Welcome to the new digital edition of Digital Directions!

You can view this issue anywhere—in the office or on the go! We hope you enjoy it.

To keep getting future issues, just sign up here.
Can earning recognition for skills developed in and out of school encourage lifelong learning?
“The Mimio system was the easiest to implement, the easiest to use, and the easiest to manage.”

My Mimio. My Story.

As part of an extensive search for the best interactive teaching technology for the Hempfield Area School District (HASD), Julio Valesquez knew he wanted a solution that could be easily implemented and that wouldn’t just sit on a shelf unused.

They chose Mimio®, Dr. Barbara Marin, Asst. Superintendent for HASD, says the choice was clear because “with other companies we would have paid 2 or 3 times more.”

Watch Mr. Valesquez tell his Mimio Story. Learn why Mimio provides a better way to learn and a more empowering way to teach.

Watch Julio’s Mimio story
Scan this code or visit: mimio.com/story6
FEATURES

12 Game On_As more schools integrate digital games into learning, programs are evolving to turn students into bona fide video-game designers.

18 Applicable Knowledge_After-school programs geared toward mobile-app development aim to engage students in technical and entrepreneurial pursuits.

32 Competitive Edge_New vendors jockeying for position in the unsettled market for learning-management systems seek to innovate with their products and fulfill districts’ evolving needs.

38 Recognizing Online PD_Educators are seeking ways to receive credit for nontraditional, online professional-development opportunities.

42 Ready or Not_A new readiness tool will provide a national snapshot of school technology in preparation for common-core online assessments in 2014-15.

ED-TECH PERSPECTIVE

46 Q&A | Making the Online Connection_Interview with the 2012 National Online Teacher of the Year, Leslie Fetzer.

48 OPINION | Making Room for Mobiles_Instead of banning or ignoring mobile technologies, educators should seek ways to leverage them for teaching and learning, write Mark West and Steven Vosloo.

DEPARTMENTS

4EDITOR’S NOTE
6 DD SITE VISIT
8 BITS & BYTES_News and Trends
50 DATA DELIVERY_Virtual Education
Do you like to be pushed outside your comfort zone? It can bring fear, confusion, frustration, with a lack of control that most people dread at first.

The first day of school in kindergarten comes to mind. I actually ran away from the kindergarten building and was chased down by the teacher. But for me, the memory that most sticks in my mind is learning how to ice skate as a 7-year-old. I was experiencing a whole new means of locomotion (gliding on skates) and my locus of control was about as unbalanced, at first, as I had ever felt.

As new innovations and technologies come to schools, educators are being pushed outside their comfort zones, too. For them, the new means of locomotion is fueled by today’s fast-evolving digital tools, from tablet computers to multimedia content to interactive virtual courses. The balancing act is figuring out which of these tools to use and how to use them.

At the same time, the educational technology companies that serve the K-12 market are being pushed outside their comfort zones. Consider the recent move by Blackboard Inc., which took a dramatic shift in strategy and product offerings when it purchased two companies built on the Moodle platform, the free learning-management system popular mostly because it is an alternative to Blackboard. (See Ian Quillen’s story on Page 32 about the growing competition and uncertainty in the learning-management-system market.)

And just when ed-tech leaders might have been feeling they were beginning to find some balance, they are facing one of the biggest challenges in years: figuring out how to put the technologies in place that will be necessary to support schools’ use of common-core standards and assessments. How, in tight budget times, will they purchase the technology needed to put all assessments online? What impact will the move to the common core have on virtual education? And what types of technology needs to be in place to ensure teachers get the training they need to implement the common core? (See Michelle R. Davis’ story about technology readiness for the common core on Page 42.)

All this uncertainty surely triggers a very uncomfortable feeling. But the best response is to lace up the skates and stay in motion. ■
They can change the future.

For curriculum leaders, using mCLASS Beacon is like being in a league of superheroes. With our integrated tools, Amie’s team can share instructional and professional development resources that support each standard. See how mCLASS Beacon can help you master a new generation of standards-based teaching and learning.

wirelessgeneration.com/resources

©2013 Wireless Generation, Inc. Wireless Generation® and mCLASS® Beacon™ are registered trademarks of Wireless Generation, Inc.
Tell the editor what you think about articles in this issue and what topics should be covered in future issues of the magazine. kbushweller@epe.org

Forging the Technology-Curriculum Link
School leaders are accustomed to working hard to make curricula challenging and engaging and to make sure it meets state standards. And many educators are now becoming more skilled at using technology in their classrooms, whether it's laptops, digital whiteboards, or smartphones. But experts say that to get the best results for students, it's important to be deliberate and thoughtful in the way technology is incorporated into curricula. Just layering technology on top of an existing curriculum is often not the best way to enhance the learning process and maximize the effectiveness of the technology tools available. School and district technology leaders and curriculum experts must work together to find the best ways to integrate technology into teaching and learning in order to develop the most innovative and successful methods for delivering curricula to students. Sign up to view this webinar at any time.

www.digitaldirections.org/go/webinar/techcurriculumlink

Digital Education
Read about news and trends in the ed-tech world on a host of topics, and find solutions and analysis for the technological challenges you face today.

www.digitaldirections.org/go/digitaled

EdTech Researcher
Learn more about how school leaders can build bridges between educators who use technology and researchers who seek to understand its impact on teaching and learning.

www.edweek.org/go/edtechresearcher

Game On
Watch a video of Mollie Ferguson and other teachers at Tygarts Valley Middle/High School in rural West Virginia teach their students how to create basic Flash games as part of a larger initiative in STEM education.

www.digitaldirections.org/go/gaming

| VIDEO |

Ed Tech in Action
See video interviews and stories about how educational technology is shaping K-12 education.

www.digitaldirections.org/go/techvideos

| WEBINAR |

On Demand

| BLOGS |

| UPDATES |

DD on Twitter
Sign up for our Twitter updates on ed-tech news and events.

twitter.com/digidirections

| www.digitaldirections.org/go/newsletters
ESSENTIALS FOR THE WELL EQUIPPED CLASSROOM

Epson equips 21st century classrooms for engagement and collaboration. Standardize on Epson and make an investment in your classrooms with products known for their value and the service and savings available through the Epson Brighter Futures program.

Check out Epson’s full lineup of products, request a catalog, or contact your rep.

Visit Epson.com/K12
A Texas school district is trying to close its digital divide by distributing thousands of Apple tablet computers in a move that could make it the largest iPad program for students in the United States.

The McAllen Independent School District has distributed more than 6,800 devices—mostly the iPad tablet computers, but also hundreds of iPod Touch devices for its youngest students. By this time next year, the district says, every one of its more than 25,000 students from kindergarten to 12th grade will receive an iPad or iPod Touch. The district believes it's the largest effort of its kind, and while Apple Inc. would not confirm that, other districts the company noted as having made large investments have not made ones as big as McAllen's.

Educational use of the tablet computers is so new that there's little evidence available on its impact for improving learning. McAllen Superintendent James Ponce says the district wants to change the classroom culture, making it more interactive and creative, and decided Apple's devices—even at $500 retail for an iPad 2—were the best investment.

The district's typical classroom is outfitted with three computers for students and one for the teacher. Under the new plan, those technology investments will be supplanted by the iPads. For now, McAllen’s iPads don’t carry its textbooks, but eventually they will, and at a much lower cost than the hard copies, which can cost $200 apiece.

A small group of teachers in the district began preparing more than a year ago to incorporate the devices into their lessons. Recently, more instructors have started studying the devices. Teachers already training will see their students receive the first wave of devices.

—ASSOCIATED PRESS

A new study suggests the typical elements of playground bullying Mom and Dad endured aren’t always present in the cyberbullying that may affect their children.

The study, conducted by the University of British Columbia, also finds that cyberbullying is likely to be under-reported by students because they incorrectly believe the activity to be less harmful than physical bullying, according to a press release. As a result, the study suggests new anti-bullying initiatives enacted in several states may not effectively limit bullying that occurs online.

While “traditional” bullying usually brings with it a power (size or popularity) difference between bullies and victims, proactive targeting by the bully, and continued bullying over a period of time, cyberbullying often possesses none of those three traits, the report contends. The absence of those traits may be linked to the flexibility of online media, which can lead students to play the roles of bullies, victims, and witnesses interchangeably.

Further, while the study involving about 17,000 students in Vancouver, British Columbia, in grades 8-12 showed 25 to 30 percent of them to have experienced or participated in cyberbullying, only 5 percent said they felt such activity was anything more than a harmless joke.

—IAN QUILLEN
Social Media

School Counselor Facebook Guide Released

With the prevalence of Facebook as one of the dominant social networks among teenagers and children, and the growing public awareness of issues like cyberbullying, online privacy, and digital literacy, the American School Counselor Association has combined with iKeepSafe, an Internet-safety advocacy group, to publish a guide to help school counselors make sense of the platform and its on-campus impact.

Now, don’t be fooled. “Facebook for School Counselors” is not actually a social-media site. But it is available for download, and it does offer tips for counselor actions in four areas:
1. Developing school policies.
2. Responding to online incidents that have an impact on the school climate.
3. Helping the community define dangerous behavior on Facebook.
4. Educating students and staff members about digital literacy.

A few points to note:
• While it may be second nature to Facebook users, the guide notes for counselors that a Facebook timeline is just a newer version of a Facebook profile.
• The guide lists fake profiles and cyberbullying among the dangers to the campus climate, but shies away from addressing other potential hazards, such as students posting sexually suggestive or explicit photographs or videos, online criticism directed at faculty or staff, and social-media interactions between students and educators. Of course, a counselor’s primary concern is the welfare of students, so issues regarding staff might not always fall under a counselor’s authority.
• Online conflicts often have a face-to-face component, the guide suggests, and while Facebook has tools available to report inappropriate behavior to the site, many times the issue can be resolved by bringing all the students involved into the same room.

At nine pages, the guide is a quick read. And if you’re looking for more resources for other educators, you might want to check out the Facebook for Educators website. —Ian Quillen

Cyber Trends

Students’ Use Of Technology

Source: Speak Up 2011 National Research Project.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Grade 3-5</th>
<th>Grade 6-8</th>
<th>Grade 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create presentations and media</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play educational games</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct virtual experiments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use e-textbooks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access real-time data/database</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Take tests online</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use social media for collaboration</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Outside of School

10 percent of 9th to 12th graders have Tweeted about an academic topic that interested them

46 percent of high school students have used Facebook as a collaborative learning tool
**IT PERSONNEL**

**L.A. District Hires First Social-Media Director**

In what may be a national first for a school district, the Los Angeles school system has hired a full-time social-media director.

The move prompts an immediate question: What exactly does a K-12 school district’s social-media director do?

Answering it has been one of the first orders of business for Stephanie Abrams since she took the job at the nation’s second-largest school district after a career as a television reporter, most recently for KCBS in Los Angeles.

In an interview by email, Abrams says she picked up technology as one of her beats during the latter portion of her TV-news career and was one of her network’s early adopters of social-media platforms.

She says her salary of just over $93,000 a year, which has drawn some criticism locally, reflects duties and responsibilities that are far more demanding than simply overseeing the district’s Facebook and Twitter accounts.

For one thing, Abrams says, she will be leading staff education about a new social-network-use policy implemented in February.

The policy advises employees of the 664,000-student Los Angeles Unified School District to keep work-related and personal social-network accounts separate, strongly discourages maintaining social-networking contacts with students through a personal account, and warns employees not to hold any expectations of privacy while using school-owned technology.

“The use of social media is a new and fluid situation at [the Los Angeles district], so I expect to lead the district on this issue moving forward,” Abrams says. She adds that enforcement of the policy will fall under the authority of the school system’s human resources department.

---

**PRIVACY PROTECTIONS**

**Teens’ Privacy Settings On Social-Media Sites**

- **62%** PRIVATE (FRIENDS ONLY)
- **19%** PARTIALLY PRIVATE
- **17%** PUBLIC
- **2%** DON’T KNOW/REFUSED

**SOURCE:** Pew Research Center’s Internet & American Life Project

“Digital Divides and Bridges: Technology Use Among Youth”

---

**PRODUCT REVIEWS**

**Educational Ratings For Digital Content Launched**

An educational ratings system for digital content announced about a year ago has debuted with listings for more than 150 mobile apps, games, and websites, and several hundred more are expected to follow, according to a press release from Common Sense Media.

The system, created by the San Francisco-based youth media-watchdog group through a partnership with the Chicago-based Susan Crown Exchange, piggybacks on Common Sense Media’s system of reviewing media in popular culture to determine age appropriateness and quality.

Just as current reviews of movies and video games, for example, assess levels of violence, sexual content, and language, the new reviews will also determine products’ levels of math, science, and language arts content, as well as their potential for building skills like critical thinking, creativity, and collaboration. The endeavor comes partly in response to research by Common Sense Media that found parents were skeptical of digital products’ educational claims, according to the release.

The ratings are created through a combination of input from academic experts, teachers, parents, and literature on contemporary learning skills, the release says. They will be applied both to digital media created for general consumption and to media created specifically for an educational audience.

---

**—IAN QUILLEN & AP**
Online Games Tapped By West Virginia To Improve Education

Students love to play computer games, and the West Virginia Department of Education is tapping into that love through a website called Learn21.

The site offers all kinds of games that help students in every grade level brush up on their studies.

Fifth grade students in Dottie Pownall’s classroom at Orchard View Elementary in Martinsburg have played Probability Pond, a math game offered on the Learn21 website that features a big green frog.

The frog can eat fireflies in colors of blue, yellow, purple, and red. The students have to determine what the probability is that the frog will eat a particular color. The students take turns guessing the answer and entering it on a large smartboard in front of the room.

Special education teacher Sharon Collins led some lessons this year, incorporating as much technology as possible.

“Almost every day, we find something online through Learn21 or other resources and incorporate it into our classroom,” Collins says.

“With having an inclusion classroom, we have students who have vision problems. We have students who have speech problems, learning problems. We have an autistic student in our class, and then we also have regular ed. students, and it really appeals to their different types of learning styles.”

The state education department started Learn21 two years ago. The website offers online games that go along with the curriculum. Teachers can use the games in class, and students can access the website from home if they want to practice some more.

Donna Landin, the department’s e-learning coordinator, says Learn21 is meant to help students in a variety of ways.

“They could find content on the website, go into that content, complete a game or an interactivity that went right along with what they were learning in their classroom, so it was either supplemental, or it helped them get at areas where they were having some problems, or it could accelerate their learning,” Landin says.

Learn21 also offers the opportunity to review material. “They can go back and pick up concepts that they had gone over formerly, maybe in previous grades or earlier in the year,” Landin says.

—AP

INTERNET MONITORING

Settlement Reached In Web-Filtering Case

The American Civil Liberties Union announced it has settled a lawsuit with a central Missouri school district whose Internet-filtering software was blocking access to nonsexual websites about lesbian, gay, bisexual, and transgender issues.

The ACLU said the Camdenton R-III School District has agreed to stop blocking the sites, submit to monitoring for 18 months to confirm compliance and pay $125,000 in legal fees and costs.

As part of a national campaign, the ACLU sued the district last summer in federal court in Jefferson City on behalf of organizations whose websites had been blocked. The problem was that the Camdenton district used filtering software to block purely educational sites, according to the ACLU.

—AP

Breathe.

We’ve built the bridge from information to implementation of the Common Core Standards in Reading, Writing, and Language for Grades 6-12:

FineTune™
First-of-its-kind online professional development in the evaluation of writing

Assessments21®
Classroom-based common and formative assessments in reading and writing

Literary Companion®
Text-dependent formative assessments and differentiated content in close reading

academicmerit.com CODIE Award Winner 2011: Best Student Assessment Solution

www.digitaldirections.org
As more schools integrate digital games into learning, programs are evolving to turn students into bona fide video-game designers.

By JAN QUILLEN
Photos by MATT ROTH for Digital Directions

It’s 8 a.m. in Diane White’s video-game-design class, and already her students are chattering, chuckling, and clicking.

In one row, juniors Jacob Currence and Tyler Gum test the gun-shooting level of “Finding Mr. X,” a film noir-flavored game they’ve created to test players’ acumen in quadratic equations. Behind them, Kasey Meadows demonstrates how the protagonist in “The Lost Llama” weaves through a maze and solves riddles about mathematical sines, cosines, and tangents.

The incessant low din suggests chaos, but White insists it’s the sound of productivity. “It’s just a different type of classroom,” she says.

White is the pioneer here at Tygarts Valley Middle and High School in Mill Creek, W.Va., where for one period a day for the past two years she has taught the Globaloria curriculum, a creation of the New York City-based ed-tech nonprofit World Wide Workshop built around students participating in social networking and video game design. It’s an effort to transform much more than the classroom vibe.

For the students in this computer-lab-turned-mini-software-company, who spend the entire course working individually or with partners developing a game that teaches an educational concept of their choosing, there’s the critical thinking needed to understand and communicate to players what exactly is toughest to teach about a subject. There are also the transferrable skills of proposal writing, storyboarding, AdobeScript software coding, informational blogging, and presentation of progress reports, as students follow a development plan similar to those in the commercial gaming industry through tools available through their account on Globaloria’s wiki site.

For the 550-student school and its rural 4,200-student Randolph County school district, where 70 percent of students qualify for free or reduced-price lunch, there’s a window to the world through communication with professional game reviewers and Globaloria students across the nation. (The district has also established Globaloria programs at Elkins High School, Elkins Middle School, and the Randolph Technical Center.)

And for a community where the economy hinges on retail sales and tourism, there’s the hope that those tools and that window may allow the best students to find local work in large numbers for the first time since nearby Elkins’ railway and mining industries faded after World War II.

“There are a bunch of kids here who in a couple years can start a company,” says Idit H. Caperton, the founder and president of World Wide Workshop, during a visit to Elkins, where the Randolph Technical Center piloted Globaloria way back in 2007.

“I believe there is talent everywhere,” she says. “And I think if we cultivate that, you will see some stars coming out of this state.”

In School or After School?

The specialization that often occurs in groups of students that design games—when they split...
the tasks of coding, graphic artistry, and concept design, for example—and the resulting communication lessons are becoming more widely recognized by mainstream educators. On one level, the concept of student game design belongs to the increasingly popular strategy of project-based learning.

But even within the far narrower sliver of advocates pushing for educational gaming, there’s a lack of consensus about whether the place to push student game design is in schools themselves, in after-school programs in schools or community centers, or in students’ homes.

Globaloria programs, in California, Florida, Texas, and West Virginia, live mostly within the formal education system. The AMD Foundation, the philanthropic wing of the Sunnyvale, Calif.-based semiconductor maker AMD, has reached most students in its Changing the Game initiative in after-school programs, however.

Since its launch in 2008, the AMD initiative has funded work with Globaloria, the social-gaming website Gamestar Mechanic, and other platforms, and through work with a

Students in a program at Tygarts Valley Middle School in Mill Creek, W.Va., design their own video games. Ryan Gum, a 6th grader, works on a design.
program, as a full-semester or year course,” says Gershenfeld, who says Gamestar Mechanic aims to take hold through individual teachers, not administrators. As such, the website features a free basic level that any teacher—or even student—can access, and a more elaborate for-pay model. “We spent close to a year reworking the product for a bottom-up school distribution channel,” adds Gershenfeld. “We kept hearing from teachers, ‘Don’t let this product die.’ ”

Caperton insists, though, that focusing on the formal education system is critical. No other pathway allows for as much scalability or access for the underserved students most in need of such a program, she says. “Look at this place—it’s very rural,” Caperton says.

THE FACES OF VIDEO-GAME DESIGNERS:
From left to right, Jace Stanley, 7th grade, Kaleah Pritt, 6th, Ryan Gum, 6th, and Logan Warner, 7th, are learning video-game design skills that they could use beyond high school.
Overcoming Obstacles

But with a model that departs so radically from the traditional classroom, winning over enough teachers to train to be competent instructors in the Globaloria curriculum is an obstacle, and getting students interested in something so unusual can also be daunting.

That’s perhaps why the model at Tygarts Valley Middle and High School has seen slow growth, with Diane White teaching the first high school game-design course in the 2010-11 school year, and Mollie Ferguson and Melissa Walter teaching middle school courses beginning this past school year. White also teaches business courses; Ferguson, science; and Walter, English/language arts.

About 20 high school students signed up for the course as an elective this school year, although White says it’s rare that they have much real concept of the course’s nature. She points to Kasey Meadows’ former class partner, who she says quickly felt overwhelmed and dropped the course, and to Meadows, who briefly left the course after getting frustrated by a coding error, before being persuaded to return.

“‘It’s actually not that bad once you get the hang of it,’” Meadows says.

Students who struggle in game design may become more stressed than those who struggle in other courses, White says, because the number of students and teachers capable of helping on tasks like writing code for AdobeFlash Player is small. Even after summer professional development that requires teachers to make their own Globaloria game, most times students will create games above and beyond teachers’ coding proficiency, White says.

“There are days when some students don’t accomplish anything, and you leave here frustrated and devastated because you’ve worked for 90 minutes, and it’s like one step forward, two steps back,” concedes White.

But there is value in the adversity, she adds. “I think it teaches them determination, and that they have to have a good work ethic,” White says. “And they know that they can’t give up.”

Meanwhile, Principal Steve Wamsley says he and teachers targeted more-advanced students to ensure that Ferguson’s and Walter’s first middle school
courses went as smoothly as possible. As the program expands, however, he envisions offering game design courses to students of all levels.

"Next year, we're going to slide it down to the sixth grade, ... and then in the eighth grade, they're going to be able to take it as a high school credit," Wamsley says. "Kids who may have failed a year of school or have been held back somewhere in middle school, they can pick up some high school credit, which will increase the likelihood that they are going to graduate."

For middle school students who are weathering major life transitions, the intricacies of coding, blogging, and collaboration can be trying at times.

"We [share] so much, we make so many videos, and so many blogs and [postings on] our wikis," says 8th grader Leenette Fincham during Ferguson's second-period class. "We talk about the class, and we talk to other classes."

But, she adds, "it was either this, or gym. And I don't like gym."

Gaming and Assessment

State standards and staffing realities most likely mean Globaloria courses will remain electives at Tygarts Valley, rather than become woven within core academics. And funding is also a concern.

While there are plans for expansion, Wamsley says that, as of March, the budget for game-design courses had not yet been assured for the 2012-13 school year. The cost of Globaloria, including professional development, is roughly $20,000 per school, according to Caperton of World Wide Workshop, and Wamsley says it is partially funded through a county tax levy that contributes $45,000 yearly to the school. That levy will continue next year, Wamsley says.

But Caperton says she thinks much more broadly. When she first pitched the Globaloria idea to then-Gov. Joe Manchin, a Democrat, she envisioned penetration throughout every district in West Virginia.

And while praising West Virginia for taking a chance on the program, she in the same breath makes sure to promote newer programs like the East Austin College Prep Academy, in the Texas capital, where all 320 students are game creators.

At the grades 6-8 charter school, which has plans to expand to 5th and 9th grade next year and eventually stretch across all 12 grades and kindergarten, Globaloria is linked closely with assessment.

In 6th grade, students there choose the topics for their educational games based on weaknesses they show in the Texas Assessment of Knowledge and Skills math entry exams. In 7th grade, they integrate a math concept into a game focused on a social issue, and in the 8th grade, they can choose to create a game pertaining to either math or social studies.

The Austin school's enrollment is 85 percent Hispanic and 40 percent English-language-learner. Principal Marisol Rocha says the program's most profound impact has been on native Spanish-speakers.

"When they were in those classes and doing blogging, they were free to write," without judgment, Rocha says of students in Globaloria. "When they have a computer in front of them, it's like a completely different world for them.

Seventh grade instructor Teresa Valdez, who was hired before the 2010-11 school year to teach 7th grade game design, says for teachers who may only teach game design, a cross-curricular background helps. Valdez previously taught 5th grade bilingual education in an enclosed classroom, meaning she taught her students their entire core curriculum in language arts, science, social studies, and mathematics.

And after teaching a computer-less course centered around students' conception and creation of board and strategy games, Valdez says it's possible to teach most of the same principles pushed by Globaloria's curriculum without technology tools. But with digital tools comes an additional, healthy pressure.

"If you're doing something [educational] that's not electronic, they really have a lot of experience doing that," Valdez says. "When you throw them into technology, it's like you're putting them out into the desert, and they have to depend on each other a whole lot more."

—Marisol Rocha, Principal
East Austin College Prep Academy, Austin, Texas

To watch a video about student video-game designers, go to www.digitaldirections.org/go/videodesign.
applicable knowledge

After-school programs geared toward mobile-app development offer appealing ways to academically engage students in technical and entrepreneurial exercises.

Teams of girls in New York City, Los Angeles, and the San Francisco Bay Area spent 10 weeks designing a mobile app so they could pitch the final product at a national competition at the end of the course.

Students outside of Raleigh, N.C., learned different programming languages to create their own apps in a largely independent but rigorous after-school program.

And in the nation's capital students meet each week to learn not only how to make their own apps, but also how to hone leadership and entrepreneurial skills, such as marketing, creating a business plan, and public speaking.

A growing number of after-school programs for boys and girls that draw on students' interest in applications for mobile devices are evolving throughout the country. Such programs can be a gateway to learning computer programming, as well as business and marketing lessons, which educators believe equip students with lifelong skills to succeed in college and the workforce.

Some of the programs aim especially to engage girls.

"The reason we use app development is because girls are already pretty interested in their phones," says AnnaLise Hoopes, the director of educational and corporate partnerships for the San Francisco-based Technovation, which aims to promote the role of women in technology fields by teaching girls to create their own apps. "It's a very nonintimidating mode of computer science because it's something they can already relate to."

The program, which takes place in San Francisco; Mountain View, Calif.; Berkeley, Calif.; San Jose, Calif.; Boston; New York City; and Los Angeles, pairs up teams of five high school-age girls with female technology entrepreneurs as mentors.

In addition, the program brings in guest lecturers throughout the 10-week program to talk with the girls about opening their own businesses in the technology field.

"They tell [the girls] what challenges they faced, and they really share honestly about what it takes to get to a successful place. … It's inspiring for the girls," says Hoopes.

Since the program began in 2010, students have created such applications as the IOU app, which tracks borrowed money and other items; the Life Pyramid, which gathers data about exercise, sleep habits, and stress to help the user maintain a healthy lifestyle; and Tab Attack!, an app that helps users learn to play drums, guitar, and other instruments.

At the end of the course, the teams of girls compete in regional competitions, and the winners then go to a national competition called Pitch Night, where they present their apps to a panel of judges. The national winner's app gets professionally produced and is put on sale on Google Play.

By Katie Ash Photographs Sarah Rice for Digital Directions

Student Isiah Foster, 16, right, works with Elisabeth Soep, the head of the app lab, during a session about design at the Youth Radio offices in Oakland, Calif.
“My hope is that they learn the process of creating a product and taking it to market just like they would as an adult entrepreneur,” says Hoopes.

To pay for the program, Technovation partners with corporate technology sponsors in the local areas where the program operates. “Finding and securing these sponsorships is an ongoing challenge,” Hoopes says.

“This year, we expanded significantly, and were able to work with twice as many new schools,” she says. “Our goal was to target underrepresented minorities.”

Girls in the Technovation program use App Inventor, created in 2009 by Massachusetts Institute of Technology professor Hal Abelson, who co-chairs the MIT Council on Educational Technology, in partnership with Google. The tool, which has since moved from Google to MIT, is a Web-based program that allows users with little programming experience to create mobile apps for Android devices.

Shaileen Pokress, a curriculum developer at MIT’s Media Lab, which houses App Inventor, is now gathering support and curricular materials for the program. MIT will also create tutorials and support materials of its own to go along with the tool, she says.

Students in the Washington-based Youth APPLab also use App Inventor to create apps for Android devices.

The Youth APPLab, which was created in 2010 after it won funding from the MacArthur Digital Media and Learning Competition, teaches students in the city how to create their own apps, as well as how to work together in teams and present their products in a professional manner, says
Leshell Hatley, the creator of the program. About 75 percent of participants have no prior programming experience, she says.

One such student is Afia Tyus, an 8th grader who helped build an app to teach the numbers one to 10 in English, French, and Spanish, and the “Girl Crew App,” which is designed “to encourage girls to embrace their individual and collective power,” she says. It contains tips on doing well in school, links to homework help, and a reading list.

“These programs expand your view on careers like computer science and engineering and show the fun in them,” Afia says.

Ninth grader Muhammad Hawkins credits Youth APPLab with giving him the entrepreneurial skills he needed to open his own app-development company with his brother, Hazma, also in the program.

The first year, a class of 25 students met twice a week to learn about technology—everything from piracy to programming, says Hatley, who runs Youth APPLab. Students received their own smartphones with texting and Internet capabilities to download and research apps. And in January 2011, they finally began working with App Inventor to design their own app prototypes.

Over the summer of 2011, Hatley hosted a course that focused more on the entrepreneurial side of launching apps.

Four of the students in her initial group have gone on to declare majors or minors in computer science in college, she says.

“We hope we’re contributing to the future of the STEM fields [of science, technology, engineering, and math], the economy, and these students’ lives,” says Hatley. “Watching them grow has been amazing.”

**After-School Programming**

In North Carolina, officials at Apex High School near Raleigh, opened an after-school app-programming course in February 2012 for students in the school’s 335-student Academy of Information Technology, which spans grades 9-12. The course is a partnership with the Morrisville, N.C., technology company Lenovo and the New York City-based National Academy Foundation, a career- and college-prep nonprofit group.

Lenovo donated 30 Wi-Fi-enabled Thinkpad tablets, six touch-screen computers, a projector, and a cart for the tablets for the course. Lenovo also provided a course in app programming from Carnegie Mellon University, in Pittsburgh, for the students and a timeline of where they should be to help them stay on track.

When the course was first announced, Julie Oster, the director of the school’s Academy of Information Technology, was pleasantly surprised by the amount of response from students. About 70 students signed up to take part in the after-school course, on top of their normal schoolwork and extracurricular activities.

Students were split into groups of four, with Oster making sure to include at least one student with programming experience to serve as a “technical lead.” (Juniors and seniors in the Academy of Information Technology have experience with programming language.)

And while each team has a teacher mentor, “we were really counting on students to take the lead,” says Oster. Students set up their own meetings and work through the curriculum independently, with support from a teacher mentor.

Mary Silliman, a junior at Apex High, is participating in the program.

“I thought it was a really interesting opportunity and really exciting to be able to use different technology,” she says. Although Silliman has used programming languages before, this is her first time learning Java.

Her team’s app allows students at her school to keep track of sporting events and create tournament brackets out of them.

John Boezeman is also a junior in the program. Boezeman had already taught himself to make apps before the course was offered, he says, but he wanted to get

**STUDENT APPS**

**IOU**

Created as part of the Technovation challenge

Helps the user keep track of borrowed and lent items, such as money, books, clothes, and jewelry. A virtual caterpillar grows and shrinks depending on how reliable the user is.


**Forage City**

Created by the Mobile Action Lab

Helps users both locate and redistribute extra food from restaurants, food carts, and people’s gardens to those who can use it.


**Youth APPLab Book Pricer**

Created by students at the Youth APPLab

Allows users to search for the lowest book prices on Amazon by using the book’s ISBN.

involved to develop more experience working on a team.

“The biggest thing [I’ve learned] is working with groups because, like I said, I already have experience with the app part, but I typically work by myself,” he says.

Learning the marketing aspect of app development is also new to him, he says.

Both Silliman and Boezeman noted that one of the hardest parts of the creation process was identifying a good app idea.

“There’s so many things you can do, and so many ideas, but you have to pick something that’s feasible in the timeline but is also kind of unique,” says Boezeman.

In addition, staying motivated and working as independent groups outside school has been a challenge, Boezeman says. “You have to take your own initiative,” he says.

‘Scream Machine’

Ray Shaik is the founder and executive director of the Oklahoma City-based TechJOYnt, an after-school STEAM (science, technology, engineering, arts, and mathematics) education program that has just begun offering classes on creating apps. Partnering with schools, school libraries, businesses, and community centers in the area, the organization reaches out to youths ages 6 to 14.

Shaik’s 12-year-old daughter, Ridah, recently took part in the app development class.

“We learned how to make an app called Scream Machine,” she says. The app is used as an icebreaker with groups of children, she explains. Students take pictures of other students and record their screams. The app then mixes up the photos and the audio, and the students are supposed to match them back together.

“The hardest part is remembering the [programming] language and how we’re supposed to do it,” says Ridah, a 6th grader. “I don’t actually know the language yet, but I’m picking it up bit by bit.”

The Oakland, Calif.-based youth-media organization Youth Radio has also launched an app-creation track for young people.

In what is called the Mobile Action Lab, students use App Inventor to create apps. Elisabeth Soep, the research director and senior producer at Youth Radio, explains that participants in the Mobile Action Lab either create learning apps, which are meant to teach them the basics of app creation, or market-bound apps, which require significant time and resources to develop. The goal for market-bound apps is to push them out for sale to the general public.

“Our model is really based on young people participating and driving every phase of the design and development,” says Soep.

Participants, who range in age from 14 to 24, work with a team to do their own market research, develop an app idea, design and create the app, craft a business plan, and market the app to the community.

Sometimes, the Mobile Action Lab brings in outside help to produce the app professionally, says Soep.

Donta Jackson is a 17-year-old junior at McClymonds High School in Oakland who has worked with the lab for about a year.

“I’ve learned how to create apps,” says Jackson. “I’ve also learned that phones aren’t smart until we give them the functionalities that make them smart.”

For now, the Mobile Action Lab hosts long-term internships, which youths are paid to participate in, as well as weeklong crash courses in app-making. To be selected as interns in the program, students first have to go through at least three classes at Youth Radio and an application process.

An app now on the market developed by the Mobile Action Lab is called Forage City. It alerts users to drop-off points where restaurants, farmers’ markets, and ordinary citizens with overabundant gardens have left surplus food.

Turning Forage City, which started as one girl’s project in her own neighborhood, into a citywide app presented many logistical and technical challenges for students, says Soep.

“We would not have been able to break through those barriers” without the input of all the members of the group, she says.
Visit Blackboard.com/K12Solutions to see how your school could benefit.

Engage students. Support teachers. Involve parents. And become more efficient with proven products like Edline’s learning community management system. From small classrooms to large school districts, Blackboard offers a full suite of technology solutions to fit every need and budget.

For many adults, the thought of earning badges evokes childhood memories of sewing Boy Scout or Girl Scout patches onto sashes and vests.

But some educators are hoping that the current generation of children will associate the word with something new: digital badges.

In this vision, electronic images could be earned for a wide variety of reasons in multiple learning spaces, including after-school programs, summer workshops, K-12 classrooms, and universities. And once earned, the badges could follow students throughout their lifetimes, being displayed on websites or blogs and included in college applications and résumés.

Initiatives seek to give students permanent online records for developing specific skills.
The concept originated at the end of 2010 at a conference held by the Mozilla Foundation in Barcelona, Spain. The idea is getting a toehold in higher education and is being tried with some youths at the precollegiate level.

Advocates of this vision for K-12 contend that such badges could help bridge educational experiences that happen in and out of school, as well as provide a way to recognize “soft skills” such as leadership and collaboration. Badges could paint a more granular and meaningful picture of what a student actually knows than a standardized-test score or a letter grade, they say.

But not all educators are convinced of the merits of the idea. Because badges are still being developed and have not yet been introduced into classrooms, how they would fit into the structure of K-12 education and whether they could actually fulfill the goals that proponents have described are still up for debate.

Other skeptics argue that introducing digital badges into informal education settings—where most agree they would have the greatest impact initially—could bring too much structure and hierarchy to the very places students go to seek refuge from formal achievement tracking. And many point to research that suggests rewarding students, with a badge for instance, for activities they would have otherwise completed out of personal interest or intellectual curiosity actually decreases their motivation to do those tasks.

Advocates see it differently. Among the strongest proponents of the idea is the Chicago-based John D. and Catherine T. MacArthur Foundation, which has spearheaded the digital-badges movement for lifelong learning by launching a competition for badge proposals in partnership with Mozilla, a nonprofit Web organization best known for its open-source browser Firefox, and HASTAC, or Humanities, Arts, Science, and Technology Advanced Collaboratory, a network of individuals promoting new technologies for learning.

“Kids are learning in their peer group. They’re learning online. They’re learning in interest groups and after-school programs,” says Constance M. Yowell, the director of education for U.S. programs at the MacArthur Foundation. “One of the things that is abundantly clear to us is that learning is incredibly fragmented, and there’s nobody that’s helping the learning that’s happening across those connections.”

Helping to string together learning achievements across informal and formal education, as well as at transitional education points, such as from precollegiate to higher education and from formal education into the workplace, is one of the main goals of badge advocates.

For example, K-12 students could earn badges for mastering certain content, such as physics or trigonometry, or for soft skills acquired in afterschool settings, such as leadership or environmental stewardship, that could paint a clearer picture of themselves for college admissions officers.

“How do you make visible what kids are learning, and how do you help them get credit for it?” says Yowell. “How do you build bridges across the multiple places that kids are learning so they can see the connections between what they’re learning inside of school and outside of school?”

‘Steppingstones’

Another advantage of digital badges, their boosters say, is the ability to create learning pathways where none previously existed. For example, students who have earned an introduction to HTML badge, which refers to a type of computer programming language, could then be encouraged to pursue an intermediate level HTML badge to continue building their skills, a website creation badge where they could apply that skill, or a badge for a new programming language, such as Java or CSS.

“With badges, you can actually scaffold out a pathway of what is next,” Yowell says. “We want as much as possible to create multiple entry points for learning and multiple pathways for career and academic success.”

Yowell envisions a recommendation tool that could point students to a variety of opportunities based on the competencies they’ve demonstrated through earning their badges.

“It becomes an integrated process as opposed to one where the assessments are separate,” Yowell says.

This was one of the reasons why MOUSE, a New York City-based youth-development program that teaches students to provide technical support and leadership in their schools, began using badges. One of the main programs MOUSE offers is MOUSE Corps, a career-readiness program for high schoolers that gives those students experience providing information technology support for their schools, as well as professional internships, mentoring, and skills-building workshops.

“What it’s really about is giving [students] that authentic role in their schools, and giving them all kinds of venues for learning,” says Yowell.
When it comes to K-12 education, most digital badges are still in the development phase. But educators working with precollegiate students can look to a handful of examples of such badges’ use in higher education for guidance on this new achievement-tracking technique.

Alex Halavais is an associate professor of interactive communications at Quinnipiac University, in Hamden, Conn., where he teaches a master’s program in interactive communications.

After hearing about the digital-badge concept, he began using a system of badges instead of a traditional grading scale to evaluate his graduate students starting in the Spring of 2011.

“I’ve been surprised by how effective they’ve been,” he says. At the beginning of each class, Halavais equates a certain number of badges with a letter grade, and it is up to his students to earn the number of badges equivalent to the grade they would like in the class.

Part of what drew Halavais’ interest to digital badges was the amount of data each badge contains.

“It’s an index of your learning biography,” he says. “It allows you to stitch together your [educational career] in interesting ways.”

And unlike an e-portfolio, badges generally represent one skill, making them easier for prospective employers to peruse, says Halavais.

Mark Rossi is a graduate student at Quinnipiac who recently completed one of Halavais’ courses using digital badges.

The badge system Halavais created relied on a peer-review process in which certain students who had achieved a certain level of badge could approve other students’ badges, says Rossi. All badges were sent to Halavais for final review.

“I’m pretty much an independent worker, so [this system] caused me to reach out, which was a little uncomfortable at first, but it was great once you broke the ice,” says Rossi. “Everybody really enjoyed the interaction of reviewing and being reviewed.”

And because the class was online, the setup helped spur collaboration and interactivity with his peers, creating a sense of community in lieu of a face-to-face classroom.

In addition, there were a variety of ways to earn an A for the course, allowing students to choose their own personalized course through the class. “It just expands your possibilities,” Rossi says.

Students in his class could earn a badge for commenting on the class blog a certain number of times; for penning a certain number of posts on Twitter, Facebook, and Google Plus; or for evaluating elements of online games.

The hardest part about earning badges, says Rossi, is being detail-oriented enough to make sure you hit all the requirements.

‘Working At My Own Pace’

Ronald D. Henry is another student of Halavais’ who took a face-to-face course about interactive media using digital badges.

“You basically did the assignment to earn a badge, and once you earned a certain badge, you opened up more assignments you could complete,” he says. His class covered computer programming, learning HTML, and networking computer systems.

Like Rossi, Henry appreciated the variety and personalization of the pathway the badges allowed.

“It was an environment where you got to learn what you wanted to learn, and learn it when you wanted to learn it,” Henry says. “Some people needed more time and more teacher supervision, and then there were people who said, ‘I get it, and I can keep working at my own pace.’”

And having the set of badges at the end of the course provided a much better representation of what skills each student mastered, Henry says. For instance, although two students in the class could have received the same letter grade, they may have come away with two different sets of skills, and the badges helped break those skills down into discernible competencies.

“Badges give you a more granular look at what someone did to earn it,” says Henry. “You have a better idea of what [the student] can or can’t do, as opposed to [the results of] standardized tests.”

He expressed concern, though, over the use of a badge system in a K-12 environment.

“I’m not sure how that would work,” he says. While it worked well for Henry, who described himself as a self-motivated learner, he asked whether the system would be too unstructured for a less motivated younger student.

Philipp Schmidt is the co-founder and executive director of Peer 2 Peer University, or P2PU, an open education university online. His proposal to create an adaptable, customizable, open-source platform for badge creation was one of the winning proposals in a recent badge competition hosted by the John D. and Catherine T. MacArthur Foundation.

Schmidt started interacting with digital badges through his work with Web developers.

“Higher-order thinking skills, teamwork, the ability to understand the goals of the project and translate it into technical code—these are all skills that don’t show up in a university transcript,” he says.

And yet, those skills are what employers are looking for, says Schmidt.

To help document those skills better, Schmidt has been incorporating badges into P2PU Web-development courses. But badges could work in a variety of educational environments, he says.

“The way we do assessment in school is totally broken,” says Schmidt. “There’s absolutely no way that through a multiple-choice test at the end of the course you can make statements about a student’s abilities. The only thing you’re testing is how good they are at taking tests.”
“It's an index of your learning biography. It allows you to stitch together your [educational career] in interesting ways.”

—Alex Halavais, Associate Professor of Interactive Communications, Quinnipiac University, Hamden, Conn.
“Part of our goal for the competition was to build a community of thoughtful collaborators,” says Yowell. “We are welcoming of all those who want to join us in this contributing to the “gamification” of education.

“[Gamification] is a system which does not trust the power of intrinsic motivation and feels the need to add a layer of extrinsic motivation,” says Jenkins, who was interviewed by email. “Some forms of gamification rely so heavily on points schemes that there is far less effort to make the activities meaningful in and of themselves.”

Already, many students are caught up in such a conception of education, he says, with high-achieving students focusing more on receiving high grades—or a multitude of badges—than the learning itself.

“I worry that badges can become just another points system … [that] undercuts the motivational structures,” he says.

And when it comes to informal learning, part of what makes such learning unique, he says, is precisely the lack of hierarchical structure and formalization that badges threaten to impose.

“Too quick a move towards badges runs the risk of destroying the complex but fragile ecosystem within which participatory learning thrives,” Jenkins says. Providing adult validation for student achievements through digital badges in places where that validation did not previously play a role could turn some students off, he says.

“There is a value in helping these youths find ways to value what they are doing as intellectual pursuits, and there is a value in seeking to validate these experiences and help them learn how to mobilize that knowledge as they learn to work through the formal structures that exert power over their lives,” says Jenkins. “But making badges too central to the process may alienate them before they have a chance to exert ownership over the knowledge they are acquiring.”

That is part of the reason why digital badges should be viewed as feedback, rather than a reward, says Yowell, of the MacArthur Foundation.

“What we think matters most for learning is, how do you give the learner and the folks supporting that learner ongoing feedback about how they’re doing?” she says. “We’re not having a conversation about replacing standardized tests or grades.”

The badges competition hosted by the MacArthur Foundation, Mozilla, and HASTAC concluded on March 1 at the Digital Media and Learning Conference in San Francisco, where 30 winners—chosen from 91 proposals—were awarded grants ranging from $25,000 to $175,000 to develop their ideas. The winners—including heavy hitters such as Intel, NASA, and Disney-Pixar—have one year to develop their digital badges, working with other winners to form a badge “ecosystem” that educators hope will transform the way achievement is acknowledged for learners of all ages.

“Part of our goal for the competition was to build a community of thoughtful collaborators,” says Yowell. “We are welcoming of all those who want to join us in this
Got iPads? Get Net Texts!

The Net Texts system is a free iPad® app + a companion Web site that lets you organize, create, and deliver custom course materials for your students’ iPads.

You can supplement or even replace textbooks, as our Atlanta schools have done.

The easy-to-use iPad app displays all types of materials: PDFs, videos, slideshows, Web sites, e-books, and audiobooks.

The companion Web site lets you create a new course or customize one of our over 100 existing courses by adding your own materials. It’s fast, flexible, and easy!

No iPad? No problem! Net Texts also works in a browser.

Try it free! Download the Net Texts app from the Apple App Store today.

Browse our existing courses, built from the best Open Educational Resources

iPad is a trademark of Apple, Inc.
endavor and be thoughtful skeptics.”

Two key factors in selecting the grant winners were the transportability and the granularity of the proposed badges, says David Theo Goldberg, the director of the MacArthur Digital Media and Learning Research Hub at the University of California, Irvine.

Transportability refers to the ability of the badge to follow the badge earner through his or her lifetime and be recognized in a variety of environments. Granularity emphasizes the need for specific data and details about why and how the badge was earned, so that anyone viewing it will have a clear understanding of the competencies of the badge owner.

Some of the winners will clearly target K-12 students. One such proposal, the “American Graduate: Let’s Make It Happen” badges, is funded by the Corporation for Public Broadcasting in an effort to target potential dropouts by engaging them in digital educational resources. Another winner, BuzzMath, will focus on helping students set goals to master the Common Core State Standards in mathematics.

Others, such as BadgesWork for Vets and the Design for America: A Badge Community for Innovation, are being developed for different population groups as well as the general public.

Building a ‘Badge Economy’

On its surface, a digital badge is nothing more than an image file encoded with metadata, or information, that includes all the data needed to understand the badge, such as which organization awarded it, what skill or achievement it represents, if and when it expires, and links to evidence for why it was awarded.

With support from the MacArthur Foundation, Mozilla has developed an Open Badge Infrastructure, or OBI, designed to become the underlying technical scaffolding for badges.

“The Open Badge Infrastructure creates some standardization around a common language of badges that we can all communicate with,” says Erin Knight, a senior director of learning for the Mountain View, Calif.-based Mozilla Foundation. “The idea is that each badge carries with it all the information you need to understand the badge.”

The OBI details exactly what should be included in the metadata of the badge; supports the issuance, collection, and display of badges; allows badge earners to tie their badges to their own identities; and provides badge earners with a way to sort and manage their badges.

Part of the infrastructure includes a “digital backpack” in which badges can be stored, managed, and displayed. Keeping the badge earner in control of which badges are seen by whom was a big consideration in the development of the OBI, Knight says.

Sunny Lee is an open-badges product manager and partner manager for the Mozilla Foundation. “[The digital backpack] enables the learner to be able to curate and manage the image that they want to represent to the rest of the world,” she says. “The idea is that we’re kind of laying down the plumbing for this badge economy to flourish. Now, we need some badges circulating around the economy to jumpstart it.”

Some observers wonder how meaningful badges can become if any organization is allowed to give them out for any reason; the fear is of an influx of superficial badges that have little to do with learning. But Knight says that is precisely why the badge earner must be responsible for managing his or her own badges.

“Yes, there will be badges that mean nothing—that will happen—but the key is that the learner is in control, and they can decide what is important and how they share those badges,” she says. “One of the problems we’re trying to solve is that a lot of the way learning is defined right now is incredibly prescribed, and the learning that counts is top-down decided. … We want to open up and legitimize learning that’s happening everywhere.”

While much remains to be seen about how digital badges could affect K-12 learners, many involved in the movement say they appreciate the conversation it has sparked about assessment, the tracking of achievement, and lifelong learning.

“We’re definitely not saying that [digital badges] are a silver bullet, and we’re not even saying that badges are going to end up being one of the pieces of the solution, but there’s clearly a lot of potential here, and at the end of the day, if we decide that badges aren’t the right way to do it, it would be hard for us not to consider that it’s somewhat of a success,” says Knight, of the Mozilla Foundation. “Everybody has elevated these issues and come together to think about it and been willing to turn assumptions on their head.”

Digital badges are a way of forcing educators to recognize that learning is no longer confined to a classroom and is taking place anytime, anywhere, adds Goldberg, of the Irvine, Calif. and Durham, N.C.-based HASTAC.

“What this speaks to, and what the interest in badging as a creative form of motivation assessment and reward for learning is, is a sense that learning is transforming before our very eyes and has been certainly since the advent of the Internet,” he says.

“It’s the case that learning is taking place around the clock,” he says. “It’s taking place interactively and collaboratively in all sorts of ways both inside and especially outside of institutional framing.”
ASCD Introduces
THE COMMON CORE CHANNEL

Explore how the Common Core State Standards (CCSS) approach literacy and mathematics in new and important ways. Through video examples, you'll learn practical ways to put CCSS to work in classrooms.

ASCD is pleased to offer you the opportunity to trial our award-winning professional development tool that provides educators with on-demand access to the latest instructional techniques with insights and guidance from the most respected education authorities.

• Hundreds of hours of video sorted by channel and need.
• Customizable for PD leaders/facilitators and teachers.
• Demonstrated effective teaching practices.
• Featuring ASCD faculty/education experts.
• Unlimited access 24/7 on most digital devices.
• Typical pricing below $50 per user*.

Sign up NOW for your FREE trial at www.ascd.org/pdinfocus

For questions regarding school or district subscriptions, please contact ASCD Program Director at jpride@ascd.org or call 1.800.933.2723, ext. 5634.

*Annual pricing based upon 30 users in 2 or more schools within a district. PD In Focus® is a registered trademark of ASCD. ©2012 ASCD. All rights reserved.
COMPETITIVE edge

Companies old and new are jockeying for position in the unsettled market for learning-management systems, seeking to innovate and fulfill districts’ evolving needs  By Ian Quillen

Don McIntosh has been cataloging the learning-management-system industry for nearly two decades. And since creating “Vendors of Learning Management and E-Learning Products,” an evolving document that logs creations and changes in the K-12, postsecondary, and corporate LMS markets, it’s grown from the size of a book report to that of a decent-sized novel.

“It’s getting to be such a huge list that it’s beginning to lose its usefulness,” laments McIntosh, the president of Trimeritus eLearning Solutions, an education consulting group based in Burnaby, British Columbia. “The idea was that it would provide a tool for people to select an LMS. But the list is so long now that it doesn’t help them. You can’t issue requests for proposal to everyone on the list.”

Industry followers say the continuing entrance of new LMS creators may signal transition, and not stability, and it may mean the sector is becoming one in which new entrants have real opportunities to leap ahead of established players.

As a ballooning number of school districts use or explore blended learning, and a growing cadre of full-time virtual schools embrace more sophisticated instructional methods, the battle for LMS providers appears no longer to be how many features they can provide school consumers, but finding the right ones for the right institutions.

Further, what once appeared to be an unbridgeable chasm between the world of proprietary systems, where the software was copyrighted by the vendor, and open-source systems, where any user can alter software for specific needs, is now but a blurry line after proprietary giant Blackboard Inc.’s recent purchase of open-source software developers Moodlerooms and NetSpot.

Some observers have even suggested the learning-management system will become an obsolete technology, while others say the LMS of the future will at least look considerably different as online and blended learning continues to shift toward providing students with personally tailored programs.

“If you look at all those needs and increased customization that comes with it, that is more than what has been in the traditional LMS,” says Matthew Wicks, the chief operating officer for the Vienna, Va.-based International Association for K-12 Online Learning, or iNACOL, and a former online learning consultant. “I haven’t seen any one vendor
Innovate
c ompetitio
emerge as far as putting all of those pieces together.”

Blending Systems

The LMS pieces themselves aren’t as rigidly defined as they used to be.

Conventionally speaking, a learning-management system is the software on which the online portion of any partially or fully virtual course is delivered, documented, and reported. A content-management system is the software on which Web content is organized, edited, and published, and a learning-content-management system is a CMS used specifically for educational purposes.

As the field has developed, some companies—such as Washington-based Blackboard and Desire2Learn Inc., of Kitchener, Ontario—have grown to offer both LMS and CMS products. And as schools look for systems that fit their particular approaches to course delivery, many vendors offer products with features that blur the LMS-CMS line.

A few companies are progressing toward products that fully mesh the LMS and the CMS, says McIntosh, including iVersity, of Berlin, and Pearson, of London, through its new, free OpenClass system. With an increasingly wide swath of the schools in the United States embracing online or blended learning in some form, McIntosh says the demand for simpler, more unified products that combine both features will only increase.

But there is still plenty to improve upon in the iVersity and Pearson products, he says. In the case of Pearson, which is also recognized as one of the “Big Three” textbook publishers, he says those improvements may not come until designers of an LMS-CMS hybrid look at such a tool as more than a way to drive users to their content.

“I think Pearson’s goal is to sell their textbooks and to use [OpenClass] as a way to sell the books, either online or in print,” McIntosh says of the tool. “It’s kind of like a service they are providing to enhance the sale of their textbooks.”

The worlds of open-source and proprietary learning-management systems also appear to be converging, which may partly explain why Blackboard bought Moodlerooms and NetSpot, two companies that sell learning-management software built upon the open-source Moodle LMS.

Historically, some experts say, commercial LMS vendors have worked mainly with entire virtual schools and other institutions that are implementing online learning in a broad, systematic fashion. Meanwhile, Moodle users have often been early-adopting, tech-savvy teachers looking for a more affordable way to manage content within their own classrooms and not necessarily across classroom walls.

Vendor Collaboration

Perhaps heartened by the successes of early adopters, more superintendents and principals are beginning to explore components of virtual or blended learning on a schoolwide level. And while open-source systems can be a good fit for a blended classroom where content is coming from a range of free and proprietary sources, the challenges of unifying student data, providing system security, and maintaining an open-source LMS can be daunting.

“Open educational resources are really only useful to a smaller subset of the market than we talk about,” says Myk Garn, the director of education for the Southern Regional Education Board, a 16-state group based in Atlanta.

“We’ve learned that this stuff has to be enterprise-class,” he says, meaning the software must be fast and highly reliable. “No matter how innovative you are, that ain’t cheap, and it takes serious people doing it.”

Moodlerooms and NetSpot are among the companies that specialize in providing support to schools that want to use an open-source LMS, Moodle, on a systemwide scale, but even they struggle to keep up with the increasingly diverse school and district needs, says Moodlerooms’ chief executive officer, Lou Pugliese.

Given trends like the increase in mobile-learning, social-networking, and adaptive-learning tools in education, he says, his company’s acquisition by Blackboard reflects an industry sentiment that what’s best for business is to collaborate across vendor lines. “We’re moving toward a more vendor-neutral environment where we’re trying to serve the marketplace better,” Pugliese says. “I think the customer is much better served to the extent you can manage the chasm between an open-source and proprietary system.”

McIntosh, of Trimeritus eLearning Solutions, adds that, despite the size of his growing
VITALSOURCE WINS FOUR TELLY AWARDS FOR EDUCATIONAL VIDEOS

VitalSource recently received three Telly Awards for educational videos produced for the New York City Department of Education as well as one produced for The National Center on Time & Learning.

Learn more at vitalsource.com.
document cataloging the LMS industry, Blackboard, as a nearly universally accepted leader in the field, can single-handedly shift its direction.

“The reality is that they dominate the whole sector,” McIntosh says.

Most observers appear to agree with McIntosh’s assessment, but some wonder whether that influence is a progressive force or one that is simply good for business.

Garn, for one, points to previous acquisitions made by Blackboard as hindering evolution in the industry because reorganization efforts diverted attention from product development. In June 2010, Blackboard acquired the synchronous-online-learning companies Elluminate and Wimba after purchasing the educational software company ANGEL Inc. just over a year earlier.

“I’ve been working with companies for 10 to 12 years now, and every two to three years one of them gets acquired by Blackboard,” says Garn. “The churning of the learning management systems and the LMS situation is a drag on productivity for the institutions, colleges, and the schools.”

Brett Frazier, the senior vice president of Blackboard Learn, the company’s primary LMS offering, disagrees. He says the inclusion of new open-source options under the Blackboard umbrella will help schools that, in tight budgetary times, are trying to figure out how best to utilize the technology they have to create opportunities for online and blended learning.

“School districts have a lot of stuff they have purchased over the past few years,” Frazier says. “To us right now, it’s actually about how you use the stuff you have or how you are wise with what little funds you have.”

Catalysts for Change?

Others say that while the acquisition may help Blackboard, Moodlerooms, and NetSpot become more flexible in satisfying immediate demands from schools, a more dramatic shift in the nature of the learning-management system will likely come from a different company.

Edward Mansouri, the president of Ucompass, a Tallahassee, Fla.-based LMS provider, says he believes his company has a chance to be that catalyst.

At an invitation-only event at the Virtual School Symposium in Indianapolis last November, Mansouri unveiled the company’s Octane product, which essentially aims to restructure the relationship between course administration and content delivery.

Basically, Octane gives users the option of writing individual tools into their content that are typically found within an LMS, such as phone directories, instant-messaging applications, social-networking functions, webinar-hosting tools, and student-performance-measuring instruments, Mansouri says. Unlike with an LMS, Octane users need only write in the tools that they find necessary, since they are hosted remotely instead of within LMS software.

“The mechanics of being able to have the focus just on the functionality needed, … that, in and of itself, is a huge benefit because you’re minimizing clicks, cognitive overhead, [and] technical overhead,” says Mansouri, who acknowledges that the new product is a departure from Ucompass’ previous work in the LMS sector.

“We got pretty wrapped up in what we thought was good functionality and what we thought was useful, but it seemed there was a pattern of what people expected to be able to do,” he adds.

The 122,000-student Florida Virtual School, based in Orlando, has for years partnered with Ucompass, and now has gradually implemented some Octane tools in its courses. As of March, the school has included a tool that allows students to rate the effectiveness of pieces of content in all but seven of its course offerings—a rating that could be used by teachers to determine future instruction.

Although the Florida Virtual School has been slower to integrate other features into its content, its senior manager of product development, Jennifer Whiting, says she believes the tool, which is built on coding abilities that have existed for at least five years, will transform the LMS field.

“I think Ucompass has a handle on how to take ideas out in the marketplace and turn them into a product that can just revolutionize things,” Whiting says.

“You could say, ‘Why didn’t anyone think of the iPhone before?’” Whiting adds, comparing the watershed Apple mobile phone to Octane. “It’s that kind of innovation. It’s that kind of leap.”

ANGEL Learning
www.angellearning.com

Blackboard Learn
www.blackboard.com

Desire2Learn
www.desire2learn.com

Education Elements
www.edelements.com

Follett Software Destiny
www.folletsoftware.com

Global Scholar
www.globalscholar.com

Instructure Canvas
www.instructure.com

iversity
www.iversity.org

Moodle
http://moodle.org

Pearson OpenClass
www.joinopenclass.com

PLATO Learning Environment
www.plato.com

Time to Know Digital Learning Platform
www.timetoknow.com

Ucompass Educator
www.ucompass.com

Providers
NewTek TriCaster™ 455 for Education

Raise the level of your production without raising the budget. TriCaster 455 gives you professional-grade gear in a compact, easy to use system so you can quickly reach your audience from anywhere—booth, studio, van, or small control room.

TriCaster 455 combines professional four-camera, 14-channel live production capabilities with built-in Web streaming in one, compact system. Satisfy the visual demands of your viewers with network-style compositions, virtual sets, transitions, brand elements, and more. And do it all with a completely integrated, all-in-one live production solution. Go live. Go big. On the road, or onsite.

A companion hardware control surface is now included as standard with each TriCaster 455 system. The operator has intuitive, hands-on control of all TriCaster functions –while small teams are also able to transfer multiple tasks to additional users on the system keyboard, Avid Artist Series audio control surface, or iPad® remote audio mixing app.

At a Glance:

• Capture every source
  NewTek’s own IsoCorder™ technology lets you record up to four isolated, simultaneous feeds during live production, replacing racks of gear—without the expense

• Customize your brand with incredible effects
  Unleash the creative potential of customizable, on-screen visuals with the ability to incorporate real-time cloth dynamics with warped video, overlays, and sound in and out; plus, the ability to build your own warping transitions with Animation Store Creator tools

• Play anything and work with anyone
  Eliminate the need to convert exported files for Mac or PC-based editing with radically extended file format support; speed up post-production workflows and enable wider integration

• Mix it up
  Delegate audio mixing tasks to a separate iPad® control app or Avid Artist series control surface operator for greater flexibility in configuring audio prior to or during a show

This course is for any live video production personnel interested in learning and operating a NewTek TriCaster and looking to take the NewTek Certified TriCaster Operator test.
Educators are seeking ways to receive credit for nontraditional, online professional-development opportunities.

By Michelle R. Davis

Educators seeking professional-development opportunities these days can choose from a vast menu of technology-related options that range from bite-size to entrée. But those who create and use this type of PD say they’re still struggling with how to officially recognize teachers’ efforts, particularly when it comes to the small-dose, on-demand versions available.

Teachers often need to rack up professional-development credits toward recertification, or to fulfill job-evaluation requirements. But acknowledging the growing segment of professional development that can range from a webinar to a Twitter session raises difficulties.

“This is a darn good question as we all struggle with the new technology and how it’s being applied to professional development,” says Segun C. Eubanks, the director of teacher quality for the 3.2 million-member National Education Association. “A wider variety of options makes this issue more important.”

These new forms of professional development can provide targeted enhancements of the skills each individual teacher needs in a way that more traditional PD, often chosen by principals or district officials, frequently can’t. Because of that, these small-dose opportunities to improve skills can be considered more engaging and meaningful to the teacher’s work and may have a greater impact in the classroom.

But experts caution that this type of professional development is not designed to replace conventional workshops and courses.
that teachers might need to enhance or learn some skills.
“The expansion of good online materials and easy access has put the control of this type of learning back into teachers’ hands,” says Barry Fishman, an associate professor of learning technologies at the University of Michigan, in Ann Arbor. “The caution is that a lot of people are confused about online professional development, as if it were a thing or a particular way of interacting. It’s not. It’s a medium.”

**Snippets of Training**
Companies and organizations that develop online professional development are increasingly getting more demand for small chunks or snippets of PD that don’t require a big time commitment and can be used in flexible ways, says Kathy Yates, the chief executive officer of San Francisco-based Teachscape, which develops software for teachers and specializes in creating professional development.
“We are hearing more and more from districts that they are concerned about release time and are very interested in professional-development programs that are job-embedded,” she says. “At the same time, teachers are looking for something that is more targeted.”
To get at the individual needs of teachers, Teachscape developed an online library of more than 2,500 videos for its members that provides examples of strong pedagogical practice addressing a variety of subjects, skills, and strategies that can be accessed any time, Yates says.
Lisa Butler, who teaches Spanish at Hershey Middle School in the 3,500-student Derry Township district in Hershey, Pa., says she routinely uses Twitter, YouTube webinars, and blogs as professional-development tools. Because she’s seeking out the information, Butler says, she’s more engaged in the content.
“Last summer, I sat through an eight-hour webinar on [the educational social-networking site] Edmodo, and I loved every minute of it,” she says. “It doesn’t
But Butler did not get any official credit for that webinar toward her professional-development obligations, she says. However, she says her district is moving toward a system that would acknowledge some of these nontraditional PD opportunities.

Barbara Treacy, the director of EdTech Leaders Online at the Newton, Mass.-based Education Development Center, says she’d like to see a PD system focused on demonstrating skills instead of time spent in traditional PD activities. Treacy says she’s investigating the idea of using digital badges—often described as the online version of a Scouting patch—to signify mastery of a particular skill. (See cover story, Page 24.)

“Badges … are one way to show your credentials or document your skills and knowledge,” she says. “If there gets to be some acceptance of it, there could be some criteria for certain generally recognized badges.”

Yates agrees that teacher professional development seems to be moving toward an emphasis on “demonstrating competencies instead of investing a certain amount of time.”

“We’re seeing early signs of this,” she says, “but it’s something that’s likely to gain a greater foothold in the future.”

Hard to Verify Learning

Despite its growing popularity, some technology-facilitated PD remains hard to verify and, though it may be more convenient for teachers, is not always the best way to master complex skills and material.

Wayne Hartschuh, the executive director of the Delaware Center for Educational Technology, a Dover-based resource that aims to improve the use of technology in the state’s public schools, acknowledges that it’s often not easy to prove that a teacher watched an on-demand webinar all the way through, or that a teacher spent time absorbing the material in a training module that should take a few hours.

“Is there a concern? Yes,” Hartschuh says, but he hopes to use quizzes and assessments to help substantiate PD when necessary. And he believes self-certification has potential.

Tim Taylor, the director of business planning and operations at PBS Education, which oversees PBS TeacherLine, a nonprofit online professional-development company affiliated with the Public Broadcasting Service, says the company has now broken down some of its 70 graduate-level courses into smaller segments, ranging from a few minutes of video or interactive activities to lightly facilitated five-hour modules. Though Taylor says these small modules are in fashion, they’re not always the right way to provide the best professional development.

“Just because something’s in demand, it doesn’t mean it’s pedagogically sound,” he says. “Somebody might want a one-hour thing, but if the concept can’t be taught in an hour, we’re not going to do it.”

Eubanks, of the NEA, agrees. “As much as we want our teachers to continuously learn,” he says, “the idea of randomly taking professional development because you need the credits or because it’s interesting, but isn’t applicable, is not something we want.”

Teachers will continue to seek professional development because they want to improve their skills, Eubanks says, whether or not they get credit for their efforts.

Butler, the Spanish teacher from Hershey Middle School, agrees, and cautions that teachers shouldn’t view these professional-development opportunities as an easy way to check a box.

“Teachers have to be genuinely learning from what they seek out. They can’t just be glancing over it,” she says. “If teachers are really showing growth from what they seek out on their own, districts will realize there’s value to it.”
ED TECH 2013

POWERING UP SUCCESS

BOSTON
September 27, 2012

DETROIT
October 5, 2012

REGISTER NOW www.edweekevents.org/edtech2013
A new readiness tool will provide a national snapshot of school technology in preparation for common-core online assessments in 2014-15.

A national inventory of educational technology is evolving as school districts try to determine what digital tools they have—and what they'll need—to deploy online testing for all students on common academic standards just a few years from now.

A new tool released by the two coalitions helping to develop those online assessments is intended to aid states and districts in taking a snapshot of their current rosters of laptops, netbooks, and other mobile devices, as well as their overall technological bandwidth. It then will highlight where districts are lacking in their capability to assess students under the Common Core State Standards by 2014-15, when such testing is set to be introduced.

The free, Web-based Technology Readiness Tool is kicking up myriad concerns among educators, who worry that there’s little new money to bring their technology capabilities up to the level needed, that such testing could overwhelm district infrastructure, and that assessments could end up evaluating students’ technology skills more than their mastery of common-core material.

But the readiness tool is the first step toward addressing those concerns, and some ed-tech leaders hope it can provide the leverage needed to encourage state lawmakers to add funding to bring lagging districts up to speed, says Douglas Levin, the executive director of the State Educational Technology Directors Association. The Glen Burnie, Md.-based group is helping state education agencies deploy the tool.

The publishing and educational technology company Pearson, based in London, which developed the readiness tool will provide a national snapshot of school technology in preparation for common-core online assessments in 2014-15.
tool, is seeking to develop assessments for the common core.

“We haven’t done an inventory like this [on a nationwide scale] ever,” says Levin. “People are viewing this as an assessment issue, but it’s also a large-scale technology project. At the end of the day, the test can’t work if the technology doesn’t work.”

What Districts Need

Forty-five states and the District of Columbia have adopted the common standards in both English/language arts and math, and a 46th state—Minnesota—has adopted just the English/language arts standards. The standards were unveiled in 2010 under an initiative led by the nation’s governors and state schools chiefs and are now moving into the implementation phase. However, the challenge of implementing the common core has some districts and education experts concerned about finances and logistics.

The intention is to use “next generation” assessments to determine how well students have grasped instruction based on those standards.

Most states are choosing to back assessments being developed by one of two nonprofit coalitions, the Smarter Balanced Assessment Consortium or the Partnership for Assessment of Readiness for College and Careers (PARCC), although some states have joined both. Assessments from both consortia will be administered using technology, and both will make use of new testing options such as simulations, video, and audio.

The main difference between the consortia is that the assessments created by Smarter Balanced will be adaptive, meaning the level of difficulty changes based on how well students are answering questions. That could create a situation in which students being tested on the same material could end up taking exams that are significantly different from those their classmates take.

Some states are already doing many or all of their student assessments online. They include Delaware, Indiana, and Oregon, which have adopted the new standards, as well as Virginia, which hasn’t. But most states haven’t moved in that direction in a big way, and the idea of doing common-core assessments online by 2014-15 is daunting.

“There’s a big concern that school districts won’t have the capacity to do that,” says Daniel A. Domenech, the executive director of the American Association of School Administrators, based in Alexandria, Va.

“The tool is a great idea to give us a factual definition of where school districts are and sound the alert that resources are going to be needed.”

The readiness tool, which was released to states in March and is just starting to reach school districts, allows schools and district technology leaders to log in and register how many and what types
of computers and other devices they have. There will be at least two rounds of data collection, to be analyzed by the assessment coalitions. The first window of data collection ran from March 20 through June 14, says Chad Colby, a spokesman for PARCC.

The coalitions are seeking information on school district operating systems, the types of technological devices they have, the ratio of students to those devices, available bandwidth, wireless access, network speed, and other categories.

Raymond Reitz, the chief technology officer for the 12,000-student Chapel Hill-Carrboro school system in North Carolina says he’s just starting to work with the readiness tool and is concerned about his district’s ability to be ready for online assessments by the 2014-15 deadline.

He says his district at the very least will have to increase its number of mobile devices and its wireless network capacity. And that will require additional funding, he says, but with no extra money in sight.

Reitz hopes the data gathered by the readiness tool will “somehow paint a picture and communicate to the legislature and get them concerned about what it’s going to take to make this possible.”

Other states have made it work.

Michael Stetter, the director of accountability resources for the Delaware Department of Education, says that over the past two years, Delaware has implemented computer-based assessments to track student growth in reading and math several times a year.

To get school districts ready, the state had them do their own technology inventories, and lawmakers allocated money for 10,000 additional netbooks, Stetter says.

“States are worried right now because they’re doing paper-and-pencil [tests] and can’t imagine having all the computers to get this done,” he says.

But the Delaware inventory showed that districts had more resources, in some cases, than they initially thought they had. For example, Stetter says, different departments in a school might buy computers for one dedicated purpose, but wouldn’t share them, even though they might be used infrequently.

Domenech, of the AASA, says he, too, hopes the information gathered by the tool can be used as leverage. “There’s no question it will definitely flag the need for greater investment in technology,” he says. “But because we’re still seeing states cutting back on educational dollars, we’re wondering where that money will come from.”

Testing Content Knowledge

The information gathered by the technology-readiness tool will have an added benefit, says Colby, of PARCC. It will help the two coalitions creating the assessments ensure the tests, at least in part, work with the technology districts already have, rather than what they might acquire.

“We want to know what devices are already being used, and the assessments should follow using that infrastructure,” says Colby.

“We don’t want to create a scenario where the assessment is driving the purchasing.”

But the information collected by the readiness tool will likely drive some purchasing decisions, says Wes Bruce, the chief assessment officer for the Indiana Department of Education and the chairman of PARCC’s technology operational working group.

For example, even though Microsoft has said it’s going to terminate support for its Windows XP operating system by the 2014-15 school year, when the online assessments are launched, if enough schools and districts say they’re still using it, the consortia must make sure that the assessments will work with Windows XP.

In addition, says Levin, of the State Educational Technology Directors Association, the hope is that once schools and districts focus on their technology needs, they’ll get up to speed enough to give students a chance to try out the technology before the real assessments take place.

“We’re critically aware that the test itself should not be the first time the student is exposed to this technology,” he says. “We want to assess their content knowledge, not their technology skills.”

——Daniel A. Domenech
Executive Director
American Association of School Administrators

Spring/Summer 2012 Digital Directions >> 45
Whenever we talk to online teachers or administrators, we always hear that it's most important for teachers to be good teachers first, and master teaching online second. You appear to be proof of that. But how did you make the migration to virtual instruction?

FETZER: I learned really quickly that the most important thing is to grab students' attention, to make them excited and want to learn, to build relationships with them. And so, I would do whatever it took. I would read books that they were reading, watch movies that they were watching, and listen to music that they were listening to. So when I actually heard about the opportunity to teach online, I jumped at the chance, mostly because of the tools I knew I would get to use in the classroom. And then I realized that teaching online really afforded me the opportunity to get to know my students even better and to personalize the instruction for them even more than I was able to in the classroom.

How long did it take to figure that out?

FETZER: Not long at all. I would say during the training period. And I did do both. I taught face to face and online part time for, oh, probably a little bit less than a full year before I decided I was going to take the jump and do this all the time.

You have said that you left your previous career as a medical writer, in part, because it wasn't interactive enough. Did you worry about how a natural extrovert would transition to the virtual classroom?

FETZER: It's funny, because I say that I was in front of the computer all day long as a medical writer, and really, that's what I do now, but it's so different. There's an entire community online. It's a community not only with your students and the relationships that you form there, but with the parents, with the stakeholders of the schools, and with my coworkers and colleagues. We have an electronic learning community, and we grow and share with each other. It's very much a community feel.

Do you feel like it's more challenging to teach science online than an English or humanities course, as some suggest?
**FETZER:** That's just a misconception. Yeah, sure, it can be a little bit challenging, but that's why we're online teachers, because we enjoy that challenge. Really, there's a whole host of things available to help teach science online, like interactive labs, and lots of ways that you can share what you're doing, in both kind of a blended approach where you maybe do something interactive and then do a hands-on lab.

**In your new role as the National Online Teacher of the Year, you'll be expected to be the face of a growing teaching role that some still don't understand. How would you describe your typical day to them?**

**FETZER:** A typical day is difficult to explain because it does change daily, but there are some fundamentals that I do every day. There's grading, so that everything that was submitted, we grade it and give feedback within 24 hours, and that feedback is always directive. We're also going to always communicate, and that happens all day long. Another thing that I do is I create announcements each day. These announcements are a place where I do some reteaching of the content; I just break it down into manageable chunks and teach it in a different way than is already there as part of the course content. Our motto is “See it, hear it, read it,” so visually and auditorially, we're presenting it in a variety of ways.

I understand you also have some responsibilities that are a little bit different in the Occupational Course of Study program. Could you talk about that a bit?

**FETZER:** So we pair up and co-teach together and communicate daily. I'll hear from a teacher and she might say, “Angela really didn't understand this concept,” and then that night I act like a little fairy in the night and think of content just for Angela. And while I am at it, I might pull in something that I know she really likes. If her prom is coming up, I'll try to incorporate something to do with the prom into the lesson. So it's very personalized. Sometimes, if they are struggling, they need a little bit of an extra challenge. Sometimes, the entire class wants a differentiated assignment. It's all through that communication with that co-teacher in the classroom. And some really great relationships have formed—some friendships have formed—with those teachers as well.

You also teach online credit-recovery courses, which have come under fire recently from some critics of online learning. Do you think any student can succeed in an online credit-recovery course, or does it have to be the right fit for the right student?

**FETZER:** I definitely think that every student can be successful in [online] credit-recovery courses. I think that, just like in the classroom, you've got really great teachers that can grab those students and get their attention. That's what we can do in a credit-recovery class, and sometimes we can do it online because they can move at their own pace, so they take a little bit more responsibility for their own learning. I think they also kind of get the feeling that, “Wow, this online teacher really, really cares, because they are not letting me go.” In a big classroom with a brick-and-mortar school, if you've got 25 students and one starts to slack off, sure you're going to do your best to grab them, but sometimes that follow-through can't happen just because of the sheer numbers. It's just not the same with online.

What do you hope to accomplish in your year as the reigning National Online Teacher of the Year?

**FETZER:** I'm sure there's a lot left to discover that's bigger than I'd dreamed, but I am excited because it has given me the opportunity to have a platform to talk about what we're doing, especially with meeting the needs of students with disabilities that have [individualized education programs] and 504s [plans under the 1973 rehabilitation law], both in inclusion classrooms and in mainstream classrooms. Because I think this is the population that has been left behind a little bit when it comes to online education. The success that we've had, I'd love to see that happen across the nation. So I am really, really excited to have the opportunity to speak to that specifically, and also to dispel some of the myths of online education.

—Interviewed by Ian Quillen
Instead of banning or ignoring mobile technologies, educators should seek ways to leverage them for teaching and learning.

For most people, the words “mobile phone” and “learning” are antonyms. If Shakespeare’s plays and Proust’s novels are at one end of a spectrum tracing intellectual rigor, mobile phones—brimming with moronic Twitter feeds, emoticon-stained text messages, and absurd games—are on the other, or so the thinking goes. Despite the fact that mobile phones have become increasingly central to our day-to-day lives, we continue to maintain that far from facilitating learning, the devices tucked in our pockets actually thwart the development of analytical thinking skills.

As a result, schools often ban mobile phones. In developed and developing countries alike, a person is as likely to find a “no cellphone” sign taped to a school wall as a “no smoking” sign. And the similar design of the signs—an image of a phone or cigarette with a red slash through the middle—is hardly an accident. They both communicate an unambiguous message: cellphones, like cigarettes, provide a quick fix, but ultimately they will hurt you and, therefore, have no place in centers of education. Research collected at UNESCO indicates that phones are strictly prohibited in many schools around the world.

Fortunately, a small but growing number of school leaders have realized that mobile phones, far from being a Marlboro encased beneath an LCD screen, are devices of dizzying utility, and that they carry enormous potential to empower learning, not only in schools but also beyond them. Today, who among us has not used a mobile phone to solve a problem, learn something about the world, or cooperate with others? Whether it be reading a newspaper, geo-tagging photos, checking the pronunciation of a word, translating one language into another, exploring new music and videos, or composing something artful in an email or, yes, even a text message, we are all already learning with mobile devices.

To pretend that people cannot or will not leverage technology to improve their productivity is naive and ultimately self-defeating. We do not ask students to forgo word processors in favor of typewriters, calculators in favor of slide rules, or Internet databases in favor of card catalogs, and even if we did, students would ignore us. The benefits of having instant access to communication and the largest cache of information civilization has ever known are simply too great to ignore.

Just ask the people of Africa: On that continent, people spend, on average, 17 percent of their monthly income on mobile phones and connectivity plans. People in Western Europe and North America spend under 2 percent. Why are Africans willing to spend so much? Because the cost of not having a mobile device is greater. Mobile phones have become an essential ingredient of everyday life; they are more appendage than tool, often the first thing we look at in the morning and the last thing we see before going to bed.

Today, the question is not whether schools will engage with mobile technologies, but when and how. To borrow a (perhaps crude) analogy, the relentless push to enhance our
intelligence with technology—and, make no mistake, we are enhancing our intelligence when we lean on our phones to fill in gaps in our knowledge—resembles an arms race. Sticking with swords when the other side is transitioning to muskets is not really a choice. And even if a treaty exists that asks all sides to keep muskets out of their armories, when one party defects, the others are suddenly under pressure to defect as well, lest they fall behind.

This innovate-or-die instinct applies to education as well: When one university makes the contents of its library searchable from any digital device with an Internet connection, others are obligated to follow. And when one school figures out how to teach students to use, rather than shun, ubiquitous and extremely powerful technology toward constructive ends, other schools must follow suit as well. Education may be notoriously slow to change, but it is hardly immune to the laws of creative destruction.

While “disruption” is often a word that gets tagged to efforts to integrate technology in education, the idea that learning facilitated by mobile devices will suddenly make teachers and perhaps even schools extraneous relics of a pre-digital age couldn’t be further from the truth. Knowing how to use technology in ways that foster healthy intellectual and social development is not self-evident at all. Study after study has revealed that despite knowing the basics of how to thumb through mobile applications, students are ill-prepared to skillfully navigate the oceans of information available to them. They can find websites and download software, sure, but filtering, organizing, using, and learning from myriad resources is a different matter entirely.

Experiments have shown, for example, that very few students know how to use electronic databases to help them identify high-quality content. More recent investigations suggest that even advanced university students will rarely consider information beyond the top four or five Web pages returned by an Internet search engine when formulating answers to complex questions.

Increasingly, students appear to be putting more trust in machines than in their individual abilities to critically evaluate the relevance of data. Thus far, schools have failed to provide a counterweight to the unthinking algorithms of Google and Yahoo because, too often, they turn a blind eye to the technology students are using to access information.

To be sure, in the wrong hands, a mobile phone can be the intellectual equivalent of a cigarette. A teacher’s job is to show students how it can also be educational broccoli—something that builds healthy minds.

Mobile devices need not be threatening to educators. They can help both teachers and students work smarter and faster and in contexts that better approximate the technological enhanced and, yes, sometimes technologically laden world waiting outside the classroom. A primary task of teachers is to help students know the difference: to evaluate when technology is a genuine tool and when it is a flashy distraction. Teachers are well-placed to help students learn how to leverage the technology that is increasingly converging inside mobile devices to accelerate learning.

Make no mistake, mobile devices are here to stay. They assist in tasks of every type, from finding and securing jobs, to learning the market prices of commodities, to sending pictures, to checking account balances, to bringing down corrupt governments. If you can think of a project, more often than not there is a way the phone in your pocket can help you do it. Today, there are more than 5.9 billion mobile-phone subscriptions worldwide, and for every one person who accesses the Internet from a computer, two do so from a mobile device. Current projections suggest that you will be very hard pressed to find anyone without a working mobile phone by 2015. From Burma to Bangalore to Baltimore, we are a world united in our embrace of this transformative technology.

Banning mobile devices in an era literally saturated with them is no longer a viable option, not for individual schools or for larger education systems. Engage we must.

The harder question of how to use the devices to enhance learning will probably take years to sort out, but that task needs to begin in earnest. And educators, not technologists, are the ones who should blaze the path forward; they are the experts in learning and development. The Nokias, Apples, and Samsungs of the world have provided us amazing tools at affordable prices. It is now our job to figure out how these tools—the ones we use every day—can further and deepen not only the education of students around the world but, indeed, our own educations.

Mobile phones need not be an educational cigarette; they carry a vast and unrealized potential to make learning more accessible and more effective everywhere. The time to seriously explore this potential is now.

The views expressed here are those of the authors and not UNESCO.

Mark West and Steven Vosloo are specialists in information and communication technologies for education at UNESCO, the United Nations Educational, Scientific, and Cultural Organization. They are currently investigating how mobile phones can be used to expand student access to education, primarily in developing countries. Recently, UNESCO published a 12-paper series that describes and analyzes different mobile-learning projects around the world. The organization is now consolidating findings from those projects to create a set of mobile-learning guidelines that will help governments effectively integrate mobile technologies into existing education plans and policies. Later this year, UNESCO will also launch mobile-learning projects in Mexico, Nigeria, Pakistan, and Senegal.
Virtual Trends

HIGHER EDUCATION
A survey of college presidents shows an expectation that online coursetaking will continue to expand. The percentage represents those saying more than half their undergraduate students have taken or are likely to take an online course.

NUMBER OF STATES WITH STATEWIDE K-12 ONLINE LEARNING OPTIONS

GROWTH OF ONLINE CHARTER SCHOOLS AND ENROLLMENT

SOURCE: Pew Internet and American Life Project
SOURCE: Center for Education Reform
SOURCE: Center for Education Reform

www.digitaldirections.org
Complete Classroom AV System Starting at $3,995

Includes System Installation, Switching, Control, Voice Amplification, and Projector

Extron PoleVault® and VoiceLift® Systems are easy-to-use, network-enabled, all-inclusive packages for video, audio, voice amplification, and system control. Designed to create a complete classroom AV technology integration solution, Extron classroom systems empower and engage teachers and students. Each system can be customized to meet your specific technology needs, and is a smart investment for administrators, technology directors, teachers, and students.

**Extron PoleVault Education Pricing =** $1,995
- Includes all AV switching, amplification, control, cabling, and mounting hardware

**Extron VoiceLift Education Pricing =** $675
- Includes pendant microphone, charger, and receiver

**Projector, Screen, & System Installation Starting at** $1,325*
- Includes typical ceiling mount projector, pull down screen and professional installation costs

*Price based on national averages. Actual pricing may vary based on your location.

Call Extron at 800.633.9876 to get started with your classroom upgrades.
With Observation 360™, administrators and principals provide personalized training that turns teacher evaluations into rapid and measurable professional development. Observation 360’s automatic reporting and integrated professional development platform make teacher evaluations easier, faster, and more effective.

Observation 360 ensures that the instruction you provide will last beyond a single observation, and extend into the entire school year. Learn how Observation 360 will save you time and money when you call or visit us online today.

FREE demonstration of Observation 360 — visit us online or call us today:
www.schoolimprovement.com/obs • 855.587.0505