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Enter the Computer Tutor: PCs Can Help Kids Pass No Child Left Behind Tests

By Angie C. Marek

Last summer wasn't supposed to be a cruel season for the third graders at Children's Village Academy in tiny, coastal Kinston, N.C. Their 125-student charter school, where 85 percent of pupils are eligible for free or discounted school lunches, makes sure that all its high-risk students are in classes with only 15 to 20 kids. And parents had been invited to campus for quarterly info sessions on important end-of-grade tests that third graders needed to pass to jump to the next grade. But despite all that, five students didn't get the minimum score on North Carolina's reading test, and they appeared to be destined for a do-over year. "It was heartbreaking," says Cynthia Williams, a curriculum and testing coordinator for the school. "Nothing is more painful than watching students repeat grades."

But teachers at Children's Village had some unique gadgets in their tool kit, and they were determined to see their students pass the test on the third and final try allowed by the state. The quintet came in Monday through Friday for intensive summer school courses-capping each day with a 45-minute session on WebAchiever, a computer program designed to help students meet state reading standards.

"We hadn't used it in the summer session before," says Williams, whose school got hooked into the WebAchiever program in the 2004-2005 school year. The experiment paid off: When the students took the test at the end of the summer, their scores jumped by 15 points on average, and all five were offered seats in the fourth grade. Williams is currently waiting for news about a grant that will allow her to use a similar program with the school's second graders.

These days, stories like Williams's are becoming more common. Although the lion's share of U.S. schools still prepare students for achievement tests using the traditional paper-and-pen approach, some educators around the country are turning to high-tech programs designed to help students succeed in the testing-heavy educational environment created by the 2001 No Child Left Behind Act. Educational behemoths like McGraw Hill have already come on the scene with programs tweaked to reflect the skill set demanded by each state, and Brainchild, the company behind WebAchiever, boasts contracts with schools in Los Angeles, Houston, and every school district in the state of Louisiana. "It's a hot topic, generating tons of interest right now," says Tim Wiley, an analyst with the Boston-based research firm Eduventures. And according to many on-the-ground users, that's not a bad thing.

In a K-12 educational environment that is ever more focused on metrics-based achievement, computers—with their massive processing power and number crunching abilities—can become tireless teaching aides. "These things can basically work for you as a testing administrator, a one-on-one tutor, or just a very well-organized storage space for massive amounts of data on your students," says Jeff Cameron, the brain behind Brainchild.

The versatility computers bring to the classroom is on full display in Wooster, Mass., where several classes of eighth graders are currently testing the Assistment program, a software tool designed by professors at Carnegie Mellon University. The program saves teachers time by administering and automatically scoring quizzes that are similar to Massachusetts's state achievement test. And when kids get tripped up on a problem, the PC breaks a larger problem down into step-by-step questions, trying to tease out exactly where the students got off track. "It's fine-grained analysis," says Ken Koedinger, the program's designer. "It's terribly useful for teachers marking up lesson plans."

For administrators, this kind of computer-generated analysis can offer valuable insight about larger schoolwide achievement trends. "With just a few quick clicks," says Cameron, the president and CEO of Brainchild, "a principal can pull up a report on how different classrooms or categories of students are performing on mock state tests." Since NCLB demands that schools demonstrate high overall achievement as well as progress among key subsets within a school-like a minority group or lower-income students-the data are invaluable.

And teachers don't necessarily feel supplanted by the high-tech gadgetry. Kate Ross, a seventh- and eighth-grade English teacher in Highland, Utah, says she sometimes thinks of the computer as a "teaching assistant," especially when students are looking over computer-generated criticisms of rough drafts of papers. She uses an online essay grader and writing-coach program designed by Newton, Pa.-based Vantage Learning, called MY Access! The program uses the same artificial intelligence software that is used to grade the essay portion of the Graduate Management Admissions Test, known as the GMAT. Says Ross: "It's rewarding, because I can walk computer to computer and really give one-on-one feedback and help to individual kids. I never had time to do that before." Ross says the quality of final papers has improved so much that she now spends five minutes grading each one, compared with her usual 15.

But of course, tech-age testing programs are hardly flawless. Many of the tools look like candy-colored computer games, and kids sometimes approach them with gaming tactics. Koedinger says that some students using the Assistment program ask for hints they don't need so they can speed through the test questions, while other "more macho" kids are loath to ask for assistance. But some see a silver lining in hypercompetitiveness: Ross says she had one student who revised a paper 17 times trying to get a perfect score. And since students can log onto MY Access! from their home computers, sometimes the thrill of the game inspires them-and their wordsmithing, eager-to-help parents-to fiddle with papers in their off hours.

Still, it's hardly clear that the fleet of No-Child-Left-Behind-inspired learning programs will be the next big thing in classrooms everywhere. Wiley says a shortage of Web-ready computers in the K-12 environment-there are roughly seven students for every Internet-enabled school computer in the United States-limits the adoption of online test-prep tools and keeps schools that have them from giving all students meaningful doses of their turbocharged tutoring. And many school districts can't afford the programs: WebAchiever, for instance, sells subscriptions to schools for $7,500 per year per school, regardless of the number of students logging in. But with some states like Maine and Virginia already moving to online testing models, where students actually take their achievement tests on PCs, some say the time to start getting kids oriented to the new math is now. Even if they're only trying to make it to the fourth grade.