridge, helped Winokur develop lesson plans for the program. Although most physics concepts are not taught until high school, he said the seventh- and eighth-grade science curriculum typically includes physical concepts such as energy and motion.

"Although the idea of using other means of teaching, in addition to the traditional chalkboard style, is not a new idea, it's nice to actually use sports ... because it's active and gets kids interested, up and interacting," Hirokawa said.

In January, Winokur teamed up with the Leadership, Education and Athletics in Partnership (LEAP), an after-school program in New Haven, to teach math and geometry skills to six middle school students, ages 11 and 12. This time she decided to forgo squash for basketball.

"I would ask them if they knew what a 90-degree angle was, and they would say 'no,' " she said. "Then I would give them a basketball and tell them to throw me a bounce pass and ask, 'What does that look like to you?' "

When a ball bounces, it leaves the ground at the same angle at which it hits the ground. If students stand the correct distance apart, it will be a right angle.

Working with Winokur one afternoon a week for four months, the students improved in their math classes.

"One girl said she went from a C to a B-plus," said Winokur, who was surprised by the degree of improvement.

Winokur, who acts as president, executive director and lone employee of the organization, will be further refining her methods of both teaching and measuring students' progress this month when she brings Sportsometry to nearly 200 children as part of the New Haven Public Schools' monthlong summer program.

Jean Mauro, a 69-year-old patent attorney who lives in New Haven, joined the board because he was attracted to the innovative nature of her idea, which he is helping her trademark.

"It struck me as a very creative sort of thing," he said. "I could see the applicability ... since kids tend to understand sports better than they understand math."

Winokur and Mauro both emphasized that the organization is still in the data-gathering stage, but both foresee big possibilities for the Sportsometry idea in the future. Mauro said it might turn into a business one day, while Winokur hopes to see it become part of the culture of schools.

"My ultimate dream would be to have a gym teacher and a math teacher talking to each other about lesson plans," she said. "The math teacher would say, 'OK, I'm going to teach about parallelograms this week,' and the gym teacher would then say, 'Then these are the drills I'm going to use.' "

Mel Greer/Staff photo

Annick Winokur speaks to a reporter at Greenwich Time recently about the new nonprofit organization she's founded that investigates how participation in sports can improve a student's math and physics ability.