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Do laptops boost learning?

Benefits real, educators say, but hard to measure

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Herbert Hoover promised "a chicken in every pot" in his 1928 presidential campaign.

In 2006, South Dakota Gov. Mike Rounds eventually wants a laptop computer in the hands of every high school student.

While the chicken was a symbol that families would prosper under Hoover, the benefits of laptops are lauded in a similar way - that all students would have an opportunity to learn more with technology.

While Rounds' \$4 million laptop initiative will start next fall as a pilot program for about 5,000 of the state's high school students, a central question remains in South Dakota and in other states that have spent millions to put laptops in students' hands: Do they really help learning and test scores?

"We believe it will enhance student achievement in a number of ways," said Mitchell Superintendent Joe Graves, who wants to be part of the state program. "Technology is becoming ubiquitous in our society."

In Watertown, where students have had laptops for three years, measuring an increase in student achievement has been difficult.

In other states, districts with their own laptop initiatives have stopped short of saying they have seen increases in standardized test scores.

But those with the programs also say learning and communication between teachers, students and parents are enhanced, and students develop skills they will need in the future.

In Maine, where the state's seventh- and eighth-graders have had laptops for four school years, limited research is showing that students are making gains, but not necessarily in the ways people expect.

"The kinds of learning going on through the laptops is not going to show up on our statewide test," said David Silvernail, director of the Maine Education Policy Research Institute at the University of Southern Maine.

Standardized tests measure student recall, while technology helps teach other things such as problem solving, critical thinking and other skills that educators say students need in the 21st century.

Silvernail's office is doing a study comparing 25 control schools to 25 experimental schools in teaching math. Preliminary study results, possibly the first hard data in the country, show laptops are positive, he said.

"It looks like we're one of the only states that has hard evidence," Silvernail said. "You really can get changes in achievement if you do systematically, sustained work on it."

Level playing field

Maine lawmakers this week approved another \$40 million during four years to continue the laptop program, he said. There are plenty of arguments in favor of laptops.

"I keep beating on the idea of equity. This did really level the playing field for kids," Silvernail said.

That's an important reason for laptops in South Dakota as well, said Wade Pogany, director of curriculum and assessment for the state education department. All students, no matter what their economic background, should have access to the same technology.

In South Dakota's pilot program planned for next fall, officials will choose which schools can participate based on a variety of factors, including whether they have economically disadvantaged students who can benefit from the technology, he said. The state will look for a variety of schools, such as large and small and those that haven't met demands under the federal No Child Left Behind Act.

The Sioux Falls School District isn't interested in applying for the state's laptop program at this point, said Bob Jensen, director of assessment, technology and information services. The district instead is investing in electronic white boards for its classrooms.

Pogany's office also is putting together an evaluation tool that will measure various skills and use of the laptops, he said.

"We're very optimistic the students in South Dakota will use that for educational benefit and purposes," he said of the project.

The state is paying for the laptops, at least in part, with money Citibank gave the state for technology, Pogany said.

At Watertown High School, educators have seen gains in reading and math in specific programs, said Principal Brian Field. The school has leased laptops for all high school students for three years and is regarded as the South Dakota model.

'A powerful tool'

"It's a powerful tool for classroom instruction and student learning," he said. But the district has never tried to show a correlation between laptop use and better standardized test scores.

Surveys at Watertown showed last year that students used laptops most often for PowerPoint presentations, research and word processing.

Students also said in the survey that they preferred doing school work with the laptops and were more excited about learning. They also improved their technology skills because of the laptop use.

Watertown's survey showed that most students have access to technology at home, as well. The survey said 745 students had Internet access at home, while 67 did not.

Emily Englund, a ninth-grader at Watertown High, received her school-issued laptop last fall.

"I really like it," said Englund, 14. "We use them a lot for intro to computer. We also use them for Spanish."

Because Englund, like many students, already had a computer at home, she uses it with ease for homework, English reports and research.

Working at home

Most of the Watertown students took their computer home with them every day. At school, 43 percent of the students used the laptops at least 10 hours a week, the survey showed.

Just like any education tool, some students use it more wisely than others, and the school is trying to work with those who need help, Field said. School districts can block Web sites that are inappropriate for students.

"There's no doubt that there are kids that do extremely well with laptops," he said.

One subject that tends to improve with the use of laptops for each student is writing, said Gloria Steele, education technology specialist with the Technology & Innovation in Education office in Rapid City. The nonprofit agency provides leadership for technology education in the region.

"By having the laptops, students can work in a self-paced environment, as well as collaborative groups," she said.

Access, feedback

Laptops make specific things possible that aren't available in the traditional classroom, said Lennie Symes, also an education technology specialist with Technology & Innovation in Education.

"The students really loved the capability of being able to find out more about a particular topic at the moment of need," he said. Students also can get immediate feedback from teachers so they know their strengths and weaknesses in a particular skill, he said.

As the cost of technology keeps coming down, more school districts will consider whether buying laptops is worth it. The state expects to lease laptops that cost about \$1,000 to \$1,200 each.

"It's not a matter of if students are going to have one-to-one access. It's when," said Jim Parry, director of Technology & Innovation in Education. "I think they're going to be much less dependent on paper than my generation."

For teachers, technology is a tool to customize lessons.

"I think there's lots of pressure in education in general to meet individual learner needs. Technology is finally making that possible," Parry said.

Staff development is a key to beneficial use, educators say. The state plans training for teachers this summer before laptops are used in schools, Pogany said.

Mitchell's Graves said his district has wanted to add laptops a grade at a time. The school's 200 seventh-graders already have them. The state's program could help the school add laptops faster so that the 850 high school students and faculty could have them as well, he said.

21st century skills

"There's a whole new set of skills that children who are going to go to college in the 21st century need that we didn't have," he said.

Pogany said the state has looked at programs in both Maine and Virginia, along with other places in the country, while planning South Dakota's laptop program.

In Richmond, Va., educators in Henrico County Schools have stopped short of attributing school improvements to laptops in grades six through 12.

"We are currently doing a one-to-one laptop research study to determine the impact of the laptop initiative," said Mychael Dickerson, the district's director of media relations in an e-mail. The study will help the district determine whether laptops or other education initiatives have made the difference.

In South Dakota, like elsewhere, educators want students to develop their critical thinking, communication, problem solving and technology literacy, important future skills, they say. Laptops aren't just about learning with a computer, he said.

"It's about engaging students with technology and using technology as a tool to teach," Pogany said.

"I think there is some misconception that when a student comes into a classroom, that it is the only tool they will use," he said. "Will it be used every single minute of the day? No."

Technology can engage students more in learning because it's the world they live in, Pogany said.

"That's where kids are now," he said. "We're immigrants to this technology world. They're natives to it."

Argus Leader Reporter Nestor Ramos contributed to this story. Reach Brenda Wade Schmidt at 331-2321.
