May 2010

Wonders of 1:1

EDCompass newsletter

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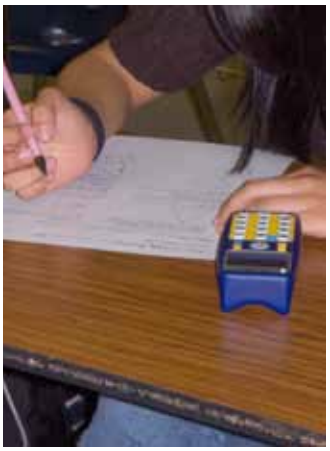
How Laptop Education Initiatives Are Making a Difference

By Christine Roulston

Over the past few decades, research has shown that providing individualized, self-directed instruction brings out the best in students. But experienced teachers know that putting this into practice is usually easier said than done.



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Leslie Wilson
President
One-to-One Institute
Lansing, Michigan

Offering students laptops as tools to work at their own pace, giving them individualized support and allowing them more opportunities to master technology skills – in other words, creating a 1:1 environment – can help make this type of instruction easier.

"With 1:1, we're able to take all the research and best practice we have known for many years and actually have it come to life," says Leslie Wilson, President of the One-to-One Institute. The not-for-profit organization offers professional development, support and resources to the growing number of schools around the world taking part in laptop initiatives.

In the United States, laptop programs are thriving in most parts of the country. James B. Hunt High School in Wilson, North Carolina, is one of eight learning institutes in the state taking part in a 1:1 pilot program launched in 2007. Early successes of the program are already evident at Hunt. Since each teacher and the more than 1,250 students at Hunt were supplied with laptops, the school's scores on the North Carolina End-of-Course Tests have improved, and teachers say student attention spans have increased.

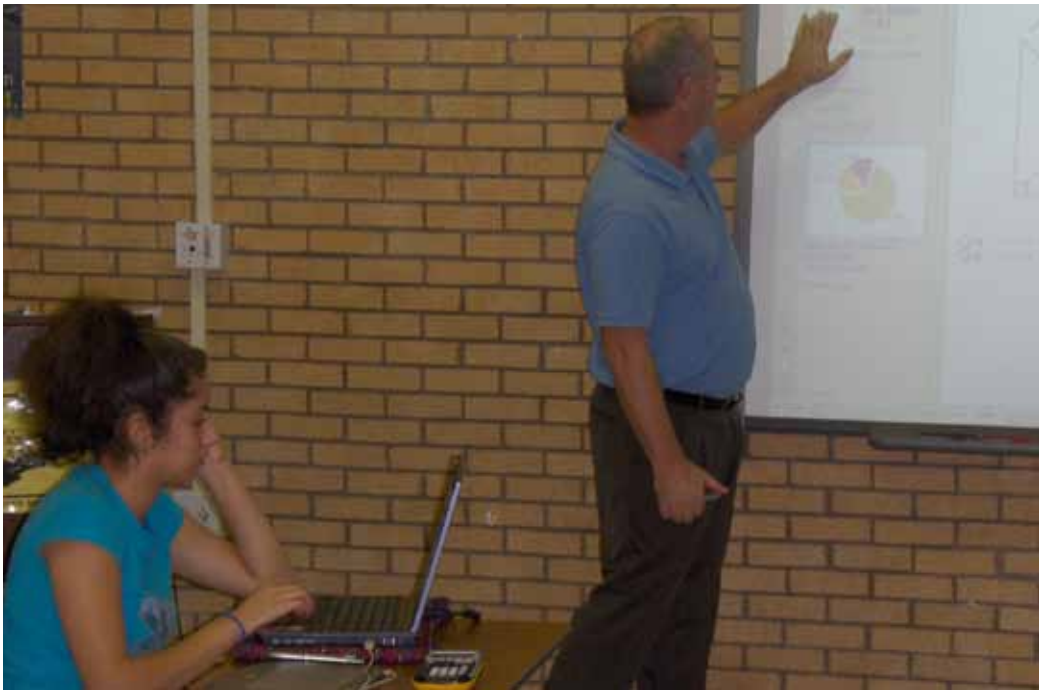
Further north, in Worchester, Massachusetts, the 1,400 students at Worcester Technical High School spend most of their day working on learning activities on laptop, netbook and desktop computers. Since implementing these products, student achievement on state tests in English, math and science has gone up 40 percent.

What is making these initiatives such a success? Wilson emphasizes that effective leadership, teacher and parent buy-in, and professional development and support are all important components. Add SMART software, which many teachers say is essential to the life of their 1:1 program, and you have a recipe for success.

Tools to get the job done

At Worchester, when a computer malfunctions, there are no IT people to fix it. Instead, students are dispatched from the student-run help desk to fix the problem. Peter Crafts, Director of Vocational Technical Education for Worcester Public Schools, explains that a group of students has been trained to maintain the network and the more than 1,000 computers in the building. "The challenge, by doing that, is that we're giving the students a lot of freedom at a young age," he says.

The school uses SMART Sync™ classroom management software to keep track of what the students are doing while they troubleshoot the machines. Similarly, during class time, the software allows teachers to connect their computer to every computer in the room so they can monitor and collaborate with students. "Teachers are able to circulate around the class and help students while projecting each student's laptop on the SMART Board™ and keep them on task," Crafts says.



Meanwhile, at Hunt High School, each of the math teachers uses SMART Classroom Suite™ interactive learning software, made up of SMART Notebook™ collaborative learning software, SMART Sync, SMART Notebook SE (Student Edition) and SMART Response™ CE interactive response software.

A glimpse inside the classroom of Jeff Kidd, who teaches math at Hunt, reveals students beginning class by opening their laptops and sending their homework assignment to Kidd's common drive. Meanwhile, Kidd posts the answers on his SMART Board interactive whiteboard and takes attendance on his computer while using SMART Sync to monitor the students. Next, he pulls up the interactive lesson activity he has built in SMART Notebook while the students take notes on their laptops. To gain immediate insight into his students' comprehension, he uses SMART Response CE. At the end of each lesson, he sends the students his SMART Notebook file to review at home using SMART Notebook SE.

This form of instruction goes a long way toward saving the teacher time and streamlining the lesson. Kidd explains, "We spend less time taking notes and more time learning concepts. Before the laptops, I'd spend most of the class saying hurry up or copy this, and I couldn't actually get into the meat of the lesson. Now, with one push of a button, they all have the Notebook lesson in front of them and we can spend our time going deeper into the material."

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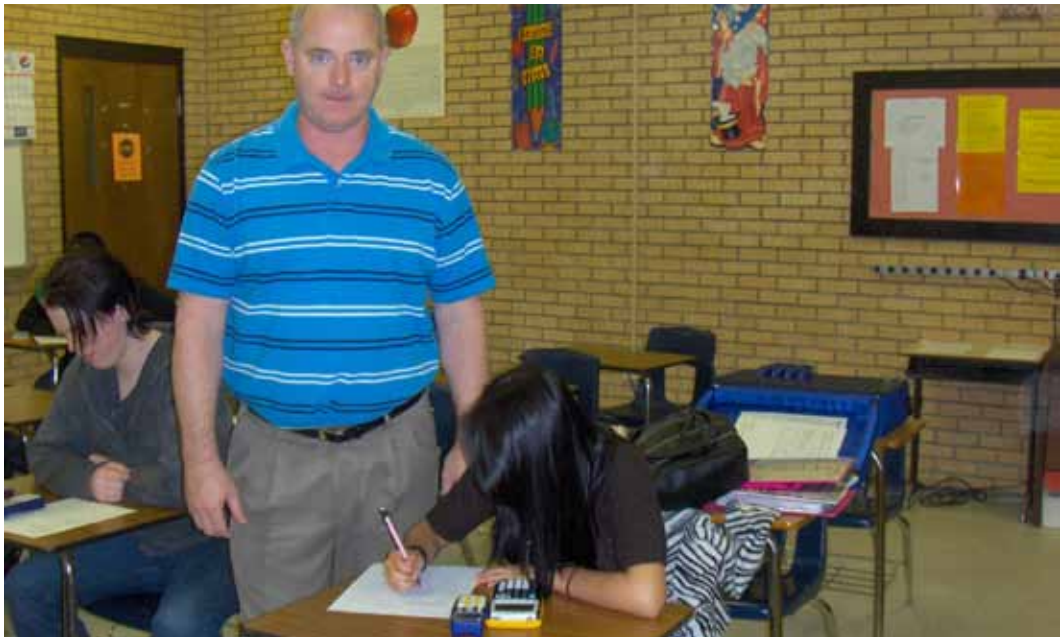
Jeff Kidd
Secondary Math Teacher
James B. Hunt High School
Wilson, North Carolina

Teaching tailored to students

Educators are not the only ones reaping the rewards from technology-enabled environments – students revel in the ownership the laptops give them over their own learning. Wilson explains, "In the 1:1 environment, the classroom becomes very much a dynamic environment where students are producing and creating and communicating, instead of being static, passive learners." This is certainly the case in Kidd's class, where students receive plenty of time to work out problems on their own and share their ideas with their peers.

"What I love about SMART Sync is projecting individual students' laptops on the SMART Board. It's one of the best motivational tools I've found," he says. "They love the fact that they can sit at their desks and explain to their classmates. They want to explain and want others to see their work." Kidd finds this exercise helps students who need to hear a concept explained using a different approach. It also gives the student who's explaining the problem a sense of accomplishment.

Students in 1:1 classrooms often describe how the initiative allows them to work independently and ask for help when needed. SMART Notebook SE was designed precisely for this kind of work. Using the software, students can complete school work, take notes, manage due dates and organize



digital material. "They say Notebook SE helps them become organized," Kidd explains. At the beginning of the year he helped all his students organize their subjects on their SMART Notebook SE home pages, and they've taken off with it since.

With the software, students have multiple ways of searching for and accessing files. They can work on several documents at the same time, quickly switching between tasks. "It allows them to organize files like they do on their mp3 players, so they know how to find material and scan through it very quickly," Kidd says. "They love SE because of the home page and the fact that you can personalize it. We rarely ever have free time, but if we do they like it when I project home pages on the SMART Board for the rest of the class to see."

"Learning is the focus so there's no need to worry about keeping up or falling behind. Whatever they're doing in class they're able to save and take home if they need to keep working on it."

Peter Crafts
Director of Vocational Technical Education
Worcester Public Schools
Worchester, Massachusetts

Meeting every student's needs

With these tools at students' fingertips, individualized learning moves front and center. In a 1:1 environment, teachers can create personalized learning plans to meet each student's unique needs.

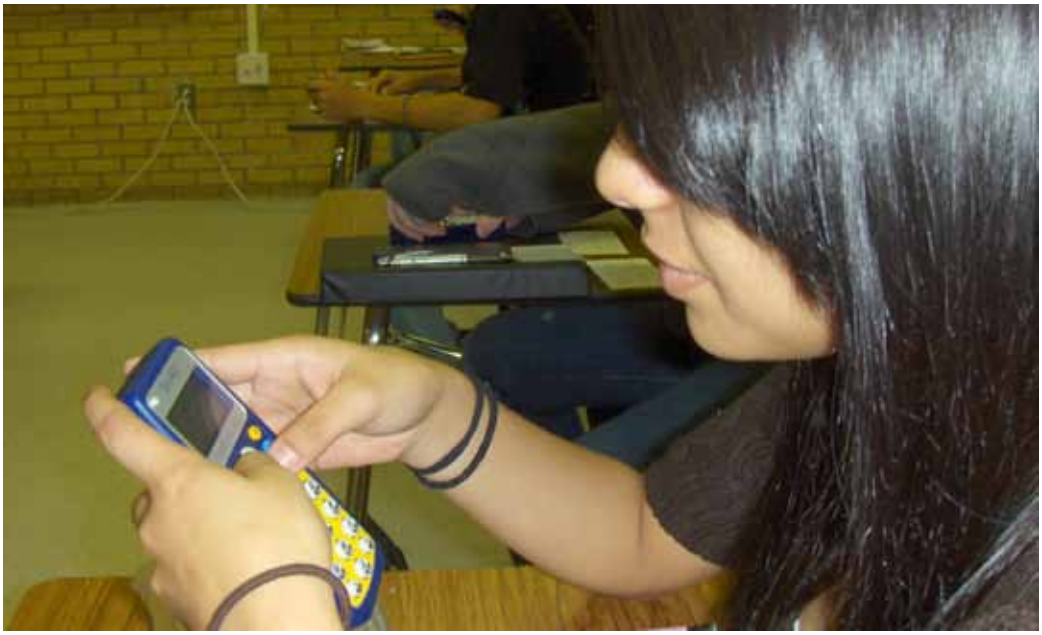
Kidd regularly develops a variety of math lesson activities for the same class based on each student's skill level. "I can have a very diverse lesson plan within the same classroom," he says. "So I can say to student A, this is what you're doing on your laptop, and to student B and C, this is what you're doing."

He has found that some teachers shy away from the idea of preparing differentiated lesson plans because of the energy it takes. However, he's found that tweaking his basic SMART Notebook lesson activities to meet different students' needs doesn't take much time at all. Plus, he says, it ensures everyone is learning. "The lower level students get something out of it whereas, before the 1:1, they would get nothing at all."

At Worchester, students also work at their own speed on the computers. "Learning is the focus so there's no need to worry about keeping up or falling behind," Crafts says. "Whatever they're doing in class they're able to save and take home if they need to keep working on it."

Wilson says that's the beauty of 1:1 programs. "Students are able to move at their own pace, focused on goals, and teachers are freed up to spend more face time with groups and individuals." She says they also allow teachers more time to conduct formative assessments. In Kidd's class, for example, he uses SMART Response CE to find out instantly which students need more help.

"I use Response a few times a week for quick quizzes," he says. "What I love about Response is that it's instant feedback to the students and it's instant feedback to me. It tells how many got it right or wrong and who got it wrong. And we can go from there."



An evolution in learning

Like any new learning program or initiative, there's a transition period involved in implementing a successful 1:1. Teachers essentially need to learn a whole new way of teaching. Kidd, who had been teaching for 16 years, found it took about a year to get to the point where he felt he was using the laptop and the software as effectively as possible.

Many teachers also find that 1:1 initiatives initially take more prep work. But the benefits are reaped afterward. "There's more prep time involved in the 1:1. But in the long run it's less because when I do a lesson, I don't have to redo it – I can just edit it," Kidd says. "When I was writing everything on the overhead, I was preparing something different for all three classes. So there's more upfront time but there's less maintenance time in the back end."

Wilson agrees. "It takes a lot of planning and formulating and retooling your craft to become a coach or facilitator instead of a sage on the stage," she says. "Once they do the up front work, once they're in the classroom, teachers can spend a lot more face time with students because the lesson has been orchestrated and each student's unique talents and needs are incorporated."

It's no surprise that research indicates teacher buy-in is crucial to a successful 1:1. And according to Damian Bebell and Laura M. O'Dwyer at the Lynch School of Education at Boston College, professional development is the biggest factor that can help in a teacher's successful uptake of the technology and the program.

The two recently examined four large studies of 1:1 initiatives in K–12. They state, "As 1:1 programs become more popular, the quality and depth of preparation that teachers receive for implementation will become a central predictor of program success."

This has definitely been the case at Worchester and Hunt, where both schools put significant emphasis on continuous professional development on classroom technology.

Kidd is part of a technology team that meets one to two times a week to deliver in-house training on classroom technology products. And at Worcester, eight teachers have been trained as technology facilitators and give regular half-day technology workshops. The work pays off in the classroom, Crafts says. "The teachers feel comfortable with the technology and can create an environment that's more hands on for the students."

"It's no more 'chalk and talk.' There's a direct correlation between the work we're doing and our objectives." **EC**

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