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Wilmington, Del.,
educator Judson Wagner
developed spreadsheet
tools for teachers to
analyze the effectiveness
of their instruction.

A Driving Force

When physics teacher Judson Wagner created spreadsheets to improve his teaching, the results were staggering.

by Terri Payne Butler

When Judson Wagner was a physics student at Elizabethtown College in the mid '90s, teaching wasn't part of his plan. "I was never much of a talker and I thought that was what was necessary to be a teacher," he says. But a stint as a tutor hooked him. "I liked it when my students were successful and I discovered that I wanted to share my knowledge and understanding."

Today, Wagner has a decade of teaching physics at Concord High School in Wilmington, Del., under his belt, and is a winner of a 2006 Cable's Leaders in Learning Award for his Tools for the Reflective Teacher. Wagner's Tools make it easier to use data generated from student tests to self-evaluate effectiveness.

Working with the Data

Tools for the Reflective Teacher consists of three Excel spreadsheets that allows teachers to collect, sort, display, and analyze data. The class-analysis spreadsheet tracks information about students and generates graphs and frequency distributions; the exam-analysis spreadsheet compares different groups of test takers. The reflective formative-assessment spreadsheet lets Wagner see student's misconceptions right away and allows him to make on-the-spot adjustments to his teaching.

"It's all around data-driven decision making," says Wagner, "and the dialogue and conversations you have with students. Whatever lesson plans you wrote for a population yesterday might need to be abandoned for the population you have today. And the new lessons or plans you come up with have to be based on what you've learned about the present population."

EDUCATOR SPOTLIGHT

Judson Wagner
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Cable provided by Comcast

Outstanding Results

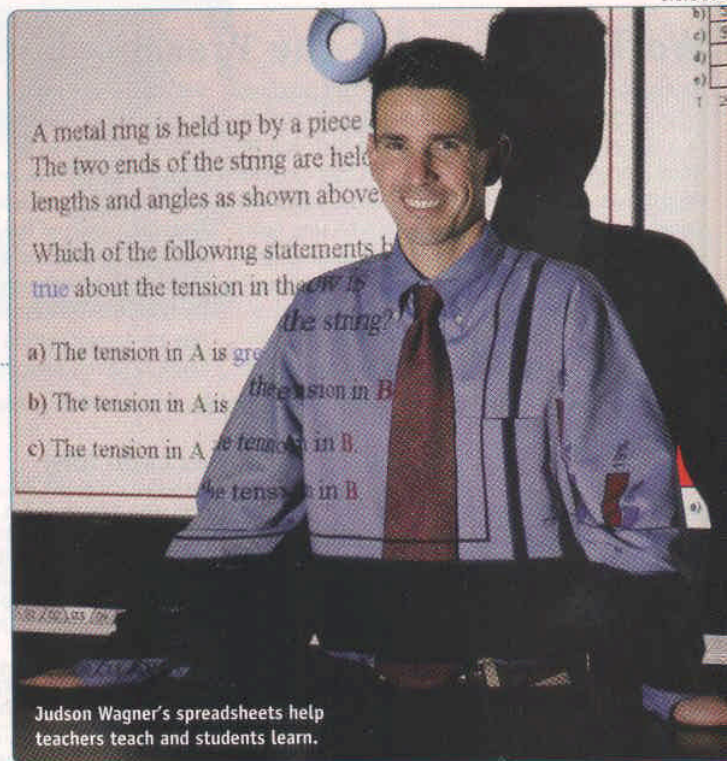
Wagner's spreadsheets help his students learn. His advanced-placement physics students have an 89-percent passing rate, which he credits to using the class-analysis spreadsheet to adjust his teaching. One hundred percent of his African American students have passed, compared with a statewide average of 15 percent, and the success rate for his female students is 76 percent, compared with a state figure of 38 percent.

Wagner's spreadsheets also have played an important part in a discussion among the district's science teachers on improving instruction. "No two classes are the same, just as no two groups of students are the same. I don't have the same conversation twice, and for me, that is really exciting. I feel myself communicating with my students, not just assuming that they get it. I can adjust in the midst of trying to get an idea across, but I also have documentation on things that I can allow myself to think about next year."



For More Information

For a podcast interview with Judson Wagner or for more on Cable's Leaders in Learning Awards, go to www.leadersinlearning.org. To see examples of Judson Wagner's spreadsheets, go to www.ciconline.org/cicmagazine.



Judson Wagner's spreadsheets help teachers teach and students learn.

And though next year will be different, some things will be the same. Wagner loves to use an Einstein quote: "It's not that I'm smarter. I just stay with problems longer," he says. "I want them to stay with the problem. I don't care if they remember all the physics just as long as they remember that they learned physics. They changed their minds in a way that allowed that to happen."

Lexington, Mass.-based Terri Payne Butler reports regularly on education and technology, and also writes stories for children.