TRANSFORMING EDUCATION THROUGH TECHNOLOGY

the JOURNAL

ARE TEACHERS REALLY USING TECH TOOLS?

COLLABORATION MOVES TO THE CLOUD

COMING SOON!

HIGH-STAKES ONLINE TESTING

The ISTE ISSUE

VISIT US AT BOOTH 1934

June/July 2011 | Volume 38, No. 6 thejournal.com

1105 MEDIA

Unruly technology should be suspended. But money's tight. We get it. Our certified K–12 experts can help plan, design and implement a 21st century classroom solution. In partnership with Epson and Promethean, we deliver the latest in educational technology. All designed to suit your school and fit your budget. It's interactive learning made easy.

There's more to learn at 21stcenturyclassroom.com

Visit us at ISTE booth 1516

EPSON® PROMETHEAN LIGHTING THE FLAME OF LEARNING + CDW·G® PEOPLE WHO GET IT™

the JOURNAL

thejournal.com

JUNE/JULY 2011 | Volume 38, No. 6

OurSpace

Therese Mageau, Editorial Director

Masters of Learning

I HAD THE DELIGHTFUL privilege of moderating the FETC Virtual Conference this past May. (If you missed it, the proceedings will be available on demand through July 28 at *fetc.org/events/virtual-conference*.)

One of the events was a Q & A with Elliot Soloway, of the University of Michigan, and Cathleen Norris, of the University of North Texas, regarding their mobile learning research initiatives. Their strong contention is that students will bring their mobile phones to school to learn—and it will happen a lot sooner than we think. It's inevitable, they say, and educators need to get with the picture.

I've been in educational technology for 25 years, and I've seen every manner of technology touted as *the* tool that will change the face of education. And as far as I can tell, nothing to date has beaten the ballpoint pen for its transformative effects on learning: a cheap, portable, cross-platform communication device that requires no training or upkeep.

Oh, wait a minute. Did I just describe a pen or a mobile phone?

I don't have a whit of hard evidence to back up my feelings about mobile learning, and I hate it when people use an "N" of 1 to support their hypotheses, but I'm going to do it anyway. When my 9-year-old granddaughter comes over to my house, she wants my Droid. She doesn't want my big, beautiful iMac. She doesn't want my sleek, lithe MacBook Air. She doesn't want TV (which is strictly limited at her house). She wants my phone to download puzzle games that she can play with a sense of ownership that I have come to believe is not a passing fad.

Mobile learning devices are also going to do what schools, governments, foundations, and technology companies have not yet been able to do: close the digital divide. With the cost of such devices dropping precipitously every day, there's no reason that every child can't have a hand-sized mobile computer to use at home, at school, on the bus, in the playground, and every place else in between. Schools will be able to buy the devices for the children whose families can't afford them. And technology companies will compete with each other to sell a common learning interface that will work across all phone platforms, so that teachers don't have to worry about which kind of phone a student might own.

> MOBILE LEARNING DEVICES ARE GOING TO DO SOMETHING THAT NOTHING AND NO ONE ELSE HAS BEEN ABLE TO DO: CLOSE THE DIGITAL DIVIDE.

Yes, there are challenges to bringing mobile phones into the classroom, but aren't we up to them? Soloway and Norris have already figured a few things out in their research (turn off texting and voice in school, for example). But these problems are trivial compared to the potential payoff: a continuous, ubiquitous learning environment in which every student can feel like the master of his or her own learning. the

Continue the conversation. E-mail me at *tmageau@1105media.com.*

the JOURNAL

thejournal.com

June/July 2011 : Volume 38 : No. 6

REACHING THE STAFF
Staff may be reached via e-mail, telephone, fax, or mail. A list of editors and contact information is also available online at *thejournal.com*, or editors can be reached at *editorial@thejournal.com*.

E-mail: To e-mail any member of the staff, please use the following form: FirstinitialLastname@1105media.com.

Corporate Office
(weekdays 8:30 a.m.–5:30 p.m. PST)
Telephone 818-814-5200; fax 818-936-0496
9201 Oakdale Avenue, Suite 101
Chatsworth, CA 91311

BPA WORLDWIDE · 100 AMERICAN BUSINESS MEDIA 1906 2006 · WPA Western Publications Association

THE PROBLEM: YOUR BUSINESS IS GROWING FASTER THAN THE SPEED OF T1s.

THE SOLUTION: COMCAST METRO ETHERNET.

Comcast Metro Ethernet does what legacy technologies like T1 can't. It's completely scalable, allowing you to quickly and easily double your bandwidth without doubling your costs. So your total cost of ownership is lower and your budget goes further. And the private network is operated by Comcast from the first mile to the last, giving your business reliability, security, and faster speed. Comcast Metro Ethernet is the choice of companies that realize outdated technology just can't compare to Comcast's Ethernet solution.

877-558-7852 | BUSINESS.COMCAST.COM/ETHERNET

Comcast
BUSINESS CLASS

E-Rate Applications Surge in 2011

Applications for the federal E-Rate program were up to 44,139 for the 2011 funding year, representing $4.31 billion in requests—the highest level in nearly a decade, according to a recent analysis.

E-Rate is the FCC program administered by the Universal Service Administrative Co. that supports schools and libraries with discounts on telecommunications and networking equipment. The program is meant to help institutions outfit and support their facilities with telephone and internet equipment and services. Recent changes to the rules also allow program participants to apply E-Rate funds to a wider range of internet connectivity options, including unused fiber optic lines.

Funds for Learning, which conducted the analysis, is an E-Rate compliance service firm that works with schools and districts to manage their E-Rate applications. The company offers software, including an iPhone app, for tracking and managing schools' E-Rate programs, from document archives to form wizards to funding and status tracking. The company said this year's applications were at their highest level since 2002 and up 9.95 percent over 2010's $3.92 billion in requests (from 42,713 applications).

More than $2.1 billion of the most recent requests were for Priority 1 funding, which includes internet access and telecommunications. Funds for Learning said these requests are unlikely to cut into Priority 2 funding (internal connections and basic maintenance requests), since the FCC is rolling over about $600 million from previous years' surplus into 2011, and since typically $150 million of Priority 1 funding is denied.

"There is usually a significant discrepancy between what applicants request and what is actually committed," said Cathy Cruzan, president of Funds for Learning, in a statement. "This should allow USAC to fund all Priority 1 requests and leave funds available for Priority 2 consideration."

Further information about the E-Rate program can be found at *usac.org*.

[industry update]

DYMO/Mimio has released two free new STEM resource packs for use with MimioClassroom, the company's suite of classroom learning and assessment tools. The Measuring Instruments Pack includes nearly 200 images of tools used to measure things such as distance, time, energy, and angles. The second pack, Weather, Natural Hazards, and More, includes more than 200 images of weather, natural hazards, climate concerns, and weather-related tools.

Element K has released InstructorHub, a global online community and resource center for educators. InstructorHub currently has members from more than 50 countries and includes blogs, discussion forums, event listings, polling, chat capabilities, course outlines, instructor support files, webinar recordings, and more.

With the goal of sustaining students' reading during the summer months, **iVillage**, **PBS Kids**, and **Scholastic** have created the Summer Reading Central website. The online resource, *summerreadingcentral.com*, includes reading activities and contests for students to complete during the summer months, as well as tips for parents and a tracking feature for educators.

The Alabama State Department of Education and **STI** have launched the Graduation Tracking System to support the state's dropout prevention awareness campaign, Every Child a Graduate. The system, available free to all preK-12 schools in Alabama through STI's InformationNow student information system, monitors attendance, behavior, course credits, and other indicators of students at risk for dropping out.

Starting in June, educators can participate in summer workshops provided by **Vernier Software & Technology**. The six-hour workshops, which will be offered in various locations around the US through the end of August, include hands-on training with the company's LabQuest handheld data collection technology. Visit *vernier.com/workshop* for more information and to register.

Your Challenge:

More People Working in More Places

Mobile workers require more than just a notebook or tablet—they need network access, software, security, and support.

Our Solution: A Team of Experts

We can help with mobile deployments from 10 to 10,000 units. Our in-house specialists hold more than 500 active technical certifications and can design and deploy custom IT solutions—from inventory planning to asset disposition, and everything in between.

We have the product selection, technical expertise, and purchasing contracts you need. Call an Account Manager today to get started.

acer Adobe Cisco Partner Gold Certified intel NETGEAR Everybody's connecting. SONICWALL

1·800·800·0019

www.govconnection.com

Follow us on Twitter!

GovConnection®

no technology left behind™

ON-DEMAND WEBCASTS

thejournal.com/pages/webinars.aspx

Implementing Better WiFi at School Without Going Broke or Crazy

New WiFi technology dramatically increases the range and reliability of wireless networks. Two large school districts share how they used this technology to build robust, stable wireless environments that IT staff, students, and faculty can count on.

Next-Generation Parent Notification Services

An expert panel of communications and technology leaders discusses trends and the future of notification services in schools and how districts are finding new ways to meet the evolving notification needs of their communities.

The WiFi Device Explosion: What's Your Plan?

The proliferation of wireless devices—laptops, tablets, and smartphones—on today's campuses is straining networks. Discover ways you can boost performance, capacity, and reliability of your school's network to meet this challenge and plan for future growth.

[green spot]

US ED to Launch Green Ribbon Schools Program

The United States Department of Education has launched a new program to recognize schools for their sustainability efforts. The Green Ribbon Schools program—being administered by the ED and supported by the US Environmental Protection Agency and the White House Council on Environmental Quality—will be modeled on the Blue Ribbon Schools program (also administered by the ED). But instead of focusing on academic achievement, the program will recognize schools for energy conservation, creating healthy learning spaces, and teaching environmental literacy.

"Preparing our children to be good environmental citizens is some of the most important work any of us can do," said Arne Duncan, US secretary of education, in a statement released at the announcement of the program. "It's work that will serve future generations and quite literally sustain our world. Through the Green Ribbon Schools program, we'll be holding up schools that are leading the way in teaching science and in ways that show students the importance of developing clean energy sources and sustainable solutions for the environment."

"The schools taking part in this initiative will help kids connect what they're learning in science class with the world around them, allowing them to envision solutions to tomorrow's challenges while living healthier lives today," said Lisa P. Jackson, EPA administrator, also in a prepared statement. "By making green living a part of everyday learning, Green Ribbon Schools will prepare our children to win the future by leading our global green energy economy."

The Green Ribbon Schools program will open later this year. The ED hasn't set a specific date for the opening of the application period but has indicated that the first recipients will be announced in 2012. Further details will be available on *ed.gov/category/keyword/green-ribbon-schools-program*.

{win big!}

Hacking Education Contest

The Prize: Top finishers in seven different categories will be chosen to win a variety of prizes, including $1,000 DonorsChoose.org gift cards, software, hardware, and professional development. "The Big Winner" will be chosen from these top finishers to meet Stephen Colbert and attend a taping of his TV show, *The Colbert Report*, with three friends.

To Enter: Through June 30, developers and analysts can enter the contest at *donorschoose.org/hacking-education*. Developers must create an app in one of six categories — JavaScript, .NET, PHP, Python, Ruby, or Wildcard — that has the potential to improve education. Analysts must crunch data from DonorsChoose.org to discover and reveal important findings about US education. Entries will be judged by potential to engage the public and impact education.

Sponsored by: DonorsChoose.org, Adobe, Best Buy, Column Five, Google, Joyent, Jumpstart Lab, Microsoft, O'Reilly, and Webtrends.

[hot topics]

Education Sees Least Growth in IT Services

WORLDWIDE SPENDING on services related to information technology increased modestly last year following a sharp dip in 2009. According to a new report from IT market research firm Gartner, education saw the slowest growth of all sectors in this type of IT spending.

The report, "Market Share Analysis: IT Services, Worldwide, 2010," covered end-user spending on all forms of IT services, including software support, hardware support, process management, consulting, development, and integration. It indicated that overall worldwide spending on these services totaled $792.96 billion in 2010, up 3.1 percent from 2009, when a recession-related drop to $769.17 billion occurred. Education and government tied as the two sectors

with the least growth in IT services spending, at 1.6 percent worldwide. Further details and the complete report are available at *gartner.com*.

Report: 6 Blended Learning Models Emerge

EVEN AS IT "disruptively" transforms American education, blended learning is itself being slowly reshaped into new and distinctive forms.

A recent report identified six emerging models for blended learning in K-12, ranging from guided online instruction in the classroom to "self-blended" models where students take courses a la carte. The report, "The Rise of K-12 Blended Learning: Profiles of Emerging Models," detailed blended learning programs that illustrate emerging trends in hybrid online and classroom-based instruction. It was authored by the Innosight Institute, a research firm focused on education and healthcare, and co-produced with the Charter School Growth Fund, a group that invests in charter school management organizations.

Despite the unique nature of each individual program studied, the researchers identified six "distinct clusters" of blended learning models that shared some common characteristics, all of which appear to be gaining adherents. The group defined blended learning as "any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path, and/or pace."

The six models identified in the report are:

1. The "face-to-face driver" model, in which a teacher in a traditional classroom setting employs online learning for remediation or supplemental instruction.
2. The "rotation" model, in which students move back and forth between online and classroom instruction.
3. "Flex," a model in which the curriculum is delivered primarily through an online platform, with teachers providing on-site support.
4. The "online lab" approach, wherein an online course is delivered in a physical classroom or computer lab.
5. "Self-blend," a model in which students choose on their own which courses they take online to supplement their schools' offerings.
6. The "online driver" model, where the courses are primarily online and physical facilities are used only for extracurricular activities, required check-ins, or similar functions.

According to the report's authors, these models are helping to "disrupt" traditional education in ways unlike technologies that came earlier.

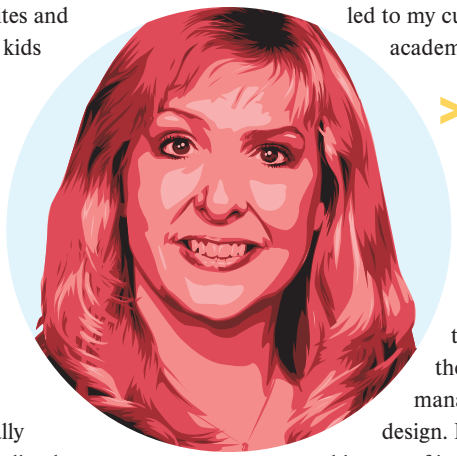
The complete report provides details on 40 individual K-12 blended learning programs from around the country, with notes on the blended learning model employed, technology used in the program, history, funding, and results. Further details, the complete report, and a digest report can be accessed free of charge on the Innosight Institute's education portal at *innosightinstitute.org/practices/education*.

PROFILE

KRISTY KUCHES, ACADEMIC COACH, HERITAGE MIDDLE SCHOOL, VOLUSIA COUNTY SCHOOLS, DELTONA, FL

IN THE BEGINNING...

When I started teaching in 1993 we had three computers, each with the old black screen and green letters. The kids were supposed to go on them once a day, but it was really just typing instead of writing, and I felt they were getting nothing out of it. It wasn't until we got the internet with LCD projectors in our classroom that I began to see the potential for technology. Suddenly we could go to educational websites and project them for all the kids to see. Still, a lot of the technology I had seen wasn't user-friendly, and I couldn't quite figure out how to adapt it to a class of 35 kids. The next year, 2006-2007, I was introduced to eInstruction's CPS student response system—the "clickers." That was really my "aha" moment regarding how technology could enhance learning.



WHEN THINGS STARTED TO CLICK

In 2006-2007, I had a job that was created for me at **Osteen Elementary** in Volusia County. Our math scores were not what we wanted them to be, so one day a week students would come to a "math lab" in which I would use a game-based approach to help make the students love math. The clickers gave me feedback that would have taken hours to get from grading papers. You ask a question and they send in their answers, then you see a graph on the screen showing how many students chose each answer. But the best part was that the kids thought we were playing a game. They didn't even see it as work. The following year I moved to **Heritage Middle School** and was thrilled to find three sets of clickers collecting dust in the media center. They were on daily checkout but the media specialist told me no one ever used them because they didn't know how. So I offered to help the other teachers learn, and soon I had to approach the principal about purchasing more. That eventually led to my current position of academic coach.

CLASS COACH

My full-time position is now to help the teachers be the best they can be, whether it's through technology or helping them with classroom management or lesson design. But technology is a big part of it. Now that I am no longer teaching my own students, I have time to work with those teachers who are terrified of the technology. For some, I'll spend a whole day in their classroom; for others, halfway through the first period they say, "I'm fine, go ahead."

WE'VE COME A LONG WAY

Heritage Middle School now has 15 sets of clickers and many regular users. This year I also convinced my principal to purchase 61 Mobi boards, also through eInstruction. With Mobis, a USB [receiver] goes into your computer and you have a small panel that you carry, and whatever you write on the panel shows up on the screen through the LCD projector. It gives the teacher mobility because you're not hard-wired to anything. You can embed video and audio files into your lesson. You can have up to nine Mobis attached to one computer, so kids can be divided into teams and each can have part of the screen to write on. It was a huge undertaking to get everyone trained, but now almost my entire staff is comfortable.

MY TOP 3... WAYS TO IMPROVE INSTRUCTION WITH TECHNOLOGY

eInstruction's CPS Student Response System "CPS 'clickers' engage students, are easy to use in a variety of ways, and provide teachers with immediate data."

eInstruction Mobi "The Mobi allows teachers the freedom to move throughout their classrooms while continuing to teach their lesson."

Ongoing Training "Teachers need ongoing training to effectively use any new type of technology. A one-day training is not sufficient. Ongoing support is essential."

MY FAVORITE MOMENTS

I was named Volusia County Schools Teacher of the Year in February 2010. It was a great honor and provided many wonderful experiences and opportunities. But what really makes me happy is when I can help a teacher try something—either a new teacher or an older one stuck in a rut—and we see the kids' reactions. With technology we're engaging those students, and it's so fun for them that they almost feel like we're sneaking it in. They don't realize that this *is* the teaching, this *is* the lesson, this *is* the learning. When I can show that new or stagnated teacher what a difference this makes, it all comes together. There's not a single teacher I worked with this year who said it was a waste of time. They all want to do more.

Daniel Hertzberg

Do you know a K-12 technology leader or tech-savvy administrator or teacher we should profile? Tell us! E-mail olabarre@1105media.com.

WHATEVER THE ASSIGNMENT, THE PROFESSIONAL PRINTING EXPERTS AT THE UPS STORE® WILL WORK WITH YOU TOWARD THE BEST SOLUTION.

It's an assignment we complete every day: help teachers and schools create handouts, flyers and great-looking reports. For us, it's easy. After all, we are the printing experts. At The UPS Store, we offer professional printing and finishing services. Just bring us your work or send it in online at theupsstore.com/print and let us show you what we can do. It's fast. It's easy. It's Logistics. For information, visit **theupsstore.com/logistics**

The UPS Store

WE ♡ LOGISTICS™

FLYERS • SCHOOL DIRECTORIES • POSTERS • CALENDARS • NEWSLETTERS • AND MORE

Diane Rapley

A Carrollton High School student checks the robotic arm he programmed as part of a STEM course.

This Is Not Your Father's Tech Plan

Experts now say that when it comes to crafting successful plans for STEM funding, short-term and piecemeal are out, while long-term and strategic are in.

THE CONVERSATION ON improving science, technology, engineering, and math (STEM) education has moved to a national stage as President Obama and his administration continue to emphasize its importance in our nation's ability to compete with the rest of the world. Understanding the importance of this issue, K-12 district leaders are crafting technology plans that aim to help fund and execute STEM improvements—but some experts suggest that districts need to turn their thinking around. It's not the technology plans that can fund STEM education, but STEM initiatives that can fund technology.

How do districts make that shift in perspective? The answer lies in big-picture thinking, according to ISTE President and STEM expert Helen Padgett. Districts must develop a more strategic way of thinking in order to move STEM education to a new level. "The name of the game now is systemic change, with districts moving toward a more rigorous interdisciplinary approach," says Padgett. "Districts need comprehensive plans to bring about improvements in STEM education, and that is reflected in the funding."

Funding sources such as School Improvement Grants and NEH Challenge Grants are looking for in-depth strategic district plans, confirms funding expert Jenny House of RedRock Reports. "Districts must include strategic objectives in their plans, plus long-term vision, a longitudinal data-gathering system, textbooks, professional development, change management, and more, as well as hardware and software," she explains.

According to Jim Bowler, CEO of Adaptive Curriculum, an online math and science publisher that works with districts to locate STEM funding, today's school districts need a new name for their technology plans. "It's not really about a technology plan," he says. "It's about an innovation plan with long-term goals that aligns curriculum and other resources to the plan and assesses understanding and thinking skills."

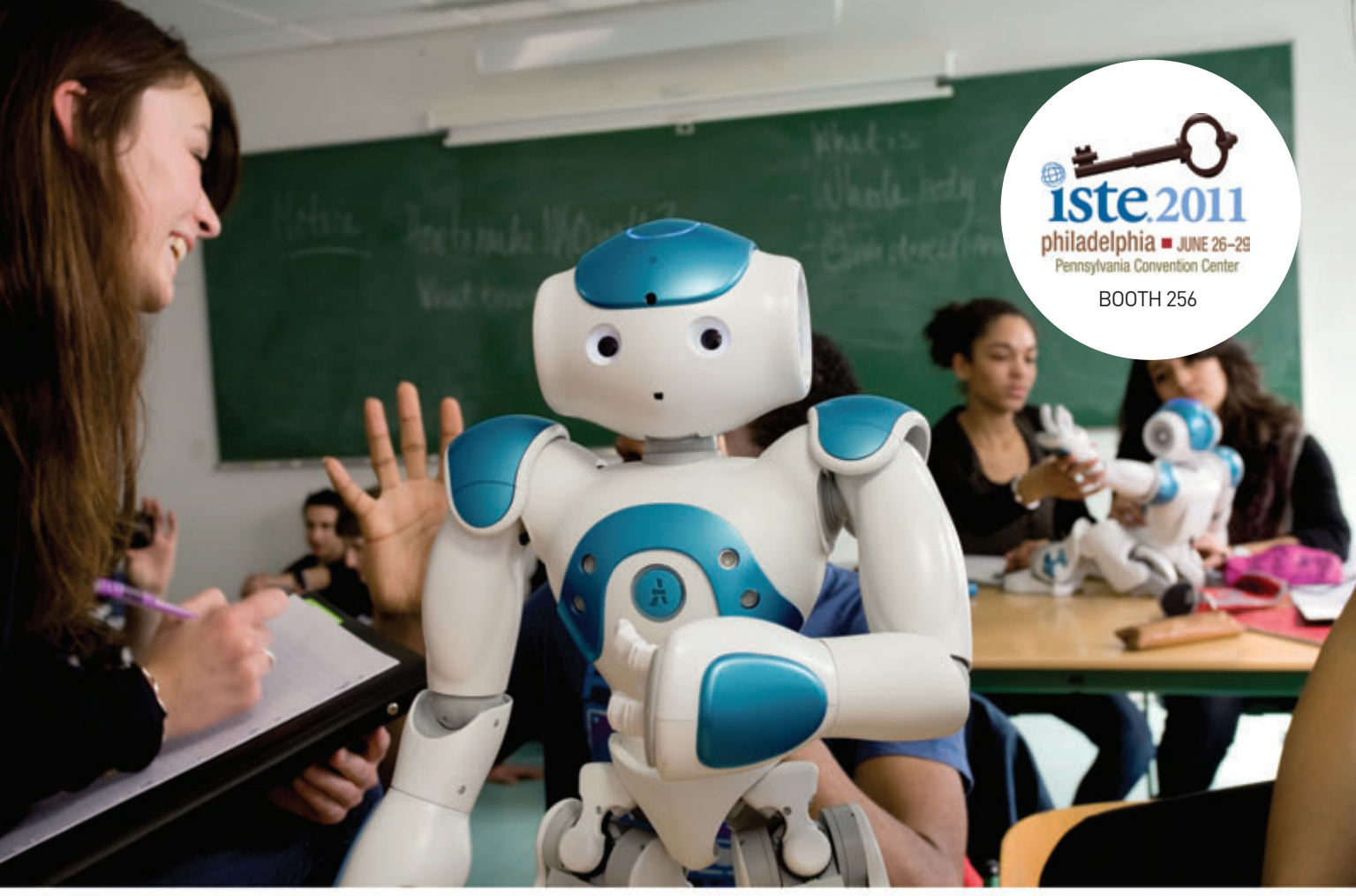
In other words, this is not your father's tech plan.

Change Is Fundamental

Carrollton City Schools (GA) took the concept of rethinking and renaming its technology plan a step further. When the district designed a new "system improvement plan," officials decided to focus front and center on long-term integration of STEM courses while addressing technology, personnel, professional development, evaluation, funding sources, and No Child Left Behind.

The district's plan includes a STEM program at the high school level and professional development focused on co-teaching, funded by a grant from the Georgia Department of Education. "We realized we were teaching science, technology, engineering, and math in isolation," says the district's superintendent, Kent Edwards, "so we started out with a new program in which all STEM courses are co-taught, by, for example, a math teacher and an engineering teacher, the goal being to build student interest and improve critical thinking and problem solving skills."

Carrollton City's systemic improvement plan also includes a feeder system that



DO YOU WANT TO LEARN MATH & SCIENCE WITH ME?

NAO STEM

YOUR ROBOT
FOR STEM EDUCATION

ALDEBARAN Robotics

www.naostem.com
americas@aldebaran-robotics.com
374 Congress Street - Boston, MA 02210
+1 404 862 7079

continually expands students' skills, starting with the youngest students. According to Edwards, the district redesigned several units for gifted students in grades 1 to 3 to include STEM, is developing a program with Lego for grades 3 to 5, and has made a STEM elective available to students at the junior high level. "The long-term goal is to be able to teach more advanced skills at the high school level," says Edwards. "And we are already starting to see some success. Our high school placed in the top 10 in a national robotics competition, and we are proud to say that we were one of the very few non-magnet, non-charter, and non-private schools to reach this level."

These fundamental changes in the way schools teach and assess STEM subjects are needed to build successful innovation plans, says Bowler. He provides another example of this type of change: "NSTA now recommends an end to survey courses," Bowler explains. "Instead, schools need to pick the important STEM concepts and help students study them in depth to build conceptual understanding."

A good way to begin planning this type of systemic change, says RedRock Reports' House, is by doing a gap analysis, or a comparison of actual performance with potential performance and goals. Districts need to identify the successful STEM programs they have in place and determine what they need to change to meet strategic objectives. "The gap analysis should help districts plan where they want to be each year moving forward," says House, "and, along with the long-term vision, it should be the starting point for all planning."

Carrollton City Schools is addressing some of its objectives by investing heavily in professional development and co-teaching. The district system improvement plan includes training in technology integration, ISTE standards, best practices, assessment, 21st century classroom technologies, diagnostic and assistive technology, and more. This combination of in-depth professional development programs and technology solutions can help foster and maintain high-quality STEM teachers—an important responsibility that Bowler says districts must take on if they want to improve STEM education. "It's all about attracting the right teachers, training them, and retaining them," he explains. "The days of rote memorization of content are over, and districts need to be sure their teachers can adjust."

Strategic Funding

Because STEM grants can fund many items that can be used across the curriculum—student and teacher laptops, interactive whiteboards, mobile carts, learning management systems, data collection systems, and more—districts can use these tools to enhance teaching and learning in other subject areas. Explains Carrollton City's Edwards, "Our plan is focused on all students and curriculum areas, but the state-of-the-art STEM component has provided funds for laptops and other technology items, as well as professional development, that have an across-the-board benefit."

But in order to make that happen successfully, explains House, "the strategic thinking needs to be in place long before the plan gets down to the level of individual hardware or software solutions." In other words, acquiring new technology should only be one piece of a consummate, well-thought-out plan to secure funding. Edwards agrees, saying that when it comes to securing funding for its innovation plan, district leaders should "start with the end goal and look creatively at locating both funding sources and partners for the long term."

Another way to secure STEM funding and help improve other curriculum areas at the same time is through the creation of focused magnet schools, according to ISTE's Padgett. "We're just starting to see this idea gain traction," she says. "A few districts are starting out by changing one middle school into a STEM magnet school to attract students and parents. Then, of course, they need an elementary that feeds into it, and they might start 'STEAM' in the younger grades, where the A stands for the arts—another new direction in STEM thinking. And then expansion to the high school level follows naturally."

In addition, says Padgett, building connections with the community is key for districts seeking funding. "They need to show that they are developing local buy-in and bringing in experts—industry leaders, doctors, engineers, academics, museum directors, and so on—to provide content expertise and role models, connect STEM to the real world, and build interest in STEM careers," she explains.

Carrollton City Schools bolsters its community ties by working with local technology companies to provide internships for high school students. The district also plans to develop a STEM Academy in partnership with local companies, both on and off campus, where courses will be co-taught by district teachers and company engineers. "This is a win-win arrangement," says Edwards. "Our industry partners like it because we are helping them build the workforce of the future."

Through its innovation plan, Carrollton has taken advantage of a variety of funding sources. In addition to the initial grant from the Georgia DOE, the district has used SPLOST (Special Purpose Local Option Sales Tax) funds and local property taxes to update its technology infrastructure. "Districts always need to pull together funds from different sources," says Edwards. "The important thing is to fit all the funding sources into a systemwide plan." the

"The name of the game now is systemic change, with districts moving toward a more rigorous interdisciplinary approach."

Diane Rapley is a writer and marketing consultant based in San Francisco.

With 4G speeds, the classroom is now bigger than ever. *Educational tools like the Blackboard Mobile™ Learn app let educators speak to students in their language. Students can blog, share educational videos and research to their hearts' content, taking the classroom with them wherever they go. Thanks to fast 4G speed and unlimited 4G data. Only on the Now Network.™* *sprint.com/4G*

1-800-SPRINT-1 (1-800-777-4681)

Sprint

The Now Network™

Samsung Epic™ 4G

Blackboard mobile™

Geoffrey H. Fletcher

Making the Big Shift

Districts in Indiana have created innovative alternatives to textbooks, thanks in part to a change in state policy.

THERE'S A LOT OF TALK from schools about moving away from—or, at least, weaning themselves off of—textbooks as the primary content delivery platform. But that's easier said than done if you live in a state that limits how you can spend your "textbook" money. And even if your state has liberalized its regulations around instructional materials spending, some districts are still caught in an all-textbook-all-the-time mindset.

Policymakers and educators who are struggling to bring about this shift might look to Indiana to see what districts can do once they are given freedom to spend their instructional materials dollars not to just deliver content, but to usher in more profound educational change.

Creative Financing

In November 2009, the Indiana State Board of Education changed the definition of a textbook to include digital content and the devices necessary to deliver or experience that digital content. This change set in motion a number of innovative initiatives at the district level that are having a seismic impact on how teaching and learning actually take place in the classroom.

Indiana has a unique business model for the acquisition and use of textbooks—parental rental. School corporations, as districts are called in Indiana, charge parents a rental fee for textbooks based on the cost of the books. With the change in definition, school corporations can use the rental fee to charge parents for textbooks, digital content and/or laptops or other devices required to access the content. School corporations are aggregating funds from a variety of sources, including textbook rental fees, to implement 1-to-1 programs that will allow all students to have access to high-quality digital content.

Some corporations have gotten very clever with the math. **North Daviess Community School Corp**. in Elnora, a small town southwest of Indianapolis, provides students with a $500 netbook from HP or Lenovo loaded with productivity software such as Microsoft School and Adobe applications. Half the cost of the device is covered by the North Daviess capital projects funds and half by parental textbook rental fees. The $250 from textbook fees is amortized over the four years a student is in high school at a $62.50-per-year hardware rental rate. The corporation then prorates a set of classroom textbooks over a typical six-year lifespan and purchases additional digital content. The total textbook rental fee per student, which covers hardware, digital content and textbooks, comes to less than $100 a year—a deal compared to neighboring school corporations that charge up to $180 per student. Parents save money and students have a netbook and access to digital content as well as a textbook.

(At press time, a new law passed the Indiana legislature that would ensure equity in the "textbook" funding for students on free and reduced lunch. Complete details were not available.)

Setting a Vision

But, of course, districts are not moving

in this direction simply to buy a bunch of hardware and save money. Dan Tyree, superintendent of **Plymouth Community School Corp**., says of its digital content initiative: "Digital content and curriculum should change so that when the status of Pluto changes, our students know that immediately. It should be low cost, but the real purpose of digital content and curriculum is less to save money and more to help teachers differentiate lessons, assignments and assessments."

Todd Whitlock, North Daviess' director of curriculum and technology, agrees that the goal is to transform how his district delivers teaching and learning. "We are changing instruction to authentic, real-world learning and getting beyond questions that Google can answer," he says. "We had a vision of moving from textbooks as the sole source of content to teacher- and student-created [content] and other free materials. We are calling it The Living Textbook."

Like North Daviess, **Danville Community School Corp**. sees the delivery mechanism for content evolving. Lyle Messenger, coordinator of special projects, wants dynamic, flexible content. "We are looking at a combination of open educational resources, teacher-designed materials and traditional content." Messenger has been working with textbook publishers, which he believes will be content partners in the long term. But right now, he says, they are in a transition. "They just haven't been able to make a complete switch yet."

Preparing Teachers

Having digital content and devices is a necessary but insufficient condition to bringing about the kind of reform these Indiana school corporations aim to achieve.

So when the State Board of Education changed the definition of textbooks, **Evansville Vanderburgh School Corp**. immediately began to look at approaches to teacher support. According to Jason Bailey, director of e-learning, the corporation already had some e-learning coaches for their teachers. They used ARRA funding to add data coaches and additional e-learning coaches so they had one e-learning coach per school. In addition, they created their own conference, a one-week boot camp during the summer where they paid nationally known consultants to come in and work with teachers. Three hundred of the 400 teachers at the high school level attended the first year. For the year-two boot camp, the school corporation's own teachers had developed sufficient expertise that there was no need to go outside the corporation for content.

North Daviess boasts a 21st century high school with a problem-based learning approach where teachers create the curriculum. "It is hard for teachers, but we have a dedicated bunch here who is willing to take it on," says Whitlock. Before they focused on the problem-based learning approach, there always had been a lesson plan for each day, and "the teacher could be a day or even just a class period ahead of the kids," according to Whitlock. "Now teachers create PBL projects a semester at a time with rubrics and everything else they need for a successful and deep learning experience." When the corporation started in this direction, they dedicated one day a week in the summer, with pay, and built lessons and projects that are revised as teachers gain experience. The school corporation also received a classroom integration grant that will result in more professional development with the data and instructional technology coaches.

Supporting Students

Danville Community Schools has decided to take a totally student-centered approach, not just for learning but also for support. A "student support class" will assist other students with the mechanics and operations of using the iPad, which they are distributing to students to promote "collaboration, interactivity, convenience, immediacy, mobility and convergence," says Brad Fischer, director of technology.

Fischer explains: "Although we will offer our teachers opportunities to learn the basics of using an iPad, ultimately it is a student device. Students will naturally become the experts on how to use the device, so it only makes sense for students to help support other students. A teacher should be able to focus on instructional strategies rather than running around the room telling students what button to push next." Messenger adds, "We are trying to develop a learning model, not a teaching model."

Fischer said he realizes that some teachers may only see the iPad as an e-reader the first month or so, but many will start to leverage the iPad more in the classroom over time. "A biology teacher may begin the year by simply saying it's okay to use the iPad to read their textbook or to take notes, transition to using a few interactive apps to study the human body or virtually dissect a frog, and arrive at students coming up with their own ways to demonstrate their understanding of photosynthesis."

But Fischer and others don't see teachers lagging too far behind their students. After all, the world they live in is increasingly customizable, with an iTunes-like disaggregation of content becoming the norm. They are going to expect nothing less for their curriculum. "Textbooks used to be the only source, like ordering a meal off a limited menu. We want an entire buffet with a lot of choices," says Fischer. "Teachers want chapter 1 from here, chapter 2 from there and chapter 3 from another place."

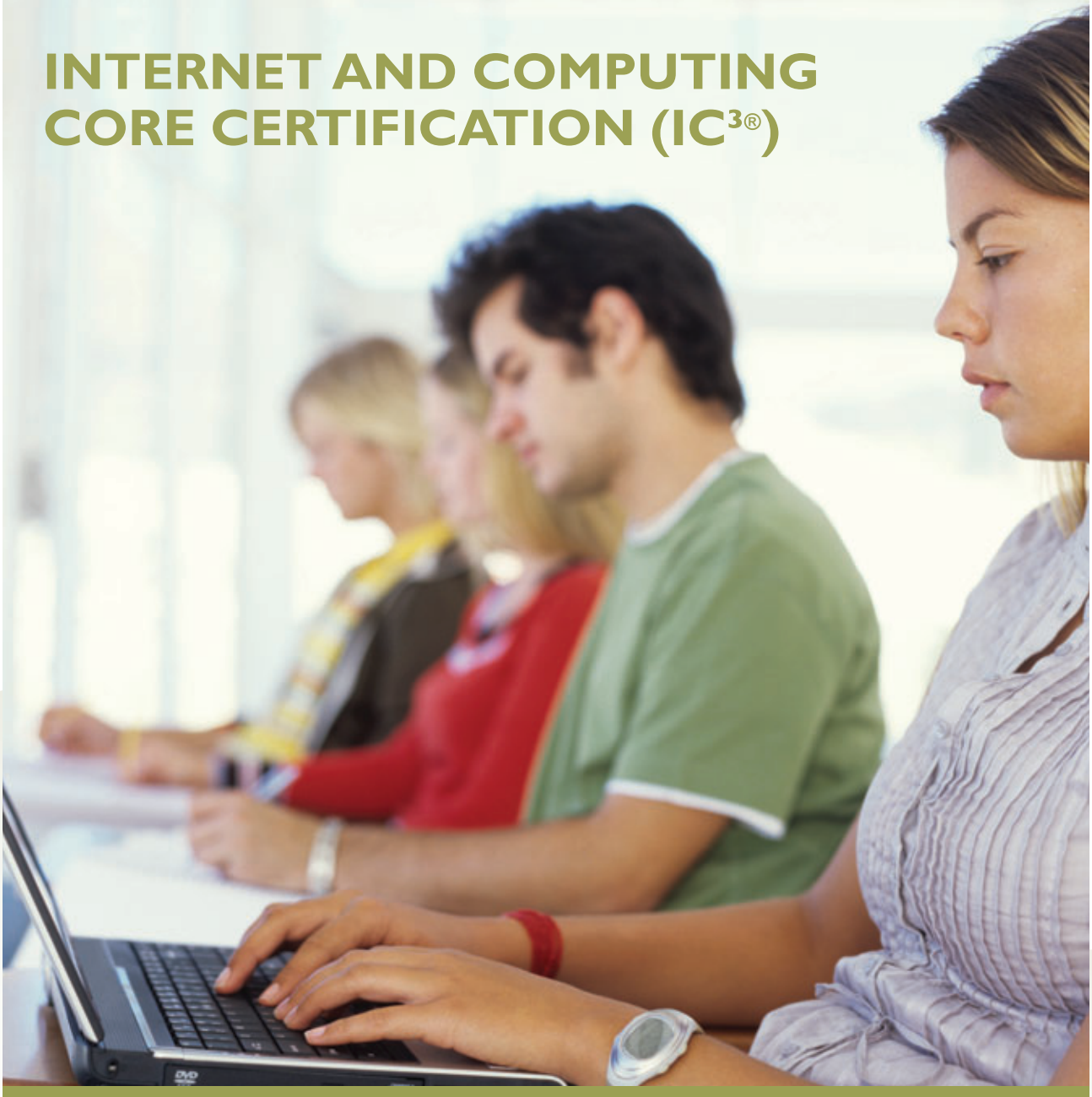
But in order for schools to get to this place of options and innovation, there needs to be a change at the top. Plymouth Superintendent Tyree may have said it best: "Without the change in the definition of a textbook from the State Board of Education, we could not have thought about the flexibility that kids and teachers really crave." the

Geoffrey H. Fletcher is the senior director of strategic initiatives and communications for the State Educational Technology Directors Association (SETDA).

IC³ INTERNET AND COMPUTING CORE CERTIFICATION

CERTIPORT®

INTERNET AND COMPUTING CORE CERTIFICATION (IC³®)



Help students and job-seekers succeed by providing them with a computer and internet foundation of knowledge. IC³ allows instructors to certify their students' proficiency based on a globally recognized digital literacy standard and prepare them to advance their education or enter the workforce.

Schools now have the opportunity to provide certification exams directly to students from their classrooms. To get started, become a Certiport® Authorized Testing Center. Exams are administered online, and cost-effective exam licensing options are available to simplify budgeting and increase exam availability at your school.

Learn more today:

Visit Certiport at ISTE 2011, booth #2709.

Contact Certiport at
www.certiport.com/IC3
IC3info@certiport.com
or call **888.999.9830**

Len Scrogan

Jud Guitteau

The Journey to Digital Content Delivery

An instructional technology director takes us down his district's path from an outdated content delivery system to one that belongs in the 21st century.

IN 2004, LEADERS *at Boulder Valley School District (CO) decided it was time to shift away from its old-fashioned, inefficient system of delivering instructional media to a more reliable, easy-to-use system.*

With the system the district had in place at the time, educators would have to reserve physical items such as DVDs and wait for them to be delivered by truck from the District Instructional Materials Center (DIMC) to their schools, only to be picked up a week later and returned for use by other teachers.

Leaders envisioned a future where instead the district would instantly deliver digital content to every desktop in every school through a private cloud.

Led by Dave Williamson, the district's CIO at the time, and Len Scrogan, its director of instructional technology and library media, the district began the BVSD Digital Content Initiative, an aggressive mission to make its vision of digital content delivery a reality. Here, Scrogan shares the story of how that journey transpired.

Mapping the Route

Our dream of implementing a 21st century digital content delivery system for a school district with about 28,500 students, 55 schools, and 400 employees required a solid strategy and plenty of lead time. For one thing, we knew we would need buy-in from the entire organization. We understood that making the people comfortable with the transition was just as important as—if not more important than—managing the technology changes.

We started in 2004 by making sure we had a strong commitment from district leaders. We also talked to the teachers' association, classroom teachers, school principals, curriculum leaders, and the IT department. Our district had a history of challenges with previous technical rollouts, including tremendous technical problems. This time, we wanted to do it right.

In the end, it only took a few months to build the political consensus we needed for a digital content delivery system, but money to fund the project was a scarcer commodity. In fact, it took a year and a half before we could convince our district leaders to include our startup costs in a larger bond proposal that eventually met with voter approval in January of 2007.

Once we had it, though, we began to search for the right digital delivery tool to meet our long list of needs, which included:

- On-demand delivery of video resources in varying formats (.wmv, MPEG-4, Flash, .mpeg, and PDF, among others)
- The ability to slice longer videos into bite-sized learning segments
- The ability to access video resources from anywhere, at any time
- Straightforward digital rights management to ensure the intellectual property rights of our chosen vendors
- Delivery of specified cable television channels to every classroom
- The capability for districtwide or in-school live broadcasting

After issuing an RFP in 2008, we selected

Microsoft® Office Specialist 2010

Turning motivated students into Office superstars

GET MICROSOFT® OFFICE SPECIALIST CERTIFIED THIS SUMMER

Get ahead of the curve in the classroom with **Microsoft Office 2010**—the world's premier desktop productivity solution. **Get started with MOS 2010 certification—FREE.** Visit Certiport booth #2709 at ISTE to participate in our instructor-exclusive offer, **"MOS 2010 Certify This Summer."** Sign-up at our booth to receive:

- 3 **FREE** MOS 2010 certification exam vouchers (Word, Excel and PowerPoint)
- Complimentary on-line Certiprep Practice Test license
- LearnKey 90-day demo license

Microsoft Office Specialist 2010 certification helps you meet funding requirements, enriches your curriculum, and puts your students on track for success.

- Students certified in Office 2010 can tap its full features and functionality to complete tasks more efficiently.
- Based on globally recognized standards, certification is an important credential that distinguishes students when applying for college or employment.
- Your students are eligible to receive college credit for their MOS Certifications at participating schools through the American Council on Education's college credit recommendation service.

Use Microsoft Office Specialist 2010 as a comprehensive training and exam solution, and deliver the expertise that college and corporate recruiters want.

Microsoft® Office Specialist

Ask us about our new Classroom License

- Expand testing opportunities
- Control exam costs

Contact Certiport today!

For more information, visit Certiport at ISTE 2011, booth #2709, or at our website:
www.certiport.com/MOS

888.999.9830
www.certiport.com/MOS

CERTIPORT®

InventiveTec's MediaCast solution because of its ability to meet many of our needs, its K-12 focus, good feedback from other districts, and its price point.

We still had to make sure we could fund operations once we were up and running. To accomplish this, we used a strategy that other districts could easily imitate: We simply converted the annual costs of maintaining the older materials distribution center into funds for maintenance, cable television charges, and content licensing.

Hitting the Road

Once our plans—and our funding—were set, we began a two-year countdown to wean our teachers from our traditional DIMC and put the new system in place.

After proving to leaders, affected teachers, and concerned employees that less than 20 percent of the center's materials were actually being circulated to schools, our next step was to shrink the center's collection by 50 percent and move it to a smaller space. A year later, we announced the pending total shutdown of the materials distribution center.

At the same time, we worked behind the scenes with the district's purchasing department to discourage and virtually eliminate the purchase of traditional televisions and DVD players. We also worked with our bond construction office to ensure that every newly constructed or remodeled classroom would be outfitted with projectors, as opposed to older display technologies. During 2009, the final year the traditional materials center was open, we scheduled the shipment, installation, testing, and scaling of new servers and software.

At the same time, we assembled and trained teams of teachers and librarians who would be prepared to teach others when the time came. When that cadre of trainers was fully prepared, we began a rigorous schedule of just-in-time training in early 2010 and commissioned a multidisciplinary committee of teachers to evaluate potential content offerings. We chose content from multiple vendors, including CCC Core Curriculum Content, Defined Learning, Visual Learning, and Learn360.

We started our phased rollout with five highly motivated pilot sites, hoping to double that number in the next phase, and so on. We were pleasantly surprised by three positive developments: the quick and relatively trouble-free back-end installation, the enthusiasm that our trainers demonstrated in seizing the training challenge so readily, and the ease of adoption by classroom teachers. In fact, the adoption by teachers was so trouble-free, we quickly discarded the schedule and allowed the entire district to move forward.

The Final Destination

Educators can now access the district's media collection in a few different ways. At school, they can use a web browser to select video content and project it in a classroom—any classroom. At home, they can access media materials through a web browser to prepare and preview them before they use them. Educators can also create a URL for a video and insert it right in a PowerPoint presentation, Word document, or syllabus, and then play that video in class, at home, or anywhere just by clicking on the link.

With the successful completion of the BVSD Digital Content Initiative, we experienced some benefits we did not anticipate beforehand:

- **Ease of use.** We did not realize that teachers could learn the system so quickly.
- **Community connections.** Our school board immediately adopted MediaCast as a vehicle to store and serve up recorded board meetings for the community.
- **Multimedia integration.** The URL builder function of the system offered us an entirely new way to integrate digital content into classroom and home learning.
- **Budget savings.** We accomplished our goals and were able to return more than $35,000 in annual general fund dollars back to the district budget in tight times.

But how does this new digital media system affect student achievement? There has been no tracking of student achievement yet. Anecdotally, though, the system benefits students by helping teachers be more efficient at what they do. It also makes the content more contemporary, since each year many new titles are added to our collections. Beyond that, content is truly readily available to all the students anywhere, at any time. the

The Next Stop

Acquiring, installing, and scaling a new digital content delivery system was just the first step in **Boulder Valley School District**'s (CO) transformation. Len Scrogan, the district's director of instructional technology, tells us what's coming next:

- **Teacher- and student-developed content.** One school has already populated the system with its own outstanding weekly television production. We expect that more school-, teacher-, and student-developed content will follow.
- **OnLocation carts.** Schools are starting to purchase MediaCast OnLocation carts that hold the tools necessary for producing school-created content.
- **Evaluating and refining content.** We will continue to search for great content that's tied to common core and state standards. We plan to select only the best content, using an iTunes-like model for purchasing.

Len Scrogan is the director of instructional technology and library media at Boulder Valley School District in Boulder, CO.

LINKS

- **CCC Core Curriculum Content**
  cccvod.com
- **Defined Learning**
  definedlearning.com
- **Inventive Technology**
  inventivetec.com
- **Learn360**
  learn360.com
- **Visual Learning**
  visuallearningco.com

BE FREE TO EXPLORE YOUR OPTIONS

Epson PowerLite® 450W/460

Epson PowerLite® 410W

Epson BrightLink 455Wi/Solo™

Pair your IWB with an **Epson PowerLite®**

short throw or ultra-short-throw projector for exceptional reliability, image quality, performance, pricing, and service. Seeking an affordable interactive option? Add **BrightLink™ or BrightLink Solo™** and go interactive starting at $499*. You have the power to choose with Epson...

That's way beyond smart...that's genius.

>> Explore your options at **Epson.com/options**

Epson Brighter FUTURES®
reliability. support. savings.

EPSON®
EXCEED YOUR VISION

*Education pricing only. Contact your Brighter Futures account representative for more information.

Adam Hall

The Arkansas Intervention

One state shows how cloud-based learning can provide continuity of instruction to help juvenile offenders stay on track for their high school graduation.

HERE'S A MATH LESSON for lawmakers and policymakers: The United States spends an average of $9,644 a year per preK-12 student compared with $22,600 per prison inmate. Increasing the high school completion rate by just 1 percent for all men ages 20 to 60 would save the country up to $1.4 billion per year in reduced costs from crime. Sixty-five percent of convicts are dropouts, and lack of education is one of the strongest predictors of criminal activity. A dropout has an eight times higher likelihood of being in jail or prison during his or her lifetime than a high school graduate.

Numbers like these give us a compelling economic argument for investing in programs that will help increase the graduation rate. They also give us urgency to look at how we can intervene with the population at greatest risk for dropping out—juvenile offenders.

These incarcerated youth are on a fast track for an incarcerated adulthood, in part because they are being exposed to a prison-culture mindset while they are in detention, but also because detention separates them from their school culture and—perhaps more important—their school work. When these students return to their schools, they are even further off track for graduation than when they left school.

It doesn't have to be this way. With cloud-based learning programs, instruction can reach these students in their detention diasporas, keep them engaged in learning, and improve their chances for graduation. The state of Arkansas has shown how this can happen.

Stuck in Limbo

In 2001, Marcia Harding was a relatively new state director of special education for the Arkansas Department of Education, responsible for all juvenile detention educational programs in the state. At that time, teachers in the facilities had to make a best guess as to where each student fell on the spectrum of basic skills. Occasionally, they might use an assessment battery, but given the typically short duration of the detention, these assessments were rarely useful.

In general, at-risk students in Arkansas who end up in juvenile detention for 30 days find themselves in a classroom with 30 other kids aged 9 to 21, all learning at different rates, with different styles and knowledge bases, and little if any motivation to invest in the process. Their peers back at school may be mastering fractions and moving on to decimals, but the incarcerated group is stuck in limbo.

Harding

Marcia Harding saw that cloud computing could help incarcerated students keep up with their studies.

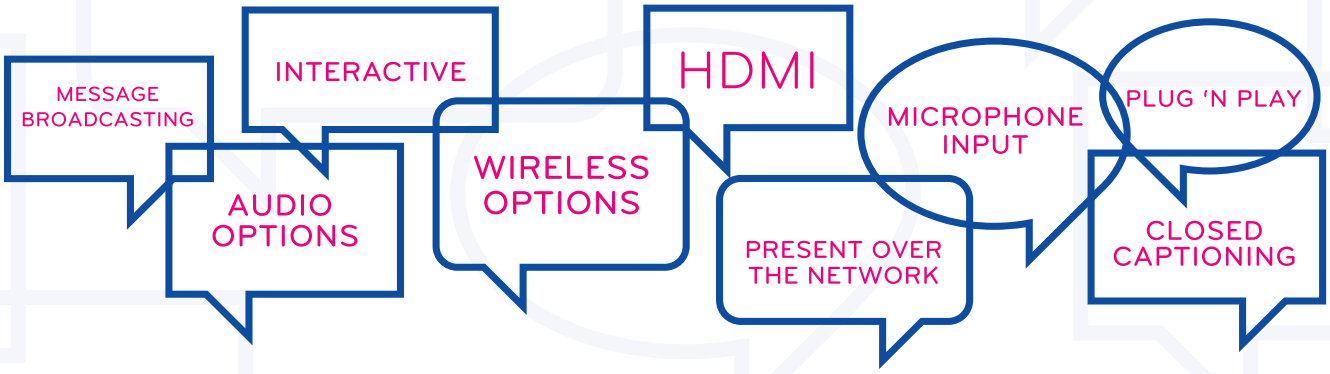
Harding wanted to provide some continuity of instruction in these students' lives, and so for a pilot program, installed my company's (SkillsTutor) networked version of diagnostic and prescriptive basic skills software at the Sebastian County Juvenile Detention Facility in Fort Smith. The idea was to help teachers better gauge individual students' skill levels and assign them work that would have relevance to their learning needs. Unfortunately, because there was no access to the internet at the center, the activity and the data was confined to the facility. Young offenders would stay for a month, work on the programs, make progress, and then be discharged with no option for follow-up in their next learning environment.

When the Sebastian County facility installed broadband, the picture began to change. Students worked online during their detention. When they were discharged and moved on to their next learning environment (for example, school or residential treatment facility), their access to the program and their data went with them. Teachers in the students' home schools began requesting access to the program from teachers in the juvenile detention facility so that they could get progress reports and pick up instruction where the students left off. In short, continuity of learning became a real possibility for one of the most itinerant groups that exists within the student population.

Harding immediately recognized the impact of the internet access. She saw that the model could scale and that multiple stakeholders in various environments could be engaged in students' instructional activities, thanks

Epson Brighter FUTURES
reliability. support. savings.

Thank you for making Epson education's top projector brand.*



SPECIAL OFFER!
Buy 7 get 1 **free** on select products for a limited time. Visit **epson.com/EDUsave** to see our current offers.

You challenged us to find innovative ways to engage learners. You defined a higher standard of service and support for education. You asked for pricing that makes our products affordable. You asked for quality, reliable products that make the most of your investment.

We listened and now you can see the difference in the projectors and programs that carry the Epson name.

PowerLite® 95
Affordable classroom projector with media rich connectivity.

PowerLite® 96W
Widescreen projection to future proof your classroom.

DC-11 Document Camera
Ideal for visual learners.

To discover more about Epson's Brighter Futures program for educators...

Visit epson.com/THE

*TFC Info. Projector Brand Customer Perception and Preference Study 2011. Additional study details are available online at www.epson.com/brighterfutures.

EPSON®
EXCEED YOUR VISION

to the cloud. So she made the decision to expand the program into all 15 juvenile detention facilities around the state.

I was curious to see if we could help this group stay in school and out of jail. So we decided to adopt a "why wait?" philosophy, to bring out-of-sequence learners back into sequence and address the instructional continuity factor *before* these at-risk students hit the juvenile detention environment.

Education and Crime

THE STATISTICAL RELATIONSHIP between a person's education level and likelihood to commit crime has been well established in various studies. Below are statistics cited in the Alliance for Excellent Education report, "Saving Futures, Saving Dollars: The Impact of Education on Crime Reduction and Earnings."

- A 10-percent increase in the male graduation rate would reduce murder and assault arrest rates by about 20 percent, motor vehicle theft by 13 percent, and arson by 8 percent.
- Of black males who graduated from high school and went on to attend some college, only 5 percent were incarcerated in 2000.
- Of white males who graduated from high school and went on to attend some college, only 1 percent were incarcerated in 2000.
- State prison inmates without a high school diploma and those with a GED were more likely to be repeat offenders than those with a diploma.

We began to see that incarcerated students who had the benefit of individualized e-learning were able to better keep pace with their peers back at school. When these students returned to school, they were more caught up, more confident, and more likely to continue their engagement in the learning process, in contrast to the typical scenario in which troubled kids from the juvenile justice system return to school with little motivation, are labeled out-of-sequence learners, and often end up back in jail.

Teachers and counselors were surprised to see some of their most challenged students working voluntarily on a basic skills program that they said they got at "juvie." Test scores began to steadily increase each year. Since the program started in 2001, more than 75,000 juvenile detention students have participated in the program, and on average their math scores have increased by 13 percent, their reading scores by 16 percent, and their language arts scores by 15 percent.

We were helping incarcerated youth, but what about the kids who were on the brink?

Why Wait for Detention?

We offered "feeder districts" (those districts that accounted for most of the offenders) the opportunity to put their most at-risk kids into the program at no cost as an extension of the detention facility license.

The feeder districts jumped on board. It was exciting to see the districts and the detention facilities begin to work together. This was only possible because of the cloud. The program provided comprehensive professional development for teachers and administrators, focusing not just on how to implement the e-learning program but also on how to use data to make informed decisions. The goal was to reduce dropout and recidivism rates, while at the same time building solid communities of practice that could weave cloud-based learning and data analytics into their instructional model.

Since the program began, more than 300,000 at-risk students in Arkansas have been able to stay on track and graduate high school. Not only has the program changed the lives of many young people for the better, but the benefits to society as a whole have also been substantial.

Helping at-risk youth stay on track makes sense for many reasons. Cloud-based instruction, because of its ubiquitous nature, is perfectly suited to meet the needs of transient at-risk students.

So, back to our lawmakers and policymakers, here's a pop quiz: Will we as a society continue to accept the costs accompanying each dropout—both the financial costs of incarceration and rehabilitation, and the less obvious opportunity costs? Will we continue to accept the current status quo—where at-risk students "take from" rather than "contribute to" society? Isn't our responsibility in this highly competitive global economy to produce wage-earning, tax-paying, GDP-boosting citizens? The cloud and the e-learning solutions are there. The choice is ours. the

Adam Hall is the president of SkillsTutor, a Houghton Mifflin Harcourt company.

REFERENCES

Alliance for Excellent Education, "Saving Futures, Saving Dollars: The Impact of Education on Crime Reduction and Earnings," 2006 (*all4ed.org/files/SavingFutures.pdf*

Harlow, C.W., "Education and Correctional Populations," US Department of Justice, 2003 (*policyalmanac.org/crime/archive/education_prisons.pdf*))

Moretti, E., "Does Education Reduce Participation in Criminal Activity?" University of California, Berkeley, 2005

Don't panic, interactive whiteboard.

I'm sure someone can still afford you.

Meet Mobi View™. Only $449.*

Mobi View™ mobile interactive whiteboard delivers maximum mobility and interactivity for a fraction of the cost of a fixed interactive whiteboard. Plus, with its touch screen you can easily launch, control, and interact with any application, website, or instructional resource from anywhere in the classroom. No wonder those other interactive whiteboards are worried.

100% interactive whiteboard.

And that's just the beginning...

eInstruction®
Simple Solutions. Real Results.

To learn more about Mobi View™ visit **www.einstruction.com/mobiview-tjrjn**.

* U.S. Education List Price in USD.

For decades the No. 2 pencil and bubble sheet have ruled the student assessment process. The time has finally come to move those tests online. Here's what you can expect. by Dian Schaffhauser

High-stakes computer-based testing has been around for more than 10 years, with some states eagerly embracing it and others avoiding it like whooping cough. But the advent of national standards is luring more states into online testing—to the point where districts can no longer assume it won't happen where they are.

continued on page 32

the focus

A Foundation for Learning

Why would a school district stay with the same hardware partner for 14 years?

Gene Manning knew he was witnessing the power of educational technology to change teaching and learning when he walked into the room. The Wilkes-Barre (PA) Area School District technology administrator had stepped into an elementary classroom to see how the district mandate for interactive whiteboards was working out. Manning saw students interacting with their teacher, each other, and the technology that was underpinning their lesson.

Manning's job is to ensure that the technology behind district initiatives works where it counts: in the classroom. If the technology doesn't run easily and smoothly, it becomes an obstacle to learning, not a support to learning. Research has shown that one reason teachers fail to use innovative technologies in their classrooms is the fear of things not working.

Wilkes-Barre teachers don't have that fear because Manning demands reliable equipment and a reliable network. His district has been using HP computing technology since 1997. "The quality is just there. We've never had a problem," he says.

Every three years—the length of the HP technology lease—the district goes out to bid for 1,700 replacement computers. Without a gap, HP has won the business—and the district receives a fresh crop of machines to distribute to teachers, staff, and classrooms.

The Wilkes-Barre district has 7,200 students across eight schools from elementary to high schools. Currently, the district is equipped with HP Compaq 6005 Pro Small Form Factor PCs with VISION Pro Technology from AMD. AMD technology enhances the user experience with processors and chipsets that provide exceptional performance while operating as efficiently as possible.

The HP Compaq 6005 Pro Small Form Factor PC includes unique features, like the Cool'n'Quiet™ technology built into the AMD processor to reduce power usage and noise, hood removal that can be done without tools, and the inclusion of DASH 1.1 on the motherboard. Based on a standard developed by the Distributed Management Task Force, DASH (Desktop and Mobile Architecture for System Hardware) is a mechanism for performing remote management, a crucial feature in districts that are minimally staffed.

Wilkes-Barre has an IT team of only two people, so it's especially important that the computers selected for the schools in the district stay operational. "I see what other school districts are using around us. I see the number of units waiting for repair. We don't have those issues," Manning notes. "I have one support technologist. Smaller school districts around us have three, four, five support people full time."

After experiencing years of reliable service, Manning is sold on HP for servers as well. In the data center, he even runs HP networking switches to keep the district network powered. "The decision on the switches was pretty straightforward," he says. "HP had guaranteed next-day replacement with no extra charges."

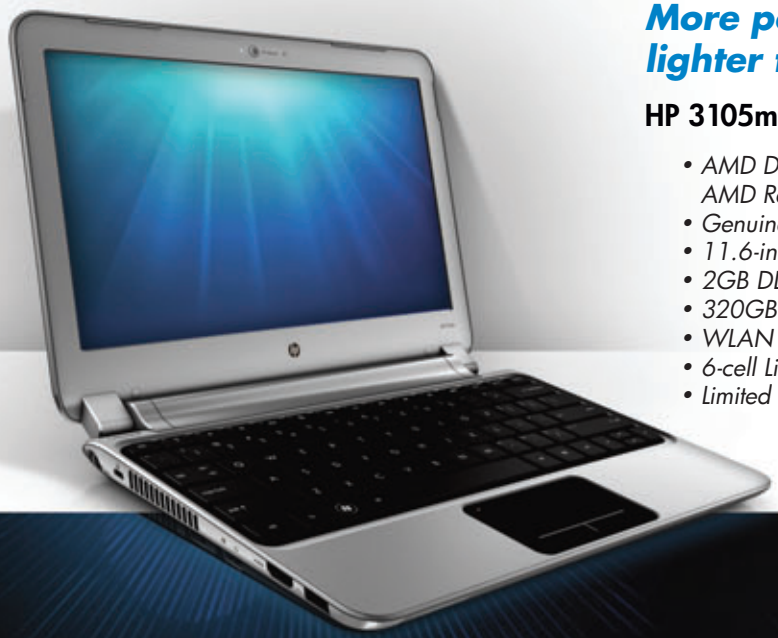
In the 14 years that the schools of Wilkes-Barre have been running HP, Manning estimates that its equipment failure has been less than half a percent. "The district would be hard-pressed to change from HP at this point because of our focus on quality."

That doesn't mean that price isn't important. "Don't get me wrong," Manning says. HP's competitive leasing program is definitely part of the reason that the district sticks with the company. "But price isn't the only deciding factor. Quality, longevity, parts availability after end of life—those types of things are big. We're an HP house, period."

In the 14 years that the schools of Wilkes-Barre have been running HP, its equipment failure has been less than half a percent. "The district would be hard-pressed to change from HP at this point because of our focus on quality," says district technologist Gene Manning.

Put a BEHIND-THE-SCENES OVERACHIEVER to work at your school—and get more.

Multi-tasking made easy, graphics made incredible, high performance made possible. At affordable, budget-friendly prices, that's quite the accomplishment.



More power than a netbook, lighter than a notebook

HP 3105m Notebook PC *XU008UT#ABA*

- *AMD Dual-Core Processor E-350[1] with AMD Radeon™ HD 6310M Discrete-Class Graphics*
- *Genuine Windows® 7 Home Premium 64-bit*
- *11.6-inch diagonal HD BrightView LED display[2]*
- *2GB DDR3 memory*
- *320GB hard drive (7200RPM)[3]*
- *WLAN 802.11 b/g/n & Bluetooth[4]*
- *6-cell Lithium-Ion battery*
- *Limited 1 year standard parts and labor warranty 1/1/0*

STARTING AT: ***$449[5]***

Sleek, space-saving all-in-one design

HP 100B All-in-One Business PC *XZ812UT#ABA*

- *AMD Dual-Core Processor E-350[1] with AMD Radeon™ HD 6310 Discrete-Class Graphics*
- *Genuine Windows® 7 Professional 32-bit*
- *20.0-inch diagonal LCD display*
- *2GB Memory (1x2GB)*
- *250GB SATA (7200 rpm)[3]*
- *SuperMulti LightScribe DVD Writer Drive[6]*
- *Limited 1 year standard parts and labor warranty 1/1/0*

STARTING AT: ***$499[5]***

1. This system requires a separately purchased 64-bit operating system and 64-bit software products to take advantage of the 64-bit processing capabilities of AMD technology. Dual/quad/triple-core processing with AMD technology is designed to improve performance of this system. Given the wide range of SW applications available, performance will vary. AMD's numbering is not a measurement of clock speed. 2. HD content required to view HD images. 3. For hard drives, GB = 1 billion bytes; 1 TB = 1 trillion bytes. Actual formatted capacity is less. Up to 8GB (for XP and XP Pro), up to 10 GB (for Vista), and up to 16 GB (for Windows 7) of disk space is reserved for the system recovery software. 4. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. 5. Pricing is subject to change without notice. 6. Actual speeds may vary. Don't copy copyright-protected materials. LightScribe creates a monochrome image. LightScribe media required and sold separately. Note that DVD-RAM cannot read or write to 2.6GB Single Sided/5.2 GB Double Sided – Version 1.0 media. 7. Actual speeds may vary. Don't copy copyright-protected materials. Double Layer is a new technology. Double Layer media compatibility will widely vary with some home DVD players and DVD-ROM drives. LightScribe creates a monochrome image. LightScribe media required and sold separately. Note that DVD-RAM cannot read or write to 2.6GB Single Sided/5.2 GB Double Sided – Version 1.0 media. 8. Maximum memory capacities assume Windows 64-bit operating systems or Linux. With Windows 32-bit operating systems, memory above 3 GB may not all be available due to system resource requirements.

HP recommends Windows® 7 Professional.

Give your students a visual edge with VISION Pro Technology from AMD.

HP and AMD have worked together to develop technology that enables students to experience and use visuals on their PCs like never before. Help them succeed, as they create more distinctive presentations with amazing 3D graphics, embedded audio and video, and animations that fire inspiration and imagination.

Enhanced graphics delivered with flexibility and value

HP ProBook 6455b Notebook PC *WZ308UT#ABA*

- *AMD Turion™ II X2 Dual-Core Mobile Processor N530[1] with ATI Mobility Radeon™ HD 4250 Graphics*
- *Genuine Windows® 7 Professional 32-bit*
- *14.0-inch diagonal LED-backlit HD anti-glare display[2]*
- *2GB 1333 MHz DDR3 SDRAM Memory*
- *320GB hard drive (7200 rpm)[3]*
- *DVD+/-RW SuperMulti DL Lightscribe Drive[7]*
- *6-cell Lithium-Ion battery*
- *Broadcom 4313GN 802.11b/g/n 1x1 Wi-Fi Adapter[4]*
- *Limited 1 year standard parts and labor warranty 1/1/0*

STARTING AT: ***$719[5]***

Powerful technology in a modular, space-saving design

HP Compaq 6005 Pro Ultra-slim Desktop PC *XZ819UT#ABA*

- *AMD Athlon™ II X2 Processor B26[1] with ATI Radeon™ HD 4200 Graphics*
- *Genuine Windows® 7 Professional 64-bit*
- *4GB Memory (2x2GB)[8]*
- *250GB SATA 3.0Gb/s (7200 rpm)[3]*
- *HP ProtectTools™ security software*
- *3-3-3 Limited Warranty*

STARTING AT: ***$599[5]***

Monitor and accessories sold separately.

To browse more HP computers with AMD technology,
visit www.hp.com/go/3perform or call 1-866-322-1736.

Everybody On

continued from page 28

Almost every (if not every) state in the union has signed on for online high-stakes assessement at some point in the future.

Why the sudden rush?

According to Linda Rogers, associate secretary for the teaching and learning branch in Delaware's Department of Education, the current political environment values accountability and therefore leaders seem willing to support initiatives that place it front and center. Likewise, the existence of the national Common Core initiative is helping drive the work in creating a common assessment. At the same time, the tools of assessment are becoming more sophisticated.

"The stars are all aligning—or maybe the comets are all colliding, depending on your perspective," she says. "[We haven't had] all those things at the same time before, and that's why it hasn't happened before."

The Current State of Testing

Two or three months ago, somewhere in this country—actually in most places—truckloads of pallets stacked with boxes and bundles of pre-labeled test booklets and bubble answer sheets were being delivered from testing companies to school districts all over the country, to be unboxed and unbundled and carefully delivered to select classrooms and particular teachers throughout the schools, where they were counted and accounted for, and issued to students, who spent an hour or two in several sessions stressing over questions and filling in little circles with No. 2 pencils. When the tests were completed, the process was reversed, and so began the waiting for the moment when teachers and principals would finally receive results and know how their kids performed. Some of those people are still waiting for the results, even now, in midsummer, long past the point when they could help those same students understand a given topic a little better before they're moved into the next grade level in the fall.

With a few exceptions, that's the current state of high-stakes testing in American schools. Those, of course, are the tests that prove to state and federal government agencies—not to mention local communities—how well a given school is doing its job of educating its students. But the testing process doesn't have to be like that. Some states—Virginia and Delaware, to name two veterans—are running those testing operations online. The testing company each state works with delivers tests digitally in a secure and efficient manner. The students sit at computers to answer questions. And the results come back immediately—as soon as the student presses the "submit" button, if the state so chooses. Districts in those states may choose to test students throughout the school year so that teachers can gauge progress and address inadequacies in learning before the last call, and students are better prepared for their time in front of the testing screen.

The desire to deliver just-in-time test results was one of the reasons Secretary of Education Arne Duncan took $350 million out of the Race to the Top (RTTT) funding and applied it to the development of what

CERTIFIABLE IN VIRGINIA

FOR ANY STATE OR DISTRICT that still does most of its standardized testing with old-fashioned pencils and bubble sheets, the ultimate goal of online testing for all its students can seem an awfully steep hill to climb. To really understand the multiple hurdles ahead, you only have to look at the challenges Virginia has overcome. Even after 10 years of building up its delivery of those high-stakes exams online—adding up to nearly 2 million—the state still delivers an even larger number on paper. One can't help but ask: What's taking so long?

For one thing, high standards. Virginia has found that it's "absolutely essential" for computers to be bulletproof, says Lan Neugent, assistant superintendent for technology, career and adult education in the Virginia Department of Education. "You couldn't have 30 children go into a room to take an online test and have things not working," he points out.

To make sure districts met the necessary standards, the state put in place a certification process many years ago. Districts had to certify that their networks could manage the number of tests they were going to deliver. To ensure commitment from the top, the certification had to be signed off by the district superintendent and audited by an outside vendor.

Part of the certification process is a "96-hour checklist," which kicks in as test day approaches. "It's like, okay, you did your certification in January. Now it's June. Check it again. Make sure it still works so you don't run into blips and problems," Neugent explains. That list includes sections for both technology people ("Alert your Internet Service Provider to your online…testing window, and also confirm that no scheduled maintenance or outages are planned during that entire window.") and assessment people ("Verify that all students testing online have had the opportunity to view the… tutorial."). Neugent estimates that all Virginia high schools are certified, as are 97 percent to 98 percent of middle schools and 70 percent to 80 percent of elementary schools. "It's just a matter of volume," he notes.

Until very recently, district participation in online testing in Virginia has been voluntary. Yet each year the number of tests delivered grows by several hundred thousand. "Schools have finally discovered that it's easier and more reliable and efficient to do the online testing," Neugent says.

Good thing: The state has now set a goal of having every student in Virginia in every course do online testing by 2014—which is exactly the same deadline as set by the Common Core consortia.

Skills 4 AMERICA™

PUTTING AUTISM AHEAD OF PROFITS!

Skills™ is a web-based program for autism treatment!

Get Skills for your school for FREE during all of 2011!

Skills: An Effective, Individualized Curriculum and Assessment for Students with Autism and Related Disorders

Sign up for a Skills webinar and get SKILLS **FREE** for the rest of 2011!

Following a brief video introduction to Skills, the revolutionary web-based program for autism treatment in the classroom, you will receive an entry code to apply for the Skills 4 America grant. Sign up now for the chance to get your school Skills **FREE** for the rest of 2011!

Visit us online and sign up now for your space in the next webinar!

Log on to: www.skills4america.com

RECOVERY IS POSSIBLE

www.skillsforautism.com

would eventually be known as the Common Core State Standards Initiative for national standards in reading and math.

Duncan's idea was this: Rather than each state individually attacking the problem of raising academic standards and improving the assessment process, states could work together. In 2010, the standards were introduced. Now, with RTTT backing, two groups, the Smarter Balanced Assessment Consortium (SBAC) with 30 states and the Partnership for Assessment of Readiness for College and Careers (PARCC) with 25 states, are developing assessments based on those standards. (Some states are involved in both efforts.) SBAC is promising "state of the art adaptive online exams using open source technology." PARCC is promoting "next-generation" computer-based assessments with "much faster turnaround of results" and "innovations in test items." Both promise to deliver online assessments by the 2014-2015 school year, the same year that the participating states have committed to implementing the new standards.

The Benefits of Online Testing

Almost all advocates will say that the main benefits of online testing are the two already mentioned: getting rid of all that paper and receiving test scores in a timely manner so as to be instructionally actionable. Yet Virginia's assistant superintendent for technology, career, and adult education in the Department of Education, Lan Neugent, can cite numerous additional benefits his state has enjoyed in its move to online testing. As a pioneer in this area, Virginia is the state with all the metaphorical arrows in its back. For the past decade, its districts have been expanding their ability to deliver online standards of learning tests to students in grades 3 through 12. (Having come this far, in fact, Virginia has opted out of the Common Core standards, believing its own to be superior.)

For one, there's the benefit of improved data collection and increased accuracy of student data. "The more people that touch data, the more likelihood there will be mistakes," Neugent notes. "When a student puts their answer on the computer, not as many people touch it. You're getting really good data all the time."

Another plus is that computers can replace the use of a person for certain functions. For example, instead of hiring a person to read to a test-taker with a vision problem, the computer can do the reading or provide a bigger screen or a larger font.

Then there's increased student interest. Delaware's Rogers recently saw some video interviews with students about their eight months of experiences with the online format. "I was mesmerized," she recalls. "These students talked about how much they liked doing it on the computer, how because they test so many times a year, that it doesn't feel like an event anymore—it's an activity. Now they get [test results back] the same day. It means something to them. That was a huge aha for me."

But students aren't the only enthusiasts. District educators who implement online testing become fast fans of the process. In a report on online testing and open source that Educational Testing Service (ETS) issued last year with market research firm Grunwald Associates, a state ed tech director was quoted as saying, "The analogy that we've used is that [moving to online assessment] was like pushing the districts off a cliff—but they found out it was a four-inch drop! I'm aware of no school in our state that has done online testing and wants to go back to paper—once they've tried it, they're sold."

Mastering the Hurdles

Though the benefits are clear, implementing online testing at the district level is not a walk in the park. Between now and the start of the 2014-2015 school year, when most states have committed to adopting the Common Core standards and the consortium-developed assessments, districts and schools have multiple challenges to address in moving to online tests. There are 15,000 districts in the United States, notes Bryan Bleil, director of online and technology implementation for Pearson Education. "And when you think about all the different variables that can come into play, there are almost that many configurations and setups."

In a nutshell, here are challenges districts can expect to face as they transition to online testing.

"STUDENTS TALKED ABOUT HOW MUCH THEY LIKED TESTING ON THE COMPUTER, HOW IT REALLY WASN'T CAUSING THEM ANXIETY, THAT IT DOESN'T FEEL LIKE AN EVENT ANYMORE. NOW THEY GET RESULTS BACK THE SAME DAY. IT MEANS SOMETHING TO THEM."

1. Adequate number of computers. Districts—and states—usually start to make a transition to online assessment by performing a technology survey, basically counting up "how many computers are out there," says Bleil. The count will help the districts figure out how large their testing window needs to be. "If you have a thousand kids and 200 computers, you might need five days to test them all," he explains. Or, you might need to get more machines.

2. Adequate bandwidth. To Geoffrey Fletcher, "bandwidth is an even bigger problem than the potential lack of computers." The State Educational Technology Directors Association senior director notes that "if I'm a tech coordinator in a school right now, I'm trying to find every chunk of bandwidth at the cheapest price I can."

While they're out shopping for band-

imagination meets innovation

Engaging language & literacy instruction delivered through **cutting-edge technology**

Imagine Learning English®

Scan with smartphone to see more.
Download "Technology Solutions in Education" brief at **www.imaginelearning.com/innovation**.

width, adds Fred Manno, business technology leader for K-12 testing at ETS, districts need to make sure they're putting in controls on how it's being consumed. "The broadband pipe isn't being regulated at the schools, so kids are doing other things such as social media and video—thus using capacity that could be leveraged more directly for testing."

Scarcity of bandwidth is one reason that high-stakes online tests are still primarily multiple choice. The more media-rich the test, the more bandwidth each test will need—and the greater the demand on the infrastructure, "especially if a thousand kids are starting at once," notes Bleil.

3. Scheduling window. With online testing, schools have a new equation to solve: the number of students testing, over the number of testing days, over the number of school periods, divided by the number of available computers equals the number of potential testing opportunities.

Clearly administrators are up to the math, but the deeper problem is that every computer assigned to test-taking is a computer not being used for instruction. When the test-taking window spans several weeks, observes Bleil, is where the uninformed state could seemingly "punish" its students. "As soon as you talk about a monthlong testing window," he notes, "then you start looking at what can be a significant impact on the instructional use of those same computers. These are challenging kinds of tradeoffs that states make on behalf of their districts."

4. Network security and stability. There are a number of security challenges inherent in online testing: blocking students from outside access; tight controls on what tools (for example, calculators) are available during the test; content filters that might roadblock encrypted test code; and odd, unexplained online glitches that can wreak havoc in a testing atmosphere.

In April 2011, for example, the pilot tests for large groups of Indiana students consistently kicked them offline at least briefly—for minutes at a time—which led some participants to wonder how a full deployment could be possible. Vendor CTB/McGraw-Hill worked "around the clock," according to news reports, to figure out what was causing the interruptions. (At the time of this writing, the cause of the problems hadn't yet been identified.)

Caching can help achieve stability. For tests delivered by ETS, all local PCs connect through a caching server, which has all the tests encrypted. "Nothing is stored on the hard drive," says Manno. "That would be too much of a security risk." When the test is over, school procedures may call for the clearing of the cache, so it disappears totally from the school's systems.

The company experimented with an online-only model of testing a few years ago and gave up on it. Says Manno, "Too many had challenges with it. If a tornado rips through the Midwest and broadband goes down, it can wipe out testing for days. But if we can load the test to the caching server, the students at least think they're on the internet."

5. Scale. For a high-stakes online test, it's not uncommon to have thousands of students across a district beginning their tests within minutes of each other. "That presents a use case that's almost unique for network administrators," Bleil explains. He compares it to the problem faced by waterworks engineers in dealing with the "flushing surge" that occurs during Super Bowl halftime. "You have to understand your network to understand where and how to put a proxy cache in place, for instance, so you're reducing the amount of data."

6. Staffing. When a testing week rolls around, Marc Baron, chief of performance accountability for the **School District of Palm Beach County** (FL), makes sure there are technical and test administration staff available. "We try to arm the help desk with as much information as we can, because we don't want to pass schools from one person to another."

During a testing week this past school year, Baron says, an internet service provider's server crashed while students were taking their tests. "We got a large number of calls on that one. A user plugged in something the system wasn't set up to handle, so it broke." As a result, he adds, "Our test administration folks and IT folks had to work closely with the Florida Department of Education and the vendor to work through how best to solve that problem."

7. Budget. Pearson's Bleil will hear IT professionals complain that they're being expected by the states to deliver technology services that they themselves know

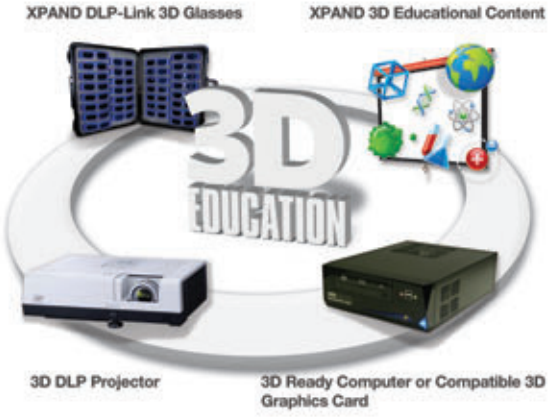
THERE ARE OBVIOUS WORK-AROUNDS FOR THE INFRASTRUCTURE CHALLENGES IN IMPLEMENTING ONLINE HIGH-STAKES TESTING, BUT THAT'S THE POINT — **THERE'S NO CLEAR AND EASY PATH TO ONLINE TECHNICAL READINESS.**

"THERE ARE TOO MANY CHALLENGES WITH AN ONLINE-ONLY MODEL OF TESTING. **IF A TORNADO RIPS THROUGH THE MIDWEST AND BROADBAND GOES DOWN, IT CAN WIPE OUT TESTING FOR DAYS."**

Getting Pupils
Focused On Learning
Has Never Been Easier

Benefits of 3D Education

- Test score results **increase by 35% on average***
- Knowledge **retention increases** dramatically
- Learning becomes more **efficient** as more information can be communicated in less time
- 3D brings **greater excitement** into the classroom environment
- Teachers have **more fun!**



At XPAND, we recognize that the art and science of teaching requires the application of both art and science! It's for this reason we developed a complete 3D education ecosystem that includes our award-winning 3D eyewear with teacher-inspired content and projector and playback systems from proven leaders in education technologies.

3D is transforming education — increasing knowledge retention by enabling deeper explanations of complex science, geography, mathematical and design lessons — and providing teachers and lecturers with new ways to keep pupils focused on what's important!

To find out more about XPAND and how we help teachers and lecturers do more with 3D please visit us at www.xpand.me/education or call (310) 309-6705.

*Controlled group case study conducted by Texas Instruments™ with over 1000 students in the USA in varying grades. Source of the results were produced and supplied by Texas Instruments™

XPAND 3D™
BEYOND IMAGINATION

"THE ASSESSMENT FOLKS KNOW HOW TO MANAGE TESTING; THE TECHNOLOGY FOLKS KNOW ABOUT INFRASTRUCTURE. **WHEN YOU HAVE BOTH GROUPS WORKING TOGETHER YOU CAN BUILD LOCAL SUCCESS** TO SOLVE LOCAL ISSUES THAT MIGHT COME UP."

there's no budget or additional staff time for in their districts. But this, he adds, is a case of IT myopia. "What they typically don't have visibility into is everything already going on inside districts. When you factor that in, this represents a cost savings or a shifting around of cost."

As an example, Bleil cites a large district in Texas with 300 schools where the tests are done on paper. Once those tests are completed by students, the policy is to have somebody in the school box up the papers, load them into a vehicle, and drive them to a central location in the district. "That's a fair amount of work on the school personnel's part," Bleil says. "But it is not work for the tech people to be involved in. They don't know that's happening. They don't see how that goes away when you shift over to technology-based testing."

8. Comparability with paper-based tests. In most states online testing still isn't 100 percent online. "Some students [in a district] are actually taking the test on paper, while others are taking it online," notes Bleil. "That places a pretty significant constraint on the test picture. If you're giving one set of students the richer types of questions while other kids are taking the same test on paper, that does raise issues of comparability and equity." Although he doesn't expect states to wait until every student can take a test online to turn off the paper chase, he does expect that most will wait until the majority of students are testing that way.

9. Overall readiness. Beginning in 2009, pushed along by state legislation, the state of Florida began a transition to more computer-based assessments, continually adding more tests and more grades to the online testing fold. As part of that process, this year Florida had its schools fill out a technical-readiness survey to answer a series of questions about how many students and how many computers they had, and how they could manage to schedule the state-mandated exams.

Here's a common conundrum: Because most schools don't have enough desktop computers to accommodate all testers, they have to rely on laptops. But laptop batteries typically don't last an entire testing day. So they have to be charged during the day—a big challenge, especially in older classrooms whose electrical systems can't handle dozens and dozens of simultaneously charging machines. There are obvious work-arounds (like charging storage stations), but that's the point—there's no clear and easy path to online technical readiness.

So serious is the readiness issue that Virginia has created a "96-hour readiness checklist" for its schools doing online testing. (See "Certifiable in Virginia," p. 32.)

No Time Like the Present

Preparing for online testing isn't like stashing away an emergency kit for a natural disaster, which may or may not hit your area. If you're in a school or district, online testing will eventually seek you out like a cruise missile tracking its target. That means it's time for you to start preparing for the inevitable.

The good news is, the basics of the job are well known. Virginia's Neugent, who has seen the surge of interest in online testing, then a waning, and now the surge again, often says to people, "You really have to start this as a technology initiative, not a testing initiative. What you're doing is building the infrastructure—in a railroad analogy, you're laying the tracks. You can create all the online tests in the world. But if you have no way to move them around or lack the administrative

Cramming for Online Testing in Delaware

When the contract was up for the vendor that handled Delaware's testing, the state faced a decision for 2010-2011: Should it stick with paper and simply grow online testing as schools could accommodate it, or should it sprint to the finish, dragging schools, processes, and people with it? Go to our ***online exclusive*** story to find out how Delaware built a statewide online assessment system that reaches every public school. ***thejournal.com/DEonlinetesting***

LINKS

- **Delaware Department of Education**
  doe.k12.de.us
- **Educational Testing Service (ETS)**
  ets.org
- **ETS/Grunwald Associates report, "An Open Source Platform for Internet-based Assessment"**
  grunwald.com/reports
- **Partnership for Assessment of Readiness for College and Careers**
  achieve.org/PARCC
- **Pearson Education**
  pearsoned.com
- **Pearson's "Considerations for Next-Generation Assessments: A Roadmap to 2014"**
  fwd.pearson.com/groups/road-map-to-2014-considerations-for-next-generation-assessments/wiki
- **Smarter Balanced Assessment Consortium**
  k12.wa.us/smarter/default.aspx
- **Virginia Department of Education**
  doe.virginia.gov
- **Virginia's 96-hour checklist for online testing**
  pearsononlinetesting.com/SampleChecklist

backbone behind it, you're only going to get so far. States that have tried to do this as a testing initiative, they've found out the infrastructure was inadequate."

That does not mean that IT people are working in a vacuum. Pearson, which recently introduced an online road map for districts implementing online testing, encourages customers to create a close partnership between technology and assessment staff. "These are two groups that have traditionally not had to work very closely together," Bleil says. "The assessment folks know how to manage testing, and the technology folks have the knowledge about the infrastructure and network. But it's when you have both groups working together that you really are able to build the local success you need to solve all of the local issues that might come up."

His advice is to create a readiness team, drawing from both groups so they all understand they're in this together and success is predicated on their collective skill sets. Bleil's colleague, Shilpi Niyogi, executive vice president of strategy and new business development in Pearson's Assessment and Information group, cautions people from thinking that the inevitable is a far ways off. "I think we're going to be surprised by the trajectory we're on now with online testing," she says. "There is a convergence of forces around broadband, around new devices emerging, around policymakers thinking about how we really do need to conquer this problem of the digital divide. It's heating up in a way that's hard to grasp. It just might happen faster than we realize." the

[keyword: online testing visit thejournal.com**]**

"IN A RAILROAD ANALOGY, YOU'RE LAYING THE TRACKS. YOU CAN CREATE ALL THE ONLINE TESTS IN THE WORLD, **BUT IF YOU LACK THE ADMINISTRATIVE BACKBONE, YOU'RE ONLY GOING TO GET SO FAR."**

Dian Schaffhauser is a freelance writer based in Nevada City, CA.

Technology in the Classroom—Is It or Is It Not Being Used?

AT THIS POINT IN TIME, there is likely not a classroom in America without a computing device of some sort, and chances are it's hooked up to the internet. Walk into the vast majority of schools in this country and you will find classrooms with some combination of desktop computers, laptops, interactive whiteboards, calculators, projectors, handheld devices, and more.

But will you find teachers and students using these tools? Two different research studies give two very different answers to that question.

For the past eight years, PBS and Grunwald Associates have been conducting an annual survey of teachers, asking them about their use of technology for instruction. And teachers tell us that they use the devices in their classrooms—a lot.

Yet the researchers at McREL, a nonprofit education research laboratory, are sitting on classroom observation data that contradicts what the teachers self-report. Their findings are grim: Teachers are not using technology in the classroom, and neither are their students.

Before we start arguing over which report is "right," let's keep in mind both studies' limitations. In the PBS/Grunwald study, the teachers are self-reporting, and it's not uncommon for people to embellish descriptions of their own behavior. (If everybody in this country exercised as often as they say they do, we wouldn't have an obesity problem.)

On the other hand, the McREL data is not a stratified random sample of the US teacher population (the way the PBS data is). It's based on a lot of classrooms (60,000) from districts all over the country that are up and down the various demographic scales. But it doesn't meet the requirements of statistical validity in terms of a national survey, so we can say that it paints an important picture, but not necessarily a completely accurate picture.

The bottom line is that we don't really know for sure what is happening in classrooms with technology. So we turn to best attempts, like these two studies, to give us a sense of how technology is—or is not—being used in education and how we can improve its chances for being used effectively.

Both studies give us some insight into that last question. Each tells us that technology use would be advanced tremendously if districts provided targeted and ongoing professional development. Teachers report—to both research groups—that they are too often left to implement tools for which they've had woefully inadequate training and support.

So let's "believe" both studies. Let's say that teachers may not be using technology as much as they say they are—but they want to be. And to get them there, they need appropriate professional support.

That's a research finding we can all get behind.

—The *T.H.E. Journal* Editors

Scotty Reifsnyder

verizon

A CLASSROOM WITHOUT WALLS.

Learning shouldn't stop at the classroom door. Give your students classroom access without walls. With a Mobile Broadband solution from Verizon, your students can download a lecture, upload a project and post on a study group wall, all from off campus. The largest high-speed wireless network in America brings the classroom into their world.

RULE THE AIR

VERIZONWIRELESS.COM/EDUCATION **1.800.VZW.4BIZ**

MOBILE BROADBAND | MOBILE LEARNING | UNIFIED COMMUNICATIONS | MONITORING AND CONTROL | VOICE AND MESSAGING

So Many Devices, So Little Use

Classroom observation data suggests that technology, even in the most device-rich schools and districts, is not being used by teachers or students.

AS YOU ENTER THE CLASSROOM you see desks arranged in five rows of five. Students are sitting at their desks as the teacher stands in front of the class lecturing and asking occasional questions. After a few minutes, the teacher instructs the students to get out their workbooks and complete the worksheet on page 43. Now for the big question: What year is this observation? 1950? 1980? 2000? 2011?

Data indicates the answer to that question is yes.

What Classroom Observations Tell Us

How is technology really being used in the classroom by teachers and by students? Many educators have opinions, but we now have quantifiable data to provide an answer to that question, and the results are surprising, if not a little disappointing.

McREL has gathered observation data from more than 60,000 classrooms across 34 states that use our classroom observation tool, Power Walkthrough. These schools represent urban, suburban, and rural settings; high, middle, and low socioeconomic levels; elementary, middle, and senior high institutions; and a range of technology use from very limited to 1-to-1 schools. (Please note that the collected data, while extensive, does not represent a stratified random sampling of the US teacher population, but rather a representation of schools that use McREL's Power Walkthrough observation software and process.) Using the Power Walkthrough software, administrators and lead teachers have visited classrooms (unscheduled and at various times of the day) and have collected data on:

- the primary instructional strategy being used by the teacher
- the cognitive level of Bloom's Taxonomy on which the lesson focused
- how students are grouped for instruction
- the technology being used by the teacher
- the technology being used by the student
- the primary evidence of learning during the visit.

Prior to conducting their walkthroughs, observers attended a two-day workshop to learn what to look for during each three- to five-minute walkthrough. Observers were also advised to vary the times they visited each classroom so that on one day they might see the opening of a lesson and the next day they might observe the middle or end of the lesson. The idea was to collect data representative of the entire spectrum of the instructional day. Although McREL facilitators train all classroom observers (which includes demonstrating actual classroom walkthroughs and facilitating debriefing sessions about those demonstrations), we recognize that instrument calibration across observers requires additional effort among those who have been trained. To that end, we encourage observers to begin their actual observations working in pairs or small groups toward the end of achieving inter-rater reliability.

The main purpose of the Power Walkthrough process at a building or district

continued on page 44

The More We Use It the More We Love It

An annual survey of teachers suggests that their use of technology has steadily increased over the years, along with the value they place on it.

WITH EACH PASSING YEAR, teachers say that they increasingly use, rely on, and value media the and technology they have available for classroom instruction.

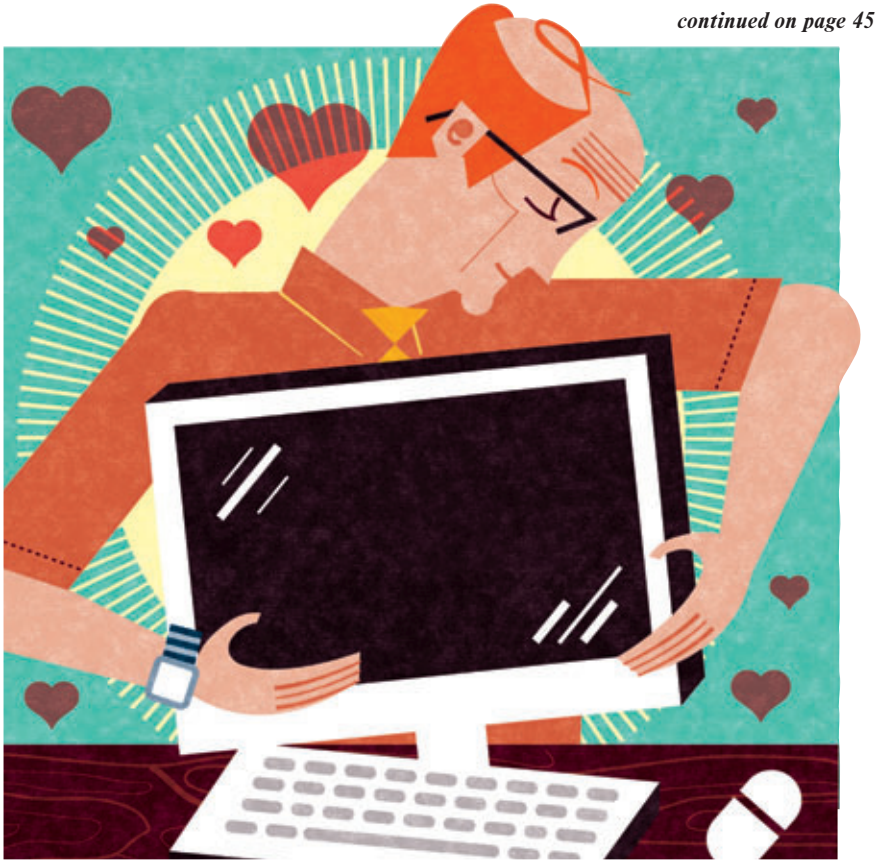
How do we know this? PBS and Grunwald Associates have been tracking teachers' use of media and technology for classroom instruction for eight years in a nationally representative, statistically valid study. Every year, we conduct an online survey of full-time classroom teachers in K-12 public schools and, for the past two years, in pre-K public and private schools as well. Drawn from a large national panel, the sampled population is carefully screened to represent the US teaching force in terms of geographic location, district size and profile (urban, suburban, rural), gender, years of teaching experience, and grades taught.

So what is it that we know? Nearly all K-12 teachers reported in 2010 that they use some form of digital media—including interactive games, activities, lesson plans, and simulations—for classroom instruction. This is a significant increase from previous years, and in fact use of most individual forms of media and technology has been trending up over the past eight years. Currently, more than six in 10 teachers (62 percent) report that they use digital media frequently (two times a week or more) and almost one in four teachers (24 percent) report that they use digital media *every day* for classroom instruction. Similarly, more than 80 percent of K-12 teachers report that they use TV and video content in the classroom at least once a month—and 76 percent are accessing this "traditional" content by streaming or downloading it directly from the internet.

Teachers also seem to be much more strategic in their use of media and technology. For example, we've seen significant increases over the years in teachers' use of short video segments, rather than entire, full-length programs. Digital technology, such as DVDs and web-based media, makes it easier for teachers to make this shift and use just the right clip. This also suggests to us that teachers are integrating media more thoroughly into content and instruction—to introduce a topic or reinforce a concept or provide differentiated support for some students, for example.

Teachers also report strong preferences and affinities for specific types of technology, often tied to the grade levels they teach. Teachers of grades 4 through 6, for example, use interactive whiteboards the most, with 47 percent reporting that they use them to supplement or support their teaching. A good number of K-12 teachers (17 percent) who don't have access to interactive whiteboards say they want them. Pre-K teachers, on the other hand, use and value digital cameras more than any other device. And, while cell phones are banned in most schools, 17 percent of high school teachers say their students use personal cell phones for classroom assignments or activities. K-12 teachers at all levels see strong potential in portable technolo-

continued on page 45



Pitler, continued from page 42

level is to determine the extent to which the organization's professional development initiatives are actually making their way into the classrooms with students. Schools and districts also use this data to make decisions about what professional development is needed to improve student learning. And, because McREL has the ability to aggregate this district data into a common database, we are able to create a picture, based on Power Walkthrough schools, of what classrooms look like across the nation.

Are Teachers Using Technology?

Researchers reviewed two data sets related to technology use in the classroom: the first on teacher use and the second on student use. We looked at a broad range of technologies including brainstorming software like Inspiration; calculators (some schools only count graphing calculators); clickers; web 2.0 tools; diagnostic/prescriptive tools including STAR, Alpine, and similar software; document cameras; interactive whiteboards (IWBs); computer or internet-based educational games; multimedia; virtual manipulatives; Microsoft Office tools; and web-based research. If during the observation the teacher was observed using technology at all, even for a portion of the observation, it was checked as used.

What we found was startling. Observers reported that in 63 percent of all observations teachers *utilized no technology* at all. These data include a range of schools, from those with limited classroom technology all the way to schools with 1-to-1 laptop programs.

IWBs were observed in use by teachers in 13 percent of all observations, followed by document cameras in just under 9 percent of observations, and videos in 5 percent. All other forms of technologies appeared in less than 2 percent of observations. While it is true the technology data includes schools across the total spectrum from almost no available technology to those with 1-to-1 programs, looking at a few specific schools helps put the data in perspective. In one Midwest elementary school with IWBs in every classroom, a robust district technology professional development program, and an IWB trainer among the staff, the percentage of IWB usage was 12 percent. Looking at a high school in that same district—and even limiting the data to just the four core subjects—IWBs were in use in only 8 percent of observations.

Are Students Using Technology?

The data on students' use of technology is even less inspiring. Research indicates that when students are the users of technology there are positive gains in achievement as measured by researcher-constructed tests, standardized tests, and national tests. Yet, Power Walkthrough observation data indicates that students used *no technology in any form* in 73 percent of observations. Observers were trained to include any observed use of technology, even if it was one student working on a computer in the corner of the room. When students were seen using technology, IWBs topped the list at a mere 4 percent of observations, with watching videos following at 3.5 percent. Web research, word processing, and educational games were observed in about 2.5 percent of walkthroughs. All other forms of technology applications were observed in less than 1 percent of observations.

Why Isn't Technology Being Used?

McREL has conducted hundreds of interviews with teachers and administrators to try to learn why technology isn't making a bigger impact on teacher pedagogy. The biggest barriers we hear are lack of ongoing professional development, lack of time to learn the new technology skills, and a perceived lack of resources.

Teachers report they receive an IWB and a day of professional development at most on how to use the board. Then, they are left on their own to make sense of how to use this wonderful new tool within their curriculum. Rarely, teachers say, does someone guide them as they are learning. There is also a lack of collaboration among teachers. Everyone feels they are working in isolation to "re-create the wheel." Also, while they indicate their administrators want them to use technology more, there is very little accountability to see they do. Soon they realize that not using technology doesn't seem to have any negative implications, so it moves to a back burner.

In one district the superintendent was very surprised to learn that teachers were only using IWBs in less than 2 percent of all observations, considering the district had just invested considerable money to put one in every elementary classroom. We asked teachers why they weren't using the boards more often and learned the district had provided a two-day workshop for all teachers on how to use the new technology in June, and the boards were installed the week before school began in August. Everything they had learned months earlier was ancient history when they finally had the technology in their rooms. Rather than look bad in front of their students, they just didn't use the boards. In another district in the Midwest, the district training center had the latest and best software and hardware along with excellent trainers. The problem was that the hardware and software in the classrooms didn't match what was in the center. Teachers got really excited in the workshops, and then back in the classroom nothing worked the same way.

If we really want to see technology supporting quality instruction in the classroom, the data indicates we need to get serious about providing ongoing and targeted professional development and set clear expectations for the use of technology, both as an instructional tool for teachers and as a way for students to learn and express their learning. Let's move beyond building up inventories of technology devices and focus instead on creating a clear vision of how technology should be implemented in the classroom to advance learning outcomes that can be best achieved through the use of these important tools. the

Howard Pitler is senior director of field services with McREL in Denver.

Lippincott/Grunwald, continued from page 43

gies, including laptops, tablets and pad-like devices, and e-readers.

Takeaways From Eight Years of Survey Results

The PBS annual survey captures teachers' perceptions of their use of technology as well as their attitudes about technology. The striking trend we've noticed is that, even as teachers report more technology use over the years, the extent to which they perceive its benefits and value has increased even more.

Teachers report a wide array of important educational benefits that help them do their jobs better and help students engage in learning. Teachers say they value many types of digital resources, from student games and activities to information for their own professional development. (Some newer applications have enjoyed pronounced increases in teachers' perceptions of value, including student-created content and content on handheld devices.) Teachers report that digital resources stimulate student discussions, increase student motivation, and help students and teachers be more creative, among other educational benefits.

We also believe the survey results indicate that behind-the-scenes use of media and technology makes a difference in classroom instruction. Some of the many digital resources teachers value, such as information for their own professional development and interactive lesson plans, wouldn't necessarily be visible during class time in terms of teachers or students in front of a screen. Even pre-K teachers rate information for professional development as highly valuable—the only digital resource so rated by a majority of pre-K teachers.

One in four K-12 teachers tell us about another behind-the-scenes use of technology—online professional communities. Teachers say they join these groups because they want the opportunity to exchange resources, obtain information or advice, and feel connected with other teachers.

Another extra-classroom technology is the school or district data management system. A majority of teachers say they use these systems to make instructional decisions based on this data, track assessment scores, refine the curriculum, develop individual education plans, or get professional development or feedback.

What Will We Be Watching in the Future?

We don't want to suggest that there are no challenges to media and technology use in schools. Here are six big ones we'll be watching in future research:

1. **Technology infrastructure and availability.** Many teachers report that they run into technical difficulties with streaming video, which could be an indication of inadequate bandwidth and could discourage teachers from using the internet in class. Plus, not all teachers have access to the media and technology resources they value. Most teachers report shrinking school budgets—and they're turning to free sources, or educational resources they purchase themselves, to make up the difference. To what extent are these temporary issues or lasting trends?

2. **Technology preferences.** Teachers see the potential in many popular consumer devices—laptops, iPads and other tablets, e-readers, and iPods/iPod Touches, for example. At what point will these new and emerging devices become mainstays in education, so teachers and students can use the devices they prefer seamlessly? And, since some of these devices are optimized for the consumption—not the creation—of media, to what extent might some of these devices result in a step back from the trend of students as producers of media?

3. **School policies.** School policies typically ban the use of many student-owned devices in classrooms, despite the fact that many teachers (and others) see the potential of smart, mobile devices. For example, when asked which devices hold the greatest educational potential, 81 percent say laptops, 53 percent say tablet-like devices and e-readers, 28 percent say iPod Touches, and 23 percent say MP3 players or iPods. There is a drumbeat of news coverage on "sexting" and other inappropriate uses of student-owned devices that justifiably concerns school officials. On the other hand, there are reports every day of districts and schools easing up on policies. How will schools manage competing tensions?

4. **Technology management.** If schools do move toward relaxing policies and allow students to use their own devices in school—which could save them money—they must have a plan for students who don't have their own devices. Moreover, use of student-owned devices may exacerbate the bandwidth problem. How will districts balance district-owned versus student-owned devices?

5. **Professional development.** Research suggests that some teachers don't make greater use of media and technology in their classrooms because they don't know how to integrate these tools with instruction, don't know how they can support teaching and learning, and/or can't find useful resources. Does professional development mean the difference between frequent and infrequent use of technology?

6. **Cost savings.** Ongoing budget pressures may push schools towards viewing media and technology-based learning as a cost-saving strategy. We'll be watching this trend—in particular its impact on the integration of technology into instruction, and more generally, its impact on education. the

NEARLY ALL K-12 TEACHERS REPORTED IN 2010 THAT THEY USED SOME FORM OF DIGITAL MEDIA—INCLUDING INTERACTIVE GAMES, ACTIVITIES, AND LESSON PLANS.

Robert M. Lippincott is the senior vice president for education for PBS. **Peter Grunwald** is the president of Grunwald Associates, a market research and strategic consulting firm. A public report of the *Annual PBS Survey of Education Media & Technology* is available at *grunwald.com/reports*.

Cloud-based tools are giving K-12 collaboration efforts a boost.

By Bridget McCrea & Marty Weil

Shaw Nielsen

ACROSS THE US, INNOVATIVE COLLABORATION PRACTICES are happening in the cloud: Sixth-graders participate in literary salons. Fourth-graders mentor kindergarteners. And teachers use virtual Post-it notes to advise students as they create their own television shows.

In other words, cloud computing is no longer just used to manage administrative technology—thanks to its accessibility, ease of use, and versatility. All over the country, teachers, students, and administrators are trying different cloud-based solutions—some free or inexpensive—that allow multiple users to collaborate in innovative ways.

Innovation #2,478
Classroom of the Future

Turn English 101 into English 2.0.

Education. Innovated.

At Samsung we not only appreciate your challenges, we strive to develop innovative solutions to address them. That's why we offer a full line of reliable technology products designed to lower costs and create a more productive learning environment. From our interactive touch screen eboards to our powerfully reliable notebooks, netbooks and tablets, we're committed to providing educators with the technology they need to solve problems and shape futures. Because with Samsung, it's not just education. It's education, innovated.

Discover all of our educational solutions at samsung.com/education.

SAMSUNG

keyword: collaboration
visit thejournal.com

Here are nine examples from K-12 educators who have found creative ways to get their heads in the cloud.

Wixie Equals Buddies

The cloud is giving some fourth-grade "teachers" in Colorado the sense of accomplishment that comes with having their own students whom they can be proud of.

That's thanks to Melissa Swenson, a teacher and librarian at **Meiklejohn Elementary School** in Arvada, CO, who introduced Wixie, a cloud-based solution that allows students to create original art, voice recordings, and written communication in one place online. With the help of Wixie, the school is conducting a pilot program across all of the classrooms that turns some older students into mentors for younger ones.

Fourth-graders at the school recently paired up with their kindergarten "buddies" to work side-by-side on desktop computers in class. The older students designed math activities using the online application, and then worked one-on-one to teach the concepts to all of the younger pupils in the project.

"The kindergarteners were learning about shapes, so the fourth-graders used Wixie to design shape activities for them with directions like, 'Fill in the triangle shapes with red,' or 'Drag the shape word inside the shape,'" Swenson explains. One older student took the lesson plan to a new level by integrating a project on proper nouns into the mix. Working on his computer screen, the kindergartener had to drag the proper nouns into one box, and the regular nouns into another.

When Swenson wondered out loud if the lesson would be too difficult, the older student answered, "Oh, it's okay, my buddy is really smart!"

"When they can get online and work on their own, or in a group format by logging into a program like Wixie," Swenson says, "it opens up a whole new world for them, and for their teachers."

(Not So) Far Afield

Field trips have come a long way since the days when students were whisked away on a bus to explore new terrain, only to forget about the experience the next day. The **School District of Palm Beach County** (FL) is using cloud technology to ensure that the experience resonates with students, starting days or weeks before the field trip itself.

With the help of Adobe Connect Professional, the district's technology team has set up a way for students, teachers, and outside parties who might participate in a field trip—like forest rangers and university scientists—to collaborate online before, during, and after the trips.

In advance of a recent trip to a local state park to explore its different ecological zones, for example, Palm Beach students met online with park rangers via a video chat to ask questions, obtain beach reports, and gather other pertinent information. Once out in the field, students were armed with laptops, cameras, and scientific probe devices that allowed them to gather data for use in the classroom the next day. Final reports (both written and video) were completed online and shared with teachers back at the school. Teachers were able to connect with the students in real time with feedback to the information they were uploading, ask additional questions, and even grade the assignments students were completing back at the park.

"Using technology, teachers can make the lesson much more compelling and extend past a single day's trip," says Kim Cavanaugh, the district's technology program specialist. "They can also latch onto the enthusiasm immediately, and use it as a motivational tool for students."

Google Docs and Pop-ins

When Lloyd Mitchell's first assignment for his fifth-graders at the start of the school year was to set up a folder system in Google Docs for all the work they would complete, little did they know it would give him the ability to "pop in" almost any time they had a class assignment to prepare.

The **Unquowa School** in Fairfield, CT, began using Google Apps about two years ago, and today about 85 percent of the institution's teachers use the cloud-based solution for word processing, spreadsheets, and presentations. Using the application also holds students more accountable: Excuses like "the dog ate my homework" don't fly in the virtual world. "My students come to class prepared," says Mitchell. "That alone creates a more enriching and efficient classroom environment."

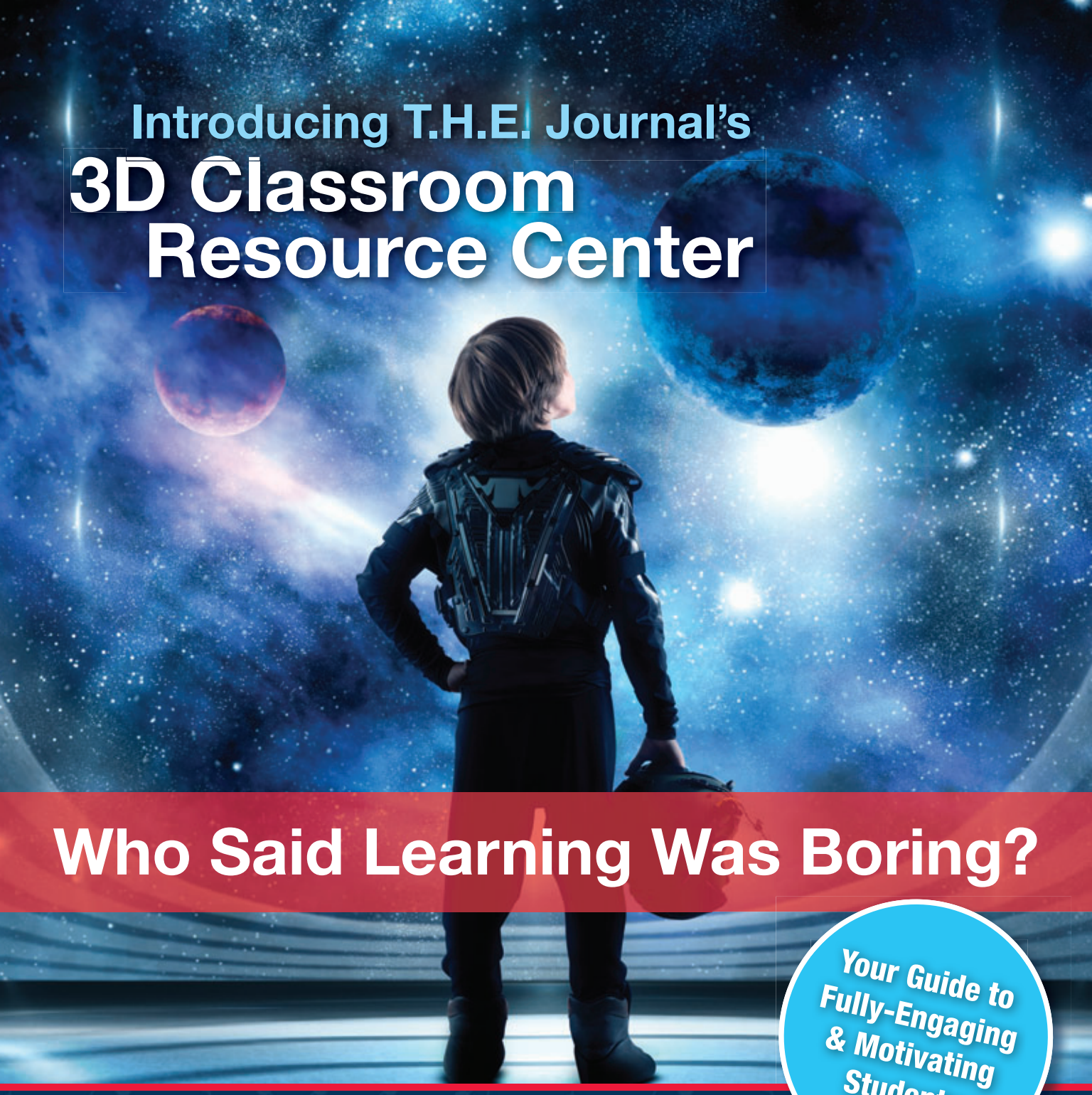
The homework that the dog didn't eat can be as simple as a few chapters to read or as complex as a classroom project that involves several students. Students are alerted when Mitchell makes changes or notes in the application, and can quickly address those comments. For an assigned reading project, as an example, students used Google Docs to take notes in an outline format. Once the assignments were finished and dropped into their respective online folders, Mitchell was able to correct them immediately.

If Mitchell happens to be online while students are working on their assignments, he can simply "pop in." Students can communicate with him or with other students via instant message. Mitchell can also give instant demonstrations, and the students can follow up immediately with questions.

"Being able to handle that quick back-and-forth online really helps students do better on their assignments," Mitchell says.

You Read It; No, You Read It!

Managing feedback from teachers on essays and other projects is one thing, but



Introducing T.H.E. Journal's 3D Classroom Resource Center

Who Said Learning Was Boring?

Your Guide to Fully-Engaging & Motivating Students

SPONSORED BY

DLP TEXAS INSTRUMENTS

the JOURNAL

3D technology may have started with the movies but it has found a valuable outlet in K-12 classrooms through DLP projectors. Today's students now have a way to immerse themselves more fully into their learning experience. Extensive research by school districts realized significant improvements in key areas with the use of 3D-ready, DLP projectors:

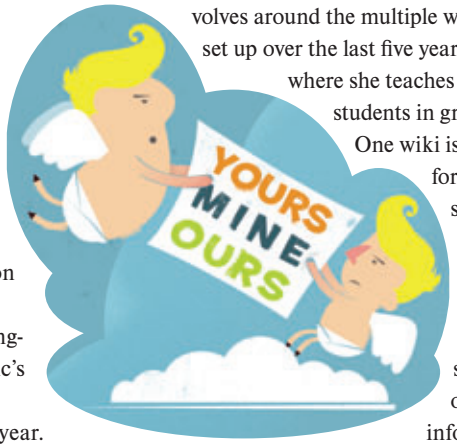
- Students were more fully-engaged and motivated to learn—Recent studies showed a 30% to 35% improvement in test scores when students learned material in 3D versus 2D
- Better quality images in all types of lighting environments
- Competitively-priced solutions compared to today's LCD projection systems
- Longer life span of the devices and lamps
- Lower replacement-part costs (e.g., total cost of ownership)
- Elimination of labor-intensive maintenance through filterless technology

Learn more about this up-and-coming education technology and how effective it has already been for school districts.

Visit our online 3D Classroom Resource Center at www.thejournal.com/3d

having peers comment on their work—and vice versa—can be downright daunting for many students. Ryan Gilbert, an English teacher at **Ohio Hi-Point Career Center** in Bellefontaine, OH, has found that cloud collaboration is one way to alleviate some of that pain.

Gilbert's cloud tool of choice is StudySync, which connects students to an extensive, online library of classics, modern texts, video-based lessons, and, most important, peer-to-peer communication tools. Gilbert, who teaches college prep and honors English, began using StudySync's peer review feature at the start of the current school year.



After completing their writing assignments, students log into StudySync and submit their work to Gilbert, and also for review by their classmates. At the same time, they are randomly assigned a certain number of their classmates' work to review.

"The random assignment helps to alleviate clique-forming," says Gilbert. Students use the system to complete objective reviews with a pre-determined rubric. When submitting their reviews, they can share their names, or not. "I can see who did what, but it's up to them to share with one another," says Gilbert, who sees the anonymity as a good way to elicit honest reviews.

The online system also helps alleviate some other issues students deal with when working on desktop- or laptop-based computer programs. System crashes, for example, are a thing of the past. "The cloud offers everybody the ubiquity of being able to access your material everywhere," says Gilbert.

Wiki Fever in Georgia

Vicki Davis says her "wiki fever" has spread throughout the **Westwood Schools** in Camilla, GA, where she is a computer science teacher—and way beyond.

Until just recently, wikis only allowed a handful of "editors" to work at one time, she says. "We're now at the point in education where we can have massive wikis with literally hundreds of students involved," adds Davis, "all editing and working together for a common cause."

Her technology-centric classroom revolves around the multiple wikis that she has set up over the last five years at the school where she teaches technology to students in grades 8 to 12. One wiki is the focal point for her computer science class, with a Google Calendar that's populated with lesson plans, assignments, and other pertinent information created for students.

Most recently, Davis got involved with a wiki whose reach extends well beyond Westwood Schools. Roughly 500 students worldwide are working together online to create and edit a wiki that examines current trends in college education. For example, in looking at digital textbooks on campus, students examine the characteristics of their various generations and make predictions about the use of e-books over the next five years.

"They are all working together to write an authentic, unique research report in the cloud," says Davis. "The end result will be a great wiki document on how their generation will actually use various technology tools in college."

The Virtual Post-it Note

Kieran Ryan is the type of teacher who once had a lot of sticky notes pasted to her desk, stuck to her computer monitor, and taped to her personal calendar. That's why the sixth-grade teacher at **Loudonville Elementary School** in Albany, NY, is particularly enthused by her latest online find: Lino, an online web sticky note service that can be used to post memos, to-do lists, ideas, and photos anywhere on an online web canvas.

Ryan's use of the tool goes beyond just posting information and giving students access to it. She has turned Lino into a collaborative workspace.

"Students use it to post images, upload movies, share ideas, and talk to one another," says Ryan. For a recent homework project, students used Apple's GarageBand software to create a television show on ancient Indian and Chinese civilizations. The show was modeled after the TV quiz show *Cash Cab*, in which unwitting passengers play a trivia game for money.

"We set up the project to mimic those online game shows, with students focusing on questions about ancient civilizations," says Ryan. The footage was shot outside of the school, and students brought the materials into class, where they worked together to assemble complete television shows using GarageBand.

The projects were then uploaded to a Lino page, where Ryan was able to collaborate with students by providing feedback and input directly through Lino's sticky notes and conversation tools.

Once finalized, the projects were uploaded to a dedicated PBworks wiki page, which served as a "home base" for the shows. "This is a great way to communicate and for me to see the work they're doing both in and out of school," she says.

Eyes on the Prizes

Iveda's Camina may not give vision-impaired children new sets of eyes, but it does give their teachers a way to see what their students are doing.

Visually impaired children who live in remote rural areas have had very specific challenges. Many school districts depend on a small number of itinerant teachers (or, in many cases, just one) who work with those children. Because the teacher's physical presence was required, students would have to wait for that single teacher to appear before they could complete all of their work.

In the spring of 2009, the Foundation for Blind Children launched a six-month

pilot program that aimed to prove that a cloud-based, assistive-technology instruction model could allow teachers of the visually impaired to conduct lessons, adapt materials, consult with classroom teachers, and work with students remotely in real time. The secret to success was a video surveillance services provider called Iveda Solutions and its product, Camina "camera in a bag"—a mobile, pan-tilt-zoom camera system, with cellular-broadband connectivity and cloud-based video hosting services, that would allow the teacher to monitor the student's activities from a remote location.

The camera solution meant that the teacher and student could communicate—and the teacher could monitor the student's work—without being physically present. The high-quality, portable, cloud-based camera could go anywhere the student went. It also allowed students access to any number of teachers who could provide the best instruction for a specific task (without the teacher being physically present).

"Iveda revolutionized how we teach blind and visually impaired students," says Marc Ashton, CEO of the Foundation for Blind Children.

Hip Kid Lit

San Francisco's **Francisco Middle School** has a culturally diverse student body and a large limited-English population. So, many teachers rely heavily on individualized learning projects to engage their students.

Elizabeth Fierst, a sixth-grade language arts teacher, has used the district's School Loop website to create a cloud-based project called Novel Podcasts. Students in her class choose one of three novels to read and then participate in virtual literary study groups with peers who have chosen the same novel. In the online study groups, they share personal reading responses and discuss character, setting, and plot.

Fierst is able to keep track of each student's progress throughout the project with the School Loop website's virtual discussion threads and assignment-based discussions. The student's peers, as well as Fierst, can leave their feedback in response to updated progress on the project as quickly as it is completed by each of the students. Then the students are able to virtually keep track of their notes and feedback in their own School Loop digital lockers, which make possible unlimited data storage, document sharing, and remote retrieval of all information.

Once they have finished reading their novels, each study group of students creates and uploads its own podcast, accompanied by a three-paragraph written script, as a virtual book report. After viewing the presentation, classmates are asked to leave final feedback by replying to the post and explaining what they liked about the presentations and what could be improved. The completed project, as well as feedback and grades from Fierst, then can be viewed by parents who are able to see for themselves that students are meeting goals and on track to succeed.

Core Scores

Common Core State Standards are slowly but surely replacing state standards of learning, which may be causing anxiety for educators who must make changes to the way they teach and assess as a result. Fortunately, a recent educational technology startup called MasteryConnect has created a free, cloud-based solution to help teachers collaborate to track their students' mastery of Common Core Standards.

"It's great to be able to build my own personal learning network around the core," says Alisa Belliston, a second-grade teacher at **Riverton Elementary School** in Riverton, UT. "When teachers I'm following in my school, district, or other states share their common assessments around the core, I can instantly see how other teachers are assessing and tracking mastery."

MasteryConnect has taken aim at the old average-based grading system, and focused on providing a way for teachers to visualize the progress of student mastery of concepts and standards. That information is then made available to parents and administrators in real time and shows exactly how well students are doing.

As with many cloud services and web 2.0 models, MasteryConnect's "freemium" solution has both free and paid features. Teachers can use all the social tools, common assessment sharing, mastery tracking, and parent reporting features for free. The components teachers must pay for include what the company calls "time-saving assessment tools" for the iPod, iPad, web browser and paper-based bubble sheet scanning from a web or document camera. the

Bridget McCrea is a business and technology writer based in Clearwater, FL. **Marty Weil** is a freelance writer based in Asheville, NC.

LINKS

- **Adobe Connect Pro**
  adobe.com/products/adobeconnect.html
- **Apple GarageBand**
  apple.com/ilife/garageband
- **Foundation for Blind Children**
  seeitourway.org
- **Google Apps**
  google.com/apps
- **Iveda Solutions**
  ivedasolutions.com
- **Lino**
  en.linoit.com
- **MasteryConnect**
  masteryconnect.com
- **PBworks**
  pbworks.com
- **School Loop**
  schoolloop.com
- **StudySync**
  studysync.com
- **Wixie**
  wixie.com

ProductFocus

By Jennifer Demski

Tiny...Cute...Powerful!

For anytime, anywhere presentations, these pint-sized projectors promise full functionality from the palm of your hand.

PICO PROJECTORS ARE poised to be the next must-have device. Talk about supporting informal, mobile education: These pocket-sized projectors have the potential to bring small group collaboration to the next level by allowing participants to stage impromptu presentations in almost any environment. But can a projector really be that portable? And what level of clarity and brightness do pico projectors offer, given their small size?

We recently surveyed the tech market in the hopes of answering those questions. The technical specs of the 29 models uncovered in our search definitely show promise. Here's a quick overview of what we found:

Each projector weighs less than 2 pounds; in fact, most of the models, 23 of them, weigh in at less than 14 ounces.

At 1.8 pounds, LG Electronics' HS201 is the heaviest—but it's also the brightest, with an output measuring 200 lumens.

Conversely, the smallest projectors are the least bright, with some measuring in at 10 lumens and below, which should be acceptable in a dark room but problematic with ambient lighting.

Most of the projectors feature long-life LED lamps. The exceptions: two laser-based models—Microvision's SHOWWX+ and AAXA's L1 v.2—which are on par with the LED models for lamp life, but also offer the benefit of staying in focus even on curved or uneven surfaces.

Each model is compatible with a wide range of devices, from laptops and personal gaming systems to DVD players, digital cameras, and smartphones.

In the following pages, we've grouped models based on portability, image quality, independent playback capabilities, and truly unique functionality. (Note that these lists are based on manufacturers' specifications; we have not done any product testing to verify manufacturers' claims. Prices listed are the MSRP.)

For a complete listing of all the pico projectors included in our survey, sortable by feature, check out *thejournal.com/0611_picoprojectors*.

PORTABILITY

Could a projector be as easy to carry in your pocket as an iPhone? Weighing in at under 5 ounces, these four projectors are not only as light as a smartphone, they can also project media directly from it (*adapter cables required). Pop a smartphone and one of these four pico projectors in your pocket, and you'll be ready to give presentations at the drop of a hat.

MODEL	WEIGHT	DIMENSIONS (H X D X W)	BATTERY LIFE	PRICE
Microvision SHOWWX+	4.3 ounces	(0.55"x4.64"x2.36")	2 hours	$399
AAXA P1 Jr.*	4.4 ounces	(0.8"x4.1"x2.2")	1 hour	$119
Optoma PK102*	4.4 ounces	(0.67"x4.17"x2")	1.5 hours	$229
Digishow Handheld Projector*	4.9 ounces	(0.7"x4.4"x2.4")	2 hours	$350

Photos courtesy of Microvision, Optoma, BenQ, Aiptek, Samsung

Smart investments for ***our future...***

...YOUR INVESTMENT TO EDUCATION BEGINS HERE.

Canon's Education Sales Department is your one stop solution for all of your school's imaging needs. From Digital Cameras for visual literacy & photojournalism to HD camcorders to record events & movie production, Canon has a diverse selection of quality, brand name products to fit any budget.

Multifunction Printers make it easy to Print, Copy & Scan documents, book pages, photos or negatives. Calculators, Image Stabilizer Binoculars and Multimedia projectors are also available.

From academics to administration, Canon has the equipment for your imaging needs.

School Purchasing information available at:
www.usa.canon.com/educationalsales *or*
email: canonsales@sedintl.com • phone: 800-344-9862

Canon
*image*ANYWARE

IMAGE QUALITY

Pico projector manufacturers proclaim that you never have to sacrifice brightness and image quality for portability. These five models all feature LED lamps with a brightness ranging between 75 and 200 lumens, and all are capable of projecting crisp images that measure at least 80 inches diagonally.

MODEL	BRIGHTNESS (in lumens)	IMAGE SIZE (diagonal)	LIGHT SOURCE (with typical life span)	NATIVE RESOLUTION	PRICE
LG Electronics HS201	200	17"-95"	LED (30,000 hours)	SVGA (800x600)	$499
Acer K11	200	15"-80"	LED (30,000 hours)	SVGA (858x600)	$369
AAXA M2	110	7"-100"	LED (15,000 hours)	XGA (1,024x768)	$369
BenQ Joybee GP1	100	15"-80"	LED (20,000 hours)	SVGA (858x600)	$399
AAXA M1 (Ultimate and Limited models)	75	10"-100"	LED (15,000 hours)	SVGA (800x600)	$299

INDEPENDENT PLAYBACK

Do you need to conduct an on-the-spot presentation without connecting to a laptop or other external source? Check out these four models; each boasts an onboard media player, over 1 GB of internal memory, and integrated speakers. They can even read and project files directly from media cards and/or USB jump drives.

MODEL	INTERNAL MEMORY	INTEGRATED SPEAKER(S)	ONBOARD MEDIA READER(S)	PRICE
3M Pocket Projector MP180	4 GB	0.75 W stereo speakers	MicroSD Card Reader	$449
Aiptek PocketCinema V10+	4 GB	0.5 W stereo speakers	SD SDHC MMC MS Pro Media Card Reader	$269.99
Aiptek PocketCinema V20	2 GB	0.5 W mono speaker	SD SDHC MMC Media Card Reader	$299.99
AAXA M2	1 GB	1 W stereo speakers	USB Media Stick SDHC Card Reader	$369
AAXA M1 (Ultimate and Limited models)	1 GB	1 W stereo speakers	USB Media Stick (Ultimate only) SDHC Card Reader (Ultimate and Limited)	$299
Samsung SP-H03	1 GB	1 W mono speaker	USB Media Stick SDHC Card Reader	$299.99
3M Pocket Projector MPro150	1 GB	0.5 W stereo speakers	MicroSD Card Reader	$275
Aiptek PocketCinema V10	1 GB	0.5 W stereo speakers	SD SDHC MMC MS Pro Media Card Reader	$199.99

UNIQUE FUNCTIONALITY

These four projectors each incorporate one unique feature that sets them apart from the pack, from AV-In recording to WiFi and Bluetooth connectivity.

MODEL	FEATURE	PRICE
3M Pocket Projector MP180	WiFi/Bluetooth connectivity allows you to access files stored on WiFi- or Bluetooth-enabled devices. Connectivity extends to the internet.	$449
Aiptek PocketCinema V10+	AV-In recording enables you to record content directly from a TV, VCR, DVD player, or any device with an RCA output, and then play back that content directly from the projector.	$269.99
iGo Pocket Projector UP-2020	A mini-HDMI port projects HD-quality images directly from Flip Video HD cameras.	$299.99
WowWee Cinemin Swivel	A 90-degree hinge in the device's midsection allows for projection on any surface without the use of a tripod.	$279.99

Jennifer Demski is a freelance writer based in Brooklyn, NY.

index

ADVERTISER/URLs **PAGE**

SCHOOL INDEX

COMPANY INDEX

This index is provided as a service. The publisher assumes no liability for errors or omissions.

NOTE: *Advertisers with * are regional ads and may not appear in this issue.*

SALES CONTACT INFORMATION

PRESIDENT AND GROUP PUBLISHER
Wendy LaDuke
949-265-1596 phone
949-265-1528 fax
714-743-4011 cell
wladuke@1105media.com

EASTERN REGION SALES MANAGER MF Harmon
207-883-2477 phone
207-883-7173 fax
207-650-6981 cell
mfharmon@1105media.com

CENTRAL REGION SALES MANAGER Tom Creevy
847-358-7272 phone
847-358-7433 fax
847-971-5621 cell
tcreevy@1105media.com

WESTERN REGION SALES MANAGER Mark Buchholz
949-265-1540 phone
949-265-1528 fax
714-504-4015 cell
mbuchholz@1105media.com

SALES ACCOUNT EXECUTIVE Jean Dellarobba
949-265-1568 phone
949-357-7564 cell
jdellarobba@1105media.com

EVENT SALES MANAGER Stephanie Chiavaras
508-532-1424 phone
617-784-3577 cell
schiavaras@1105media.com

EVENT SALES MANAGER Patrick Gallagher
508-634-3525 phone
617-512-6656 cell
pgallagher@1105media.com

EVENT SALES REPRESENTATIVE
Deborah Carroll
203-331-0571 phone
203-331-0572 fax
203-814-7408 cell
dcarroll@1105media.com

CORPORATE HEADQUARTERS
1105 Media
9201 Oakdale Avenue, Ste. 101
Chatsworth, CA 91311
1105media.com

MEDIA KITS
Direct your Media Kit requests to Michele Werner, 949-265-1558 (phone), 949-265-1528 (fax), mwerner@1105media.com

REPRINTS
For single article reprints (in minimum quantities of 250-500), e-prints, plaques, and posters contact:
PARS International
Phone: 212-221-9595
E-mail: 1105reprints@parsintl.com
Web: magreprints.com/QuickQuote.asp

LIST RENTALS
This publication's subscriber list, as well as other lists from 1105 Media, Inc., is available for rental. For more information, please contact our list manager, Merit Direct.
Phone: 914-368-1000
E-mail: 1105media@meritdirect.com
Web: meritdirect.com/1105

t/h/e JOURNAL (ISSN 0192-592x) is published 10 times a year, monthly except for Jul and Dec by 1105 Media, Inc., 9201 Oakdale Avenue, Ste. 101, Chatsworth, CA 91311-9998. Periodicals postage paid at Chatsworth, CA 91311-9998, and at additional mailing offices. Complimentary subscriptions are sent to qualifying subscribers. Annual subscription rates payable in U.S. funds for non-qualified subscribers are: U.S. $29.00, International $44.00. **Subscription inquiries, back issue requests, and address changes**: Mail to: *t/h/e JOURNAL,* P.O. Box 2166, Skokie, IL 60076-7866, email T.H.E Journal@1105service.com or call (866) 293-3194 for U.S. & Canada; (847) 763-9560 for International, fax (847) 763-9564. **POSTMASTER:** Send address changes to *t/h/e JOURNAL*, P.O. Box 2166, Skokie, IL 60076-7866. Canada Publications Mail Agreement No: 40612608. Return Undeliverable Canadian Addresses to XPO Returns: P.O. Box 201, Richmond Hill, ON L4B 4R5, Canada.

FETC
VIRTUAL CONFERENCE & EXPO '11

virtual.fetc.org

ENCORE PRESENTATION!

FETC Virtual Conference is **now available on-demand through July 28!** Log in and access this compelling educational content as many times as you like—for free!

This **ALL-ONLINE** event gives you access to:

- Top sessions from FETC 2011—PLUS new presentations
- A virtual networking lounge where you can share best practices
- Technology product and service demos in the virtual exhibit hall
- Free content downloads and presentations-to-go—and more!

FEATURED PRESENTATION:
A Technology Shootout!

The blockbuster session that showcases the latest, most amazing technologies available to educators!

Get the schedule right on your mobile device!

Get the free mobile app at
http://gettag.mobi

Missed the event? Register today for free on-demand access!

virtual.fetc.org

Please register using priority code NQ6T

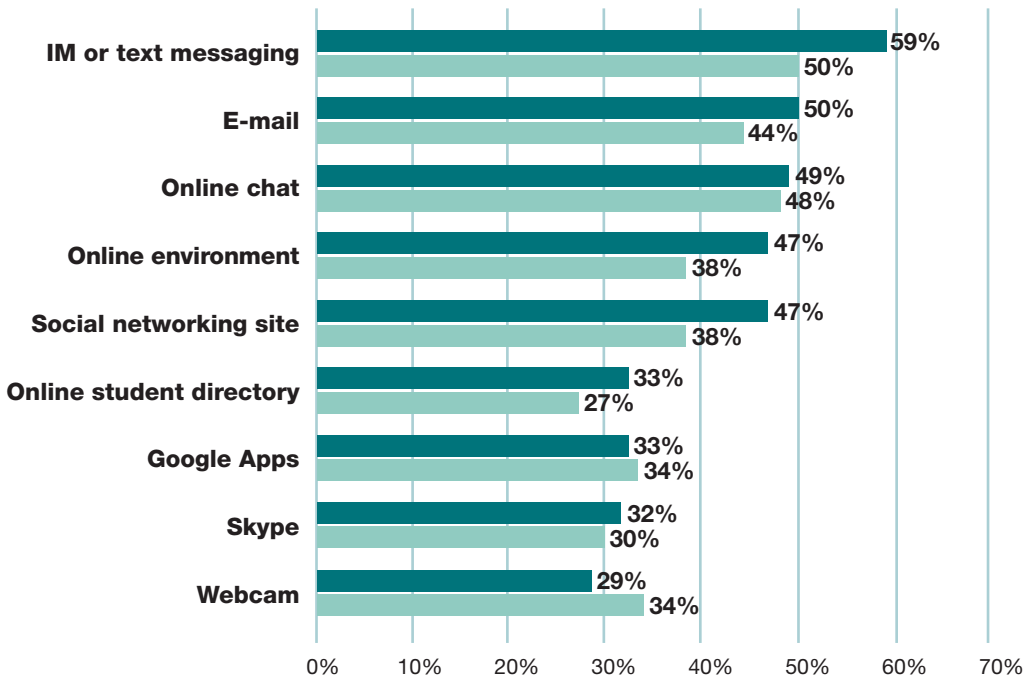
Tools for Teamwork

IN THIS ISSUE'S "Cloud Nine" feature (p. 46), educators share some of their favorite tools for collaboration in the cloud. But what would students choose if they could pick technology tools for working with each other on school projects or homework? This month's Speak Up data provides an answer.

HIGHLIGHTS

- Among the top collaboration tools of choice for middle and high school students were communications tools (such as IM, text, e-mail, or online chat) and online environments where they could see who was online and communicate with them via instant messaging or text messaging capabilities.
- One third of middle and high school students would use Google Apps such as Docs, Calendar, Groups, or Video for collaboration.
- About a third of high school students (33 percent) and middle school students (27 percent) see value in having an online directory for easy access to their classmates.

Which of these tools would you like to use to collaborate with other students? (Multiple answers allowed.)

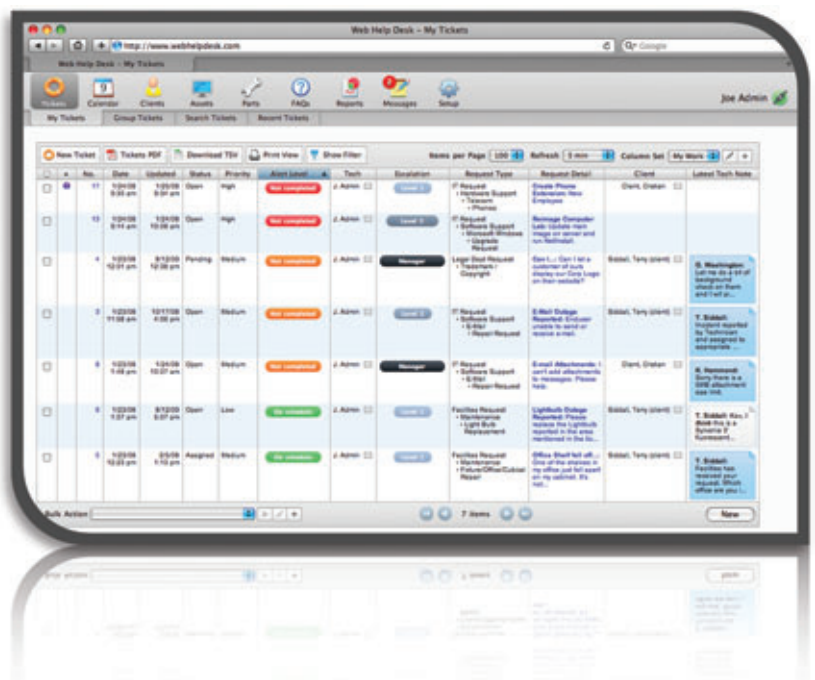


Data courtesy of Speak Up 2010, an annual national research project produced by Project Tomorrow that surveys K-12 students, teachers, parents, and administrators (*tomorrow.org*).

Help Has Arrived.

Web Help Desk

Powerful Software for Service Management



Web Help Desk is the leading cross platform service management solution for support professionals seeking to simplify and control their increasingly complex service management environments.

Contact us today to learn more.

www.WebHelpDesk.com

Trade up to a better approach to interactive whiteboards, and **save $200!**

Yesterday

Today

The MimioTeach interactive system
Place on existing dry erase board.
Teach.

More simplicity. More value.
And for a limited time, even more savings.

Simply teaching. Patented MimioTeach™ technology turns regular dry erase boards into interactive whiteboards. No more bulky and expensive equipment. No costly installation. So you'll save money.

And now you can save even more. Just trade in your old, conventional interactive whiteboards – regardless of their condition – and trade up to our newest and most advanced MimioTeach system. For every trade-in you make between May 1, 2011 and June 30, 2011, you'll **save $200 off our already-special educator pricing.***

Spending less doesn't mean you get less. Everything is refreshingly intuitive, so your teachers can be up and running within minutes, with features that make them more successful – and students more engaged. At DYMO/Mimio, we make it easier for teachers to do what they do best. Simply teach.

"…simple to use, priced right, and not confusing for teachers…."
Ken Royal, Scholastic

Find out more about the Mimio Trade-Up Offer:
Call 800.640.6951 or visit mimio.dymo.com/a76

DYMO | Mimio®
Interactive Teaching Technologies

*Please visit mimio.dymo.com/a76 for complete details.