

# NATIONAL TEACHER SURVEY

## Links Student Computer Use to Improved Engagement and Academic Performance

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### EXECUTIVE SUMMARY

A new independent study indicates that classroom-based technology is increasingly accepted as having a positive impact on student learning and performance on standardized tests. This study, which is the only one of its kind to focus on the opinions of classroom teachers, reinforces several valuable trends in educators' use and perception of technology in their schools. For example, teachers want greater access to computers for themselves and their students, and they want more technology training. They also believe that technology improves communication with parents, although there is a wide disparity based on income levels as to technology's perceived effectiveness.

From the 2004 Teachers Talk Tech™ survey, commissioned by CDW Government (CDW•G), education leaders can gain insight into teachers' perspectives of key issues in educational technology. The survey, conducted with more than a thousand K-12 teachers equally segmented from a random sample of elementary, middle and high school teachers, has a margin of error of plus or minus 3 percent. The findings of the study, released at the 2004 National Educational Computing Conference in New Orleans, Louisiana, support both prior research and the direct classroom experiences of K-12 educators across the country.

According to Don Knezek, Chief Executive Officer of the International Society for Technology in Education, a leading education professional association, "School administrators hoping to address accountability concerns with professionally aggressive teachers would do well to study key findings discussed in this survey. Access to technology and availability of substantial, ongoing, relevant, and technology-rich professional development can be key factors in recruiting and retaining high-performing staff."

The survey highlights a number of trends, including the high rate of technology integration, the need for greater access to computers, the need for more teacher training, and the usefulness of technology for communications between teachers and parents. In addition to the key findings noted below, the survey also highlighted interesting regional distinctions. Nearly half the teachers in the Southeast and Texas indicated that they need "a lot more" computers, while only 21 percent of Northwest respondents made such a claim. Complete results of the 2004 CDW•G Teachers Talk Tech survey can be found at: <http://www.cdwg.com/TeachersTalkTech2004>.

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## FIVE KEY FINDINGS

### *Finding 1: Technology has become highly integrated into the education process*

The Teachers Talk Tech survey found that 93 percent of teachers consider classroom-based computers to be either “very useful” or “somewhat useful.” These numbers reveal the extent to which technology has become an integral part of learning—not as an end in itself but as a powerful tool capable of helping transform learning experiences.

Ted Maddock, former director of the Digital Safari Multimedia Academy at Mt. Diablo High School in Concord, California, puts it this way: “We want the technology to be as transparent as possible. It’s like the furniture—technology as a tool to learn.” That transparency reflects a maturation process for the use of technology in schools. The computer no longer calls attention to itself as a high-tech piece of equipment. Now, it is simply another tool that has the power to engage students in what educators call “discovery learning.”

One Mt. Diablo social studies lesson, for example, called “Forrest Gump Projects” after the fictional character’s ability to show up at important historical events, places students in specific situations and has them use the Internet to conduct research to understand the dynamics of the given time period. For example, students might be told that they are a Japanese family living in California in 1942 or a student on the Berkeley campus in 1962. It is up to the student to research the time period and learn on his or her own about the Japanese internment camps and the free speech movement. “We’re able to use technology to engage students and have the concepts we’re studying emerge for each student through their own discovery,” Maddock said. “It’s a beautiful way to lead the horse to water,” he said.

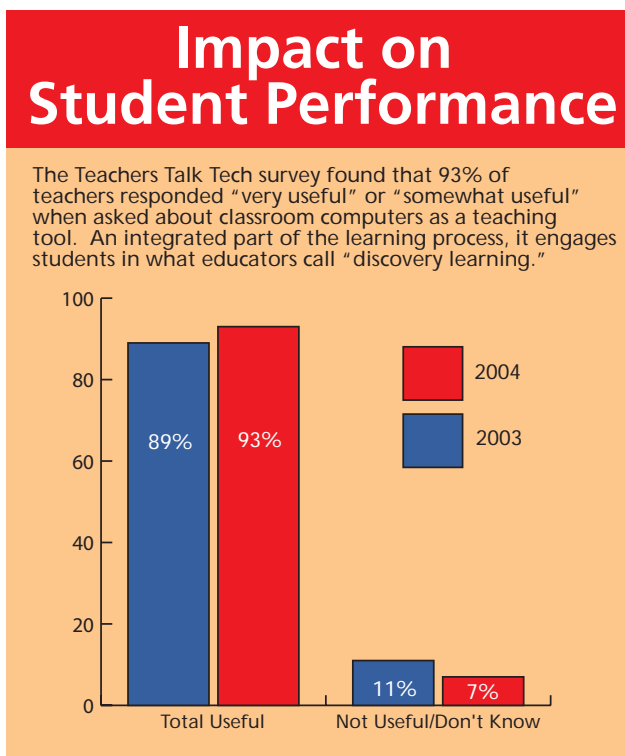
### *Finding 2: Access to technology improves student performance*

According to survey results, 81 percent of all teachers believe that access to classroom-based computers improves how their students perform in the classroom. While many teachers have long advocated for more classroom-based computers, those requests are now supported by hard data coming back from schools that have moved aggressively toward one-to-one computing.

One study, funded by the Bill and Melinda Gates Foundation, (<http://www.mitchellinstitute.org/Gates>), looked at Piscataquis Community High School, where 285 students and 26 teachers were each given laptops with wireless Internet access for use in school and at home. After two years of deployment, the results were dramatic:

- 79 percent of students said laptops made their lessons more interesting
- 60 percent said they were more motivated to complete their assignments
- 54 percent of students reported that their grades had improved
- Student attendance at school increased, and rates of student discipline incidents decreased

Horizon Research and Evaluation’s 2003 Phase II study of The Wireless Writing Project at the Peace River North School in British Columbia,



reached equally encouraging conclusions ([http://www.prn.bc.ca/FSJ\\_WWP\\_Report03.pdf](http://www.prn.bc.ca/FSJ_WWP_Report03.pdf)). According to David K. Vandergugten, Principal of Technology Services, School District 60, “In one year, as a result of this program, we saw student’s pre-test and post-test data scores improve dramatically, with 92 percent of our students meeting provincial education standards for writing, compared with a pre-test score of 70 percent. This represents an impressive gain of 22 percent.”

Several other large-scale studies are presently underway across the country, as districts continue to learn from one another that with proper support and professional development, integrating technology makes significant, quantifiable improvements in learning.

### *Finding 3: Teachers want more technology*

In the CDW•G study, many teachers reported that they would like to see “a lot more” computers in their classrooms. Fifty-five percent of teachers say having enough computers for student use is an “extremely” or “very” serious problem.

Mt. Diablo High School’s Ted Maddock confirms this finding and says that after watching and pioneering the use of technology with students for 28 years, he has seen the difference sufficient access to technology can have on effective teaching. “A laptop cart can turn any classroom into an Internet lab or a writing lab for the day.”

Maddock feels that 1:1 access to the technology not only engages students more, but also makes the whole learning process much more efficient. He said that when students go to a computer lab, “teachers lose too much time moving kids to and from the lab. The technology needs to be available in the room when the kids walk in—not something you sign up for and go to a week later. The lab model is going away quickly because it didn’t work very well.”

Convinced of the benefits technology is having on student learning, many educators feel that moving towards a 1:1 model of school computing, either through the use of laptop or Tablet carts or by assigning each student an individual machine is the critical next step. Schools that have successfully moved to 1:1 computing report that the initiative has profoundly changed the role of computing for all students. As Dr. James R. Polzin, assistant

superintendent of Hinsdale Township High School District 86 in Illinois, puts it: “When we had just a few computers in the back of the room, they were used primarily for reward and remedial exercises. Now that the ratio has improved, students are doing research, preparing multimedia reports and collaborating on science projects.”

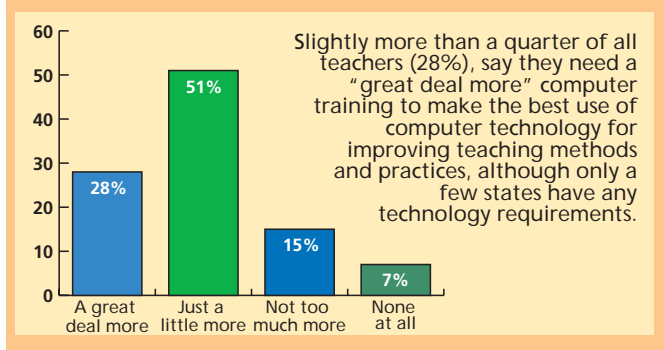
Dr. Joe Hofmeister, Technology Director at Cincinnati County Day School in Cincinnati, Ohio, believes that access to technology and Tablet PCs in particular, open up new ways of thinking and lead student to do things they otherwise might not do. “Schools by in large have been focused on analysis, information—left brain activities. What the Tablet has done is help introduce the right side of the brain. Having access to the Tablet has turned kids on to a point where they forget about the fact that it’s a class. Students will do a lot of extra work that they weren’t willing to do before,” Hofmeister said.

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### *Finding 4: Teachers need more training.*

Eight of 10 teachers surveyed say they need additional computer training. But while teachers may say they want it, few states require such preparedness. According to Education Week data, only 15 states require incoming

## Need for Training



teachers to take courses in technology—and only Florida and Georgia have such a requirement for their administrator-candidates. Just nine states require teachers to demonstrate technology competence by taking a technology test; only four states require their administrators to take such a test.

At Cincinnati Country Day, Technology Director Joe Hofmeister said that the key to teacher training is not mandates, but rather to show teachers how the technology will help students share their excitement for the subject. "Teachers really want their students to love the subject that they teach—math teachers want kids to love math and be excited by it. If you can show teachers how they can use the technology in a way that will make students excited by the subject matter, you'll be guaranteed their attention."

In addition to a natural excitement new technologies bring to the equation, many schools are looking to teacher incentives to draw educators into additional technology training. A mix of state funding and foundation grants has helped 27 states develop technology-related professional development with incentives for administrators. In Orange County Florida, teachers who successfully completed a 13-session course in integrating technology are each given a Palm handheld computer. Director of Technology George Perreault said that in addition to the Palms, they like to excite teachers with incentives like copies of classroom software such as Inspiration and Kidspiration. "We teach them to use the tools during the training, so we like for them to then have those tools for use in their classrooms," Perreault said.

Some innovative programs use tech-savvy students as a

means to facilitate teacher technology training and integration. In one 1:1 laptop program, a professional development initiative sends technically capable students to Technology Boot Camp. Once trained, the students are then used as a resource to help with deployment and teach the teachers how to integrate technology into the classroom.

Other schools rely on variations of traditional teacher training to make sure the teachers are as comfortable with technology as are their students. Allyn Bushlow, IT director at the Stevenson School in Pebble Beach, Florida, says that at her school, the most effective technology teacher training is one-on-one. "We have our infrastructure in place. Now the challenge is to increase the teacher engagement," Bushlow said. While after-school and weekend professional development workshops can help teachers learn to use applications such as PowerPoint, Bushlow believes "you have to sit one-on-one to help them make the leap from understanding how to use it, to actually integrating it into what they do in their classroom." Bushlow and her staff of five continually work with the school's staff of 120 teachers.

### *Finding 5: Technology is playing an increasing role in communication between teachers and parents.*

The Teachers Talk Tech study showed that more than half (66 percent) of teacher respondents with school Internet websites believe the technology has increased parental involvement, an increase of 8 percent over last year. Ms. Bushlow says that in her school, the technology not only helps parents to know about school activities, but it also helps parents address concerns about their individual child.

"Teachers are in the classroom all day, with very little time for phone calls. Both teachers and parents find email to be an efficient way to communicate. E-mail saves a lot of phone tag and, because you have the question or the problem right in front of you, it's easy to refer to," Bushlow said.

At St. Philip's Episcopal School, a private school in Coral Gables, Florida, teacher and technology director Ed Diaz says that the use of technology to facilitate a school-home connection has another benefit: motivating students. "Having instant access to parents by being able to email them at home or work is definitely a strong

motivation for students to perform,” he said.

Joe Hofmeister at Cincinnati Country Day agrees and remembers just how excited parents were when they learned that they would no longer have to struggle with their students to find out about the day's homework assignment. “When the head of our middle school announced that they were requiring all teachers to post each day's homework on the class Web site, he was met with a standing ovation from parents.”



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Ed Diaz  
Teacher and Technology Director  
St. Philip's Episcopal School  
Coral Gables, FL



### **Impact of Findings**

This independent national survey commissioned by CDW•G highlights many key trends in educational technology. The study is unique in its ability to offer insights into teacher opinions and perceptions about the role of technology in the classroom. Administrators and policy makers will be interested to learn that a majority of teachers have highly positive feelings about technology's ability to improve student classroom performance and raise test scores. They should also note that teachers feel a strong need for increased access to more computers and computer training.

For parents, the study offers insights into whether school resources are being effectively allocated. The survey may call parents to inquire if their child's school is appropriately prioritizing the role of technology and meeting the needs for continual teacher professional development.

CDW•G, which commissioned the Teachers Talk Tech survey, is a leading reseller of name-brand technology to government and educational institutions. The company is known for providing expert advice across a broad spectrum of technology products and responding with a sense of urgency to the technology needs of educators.

CDW•G is a wholly owned subsidiary of CDW Corporation (NASDAQ: CDWC) ranked No. 376 on the Fortune 500 list. More information about CDW•G can be found at <http://www.cdwg.com>.

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