Technology News for Today's K-20 Educator

eSCHOOL NEWS

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Digital-divide efforts under siege

Poor, minority students see test scores drop with computers at home, researchers argue; media reports jump to false conclusions

Meris Stansbury
Associate Editor

Two researchers at Duke University have published a draft study that raises questions about the academic value of giving students home computers and broadband internet access. Their study has led to a flurry of media coverage, with some reports trumpeting the study's findings as evidence that efforts to close the digital divide are counterproductive. But is that what their research really says?

The study, "Scaling the Digital Divide: Home Computer Technology and Student Achievement," was the work of researchers Jacob Vigdor and Helen Ladd of Duke University's Sanford School of Public Policy. It was published in June by the National

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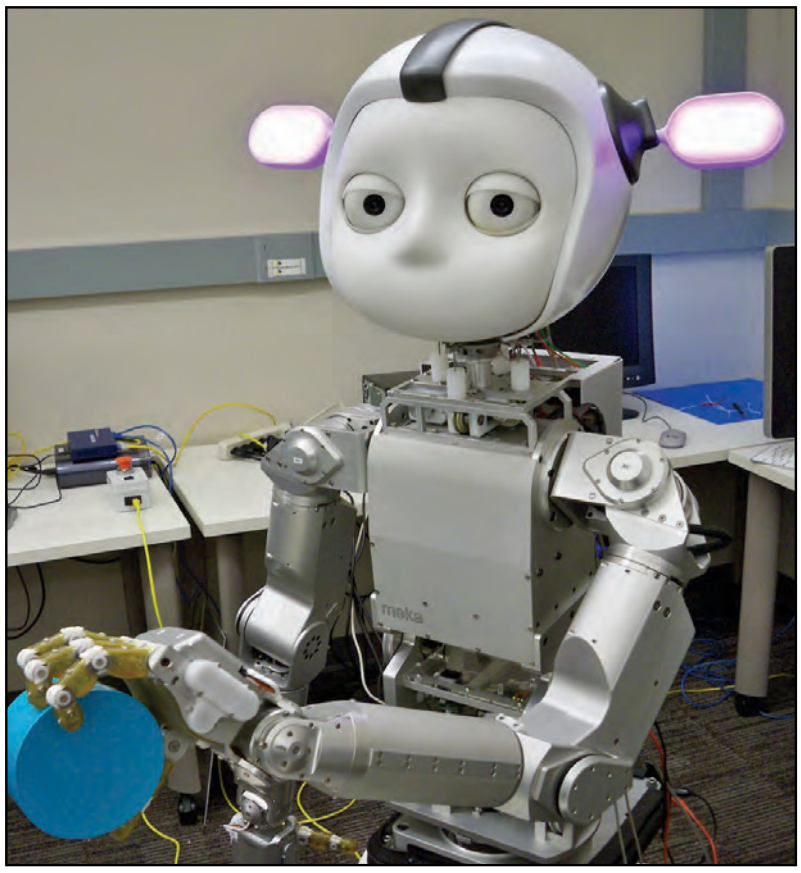
Classroom robot: Not your normal 'para'



As robotics technology continues to improve, researchers are developing a new generation of robot teaching assistants to help support elementary school instructors. See story, page 25.

Web-use plan raises concerns

Critics pan industry proposal to ensure 'net neutrality'

From staff and wire reports

Verizon Communications and Google Inc. have crafted a joint policy proposal they hope can serve as a framework for Congress and the Federal Communications Commission in drafting so-called "net neutrality" rules to ensure that phone and cable providers cannot favor their own services or discriminate against certain kinds of internet traffic that compete with their core businesses. But several public-interest groups have decried the proposal, saying it would lead to a two-tiered system of internet use that favors large organizations over smaller competitors.

Phone and cable TV companies that provide internet access should be barred from slowing down, blocking, or charging to prioritize internet traffic flowing over their regular broadband lines, Verizon and Google said in a policy statement released Aug. 9. But the

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Predictive modeling software is helping schools cut costs, improve efficiencies, and strengthen teaching and learning. > 17

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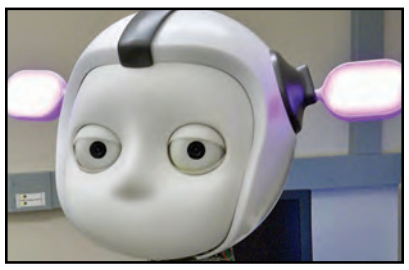

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Corporate policy making would result in a net loss

Dennis Pierce, Editor
dpierce@eschoolnews.com

The future of digital-age learning could hinge on the boardroom deals being made by giant corporations as they seek to head off "net neutrality" regulations—and education leaders ought to speak up to make sure their voices are heard on this critical issue.

As we report in our front-page story "Web-use plan raises concerns," Google and Verizon have floated a plan they hope can serve as a framework for federal regulators in drafting rules for net neutrality, which is the idea that internet providers can't discriminate against certain types of traffic flowing over their lines. But several public-interest groups have slammed the companies' proposal, saying it would lead to a two-tiered system of internet use that favors large organizations over smaller competitors.

The plan hatched by Google and Verizon would prevent service providers from slowing down, blocking, or charging to prioritize internet traffic flowing over their regular broadband lines. But it exempts wireless carriers from these restrictions. It also leaves room for broadband providers to charge extra to route traffic from so-called "premium services" over dedicated networks that are separate from the public internet.

Broadband providers have been doing everything they can to squelch the development of net-neutrality regulations. They argue that such restrictions would keep them from managing traffic over their networks effectively as bandwidth needs continue to multiply. Having invested billions of dollars in upgrading their lines for broadband, they also want to be able to charge more for premium services to monetize their investment.

Google's and Verizon's plan seeks a compromise on net neutrality, one that would preserve the open nature of the internet … to an extent. Sure, wireline providers would be barred from throttling certain kinds of internet traffic, like Comcast did to users of the peer-to-peer file sharing web site BitTorrent two years ago—but wireless carriers essentially would be free to do what they want. That's a little like saying the fire department will answer calls for residents with one-story houses, but not two.

Google and Verizon argue that wireless carriers face steeper hurdles in managing bandwidth to make sure internet "road hogs" don't ruin the experience for everyone, and their plan stipulates that wireless carriers would have to disclose their network management techniques to consumers. Such transparency should be enough to ensure that wireless companies play fair, they say—but when has transparency alone been enough to protect consumers? Cellular providers already disclose their ridiculously high early termination fees for breaking a two-year contract, and the practice still continues. If every major provider decides to adopt a certain lucrative business practice, the threat of competition does little to change this behavior.

Google and Verizon also have taken heat for leaving the door open for providers to charge more for "premium services" streamed over dedicated networks—the part of the plan that public-interest groups say would create an internet "fast lane" that favors large businesses with the resources to pay. If this were to happen, critics say, what incentive would broadband providers have to sink resources into the old public internet? Clearly, they could reap higher profit margins by focusing on these new private networks—and without regulations to stop them, that's where they might funnel all their investments.

All this might sound a little wonkish—but the fallout from these debates will have enormous implications for the future of education.

Don't believe me? Consider how important having reliable broadband access is to the quality of online instruction. Now, think of how important online instruction is to the future of teaching and learning. If private companies and large research universities were allowed to pay for preferential treatment of their video streams and other distribution of content, where would that leave smaller colleges and K-12 schools?

Because they're cheaper than desktop computers, cell phones and other mobile devices are seen as an increasingly important way for low-income students to access online courses. But in the absence of net-neutrality regulations for wireless carriers, how will mobile users' online experience fare when compared with that of their peers who are taking a course over a wireline broadband connection? Will they have the same quality of access to educational opportunities, or will their experience suffer?

Public-interest groups are especially unhappy with Google because they see its pact with Verizon as a betrayal of its staunch early support for net neutrality. The Google-Verizon agreement likely has its roots in a deal between the two companies, announced last year, to speed development of new mobile devices based on Google's Android software and running on Verizon's cell-phone network.

Google, Verizon Wireless partnered last year.

In defending the plan from a wave of opposition, Google released a statement that read: "Google has been the leading corporate voice on the issue of network neutrality over the past five years. No other company is working as tirelessly for an open internet. But given political realities, this particular issue has been intractable in Washington for several years now. … With that in mind, we decided to partner with a major broadband provider on the best policy solution we could devise together. We're not saying this solution is perfect, but we believe that a proposal that locks in key enforceable protections for consumers is preferable to no protection at all."

What Google says about the gridlock in Washington is true, and perhaps the internet giant deserves a nod for trying to move the issue forward. But public policy decisions made from the boardroom aren't good enough, and school leaders should pressure federal lawmakers not to abdicate their responsibility in ensuring a fair and open internet.

Just as we wouldn't allow our system of highways to be managed by toll collectors whose first obligations are to shareholders, we shouldn't allow the same to happen to the information highway—the backbone for all commerce in the digital era. Letting market forces alone dictate the future didn't work for the banking industry, or for Wall Street—and it won't work for the internet, either. eSN

Your Turn

Many of the stories appearing in the pages of *eSchool News* first ran on our web site in some form or another, prompting various responses by our readers. Here, we've published the best of these responses in print, so you can see what your colleagues have to say about these issues. To keep the conversation going, go to **www.eschoolnews.com**, search for the story in question, and add your own thoughts in the comments section. *—The Editors*

One reader's suggestion for how to curb cyber bullying

When Associate Editor Meris Stansbury's story "Duncan: School bullying now a top federal priority" (page 8) ran online Aug. 11, reader David Prentice shared a tip for how students can use web sites such as Facebook while reducing the risk of being bullied online.

"A new approach to protecting your Facebook privacy and minimizing bullying is by 'cloaking' your posting," he wrote. "This lets students and teachers share information through Facebook (and other social networking services) but limit who can read the postings. Best of all—it works independently of the Facebook privacy settings."

Prentice continued: "Users select the part of their posting they'd like to keep private, pick their own keyword, and encrypt it before posting. Postings are still made as normal, and Facebook is not affected. ... Only those people who you've shared your keyword with can read that encrypted posting."

This technique makes use of free software called CloakGuard, he explained, which is available as a plug-in for Mozilla Firefox, as well as a version that does the encryption "without requiring any software download."

New technology takes assessment 'back to the future'

In response to our story "Technology takes formative assessment to a new level" (page 16), which ran online Aug. 4, a reader identified as "TheProf" noted that Promethean's latest software is a 21st-century version of a strategy that has been around for decades.

"This is what they used to call 'drill and practice.' Research proved its effectiveness in the 1970s and 1980s with older technologies," TheProf wrote. "It's probably just as effective with newer ones, if used appropriately. According to past findings, key features seem to be (1) immediate feedback tailored to each student, and (2) allowing students to move on quickly to other problems. Students are reinforced and motivated by seeing their own progress."

TheProf is right, except that Promethean's new twist on the old approach takes advantage of low-cost, mobile "clicker" devices to deliver the assessment. That means it's much more scalable for use across an entire school building. The new technology also lets teachers follow the progress of their entire class at a single glance, allowing them to move from student to student to offer individual help as needed. eSN

Online update

Ed-tech innovators share their vision for education

From ideas on how Web 2.0 tools and game-based learning environments can help schools move beyond the industrial-era model of instruction, to the key question that should define successful teaching and learning in the 21st century, **eSchool News TV** recently captured the insights of several ed-tech leaders in a series of video interviews you won't want to miss.

With support from JDL Horizons, our video crew was at the International Society for Technology in Education's annual conference in Denver in late June, where we interviewed several visionary leaders in education technology.

Here's a small sampling of the wisdom we captured on video during the conference. Be sure to watch all of our ISTE 2010 videos at **eSN-TV**, however—where you'll find information on such diverse topics as the latest in school eMail security threats, new Microsoft certifications, and more: http://www.eschoolnews.tv

Why ownership of the learning process is key

For many educators who are veterans of past education technology conferences, the name Alan November should be familiar. A senior partner of November Learning, a consulting firm that helps school systems redesign teaching and learning for the digital age, November has spoken at numerous ed-tech shows. But readers might not know that he became an educator "by accident," as he says.

Trained as a city planner, November's first client after college was a reform school for boys on an island in Boston Harbor that had burned to the ground. He was asked if he'd like to teach algebra and oceanography when one of the teachers quit, and that was when he discovered that he loved teaching—and also that the current education system didn't meet the needs of every student.

One of his students broke into the school's computer lab in the early 1980s, November said, but "he had broken in to learn." With November's help, the student was given a computer to take home and soon had finished a semester-long course in just a single weekend. Yet the student was given a "C"—because he had missed too much class time.

"Now, he did perfect work on his own, self-directed, and gets a 'C,' because the system just didn't have the capacity to deal with somebody who was that smart [and] creative," November said. "And so it was a wake-up call for me that the structure of school wasn't really designed to support all learning styles; it was designed to *punish* certain learning styles."

He added: "I thought technology was going to change that … and I was wrong."

The reason technology hasn't had the kind of dramatic effect on education that many people hoped it would have—at least, not yet—is because the pedagogy hasn't changed in most schools, November explained.

He said the key question he seeks to answer when he evaluates a school is: "Who owns the learning?" If the teacher is working harder than the student, he added, there's a problem.

To learn what November believes a successful school environment should look like, watch the 10-minute interview at www.eschoolnews.tv.

Time to reinvent education yet again

Chris Dede, Timothy Wirth Professor of Learning Technologies at Harvard University, discussed his involvement in helping to create a new National Education Technology Plan, as well as his latest research.

Dede was one of 15 people on a panel the U.S. Department of Education put together to develop the new ed-tech plan. "We were very pleased by the draft document that came out. It is really more a national education plan, with technology helping to fuel it, than it is a national ed-tech plan," he said.

The plan starts with learning, he said, and proceeds to assessment and teaching—"and only then is the infrastructure section that talks about the technology you need to make these visions of learning and assessment and teaching work."

But one of the things he's learned, Dede said, is that the word "plan" is not just a noun—it's a verb as well. "If that plan is just a document that sits somewhere, it loses value every day," he explained. Yet, if we can get a national conversation going about how to implement the plan, "then it's a verb—and it's much more useful."

Dede said he got into the education field because, as a student, he couldn't wait to get out of it. "We can do better," he remembers thinking.

He described how the first real shift in our educational system occurred during the Industrial Age, when the system we're familiar with today replaced the one-room-schoolhouse model. Yet, the lives of today's students are so different from those of the industrial era that it's time for the next big shift in educational thinking.

For teachers in industrial-era schools with large class sizes, "it's incredibly difficult … to get out of [a mode of] presentational instruction," Dede said—unless they have what he called "power tools" to help them.

"I think Web 2.0 and some of the game-like interfaces [that are being developed today] can really help," he said.

To learn how, watch the interview with Dede at www.eschoolnews.tv.

Schools get $10 billion to save education jobs

From staff and wire reports

Summoned back from summer break, the House on Aug. 10 pushed through an emergency $26 billion jobs bill that Democrats said would save 300,000 teachers, police, and other public employees from election-year layoffs. President Barack Obama immediately signed it into law.

Lawmakers streamed back to Washington for a one-day session as Democrats declared a need to act before children return to classrooms minus teachers laid off because of budgetary crises in states that have been hard-hit by the recession.

Republicans saw it differently, calling the bill a giveaway to teachers' unions and an example of wasteful Washington spending that voters will punish the Democrats for in this fall's elections. The legislation was approved mainly along party lines by a vote of 247-161.

The aid for the states is to be paid for mostly by closing a tax loophole used by multinational corporations and by reducing food stamps benefits for the poor, though it also cuts $300 million in funding intended for broadband grants from the federal stimulus package.

The Senate narrowly passed the measure on Aug. 5, after the House had begun its August break.

The legislation provides $10 billion to school districts to rehire laid-off teachers or to ensure that more teachers won't be let go before the new school year begins. The Education Department estimates that could save 160,000 jobs.

Education Secretary Arne Duncan said his department would streamline the application process to get the money to local school districts quickly. He said three-fourths of the nation's districts have said they would be opening the school year with fewer teachers and "we wanted to avert a crisis for this year."

An additional $16 billion would extend for six months increased Medicaid payments to the states. That would free money for states to meet other budget priorities, including keeping more than 150,000 police officers and other public workers on the payroll.

Some three-fifths of states have already factored in the federal money in drawing up their budgets for the current fiscal year. The National Governors Association, in a letter to congressional leaders, said the states' estimated budget shortfall for the 2010-12 period is $116 billion, and the extended Medicaid payments are "the best way to help states bridge the gap between their worst fiscal year and the beginning of recovery."

Not all governors were on board. Mississippi Republican Haley Barbour said his state would have to rewrite its budget and would have to spend $50 million to $100 million to get its additional $98 million in education grants.

The $26 billion package is small compared to previous efforts to right the flailing economy through federal spending. But with the election approaching, the political stakes were high.

"Teachers, nurses, and cops should not be used as pawns in a cynical political game" resulting from "the Democratic majority's failure to govern responsibly," said Rep. David Dreier, R-Calif.

"Where do the bailouts end?" asked Republican leader John Boehner of Ohio. "Are we going to bail out states next year and the year after that, too? At some point we've got to say, 'Enough is enough.'"

But Democratic Rep. Jay Inslee said his state of Washington would get funds to keep 3,000 teachers. Republicans, he said, "think those billions of dollars for those corporate loopholes is simply more important than almost 3,000 teachers and classrooms in the state of Washington."

Rep. Jim McDermott, D-Wash., said Republicans ignore the fact that the law would not add to the federal deficit. "They want to do everything in their power to make certain that President Obama can't get this country going again. I think in November they are going to find it was a dumb policy."

The means of paying for the bill, a result of difficult negotiations in the Senate, were contentious.

Republicans objected to raising some $10 billion by raising taxes on some U.S.-based multinational companies. Advocates for the poor protested a provision to accelerate the phasing out of an increase in food stamp payments implemented in last year's economic recovery bill. Under the measure, payments would return to pre-stimulus rates in 2014, saving almost $12 billion.

James Weill, president of the Food Research and Action Center, said that would be cutting benefits for some 40 million people now receiving food stamps. Democrats said they would look for other ways to pay for the law before the payment cuts go into effect in four years.

An earlier attempt at saving teachers' jobs was included in a war spending bill passed by the House last month, but the Senate rejected the measure. That bill included $10 billion for education jobs and $5 billion to make up a shortfall in federal Pell Grants for low-income college students, but the $15 billion for education was dropped from the measure after Obama threatened to veto it.

The president objected to some of the cuts in other education programs the bill proposed to help pay for the increases, including $100 million in charter school funding and $500 million from his signature Race to the Top initiative. eSN

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Duncan: School bullying now a top federal priority

National summit on bullying provides tips to schools, dispels common myths

Meris Stansbury
Associate Editor

Calling attention to one of education's fastest growing problems, Education Secretary Arne Duncan on Aug. 11 spoke at the nation's first "Bullying Prevention Summit" to incite a call to action, inviting government officials, behavioral experts, and education organizations to brainstorm scalable solutions to bullying in classrooms nationwide.

"This is the first real collaboration between government agencies to help combat the growing issue of bullying," said Duncan. "Why these agencies haven't come together before today is a good question. We're hoping this summit will be the first step in creating a sustained effort against bullying in schools."

The two-day summit, held in Washington, D.C., was intended to help school leaders and government officials pool their knowledge on bullying and then turn this knowledge into action.

According to the federal Education Department (ED), in 2007 one in three students in middle or high school reported being bullied. Nearly 3 million teens said they were physically abused by their peers, and 1 million teens reported their property stolen or damaged by bullies.

"People say the phrase 'gateway drugs'; well, I see bullying as 'gateway behavior' that later in a student's life can lead to high school dropout, drugs, and criminal behavior," Duncan said.

Duncan said that while severe cases of bullying that lead to criminal offenses must be punished, a school's code of conduct should not be all punitive; instead, schools must reward good behavior, too.

"Many bullying cases … can violate civil-rights laws and, in some severe cases, violate state and federal laws; however, it's not my intention to try and lock up our nation's youth. Instead, we have to prevent bullying from ever happening and/or escalating to that extreme," he said.

What the experts say

Philip Rodkin, an associate professor of child development in the Departments of Education Psychology and Psychology at the University of Illinois at Urbana-Champagne, said many people believe that bullying is just an act of aggression, but it's important to understand that aggression and bullying are two different beasts.

"Aggression is more of a personality trait, where bullying is a learned action, usually resulting from an unstable home environment or from having experienced bullying by another," he explained, adding: "Bullying is about social capital, not just physical power—it's a relationship of control."

According to Rodkin, many schools aren't actively combating bullying because teachers already have enough on their plates.

"Schools need to ask every student, 'Are you being bullied, and if so, by whom?' They really need to formally and objectively know the social dynamic of their school," he said. "Yet, so often, administrators and teachers don't take the time to know, because they either consider the problem to be outside the school's jurisdiction or have more pressing concerns, like standardized testing."

"Schools need to cultivate an environment of trust and accountability for their students," said Duncan. "Victims of bullying aren't 'tattletales'; they're being responsible. We, as adults, must also present consistent and sustained model behavior for children."

Rodkin said another issue that parents need to monitor is cyber bullying.

According to research conducted by Sameer Hinduja, associate professor in the School of Criminology and Criminal Justice at Florida Atlantic University, and co-director of the Cyber Bullying Research Center, 15 to 35 percent of students have been victims of cyber bullying.

Research also shows that 10 to 20 percent of students have admitted to cyber bullying others; girls are as involved, or more involved, than boys; and involvement seems to peak in middle school (grades 6-8).

What to do now

"There … needs to be a seamless system of support in schools," said Catherine Bradshaw, associate professor in the Department of Mental Health at the Johns Hopkins Bloomberg School of Public Health. "You can't just have a separate program for each individual problem; otherwise, teachers will become overstressed and implementation will be faulty. Instead, social-emotional learning, bullying prevention programs, student services, school mental health programs, suicide prevention, special-education assessments and referral, and effective classroom management all need to work together."

Susan Limber, a professor of psychology at Clemson University, was sick and could not attend the summit; however, Bradshaw presented Limber's suggestions, citing ways schools can take action against bullying.

Limber's research suggests that many schools are implementing faulty policies, which include zero tolerance policies, conflict resolution and peer mediation, group treatment for children who bully, and short-term solutions.

"Zero tolerance policies mean suspension or expulsion for students, which often leads to a dead-end road for bullies, and many teachers are hesitant to report this behavior because of the harsh consequences," said Bradshaw.

Limber insists that conflict resolution is not adequate, because in many cases bullying is not the result of a conflict between students, but rather aggressive abuse sustained over a long period of time.

She also suggests that group treatment for bullies can actually unite them together in their bullying, and short-term programs or solutions are not adequate, because bullying is not a short-term problem.

Instead, Limber suggests these 10 best practices: (1) focus on the school's social environment; (2) assess bullying through formal assessments; (3) garner staff and parent support; (4) have a representative team coordinate efforts; (5) train all staff; (6) establish and enforce rules and policies; (7) increase adult supervision in "hot spots"; (8) intervene consistently and appropriately; (9) focus some class time on prevention; and (10) continue efforts over time.

Duncan suggested that schools should have safety metrics, just like they have metrics for academic performance.

"We're … going to begin surveying students and parents to get their suggestions for how best to combat bullying," he added. "We can't continue to let this happen. It's not just a 'big city' problem, it's a national epidemic." eSN

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New copyright ruling affects media-studies programs

Students, faculty can legally 'rip' portions of DVDs for use in media-studies classes

Meris Stansbury
Associate Editor

A new ruling from the U.S. Copyright Office will affect how some higher-education students and teachers can use digital material in the classroom.

The change is part of a new interpretation of the Digital Millennium Copyright Act (DMCA), a U.S. copyright law that criminalizes production and dissemination of software, devices, or services intended to circumvent the digital rights management (DRM) technology that controls access to copyrighted works. The U.S. Copyright Office, a branch of the Library of Congress that meets to discuss exemptions every three years, oversees management of the DMCA.

Renee Hobbs, professor of communication at Temple University's School of Communications and Theater, was one of a handful of educators who led a formal petition of the Copyright Office in 2009 to receive an exemption that would allow educators and students to legally "rip" excerpts of copy-protected movie DVDs for comment and criticism in media or film-studies classes. "Ripping" is the process of copying audio or video content to a hard disk, typically from removable media.

Thanks to this group's efforts, certain higher-education students and teachers now can rip movie excerpts legally to make commentaries and compilations.

Hobbs, who teaches courses in media literacy and media's effects on children and society, says the change will help college-level instructors and students use excerpts from copyrighted materials to create "remix" videos for a wide variety of instructional purposes. For example, a recent video from a student in one of her courses used clips from 25 different movies to comment on how menstruation is negatively depicted in film.

"Remix videos … can be used to question some of the assumptions of contemporary culture and offer a critical perspective," Hobbs said.

Before the new ruling, she explained, the DMCA made it illegal to rip portions of DVDs by bypassing the copy-protection code on a disc using easily available software programs such as Handbrake, unless the user qualified for a special exemption given in 2006 to film professors.

"Media literacy educators depend on the use of copyrighted materials," Hobbs said. "We can't do our job without using them. Educators want to be lawful, and we didn't want to bypass encryption when it wasn't legal to do so."

Thanks to the new ruling, Hobbs' students studying mass media and children will be asked to develop projects that explore various themes in children's movies.

However, not all students and professors are affected by the ruling.

Students can legally rip movie excerpts only for their work in film or media studies courses—meaning students in subjects like history and sociology won't have the exemption. K-12 students and teachers also are still at a disadvantage.

The Copyright Office deemed K-12 teachers and students ineligible for the exemption, and instead indicated that they should use only screen captures of a film, because K-12 education doesn't need access to visually high-quality clips, officials ruled.

Hobbs speculated that the exemption's lack of reach might have to do with pressure from the film industry.

"The Copyright Office wanted to limit the exemption only to those groups who could prove a reasonable harm, and who could demonstrate that bypassing CSS encryption is the only way to accomplish fair-use purposes," she said, adding: "The Copyright Office has acknowledged that screen capture is a legal resource for K-12 classrooms and non-film/media students, and truthfully, that may be all that's really necessary for many student projects. But when student work is submitted to film festivals or designed to be viewed on the big screen, then high-quality images are essential."

Hobbs said she and her colleagues will continue to fight for education's digital media rights at the Copyright Office's next hearing in 2012.

In preparation for the hearing, Hobbs and her colleagues will invite K-12 educators to help demonstrate the need to bypass CSS for educational purposes.

"We want to ... assemble a list of projects not undertaken due to the current ruling. We especially want examples of where students need to be able to bypass [DRM] or where screen capture is not adequate for a particular project," she said. eSN

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Refurbished computers help special-ed students thrive

Used machines from CDI enable a Rhode Island cooperative to give disabled kids the access to technology they need

Cara Erenben
Contributing Editor

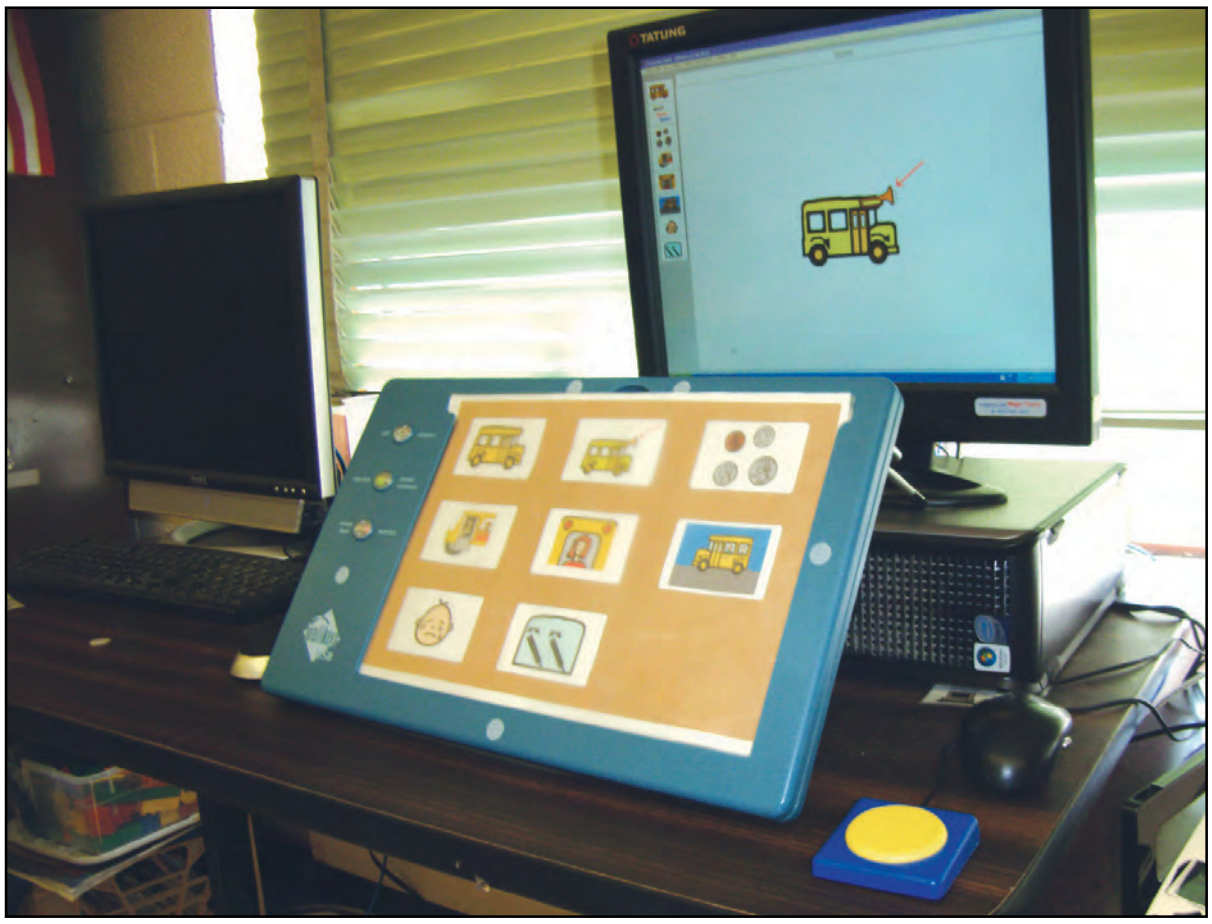
Greater access to computers in the classroom is helping special-education teachers in Rhode Island meet the diverse needs of their students—and this increased access was made possible in part by purchasing refurbished computers from Computer Dealers Inc. (CDI), officials say.

"Computers [can] have a significant impact on students with disabilities," said Robert Wall, director of educational services for the Rhode Island Northern Collaborative. By using computers with special modifications and accommodations, students can demonstrate what they have learned, he said—diminishing the impact of their disabilities.

"For example, a student who has a significant reading disability might have a computer that would read to them or use word predication software that might make it easier to respond in writing," Wall said.

"More and more, we are finding [that] students who have limited language functioning and have a great difficulty with oral language ... are more independent than was previously thought through using those modalities."

The Rhode Island Northern Collaborative serves approximately 140 special-needs students, from preschool through postgraduate in transitional programming. The collaborative operates classrooms in five sites across four different communities.



Buying from CDI helped Rhode Island schools get more equipment into the hands of special-needs kids.

Upgrades made possible with the help of refurbished computers

Recently, the district replaced its antiquated computers with refurbished computers bought from CDI, one of the largest computer resellers in North America.

With the help of NComputing desktop virtualization and thin-client technologies, the collaborative converted those 30 refurbished machines into approximately 90 workstations. The organization also purchased two 10-unit laptop carts from CDI.

"My last four years have been basically trying to bring the collaborative up to the same level of technology as a current public school district," said Tom Rambacher, technology director for the Northern Rhode Island Collaborative.

When Rambacher started with the collaborative, students had limited access to the internet. There was no real networking infrastructure throughout the classrooms, no eMail services, and limited database services, he said.

Rambacher said he was originally a Gateway customer, but when Gateway folded, he had to look elsewhere. His goal was to install common computer models throughout all classrooms and weed out older equipment.

Buying high-quality refurbished computers from CDI meant getting more computers for the same amount of money.

"It's almost a corny quote: We're all looking to save money because our budgets are all being cut—but it is true," Rambacher said. "What we purchased from CDI [resulted in] somewhere between 30 and 50 percent savings over something new."

"Whatever you would pay for one computer from Dell, you can get two, maybe three, from us," said Saar Pikar, senior vice president and general manager of CDI, which is based in Markham, Canada, and operates as a subsidiary of U.S.-based Relational Technology Solutions.

CDI resells name-brand computer equipment—including laptops, desktops, LCDs, servers, and printers—that was leased to Fortune 500 companies and returned, or is brand-new "end-of-the-line" product inventory that computer companies never sold.

Rhode Island Northern Collaborative is "a tuition-based organization, so any cost savings that we can do as … an agency result in lower costs to the districts that send us students," Rambacher said.

"It's all about operational costs," he added. "We're not subsidized by the federal government, we're not subsidized by the state. Our tuitions come directly from the districts that send us students, so the smarter we can be in a business sense, in what we spend in those operational costs, the more cost-effective we can be in our programs."

Besides cost, other factors that helped CDI win the collaborative's bid for refurbished computers included the company's guaranteed, no-questions-asked warranty, the low shipping charges involved in both the initial purchase and any warranty work, its extensive customer references, and CDI's ISO 9001 certification.

"Another [factor] was the ability to recycle equipment for us," Rambacher said.

Last October, with the help of CDI, Rambacher and a colleague coordinated a free, statewide recycling day. School districts throughout the state were invited to drop off old computers, and CDI packed up and safely disposed of approximately 20,000 pounds of old computer equipment.

"For schools to be able to pay for that recycling is just not an effective use of dollars, so for many years, people have just kind of stockpiled this stuff," Rambacher said.

Assistive technologies enable special-needs students to function

How computers are used in the classroom depends upon the students' disability, their level of functioning, and what their needs are.

For example, at one site, the collaborative offers computer-based access to Rhode Island's state assessment through a program called NimbleTools, which integrates 18 technology-based access and test accommodations such as the reading aloud of text, presentation of text in American Sign Language, text magnification, and more.

"That's one way we've been able to provide accommodations to students," Wall said. Technology "provides accommodations and modifications to students to ensure that we can assess them for truly what they know and are able to do and to try to remove … the impact of the disability."

The collaborative also uses Virtual Learning Academy, an online virtual school, to provide a diverse array of content for students who are developing typically in terms of their cognitive ability but have more social and behavioral issues, so they get high-quality content that is tied to national and state standards. The collaborative's teachers assist and provide accommodations and modifications to students so they can access the online content.

"We also use computers in our transitional services for students to be able to access the web, learn how to fill out online applications, and do job searches," Wall said.

He added: "We actually have students who are creating their own business … and they are able to access the attorney general's web site online. With assistance from our staff, they are able to [fill out] applications to create entrepreneurial businesses for themselves."

Students with more significantly profound disabilities use computers to access technologies from Mayer-Johnson, with accessible keyboards and touch screens to communicate with staff via pictures and symbols, for example.

"It's for our more significantly challenged students who have significant cognitive or physical disabilities, and those students use switches [and] light boxes to communicate their desires and needs," Wall said.

Mayer-Johnson Boardmaker Studio offers symbols that are useful for non-verbal students. Often, teachers make a board ahead of time and laminate it and add Velcro to teach skills such as days of the week, time for snack, time for lunch, and time for play. It's very customized for each student.

"A lot of students will rely highly on it," Rambacher said.

The collaborative also uses text-to-speech programs, as well as specialized keyboards and response-button equipment.

"No matter what level anybody is, … they all love the computer," Rambacher said. "It doesn't matter whether they are playing a game. We have a lot of autistic students who aren't really verbal, but they can go on a computer and write."

Another program, Co:Writer, helps students write by prompting them, similar to how a smart phone fills in the rest of the words as you type. "It actually helps them write [by prompting] them to finish a sentence," Rambacher said. eSN

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Ed Dept. to create an Online Learning Registry

Maya T. Prabhu
Assistant Editor

In a move to help rural schools keep pace with more developed districts, the U.S. Department of Education (ED) said it will create an Online Learning Registry that will provide access to historical, artistic, and scientific primary-source materials.

Education Secretary Arne Duncan made the announcement July 21 at the National Rural Education Technology Summit, held at the National Museum of the American Indian (NMAI). "Knowledge knows no boundaries, and we cannot allow distance to stand between students, education, and opportunity," Duncan said.

The registry is one of the recommendations the Federal Communications Commission (FCC) made in its National Broadband Plan to give more students and teachers access to high-quality digital content that the federal government owns.

"No technological innovation in our lifetime has greater potential to transform education than high-speed internet," said FCC Chairman Julius Genachowski.

"The National Broadband Plan recommended that the federal government increase the pool of high-quality digital resources that educators can easily find, access, and combine with other content to help their students learn. I am very pleased to see this recommendation being adopted."

Many of the resources that will appear in the Online Learning Registry have associated educational materials that have been created by education professionals, and some of those educational resources are available online. However, currently it is difficult to find these many resources, because they are available across numerous agencies.

During his remarks to the more than 150 rural education stakeholders, Duncan cited digital artifacts from the first moon landing as an example of why the registry is needed. He said the artifacts, which include things such as weather records and recordings of conversations, are currently spread across three agencies.

"Right now, frankly, they're not organized in a way that makes them easy to access. This registry will make it easy for teachers and students to find the variety of resources available," he said.

And the collections, especially those at the Smithsonian Institution, belong to all Americans—including those who live in rural areas, said Smithsonian Secretary G. Wayne Clough.

"We have ambitious plans to use new technologies to reach new audiences. … We have much to offer students and teachers in art, science, history, education, and culture. We want to give learners of all ages access to America's treasures and our creative experts who bring them to life," he said.

A healthy American economy depends on a prosperous rural America, said Kathleen Merrigan, deputy secretary for the U.S. Department of Agriculture (USDA).

"Broadband investment boosts innovative capacity, drives business competition, and expands both educational resources and health-care services in small communities throughout the country," she said, "USDA, ... recognizes that access to high-speed internet is fundamental for rural communities that seek to overcome the challenges of time and distance."

More than half the nation's school districts are located in rural areas, and one-fifth of all public school children are enrolled in rural schools. There are successful models for providing access to college-level coursework, new content, and high-quality teaching online using the latest technology innovations, according to an ED press release.

Some of those models were highlighted during a panel discussion moderated by Gene Wilhoit, executive director of the Council of Chief State School Officers.

"Our goal as chief state school officers is to move from these beautiful exceptions to mass scalability," he said.

All schools in South Dakota have been wired for the internet since the 1990s, as well as every school in New Hampshire, but New Hampshire Commissioner of Education Virginia Barry said the state's schools still have issues with connectivity. And South Dakota Superintendent Tom Oster noted that the state network's connection speed has slowed over the years without some of the necessary maintenance.

Through its National Education Initiative (NEI), NMAI offers historically accurate educational materials about American Indians. NEI's mission is to share American Indian knowledge, and many of the reservations where American Indians live are in very rural areas.

"We know there's need for this content," said Tim Johnson, associate director for museum programs at NMAI. "Teachers and curriculum supervisors need in-depth educational materials that integrate native perspectives." eSN

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Technology takes formative assessment to a new level

New Promethean software allows for 'real-time personalized intervention'

From staff reports

Student response system (SRS) technology has caught on in classrooms nationwide as a tool for boosting class participation, as well as helping teachers ensure that students understand what's being taught before they move on to another concept. But the current generation of the technology has its limitations.

For one thing, the lag time between student responses kills the pace of learning, says Promethean Director Tony Cann. In a typical use of the technology, the teacher poses a question to the entire class, then pauses as students answer the question on their personal "clicker" devices. This results in a lot of waiting around—time that could be put to better use.

Another problem is that students see, and answer, the same question as their peers. For students who already understand the material and are ready to move on, this can be a tedious process—and teachers risk losing their interest.

Promethean thinks it has developed a solution to these problems. The company has unveiled a brand-new version of software that could take SRS technology to a whole new level—something the company calls "real-time personalized intervention" (RTPI).

The new technology can send a question directly to each student's ActivExpression unit—Promethean's version of a "clicker" device. Once the student answers a question, he or she immediately gets a new question to answer. Best of all, the system is adaptive, meaning it can quickly hone in on each student's abilities and deliver personalized questions that target these abilities.

Promethean's ActivExpression

"If you believe interactive whiteboards are a level 4 improvement [in education], this is a level 8," Cann said, adding: "It will have an enormous effect on teaching and learning."

Cann said the technology gives teachers the ability to do handheld formative assessment in real time—assessment that adapts to the pace of each student, while also filling the time for each student. Students receive immediate feedback on their responses, and teachers can see how the entire class is progressing on their own computer screen.

In the teacher's view, each student response is color-coded according to the question's degree of difficulty. Wrong answers have a red "X" next to them, so teachers easily can see which students are progressing quickly through the questions and which need more help. The teacher then can work individually with students as they need it.

Ron Clark, founder of the Ron Clark School in Atlanta, called the development "shockingly effective, exciting, and brilliant."

"As a teacher, I am able to send questions to each student's ActivExpression, and they are able to work on the problems at their own pace. I can instantly track the progress of each student on the ActivBoard, and I can go directly to the students who aren't on task or who are having problems," he said.

"The best part about RTPI is that it places a sparkle on every student's face. They love the thrill of texting their answers, and the competitive component of seeing how quickly you can answer all of the questions in each series is something that appeals to kids a great deal."

After class, Clark said, "I always review the responses again to see where there are overall weaknesses in the class. I also take note of material that the students understand fully, and I realize that there is no need to review the content that has been mastered."

Cann said the system is capable of delivering 15,000 to 20,000 self-paced questions per minute. It is available as a free software upgrade for current ActivExpression users, and the ActivExpression units themselves work with any whiteboard system, not just Promethean's ActivBoard. eSN

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Helping educators approach the ideal

Predictive modeling software can help education leaders cut costs, improve efficiency, and enhance teaching and learning

In the business sector, companies have been using predictive analysis for years to improve performance, predict stocks, or take action and change direction when troubling trends appear. They gather data from a variety of sources and use modeling to pinpoint disturbing developments, identify where things might be headed, and make appropriate changes.

The public sector typically lags behind business: While it has become relatively common within education to use data analysis for tracking and measuring performance at the school, educator, and student levels, far fewer schools and colleges have taken analytics to the next level—using advanced analytics strategies to identify trends that can help predict future performance and help school leaders make key decisions, early on in the process, that can change a potentially unwelcome outcome or take advantage of a positive trend.

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But that's beginning to change. Using advanced analytics software, the University of California system has saved $167 million in the last five years by mitigating risks across its 10 campuses and five medical centers, for example—and the Houston Independent School District has saved millions of dollars in labor and expenses for food service, transportation, and other critical functions. These are just a few of the ways that schools are tapping into this trend to improve their operations.

Why advanced analytics?

Some school leaders are beginning to realize what can be done with advanced analytics and have started taking data analysis to a deeper level in order to mine trends to their fullest extent.

"As a society, we've always been fascinated with the idea of predicting. The movie Minority Report, for example, was about predicting where crime was going to occur," says Stephen Gold, an executive in the global education business unit for SPSS products at IBM. "As a parent, predicting makes so much sense: Don't tell me my kid failed a class after it's already happened." It's far better, he says, if a parent can be warned in advance if his or her child is at risk of failing a subject or a grade.

IBM offers tools, such as SPSS Modeler, that can help schools and colleges improve outcomes—both on the education side and the business side—by identifying trends and allowing administrators to make decisions based on patterns and associations found within their data.

For example, says Gold, someone using SPSS Modeler could look at attendance, tardiness, and visits to the school nurse, in conjunction with teacher attendance, to see how often a student is actually in class at the same time as the teacher, and to see how all these factors work together to affect student performance.

School leaders could use the software to answer an endless number of questions. For example: What's the most important characteristic of a good instructor—advanced degrees, national certification, or some other characteristic? If a student is habitually in the nurse's office at a particular time of day, what bearing will that have on the success of the student? Which teachers are the best at teaching certain types of students? What is the best learning environment for students with special needs? What's the best course of action to take for a student who scored poorly on a biology test at the beginning of the year, to ensure that he passes at the end?

Administrators and educators then can make decisions that can change a potentially negative outcome before it takes place.

Using advanced analytics for predictive modeling marks a total structural change in education. "It gives us the ability to act," Gold says.

Using 'imperfect data'

While many schools have become adept at tracking and measuring student and teacher performance, structured information such as grades, state test scores, and attendance—as well as other information, such as food service data and bus routing schedules—is typically kept in a variety of different repositories. Then there's the high volume of unstructured data that can exist across a campus: information about disciplinary action, parent-teacher reviews, notes from a counselor, surveys of parents or students, or notes from PTA members about different issues affecting a school, to name a few.

Data mining tools such as SPSS Modeler or SAP's BusinessObjects analytics allow institutions to pull together both structured and unstructured data. And that's

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Tennessee districts improves student performance, reduces dropout rates

The Hamilton County Department of Education (HCDE) oversees nine K-12 school districts in and around Chattanooga, Tenn. Evaluating and improving school performance became a critical task for the districts, owing largely to No Child Left Behind. HCDE officials knew the students in their districts were scoring below state target levels, but it was difficult to understand why—and without that understanding, it was nearly impossible change the situation. HCDE also had a high dropout rate among high school students, and officials wanted to reduce that number.

Administrators chose IBM's SPSS Modeler and SPSS Statistics software to take a deeper look at student performance by combining data sources and exploring variables beyond what the state reports provided.

Now, HCDE evaluates student performance and keeps students on track earlier in their academic careers by analyzing students' test scores and combining that information with information on student attendance, behavior, parent information, class schedules, and other data. "Then, we can go through and begin to look at making predictions and identifying students who might be at risk," says Kirk Kelly, director of testing and accountability for HCDE.

For example, even before the school year begins, teachers now have a remarkable amount of data on the makeup of their classrooms and on which students might require additional instruction and focus. A teacher will know in September if the data predict that a student will not perform well on the early college assessment ACT Explore test, which takes place in November. That student then can be given the extra attention needed to bridge the gap and, ideally, exceed expectations.

This has led to an improvement in test scores, with Hamilton County students performing well above the national average for the ACT Explore test in English, math, reading, science, and overall composite categories for the last three years.

HCDE also noticed a trend having to do with dropouts: Kelly learned that 63 percent of all dropouts

Analytics have helped slash dropout rates.

were over the average student age. In fact, that was the biggest indicator contributing to the high school dropout rate. Kelly looked at students from kindergarten through high school to discover just how and when they become overage students.

"A student might be retained and then retained again, held back a year for issues such as athletics or maturity," Kelly explains. "Then they run into problems." What 21-year-old, he points out, wants to remain in school with a bunch of 18-year-old kids?

Understanding the high correlation between overage students and dropout rates allows HCDE to be proactive. Officials can identify a student coming into ninth grade who is already 16 or 17 and help the student before he or she gets into trouble, Kelly says. Even earlier in the process, educators can make sure that students—particularly those who have late birthdays—don't get held back more than is absolutely necessary.

"By making schools aware, we've gotten numbers down to a very small percentage of students who are overage being retained. We're also taking steps to provide help," Kelly says. HCDE has been doing this for about seven years now; the group of students containing fewer overage children has begun to move into high school, and dropout rates have improved significantly. In fact, HCDE saw dropout rates go from 30 percent to 22 percent over the past year.

HCDE also uses the IBM solution for teacher incentives. "We go through and estimate the scores a student would make based on past history. We predict where a student will score, and track teachers who beat those predictions. Then we rank those results, and if a teacher is in the top 20, they receive an incentive," explains Kelly.

Kelly's department started out as a group of three people several years ago, but now it has eight people using the analytics system and looking at anything that might have an impact on student achievement.

The department purchased the base analytics package for about $4,000 in 1998. As they improved results, administrators recognized a greater need—and the department increasingly received a larger budget.

Kelly suggests that education leaders who want to begin doing predictive analytics bring together a group of stakeholders to decide what kinds of information they want to be able to capture, and to begin making sure they have good data. There might be eight or so data points the stakeholder group agrees on, such as age, ethnicity, income, and other variables. Once those have been decided upon, the group should make sure that every student record contains all of this information, and that it is accurate.

"Look at outliers," he suggests. "Do you have a two-month-old high schooler, or a 99-year-old first grader? Then you might have a transposed birthday. Flag those. Then go through and flag missing variables. The people who are pulling the data and the people who are entering the data will have to interact."

Good, clean data strengthens your success rate as you look at analytics to head off problems before they occur, Kelly says. —J.N

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important, because 80 percent of the data produced every day—from eMail messages to call logs to blogs on the internet—are unstructured, according to Gold.

"Generally, the information is there. There just hasn't been a vehicle by which institutions could take advantage of it," he says. "Now, text analytics products are looking at sentences, how the words appear, what the words mean." Then, they build relationships between those words and make connections, such as identifying students who indicate they're always tired, or students who say they have little support, and predict how those factors affect test scores.

IBM offers tools, such as SPSS Modeler, that can help schools and colleges improve outcomes—both on the education side and the business side—by identifying trends and allowing administrators to make decisions based on patterns and associations found within their data.

Without the appropriate tools, school organizations are unable to use methods such as these, and qualitative factors end up being analyzed in a subjective fashion, with nobody pulling together insights based on all the data—which leads to wasted opportunities.

But as the use of advanced analytics becomes more widespread, the trend is moving from simple reporting to predicting. "It changes the school's mindset from thinking about, 'What do I do with at-risk kids?' to 'How do I keep kids on track so they don't become at-risk?'" says Gold. "If I provide early intervention, I can preempt or prevent completely what will be the likely outcome."

Another benefit of a product like SPSS Modeler is that it provides real-time data, and it puts the data into the hands of those making the decisions. Administrators and educators no longer have to ask the IT department for data and wait weeks for this information to be returned to them, by which time it is old and perhaps no longer useful.

Gone, too, is the need to dump data from a variety of different systems into a giant data warehouse every night—an important point, as data in that case are "only as accurate as the last time you did the dump," points out Don Seaman, business development director at SAP Public Services, another provider of predictive modeling solutions.

Rather than dumping information into a data warehouse on a regular basis, educators and administrators can immediately begin using the information to make business and education decisions.

"That's the power [of predictive modeling], going from hindsight to insight to foresight," says Sherry Amos, executive director for industry strategy at SAP Public Services. "You can access the data where [they exist]. You don't have to spend months pulling [the data] together."

With data mining of this sort, there's also no need to form a supposition about what you think the data will show. Rather, educators can wait to see what trends the mining process uncovers.

"With statistics, you have to have really good data and a hypothesis," explains Gold. "You have to say, 'I believe this type of student, with this type of history, will exhibit this type of behavior.'" And that's difficult, he says, because data often are in silos, or unconnected databases.. Also, not all schools have that kind of continuity with a student, as students often transfer from one school to another.

Advanced analytics, page 22

UC campuses mitigate risk—and save millions in the process

The University of California's Office of Risk Services worked with IBM to design and build an Enterprise Risk Management System based on IBM's analytics, portal, and collaboration software to manage risks and improve security. The move helped the school mine its databases to spot trends, such as a rise in pushing and pulling injuries at medical centers. Once that particular trend was spotted, officials were able to take action to prevent such injuries, like purchasing better equipment and launching training programs designed to limit them.

Information about the real and potential risks from departments and locations across the university system's 10 campuses, five medical centers, laboratories, and field sites is aggregated for better insights and management, so that UC administrators can isolate recurring incidents and break the cycle of injuries and costs that ensue.

As a result, injuries have been cut by 39 percent—and the cost of the university system's insurance has dropped by $167 million since the system's initial deployment in 2006.

"We are now able to determine where we are the most vulnerable by creating dashboards so managers can access their data in real time," says Grace Crickette, chief risk officer for the University of California. "They can target the key variables that influence outcomes and make changes to increase productive trends or intercede in operations that are having a negative impact."

Traditionally, risk management programs in many sectors have relied heavily on quantitative analysis, but they have lacked qualitative measures and analysis. Using the advanced analytics and business intelligence capabilities of IBM's Cognos software, UC's Enterprise Risk Management System uses both quantitative and qualitative data to highlight emerging risks and assist with avoidance measures. The software also has helped university officials know the best way to deploy resources—money, people, and time—which is vital during a time of severe budget cuts.

But analytics alone are not capable of making change happen, Crickette points out.

"One of the benefits of analytics is it can be a great motivator of people," she says. "Our tools can show us how [we] are performing in different areas, which helps to motivate people to implement good policies and procedures. Analytics for analytics' sake is, without action, not very useful. But analytics that help drive action can be very powerful." —J.N.

Advanced analytics...

continued from page 20

A good advanced analytics software program "allows you to take whatever data you have and allows the technology to work through the information and see what the outcome is. You don't need a hypothesis," Gold says.

What you need to get started

If perfect data and a fully formed hypothesis are not needed to begin using predictive modeling, what is needed?

"You need to understand the metrics you'll want to be gathering and the outcomes you're looking to achieve, and [you need to know] the data required to track [these] so you can show measurable progress," Seaman says.

That, he says, requires a highly collaborative effort, with participants "from the central office all the way out to the individual schools" or departments.

Schools that have invested in building out a more robust data offering, and that have begun aggregating student components of data records, test scores, and other information, will benefit from having all this information pulled together. But even schools that haven't had the resources to do that can begin to use predictive analytics.

"There's no prescriptive that says you have to have a certain amount of data before you'll be able to get value," says Gold.

"You can have five years of longitudinal data in one area, two years of data here, eight years there, and that's great. Just start," he suggests.

Another important element in getting started with predictive analysis is a group of people with advanced analytics training. "Finding individuals with these skills is a prerequisite for doing these things at an institutional level," Gold says.

In terms of getting buy-in from the top, it can help to start small, says Amos. Rather than say you're going to predict student achievement across the board and come up with a prescription for improving success, pick a specific area on which to focus. You might measure on-time arrival of buses, for example: Choose key performance indicators to measure bus arrival time; determine what's good, fair, or poor in terms of bus arrivals; and begin to analyze whether and how that has an effect on student performance. Then, you can begin making decisions on how to improve those numbers—after which you can move on to another area of focus.

> *You can access the data where [they exist]. You don't have to spend months pulling [the data] together.*
>
> *—Sherry Amos, executive director for industry strategy, SAP Public Services*

"These are relatively short processes," Amos says. "They're not multiyear projects. It does a lot to show small successes early to bring the cultural environment along. And these are projects that can be funded in small increments."

Another good place to start is driving cost savings. Using advanced analytics often starts on the business side, looking at strategic areas of an institution's mission to see where improvements can be made. "Cost savings are the low-hanging fruit," says Amos—and top-level decision makers are more likely to budget for a new software program if it can show immediate financial benefits.

Ways to use predictive modeling

The uses of predictive modeling can be endlessly varied, and they can run the gamut from improving efficiencies to saving money to enhancing student achievement.

Just a few examples include:

- **Late buses, the early breakfast program, and their impact on learning success:** If buses arrive late in the mornings, students might not be able to participate in the breakfast meal program—and students are not ready to learn if they don't eat in the mornings. Typically, the breakfast meal program and the bus program are tracked by two different groups and in two different databases. But with predictive analytics, administrators can see how they work together and whether those two factors have an impact on learning.
- **Identifying problems**: One school district noticed that a single group of students was continually late to school every Wednesday morning. By applying IBM's advanced analytics, administrators discovered that the parents of this group of students all worked the late shift on Tuesday night, then the early shift on Wednesday morning. The kids were staying up late on Tuesdays, then falling back asleep on Wednesday mornings after their parents woke them up and left for work, says Rob Dolan, a worldwide industry executive in business analytics for IBM. After identifying the problem, administrators were able to contact the parents and explain the situation, which was then rectified.
- **Course planning**: An instructor's plan can be shaped, day to day, by data points. Imagine that an instructor has a lesson plan for Tuesday, teaches the class, then inputs feedback from Tuesday's exercise into the system. That teacher might find that four of the five concepts taught on Tuesday resonated well with the students, but the fifth concept was a problem. That could suggest that the lesson plan for Wednesday focus on that fifth concept. "It becomes part of a process, changing activities in a classroom to provide for a better experience," Gold says.
- **College recruitment and retention**: As many colleges and universities struggle with retention problems—students who finish their freshman or sophomore year and then drop out—some have used advanced analytics to discover what types of students they should be recruiting to find the attributes that make a student most likely to complete his or her college career. Institutions of higher learning also can look at what types of programs are most likely to help keep a student engaged. They can identify, for example, that "this type of student who lives in this dorm and with this major will most likely stay [in school] if I offer them this club," explains David P. Whirlow, a senior managing consultant in business analytics and optimization for IBM.
- **Optimizing the scheduling of classrooms**: Syracuse University has used IBM's advanced analytics to help schedule its facilities for classes, taking into account how students are moving between classrooms and the best way to schedule within the university's budget constraints.
- **Optimizing alumni donations**: Another higher-education or foundation application of advanced analytics would be using the method to discover the best way to interact with the alumni community to boost donations.

Advanced analytics, page 23

HISD sees 151-percent ROI in 10 years from analytics project

The Houston Independent School District faced the same management challenges encountered by many large urban school districts: a wide variety of incompatible information systems, reliance on multiple manual processes for transferring data between those systems, and no way of looking across systems to find redundancies or business process problems.

The school district decided to improve operations in key organizations, consolidating business applications onto a common platform with a centralized, enterprise-wide administration database. The district worked with SAP, using its enterprise platform for education. HISD broke even on the project in about five years, with an anticipated 10-year ROI of 151 percent, officials say.

Broken down, this equals:

- More than $3 million in labor savings and warehouse cost reductions in food services;
- More than $5.5 million in savings on labor, paperwork order reductions, fewer vehicles kept in inventory, and improved maintenance in Fleet Operations;
- $5.7 million in reduced headcount and other savings in Administrative Operations; and
- $52.3 million saved in labor, bulk purchases and negotiated cost savings, inventory reduction, and eliminated waste in Materials Management.

To make such an implementation work, educators and administrators should take certain steps, HISD managers say. Like Kirk Kelly of the Hamilton County, Tenn., Department of Education, they suggest that stakeholders be engaged early in the process to help identify goals, including annual reporting requirements. They also suggest appointing a "project champion" at the highest levels of administration. Such a person can be valuable in making sure the project has adequate resources and that individual departments are on board and remain committed.

Team training is also an ongoing need. Work up a communication plan and stick to it to keep all stakeholders informed of progress or issues, HISD suggests. —J.N.

Advanced analytics...

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Reaching the nirvana of 'personalized instruction'

In recent years, the pie-in-the-sky ideal of learning has been the notion of individualized lesson plans. Through advanced analytics, the education industry is getting closer to that ideal.

Periodic assessments of a student's knowledge, combined with other data such as the challenges specific to that student, the student's demographic information, and information about his or her teacher (what type of certification the teacher has, how often he or she is absent, subject matter background, etc.), can help school leaders understand not only how a child is performing but how a child will perform under certain circumstances. This creates the opportunity to formulate specific lesson plans for that student.

"Picture Johnny with a Kindle, and what Johnny does on Wednesday is different from what Mary does on Wednesday," Gold explains. "Their actions are shaping their own different lesson plans as we create a personalized experience." eCN

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Some colleges use analytics to predict which student prospects are most likely to earn their degrees.

Helping schools forecast future trends

In the last few years, IBM has acquired two companies to help it improve its predictive analytics offerings to the education field.

In 2007, IBM acquired Cognos to accelerate its information-on-demand business initiative, followed by the purchase in 2009 of SPSS.

IBM Cognos helps schools improve student performance, deliver on performance mandates, and improve financial performance, IBM says, by aggregating critical data and identifying trends.

For example, Cognos can help schools:

- Calculate curriculum costs, or identify good fundraising programs.
- Monitor student headcount and performance, program outcomes, school reputation, national agendas, and other key performance indicators.
- Share secure web-based information with all stakeholders.
- Manage endowments and recruitment through drive-based planning.
- Spot high- and low-performance schools or programs.
- Map enrollment to attendance and attendance to performance.
- Speed compliance reporting.

IBM Cognos is currently in use by more than 1,000 institutions of higher education and more than 530 K-12 school districts (representing more than 20,000 schools), IBM says. Additionally, 13 state departments of education and the federal Education Department use IBM Cognos.

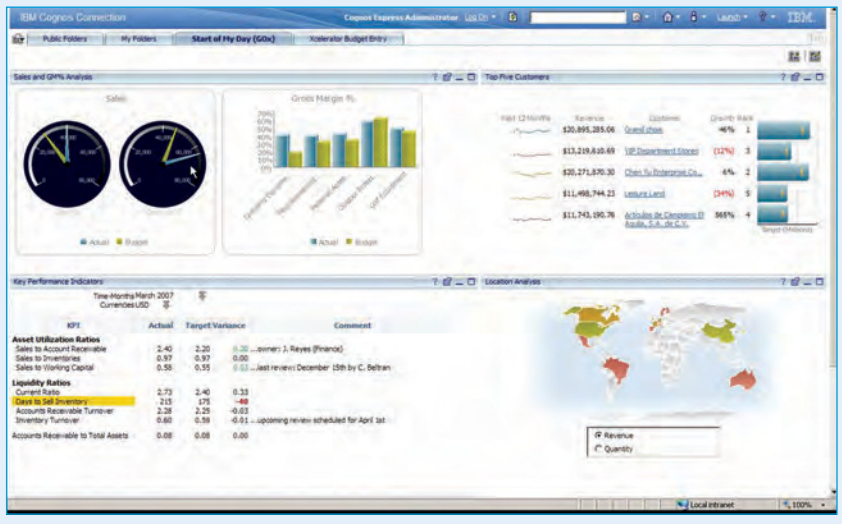
IBM's SPSS Modeler is another tool that schools reportedly have found of great benefit in predictive analytics. With Modeler, users can access a broad range of data, including data stored in operational databases and files, as well as unstructured data such as call center notes, eMail messages, Web 2.0 sources, and survey responses, which can be mined, modeled, and deployed via a simple desktop tool or via advanced client server architecture. This allows organizations to integrate predictive analytics into their everyday business processes, IBM says.

The data can be used to create predictive models in a way that doesn't require programming, which means users can access information without waiting weeks for their IT department to respond to data requests.

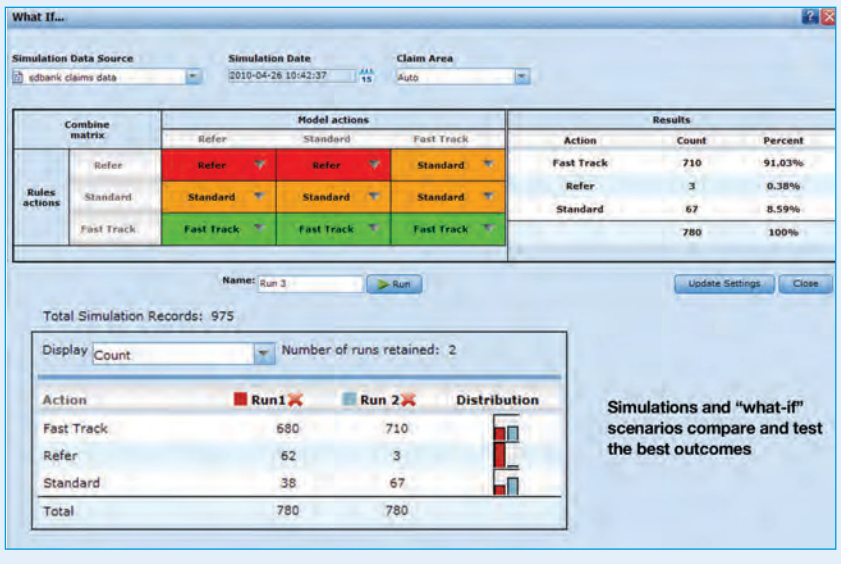
SPSS Modeler provides deeper insights and more accurate predictions than simple analytics, because it uses all data assets to provide a complete view of a school district's data, regardless of where these are stored.

For example, a community college in California uses Modeler to predict which students are less likely to return to school, helping faculty and administrators improve retention by providing appropriate counseling, financial aid packages, and curriculum offerings.

Partly as a result of these programs, the college ranks third among the state's community colleges for the percentage of students successfully transferring to the University of California system. —J.N.



IBM Cognos is used by more than 1,000 higher-education institutions.



IBM's SPSS Modeler lets users run numerous education scenarios.

Education for a Smarter Planet.

On a smarter planet, educators and government leaders must enable student success. Through a unique combination of industry experience and expertise, IBM is helping education institutions improve operational effectiveness and accelerate innovation to contribute to economic development. With deep knowledge of the personal learning paths through the educational continuum and powerful technology, IT services and business consulting, we are equipped to help provide innovative solutions to institutions, cost efficient sharing of best practices and facilitate collaborative communities. IBM has the tools, technology and the people to help you meet the challenges of today's education.

A smarter planet starts with a smarter education system.
Let's build a Smarter Planet.

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Coming soon to a classroom near you: Robot teachers?

There's nothing normal about these paras, as new developments in robotics lead to computerized teaching assistants

Meris Stansbury
Associate Editor

To help spur interest in science, technology, engineering, and mathematics, many schools have begun to integrate robotics into the curriculum—but are younger students and their teachers ready for a new wave of robotic teaching assistants?

Many researchers agree that robot teachers are no longer the stuff of science fiction—they're part of a new workforce designed to lend a helping hand to classroom teachers … whose jobs aren't in jeopardy any time soon, experts say.

Although the technology is still in its developmental stage, assistant teaching robots already are being piloted in classrooms from Korea to San Diego, Calif. The benefits, say researchers, are that robots not only provide infinite patience but can handle simple tasks that take up teachers' valuable classroom time.

Javier Movellan, founder of the UC San Diego Machine Perception (MP) Lab, said robots could be a cost-effective way for schools to get early education teachers the help they deserve.

RUBI

Movellan, whose team at MP Lab developed RUBI, a robot tutor for toddlers, said he only wants early childhood educators of the 21st century to have access to cutting-edge technology tools like other professionals have in their fields.

RUBI, which stands for Robot Using Bayesian Inference, measures 22 by 24 by 8 inches and is a low-cost sociable robot designed to interact safely with 18- to 25-month-old toddlers.

After four years, RUBI is now in her fourth version, thanks to a collaboration between the University of California and Sony through a program called UC Discovery, as well as bridge funding from the National Science Foundation's Science of Learning Centers.

RUBI, like most other education-based robots currently in production, can help human teachers with mundane tasks like teaching vocabulary word memorization or other rote exercises.

The bandana-wearing RUBI interacts with preschoolers at UCSD's Early Childhood Education Center and teaches them basic concepts such as colors, numbers, and some vocabulary words.

"I think of robot teachers as 'exercise machines' and of teachers as 'coaches,'" said Movellan. "A good coach provides you with the motivation and the vision for why you are exercising. A good exercise machine takes care of the low-level details so you achieve your fitness goals."

RUBI also has smile-detection technology, made possible with a Computer Expression Recognition Toolbox (CERT), which allows the robot to giggle and encourage a child to continue with the lesson when it sees the child smiling.

So far, Movellan said, the most challenging aspect to RUBI's effectiveness in the classroom is her fatality rate.

"The children would shake RUBI's head, poke her eyes, pull her arms, and bite her hands," he said. "Some of our versions of RUBI died after two hours of interacting with the children. In the end, a critical part of RUBI's survival was to provide her with an 'emotion engine.'"

According to Movellan, RUBI now can detect when her well-being is at stake and respond appropriately. For example, when she feels threatened, she cries, and this gives the children a clear message as to what is appropriate and what is not. When she is surrounded by children who are playing with her, she is happy and giggles.

RUBI is also modeled after typical child behavior, with an interactive program that allows her to take objects offered to her from children, say "thank you," and then give the objects back.

After conducting two randomized, pre-test/treatment/post-test trials, RUBI was found to have a significant effect on vocabulary learning, both in English and in a foreign language (Finnish).

As with other classroom technology, Movellan said, what matters most is the duration of the daily interactions. Children who interacted a lot with RUBI during the day, but with short interaction periods, did not learn much. Children who interacted for a lesser amount of time, with each episode being more sustained (about four minutes), learned a lot.

MP Lab is now programming RUBI to get four minutes of sustained interaction with each child per day.

Robots all over the world

In Seoul, South Korea, robots are establishing a presence in education and soon will move beyond basic testing to full classroom implementation.

Engkey, a robot created by the Center for Intelligent Robotics (CIR) at the Korea Institute of Science and Technology (KIST), is a short, penguin-like robot designed to help South Korean students learn English.

According to KIST's Intelligent Robotics team leader, Mun-taek Choi, the development of Engkey started in early 2009. Choi and his team expect the second version of Engkey, with better software, to be ready by the end of this year.

In a pilot project to test the applicability of the robot as a teaching tool, the first version of Engkey was installed in classrooms for two months, from late Dec. 2009 to early Feb. 2010.

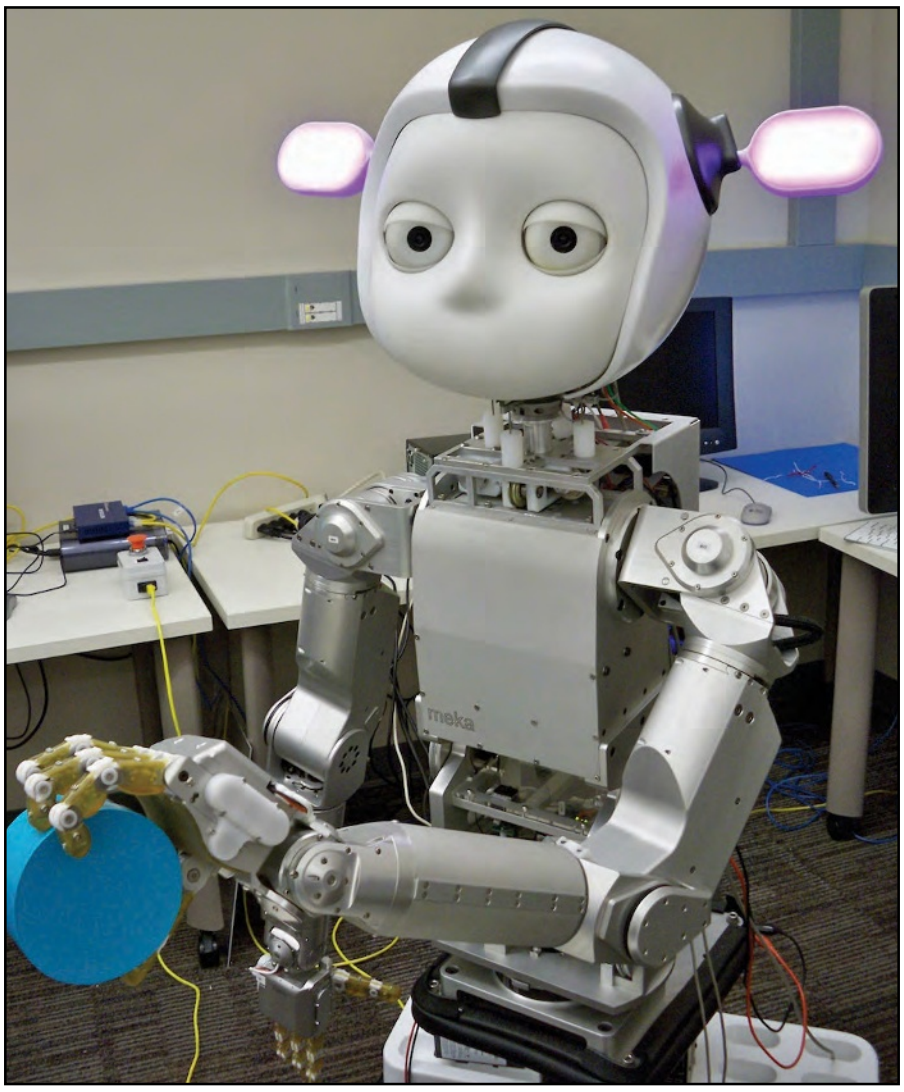
Engkey has the option of using either a synthesized female or male voice and can follow students around the room, asking them basic programmed questions in English, such as "How can I help you today?"

The robot also is programmed to give a series of set responses, such as "Wow, very good!" or "Not good this time. You need to focus more on your accent."

However, Engkey is programmed to hear a set list of responses, and if a student deviates from the responses, Engkey cannot compute those responses.

"To make a robot have 'good' interaction skills, first we need to develop good recognition technologies to understand humans, environments, and situations," said Choi. "Those are very limited with current sensor technologies."

After more tests in schools this year, Choi hopes to commercialize Engkey and to reduce the price from the current $24,000 to $8,000.



Ga. Tech's Simon is a robot teaching assistant that can learn by socializing.

South Korea, a leader in robotics, soon will deploy hundreds of robotic teaching aides as part of a plan to have the country's 8,400 kindergartens work with robots by 2013, thanks to the efforts of the Education Ministry.

"In Korea, English education is very important to students and their parents, and in many cases it takes substantial costs to have native speakers teaching," explained Choi. "Although robots cannot supplant human teachers, we believe that we can at least provide a cost-effective way of teaching; and robots are quite effective in teaching as long as they are carefully designed with predefined teaching materials using current technologies."

Social robots

Another robot being created in the United States might be the most promising development yet in robotic teaching assistants.

Simon, the creation of Andrea Thomaz, assistant professor in the School of Interactive Computing at the Georgia Institute of Technology's Socially Intelligent Machines (SIM) Lab, can learn simply by socializing.

Simon, an upper-torso robot with a "socially expressive head," learns from social attention and interactive task learning. For example, say Simon is handed an object. If Simon recognizes the object, it will drop that object into the appropriate color-coded bucket. If Simon has not learned where to put the object, it is told, and then will remember that object and its designation in the future.

Simon is also a proactive learner. If Simon is asked whether it has any questions, it will scan the environment to identify any objects it might not know.

"I want to see robots successfully helping people in human environments, and in particular, I want those robots to be easy for people to adapt and use in whatever way they see fit," said Thomaz in an interview with SmartPlanet.

Thomaz said her lab is currently working on Simon's interactive learning skills, focusing on nonverbal gestures for natural and intuitive turn-taking, which she hopes will improve the learning interaction.

Although robotics might be taking off in many service sectors, including classrooms, developers and researchers say it's important to understand that robots might never have the full capabilities of a human.

"Putting your heart into teaching, wanting to help your students and make them feel good about learning—that is not easily replicable by any kind of hardware," said Jacob Whitehill, an MP Lab researcher, during an interview with UCSD News. "… I don't think humans have to fear for their jobs just yet." eSN

Digital divide...

continued from page 1

Bureau of Economic Research as a working paper that was not peer-reviewed.

The study examined the reading and math test scores of more than 500,000 North Carolina public school students in grades five through eight from 2000-05. It sought to determine if differential access to computer technology at home compounds the educational disparities among students from various socio-economic backgrounds, and whether government provision of computers to middle school students would reduce those disparities.

The researchers found that students who had home computers for all five years of the period examined had better test scores overall than students who did not have home computers during this time. But the scores of students who reported getting a computer during this period showed a moderate decline in their first three years of home computer access. This effect was most pronounced for students who received free or reduced-price lunches and/or who were black.

"The introduction of home computer technology is associated with modest but statistically significant and persistent negative impacts on student math and reading test scores," the researchers wrote in the abstract to their report. "Further evidence suggests that providing universal access to home computers and high-speed internet access would broaden, rather than narrow, math and reading achievement gaps."

The researchers attribute the lower test scores to a lack of parental supervision and time management skills—that is, they theorize that students from lower-income households (those whose parents are less likely to be educated, and who either cannot or do not monitor their children's use of computers at home) are more prone to use their computers for games or other non-educational uses than for homework.

However, the researchers make it clear that this is only a hypothesis.

The study used a method called within-student comparison, which examined individual children before and after they obtained a computer in their household. Researchers took note of elements such as how long students reported having access to a home computer, students' gender and ethnicity, whether they took part in the National School Lunch Program, and their scores on a state exam testing reading and math skills.

The researchers used a state database of reading and math test scores for all grade levels. For each student, researchers observed test performance as many as four times.

When public school students in North Carolina take the state's required end-of-grade tests in math and reading, they fill out a brief questionnaire regarding their time use outside of school. The questionnaire asks about time spent on homework, time spent reading for leisure, time spent watching television, and the frequency of home computer use for schoolwork.

It's this last question, asked of nearly one million students in fifth through eighth grade between 2000 and 2005, that served as the basis for the researchers' analysis, as one of the possible responses is "I do not have a computer at home." The researchers were able to hone in on the data for students whose answer to this question changed during the period studied.

The researchers also analyzed the test scores of students across various socio-economic groups according to whether there was broadband access available in their ZIP code, and they found similar minor but statistically significant negative effects on the test scores of students whose ZIP codes attained broadband access during the period studied—effects that were more pronounced among low-income and black students.

It's important to note that the researchers had no way of correlating for sure whether students whose families owned computers also had broadband access during the period; instead, they relied only on the availability of broadband service in the students' communities.

It's also important to note that Vigdor and Ladd did not base their analysis on observations of school laptop programs or other school-based efforts to close the digital divide. In these more structured programs, where teachers are assigning computer-based homework and parents receive computer training as well—often signing a contract promising to monitor their children's computer activity at home—it's entirely possible that researchers would see different results. That's something Vigdor acknowledges, too.

"Providing computer training in a more structured, monitored environment might avoid some issues," he told eSchool News, adding: "More than 90 percent of families with kids have computers in the home, and they aren't going anywhere. The real policy question thus isn't about how to keep computers out of homes, but about informing parents, teachers, and the IT industry about the risks, and potentially devising techniques to mitigate harm."

It would appear the study's real lesson, then, is that efforts to close the digital divide also should include parental education and other interventions to change students' habits.

Yet, that wasn't the conclusion conveyed by some media reports.

A story by the Raleigh News & Observer, headlined "Home computers hurt middle-school students' test scores," contained the lead: "You may want to stop and reconsider whether you think a home computer will help your child with reading and math." And the subhead in a story by the United Kingdom's Register read: "Digital divide efforts counter-productive, say profs."

"These wild-camp claims have to stop," said Keith Krueger, chief executive of the Consortium for School Networking. "Reading what these media outlets are publishing just goes to show you that you really have to read the original report yourself."

He continued, "The damage this is doing to those who have advocated for a 24/7 learning environment, and for all kids to be connected, whether or not they come from low-income families, is discouraging." eSN

Plan...

continued from page 1

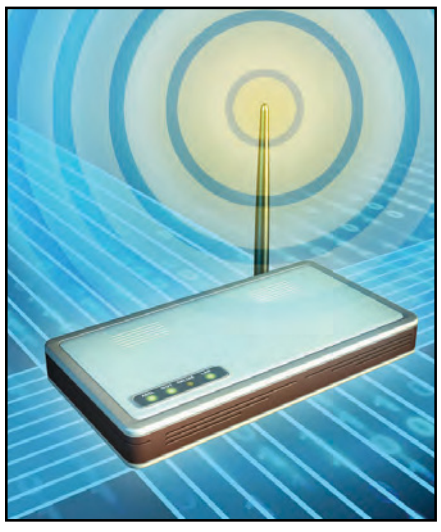
companies left room for broadband providers to charge extra to route traffic from premium services over dedicated networks that are separate from the public internet.

Although broadband providers such as Verizon and internet-content companies such as Google are at opposite ends in the increasingly bitter debate over such rules, the two companies have been in talks for months to try to identify common ground.

Their proposal came just days after the FCC declared an impasse in negotiations to craft an industry-wide compromise on the thorny issue. FCC Chairman Julius Genachowski is seeking to adopt net-neutrality rules that would ensure that broadband subscribers could readily access all legal online content, applications, services, and devices.

The proposal from Google and Verizon would give the FCC authority to enforce those rules for wired networks by prohibiting broadband providers from discriminating against or favoring internet traffic. The proposal would allow the agency to impose a penalty of up to $2 million on companies that violate the rules. Wireless carriers, which have more capacity constraints, would not be subject to the restrictions, although they would have to disclose their network management practices.

In a conference call with reporters, Google CEO Eric Schmidt and Verizon CEO Ivan Seidenberg said their proposal would preserve the openness of the internet, but still give phone and cable TV companies room to experiment with "managed"



At stake in the battle over 'net neutrality': the future of the web.

services that could send online video, games, and other bandwidth-hungry applications over separate systems.

Jen Howard, a spokeswoman for Genachowski, had no comment about the companies' proposal.

But several public-interest groups were quick to denounce it. In a statement, Free Press Political Adviser Joel Kelsey said the plan would "transform the free and open internet into a closed platform like cable television" and "lead to toll booths on the information superhighway."

Gigi B. Sohn, president and co-founder of the group Public Knowledge, added that the proposal "sacrifices the future of the mobile wireless internet as this platform becomes more central to the lives of all Americans."

Higher-education technology officials also have voiced concerns. IT decision makers at colleges and universities have said that charging more for so-called "premium" services—such as sending internet video over a separate network—could undermine major strides in providing educational content online, especially for smaller institutions (such as community colleges) without massive technology budgets.

Public-interest groups were particularly disappointed with Google, which has led the push in recent years for strict net-neutrality rules that would require broadband providers to give equal treatment to internet traffic.

Net-neutrality supporters argue that this encompasses more than just barring phone and cable companies from blocking or degrading traffic. They also insist that broadband providers should not be able to charge extra for priority access on their systems, because doing so would create a two-tiered internet with a fast lane for online companies that can pay more and a slow lane for everyone else. The proposal outlined by Verizon and Google, they say, violates this principle.

Schmidt rejected this point, stressing that the proposal would not allow any paid prioritization of traffic over the public internet.

Verizon and other internet providers, meanwhile, maintain that onerous net-neutrality rules would discourage them from continuing to invest in their systems. After spending billions to upgrade their lines for broadband, they say, they should be able to operate those systems as they see fit and earn a healthy return by offering premium services.

Broadband providers also insist that they need flexibility to manage traffic so that high-bandwidth applications don't hog capacity and slow down their networks for everyone else.

Verizon and Google unveiled their proposal less than a week after the FCC abandoned its efforts to negotiate a compromise on net-neutrality regulations that the broadband industry would accept.

According to one person close to the FCC talks, the Verizon-Google deal undermined the discussions taking place at the FCC and progress that had been made toward an industry-wide compromise. This person said FCC officials fear the proposal from Google and Verizon will not do enough to prevent phone and cable companies from using their control over broadband connections to become online gatekeepers.

At this point, it's unclear what the FCC's next step will be. Before it moves ahead with any net-neutrality proposal of its own, the agency first must establish its authority to regulate broadband in the aftermath of a federal appeals court ruling in April that cast doubt on its existing regulatory framework. eSN

'Race to the Top' spurs school-reform debate

From staff and wire reports

The U.S. Department of Education has named 18 states and the District of Columbia as finalists in the second round of the federal "Race to the Top" (RTTT) grant competition, giving them a chance to receive a share of $3.4 billion to implement broad school reforms. The July 27 announcement came just one day after a coalition of civil-rights organizations criticized the Obama administration's approach to education reform, highlighting a growing disconnect between administration officials and critics of its education policies.

The 18 states that are finalists for the second round of RTTT grants are Arizona, California, Colorado, Florida, Georgia, Hawaii, Illinois, Kentucky, Louisiana, Maryland, Massachusetts, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, and South Carolina.

The competition rewards ambitious but controversial reforms aimed at improving struggling schools and closing the achievement gap. Dozens of states have passed new education policies to foster charter school growth and modify teacher evaluations, hoping to make themselves more attractive to the judges.

In a speech announcing the finalists at the National Press Club in Washington, D.C., Education Secretary Arne Duncan said a "quiet revolution" of education reform is taking place across the country.

"It's being driven by great educators and administrators who are challenging the defeatism and inertia that has trapped generations of children in second-rate schools," he said.

Thirty-five states and the District of Columbia applied during the second round of the RTTT competition. Applications were screened by a panel of peer reviewers, and finalists will travel to Washington, D.C., in coming weeks to present their proposals.

The department expects 10 to 15 applicants ultimately will receive money, depending on whether large or small states win.

The administration's plans have drawn criticism.

In the past 18 months, 13 states have altered laws to foster the growth of charter schools, and 17 have reformed teacher evaluation systems to include student achievement scores, among other indicators.

Nearly 30 states have scrambled to adopt the Common Core State Standards, a state-led initiative that outlines what students should know by the time they graduate from high school, which is part of the scoring for RTTT.

New York, a finalist in the first round that did not win money, lifted its cap on the number of charter schools that can open from 200 to 460. Colorado passed laws that would pay teachers based on student performance and can strip tenure from low-performing instructors.

Two states, Tennessee and Delaware, were awarded a total of $600 million in the first round.

Their applications were praised for merit pay policies that link teacher pay to student performance and for garnering the support of teachers unions. Tennessee and Delaware also have laws that are welcoming to charter schools.

All the states that were finalists but did not win in the first round were finalists in the second round.

The administration's emphasis on charter school expansion and using student test scores as leading indicators of teacher quality have put off many critics, including noted education historian Diane Ravitch.

Citing research that suggests charter schools perform no better than traditional public schools, Ravitch says charter schools are actually hurting public schools because they're skimming off many of the students who are most motivated succeed.

The reforms also have drawn criticism from teachers' unions, such as the American Federation of Teachers (AFT). AFT President Randi Weingarten says she supports reforming how teachers are evaluated, but relying mainly on student test scores is unfair.

In a statement on the finalists for round two of RTTT grants, Weingarten criticized the administration for including Washington, D.C., as a finalist. The D.C. school system made headlines in July when Chancellor Michelle Rhee fired 241 teachers, or 5 percent of the district's total, under a new evaluation system that held them accountable for their students' standardized test scores.

"The centerpiece of Race to the Top is meaningful teacher evaluations developed with teacher input and focused on student learning," Weingarten said. "The Department of Education's rhetoric, and its scoring rubric, purport to reward states that work with teachers to develop this kind of evaluation system. Logically, then, Washington, D.C.'s application—which includes an evaluation system developed and implemented solely by the chancellor, without regard to considerable criticism this year from frontline educators—should have ranked among the lowest. ... No one wants bad teachers, but no one should want bad teacher evaluation systems, either."

Weingarten also blasted the administration for its practice of encouraging reforms through competitive grants—an approach that many others are concerned about, too.

Civil-rights leaders, meanwhile, are worried that the administration's reforms leave out many minority students. Eight civil-rights organizations, including the NAACP, contend in a document released July 26 that the Education Department is promoting ineffective approaches for failing schools.

"Low-performing schools will not improve unless we also change the resources, conditions, and approaches to teaching and learning within the schools or their replacements," the document states. eSN

How 'process management' can improve education

Laura Devaney
Managing Editor

An ambitious program aims to transform K-12 education outcomes, such as student achievement and smart spending, by focusing on the processes through which schools strive to achieve those outcomes—and it already has led to positive results (and millions of dollars in savings) among participating schools.

The North Star Project, spearheaded by the nonprofit American Productivity and Quality Center (APQC), focuses on process and performance management (PPM) as the driver of improvement.

APQC Chairman C. Jackson Grayson Jr. said he has a "simple but difficult mission—I want to transform the entire education system," including state and federal governments, higher education, and private schools.

Grayson said there are two fundamental reasons for the "decades-long" stagnation in public K-12 education: There exists an almost total focus on inputs and outcomes, and no focus on processes; and there is a failure to link accountability with improvement through processes.

"Most of the focus of the entire education system has been on … inputs and outcomes—the what and the why," a recent APQC report states. "The how—the processes—have been almost entirely overlooked."

"Process is the most fundamental way to go about improvement," Grayson said, adding that process management is not used in K-12 education today. Outcomes themselves cannot be managed, but the processes use to achieve those outcomes can, he said.

The North Star Project holds that when performance management and process management are not linked, education cannot improve and undergo transformative change.

The project describes the processes that participating districts have used, and the success they have realized, for replication and implementation in other districts. It relies on the development and maintenance of a process-outcomes database that will let districts compare their performance against that of other schools and identify areas for improvement.

School leaders should identify who can influence a process positively and negatively, and Grayson said strong leadership is essential from the very beginning. "We don't let any district [participate] in which the superintendent is not involved enough to know what's happening," he said.

The North Star Project includes face-to-face coaching, but Grayson hopes to move to virtual coaching in the future. APQC is a nonprofit organization, but it does require varying financial assistance from participating districts. However, schools will receive a refund if they fail to identify cost savings during process evaluations.

Everything in a school district, including bus schedules and cafeteria service, is somehow related to student achievement, Grayson said.

From January to March 2009, APQC launched a year-long pilot project in 11 districts across nine states. Each district assembled project teams, received PPM training, and selected projects that the district wanted to implement. Teams received face-to-face and virtual coaching while they outlined and put plans into action. Projects included new construction, common math assessments, reducing textbook order errors, and creating a teacher evaluation system.

Last November, participating districts met in Houston to share lessons learned and results of their projects.

While still ongoing, the projects showed promising results. A project to reduce textbook order errors has saved one district an estimated $150,000 up to now, and a transportation project to improve accident prevention has saved its district $264,000 so far.

The Iredell-Statesville Schools in North Carolina implemented a dropout prevention program and immediately saw a 3-percent reduction in its dropout rate. The district forecasted a 20-percent decline over the next six years. It also freed up $4 million in energy savings for other programs.

Montgomery County, Md., schools realized that purchasing energy via a wholesale model would save about $2 million a year. A cooperative inter-agency bidding process for employee health-care services is expected to save about $4 million over three years.

"We are facing a $140 million budget deficit in Montgomery County Public Schools," said Jerry Weast, the district's superintendent. "Our work with APQC ... has helped us know where and how to make intelligent budget cuts that minimize the negative impact on college and work readiness for our students."

On average, participating districts have saved about $1.6 million and 39,000 labor hours.

Schools that want to become involved should examine their current practices. "Map the process—that's the simplest and best way to start," Grayson said. "I want this to spread to every part of the nation." eSN

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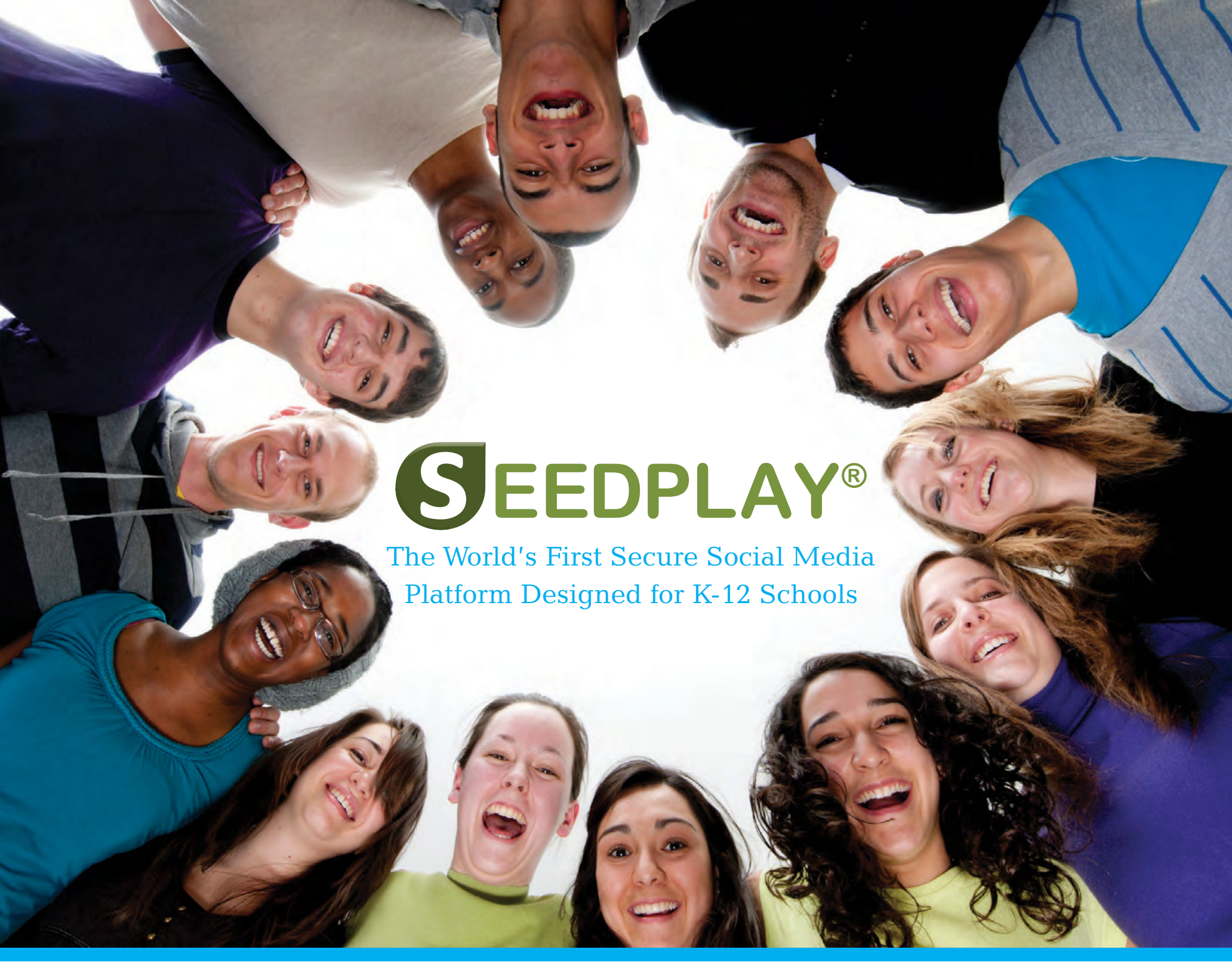

Introducing Seedplay

Seedplay is a unique online program that empowers middle and high school students to become inventive, resourceful leaders and entrepreneurs. It provides the tools and guidance needed to initiate, promote, and fund, student-centered, entrepreneurial projects that improve the quality of school and community.

To develop Seedplay® projects -- students use online planning, budgeting, and social-networking tools to attract fans, micro-funders, and advisors from their extended communities. They'll develop a network of support for their projects, but will also build valuable personal networks that will sustain them in the years to come.

An idea is a seed. If knowledgeably nurtured -- it will grow and transform. Seedplay is the mechanism to nurture the seeds of ideas. Through it, your students will learn to transform their own ideas and dreams – to benefit their school, their community, and themselves.

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Organizing for Success

Seedplay provides the means necessary to envision, plan, seek funding, and complete an individual or team student project.

Students will enroll in Seedplay's online component where they will find the instructions and tools needed to generate ideas, organize their thinking, and advance their projects. Seedplay projects may be proposed by individuals or by collaborating teams. Faculty will provide appropriate oversight by filling advisory roles throughout the process.

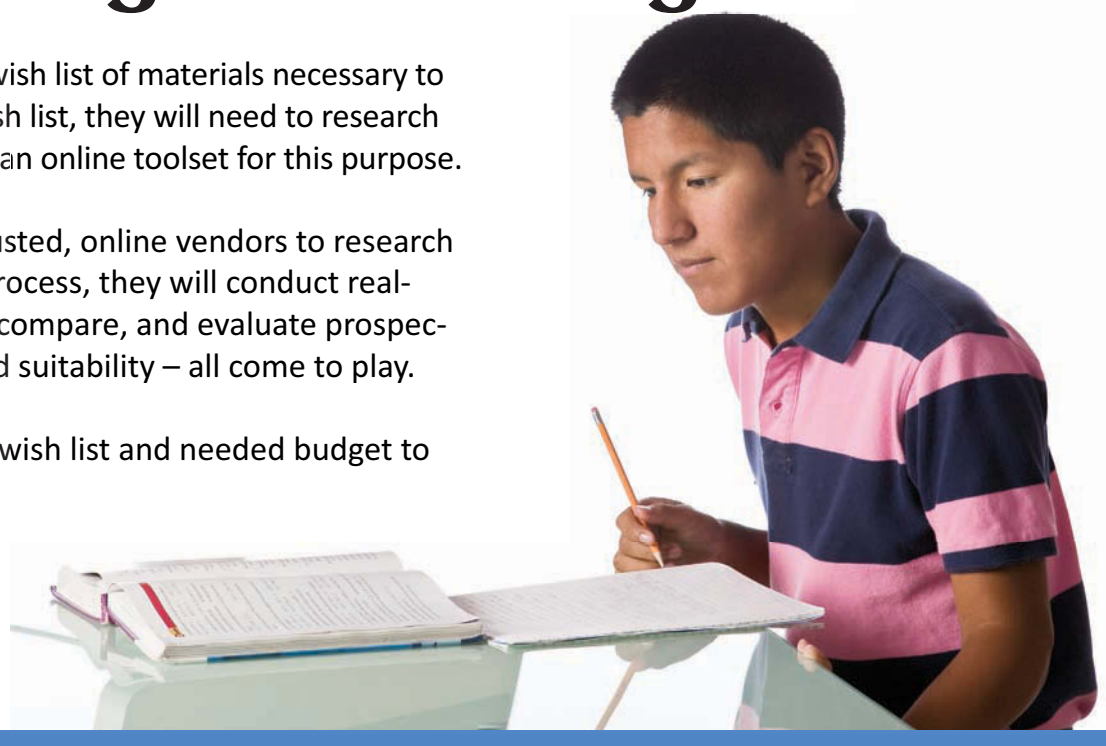
To advance their projects, students will progress online through a series of organizational stages. Each opens with a descriptive video that establishes the goals for that stage, and provides information necessary for successful completion. The steps represent an incremental learning process, and as such, lend themselves to organizational thought for completing projects in almost any subject.

Student Planning and Budgets

As students prepare their projects, they must create a wish list of materials necessary to promote and launch that project. To support such a wish list, they will need to research and create a corresponding budget. Seedplay provides an online toolset for this purpose.

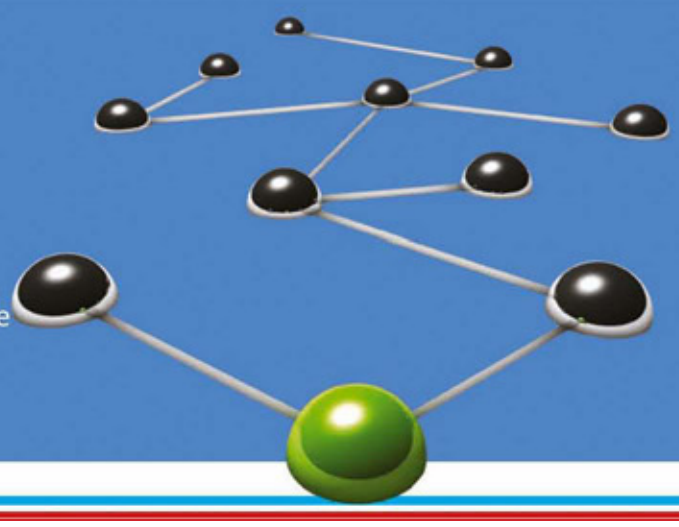
Next, students will access Seedplay's pre-arranged, trusted, online vendors to research the price and availability of each item. Through this process, they will conduct real-world higher order thinking activities as they analyze, compare, and evaluate prospective purchases. Price, quality, quantity, availability, and suitability – all come to play.

When choices are made, students add their materials wish list and needed budget to their project page. They'll then use Seedplay's social networking component to attract advisors and donors. Advisors, fans, friends, family all can offer guidance and insights about this list. Through such interactions, students self-evaluate and self-correct their lists and budgets.



The Power of Social Networking

One of the most powerful elements of Seedplay is its integrated, online, social networking component. It gives students the contemporary, connectivity and communication tools needed to broadcast their projects, seek fans, advisors, micro-funders, and supporters. When their project is completed, the networking component then provides the student with the mechanism to announce the success, express appreciation for each contribution of invested time and resources – and even announce the next project! Learning to use and appropriately apply social-networking tools – to meet constructive goals -- is an essential part of every Seedplay project.



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Drop-out Prevention and Beyond

Seedplay is designed as a supplemental component that can be a motivating enhancement to virtually any core course of study or program. It is particularly at home in an English, Language Arts, Reading or Language Development course by virtue of its communication-centric model. Seedplay's projects invite every student to read, write, listen and speak -- all four language development processes -- throughout each stage of project creation, launch, and evaluation. And students exercise higher order thinking as they analyze, compare, draw conclusions, and evaluate gathered information. By its very nature, Seedplay is cross curricular -- where consumer mathematics and thematic projects can suggest use in Social Studies, Mathematics or even Science courses. Seedplay can evoke a new level of student interest and involvement wherever it is used.

Students engage in both online and paper and pen activities. To access Seedplay's online functions, they can attend whole-class sessions in a computer lab, or simple rotations using in-class computers – all while normal instructional activities are being conducted. The implementation model is specifically designed to accommodate the widest range of classroom schedules and requirements. Recommendations for implementation during the school day, extended day, or summer school are detailed in the Teacher's Edition.

Micro-Fundraising

Micro-fundraising is the practice of gathering supporters who contribute monetary donations -- in small scale – to a worthy endeavor (thus the prefix "micro"). A student may post a Seedplay project that includes a list of needed materials and their cost. Using Seedplay's social media component, the student then generates a list of email contacts – inviting them to review the project, and lend moral or tangible support. Fans, supporters, faculty advisors, and community members view the project – and its financial requirements. They can elect to become a donor through Seedplay's secure commerce functions to cover a part or all of a project.

To assure a viable pool of donors for student projects, school and district leadership will want to contact local businesses, industry and social organizations as potential funders. These groups may wish to support student projects through individual donations, or with lump-sum contributions. Local newspapers may wish to provide ongoing coverage of schools that produce a continuous stream of projects that enhance the quality of community. And they may wish to recognize involvement of businesses and groups that endorse such projects. Seedplay's vision and spirit is imaginative and infectious – involvement can easily span and unify an entire community.

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Completing Projects That Transform

In the adolescent culture today, we hear of conflicts involving the misrepresentation of respect. Some see it as a commodity gained or lost on demand – often as a function of intimidation. Yet when respect is demanded, it is rarely commanded. True respect must be earned. Projects where students capably reach outside themselves to transform their school or community in meaningful ways -- earn praise and recognition. These are a means to earn genuine, lasting respect.

"Ask any teacher, and you will hear great stories of individual student transformation. Ask any district administrator, and you'll next hear stories of schools that broke the mold and transformed a dynamic. And last, ask any community leader, and you will hear stories of the transformation of whole neighborhoods and entire cities.

In each case there was a vision, a rally point, and a leader.

What if your school is filled with transformational vision, many rally points, and many, many leaders? You know it is.

Let Seedplay be your partner – together we'll create a safe place where students learn to dream and transform -- their school, their community, and themselves." **~ Harlan Gaston**

Harlan Gaston

Harlan Gaston is an artist and social entrepreneur with a vision to help young people realize their fullest potential.

He grew up in the inner city neighborhood of Watts in South Central Los Angeles, and overcame many challenges to attend Stanford University at the age of 16.

At 20, Harlan became the world's youngest and first American Reinhard Mohn Fellow with Bertelsmann AG, consulting with business leadership from around the world.

Drawing on these experiences, Harlan designed an exemplary program for student goal setting – selling over 50,000 audio books and DVDs.

And now Harlan has developed Seedplay – his latest innovation to help students envision – and realize – a fulfilling future.

Call or email us today to request a free descriptive brochure or visit our website for more information.

Together, we can help your students create both a vision and the reality of their success.

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India unveils prototype of $35 tablet

From staff and wire reports

It looks like an iPad, only it's one-fourteenth the cost: India has unveiled the prototype of a $35 basic touch-screen tablet aimed at students, which it hopes to bring into production by 2011.

If the government can find a manufacturer, the Linux operating system-based computer would be the latest in a string of "world's cheapest" innovations to hit the market out of India, which is home to the $2,127 compact Nano car and the $2,000 open-heart surgery.

The tablet can be used for functions like word processing, web browsing, and video conferencing. It has a solar-power option, too—important for India's energy-starved hinterlands—although that add-on feature costs extra.

"This is our answer to MIT's $100 computer," Human Resource Development Minister Kapil Sibal told the *Economic Times* when he unveiled the device in July.

In 2005, Nicholas Negroponte—co-founder of the Massachusetts Institute of Technology's Media Lab—unveiled a prototype of a $100 laptop for children in the developing world. India rejected that as too expensive and embarked on a multi-year effort to develop a cheaper option of its own.

Negroponte's laptop ended up costing about $200, but in May his nonprofit association, One Laptop Per Child, said it plans to launch a basic tablet computer for $99.

Sibal turned to students and professors at India's elite technical universities to develop the $35 tablet after receiving a "lukewarm" response from private-sector players. Critics noted that the tablet's cost largely depends on companies actually being able to manufacture at the $35 price point.

Christopher Dawson, an education blogger for ZDNet, discussed the tablet in a July 23 post, and he posted a follow-up entry on July 26 in which he wondered exactly how India would achieve that $35 price tag.

"The prototype only lays out the specifications for the tablet, but [its] cost estimates rely on predictions of massive economies of scale and local government large-scale purchases," he wrote.

Dawson noted that "devices like these have the potential to leverage extraordinary advances in cloud computing and be part of both modern, connected classrooms as well as bridging the digital divide." He pointed out, however, that many schools—in the U.S. and across the globe—are still struggling with connectivity and might not be ready for devices like this.

Mamta Varma, a ministry spokeswoman, said falling hardware costs and intelligent design make the price tag plausible. The tablet doesn't have a hard disk, but instead uses a memory card, much like a mobile phone. The tablet design cuts hardware costs, and the use of open-source software also adds to savings, she said.

Varma said several global manufacturers, including at least one from Taiwan, have shown interest in making the low-cost device, but no manufacturing or distribution deals have been finalized. She declined to name any of the companies.

India plans to subsidize the cost of the tablet for its students, bringing the purchase price down to around $20.

"Depending on the quality of material they are using, certainly it's plausible," said Sarah Rotman Epps, an analyst at Forrester Research. "The question is, is it good enough for students?"

Profitability also is a question. Epps said government subsidies or dual marketing—where higher-priced sales in the developed world are used to subsidy low-cost sales in markets like India—could convince a manufacturer to come on board.

If it works, Epps predicted, the device could send a shiver of cost-consciousness throughout the industry—much as Negroponte's plans helped spur the creation of devices like Intel's low-cost Classmate PC.

"It puts pressure on all device manufacturers to keep costs down and innovate," she said.

The project is part of an ambitious ed-tech initiative that also aims to bring broadband connectivity to India's 25,000 colleges and 504 universities and make study materials available online. eSN

A prototype of the $35 tablet

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Update: Google touts encrypted search fix

Meris Stansbury
Associate Editor

Responding to concerns from ed-tech officials, internet search giant Google Inc. has moved its encrypted search feature to a new domain name, from https://www.google.com to https://encrypted.google.com. The move is intended to let schools block Google's encrypted search feature without having to block the company's other services, too—but some ed-tech officials say it's not a viable solution to the problem.

Google in May released a new encrypted search feature, which lets internet users hide their search queries from third parties. The service uses Secure Sockets Layer (SSL) connections to encrypt information that travels between a user's computer and Google's search engine, meaning that a user's search terms and search results pages cannot be intercepted by any third-party software on the network. Searches also are not archived in the web browser's history and won't appear in the auto fill during a subsequent search.

Educators in school systems using Google services, such as Gmail and Google Apps for Education, worried that the new encrypted search feature would keep them from complying with the Children's Internet Protection Act (CIPA) and put their federal e-Rate funding at risk. They said the service forced them to make a difficult choice: Block access to all of Google's features, including Google Apps, or risk forfeiting CIPA compliance.

To address these concerns, Google has moved the domain name for its encrypted search. On the Official Google Enterprise Blog, a post titled "An update on encrypted web search in schools" stated that Google moved its encrypted search "to a new hostname in order to better serve school partners and users."

"The site functions in the same way," according to the post. "However, if school network administrators decide to block encrypted searches on https://encrypted.google.com, the blocking will no longer affect Google authenticated services like Google Apps for Education."

That's not entirely true, said Jerry Jones, director of computer and telecommunications support for the Sacramento County, Calif., Office of Education.

"Encrypted.google.com appears to use the same IP addresses as the rest of the Google services, so just having a different domain name will not meet our needs," Jones said. "We need the IP addresses of their encrypted search to be different as well."

Google says schools can simply "block the DNS [Domain Name System] resolutions of the encrypted.google.com hostname, and not attempt to inspect HTTPS packets. … Before a browser even tries to make a connection to https://encrypted.google.com, it has to resolve the IP address of that hostname. We expect schools to block that initial resolution."

But Jones and some other ed-tech officials say they prefer to filter inappropriate web sites based on IP addresses instead of domain names. As long as Google's encrypted search shares the same IP addresses as the company's other services, the new domain name won't matter, they say.

Andrea Bennett, executive director of the California Educational Technology Professional Association, agreed with Jones.

Though Bennett said she's impressed with Google's attention to the problems its encrypted search has created for schools, and said that Google has "responded well to the education community's concerns," she noted that the domain name change is not very helpful.

"While this is an improvement, it is not perfect," Bennett said. "Using DNS to block is not secure enough, because students know how to get around it by using the actual IP address. We have been told that Google continues to work with the vendor community to develop a more stringent solution, and we appreciate that."

The issue is important not only for schools, but also for Google, which is competing with Microsoft in supplying free, cloud-based software to schools for communicating and collaborating online.

In April, the Oregon Department of Education announced that its 540,000 public school students would have access to Google Apps for Education in a deal expected to save the state's schools about $1.5 million a year in software licensing and hosting fees. In July, Google Apps also won the endorsement of Iowa and Colorado, which will offer the tools and training to their public schools.

Microsoft said in June that the Kentucky Department of Education has implemented Live@edu, its answer to Google Apps for Education, for its 700,000 students, teachers, and staff throughout the state—saving districts an estimated $6.3 million in software licensing and management costs over four years. eSN

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Microsoft recognizes innovative teaching

Meris Stansbury
Associate Editor

In what could be called a 21st-century teachers' fair, Microsoft chose a select group of educators to participate in the company's annual Innovative Education Forum (IEF)—a showcase of the best teacher-created projects that incorporate 21st-century skills and effective uses of education technology.

Now in its sixth year, the IEF was held in Washington, D.C., in late July and hosted 17 teacher teams from 10 states.

In an ironic twist from the usual student-centered fair, teachers were the ones who lined the walls of a room crawling with judges, standing anxiously by their billboards, scotch-taped visuals, and laptop screens.

"Just relax, and try to tell us about your project as if we were having a normal conversation," said one judge to the first presenter.

IEF is part of Microsoft's Innovative Teachers program, a global community of educators sponsored by Microsoft Partners in Learning. The forums are annual events that recognize and reward innovative teachers who "practice the elements of 21st-century learning in their own classrooms, and then incorporate these skills into the student learning environment," says Microsoft.

Every year, teachers who exhibit the greatest innovation are selected by their schools to attend a regional forum. Next, the most innovative teachers from each region are selected to participate in the forum for their country. Finally, the teachers who demonstrate the greatest innovation at the countrywide forums are selected to attend the Worldwide Innovative Teachers Forum, which this year is being hosted in Cape Town, South Africa, in October.

The theme for this year's U.S. IEF was "Inspire More," says Microsoft. Projects demonstrated innovative uses of technology that inspire collaboration, community, exploration, and service by educators with peers and students while developing 21st-century skills.

While the use of Microsoft technology tools was required, participants were allowed to incorporate as many technology tools as they wanted, regardless of the company behind them.

Examples of some of the teacher projects included:

- "Project Phone Zone" from Byng Junior High School in Ada, Okla., had ninth graders research cell phone radiation as a global problem to address in their school community. Students created online surveys, measured radiation through custom-designed experiments, and used Microsoft Office products to implement their ideas and research. As a result of the project, more than 70 percent of all students at the school reported they will take steps to reduce cell phone radiation and spread the word to the community.
- "I am…" from St. Paul's Episcopal School in Mobile, Ala., had high school students become curators for the Museum of Culture and Society. Students were asked to create a museum exhibit that educates their peers about the influence of epics in society. Student read excerpts from ancient and medieval epics, then analyzed how the epics influenced societal values of the youth of that age and how those ethics relate to modern life. Student groups also created a video virtual tour of an epic hero using Microsoft OneNote, VoiceThread, and community-generated video clips. Students learned about copyright law and digital citizenship and gained mastery of many digital technologies. They also gained critical analysis skills.
- "2010 Astronomy Interdisciplinary Unit Project with WorldWide Telescope," from Jonas Clarke Middle School in Lexington, Mass., had sixth grade students use Microsoft's WorldWide Telescope to study astronomy and explore the universe. Students worked in groups on projects that incorporated technology, research, math, ancient civilizations, and science. Seventy-eight percent of student groups created WW Telescope Tours as part of their presentation; others used PowerPoint. Groups gave presentations to their peers as well.

Judges for the IEF included the K-12 and STEM coordinator for the Corporation for National and Community Service's Learn and Serve America, Scott Richardson; last year's IEF U.S. winner, Autumne Streeval; Microsoft Academic Program Manager and WorldWide Innovative Teachers Program Manager David Walddon; Microsoft Academic Program Manager Allyson Knox; the director of educational innovation at Peer-Ed, Les Foltos; and 2008's IEF winner, Matinga Ragatz.

"We want to know not just how the class as a whole did, but we want to know if teachers also monitored individual student progress, because that's just as important," said Knox. "We're also interested in how the project is applicable to not just one class, but the entire school or district, as well as whether or not students are 'thinking about their thinking,' which is critical for 21st-century development."

The winning team, Rawya Shatila and Cheryl Arnett from Sunset Elementary School in Craig, Colo., won for their project, "Digital Stories: A Celebration of Learning and Culture." It involved two classes of children—one in Colorado and the other in Beirut. These two first and second grade classes used technology from ePals to share stories, learning, and activities throughout the year.

Students posted messages and drawings on a wiki, exchanged bookmarks on World Book Day, shared the holidays they celebrate on a wiki and VoiceThread, and also shared their digital stories on a blog. eSN

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How to tailor your web site for on-the-go consumers

By Nora Carr, APR, Fellow PRSA

With smart-phone use exploding in the U.S., it's only a matter of time before having a mobile web site becomes a necessary component of school communications.

Used as handheld computers, smart phones are changing how Americans consume media. According to the Pew Internet and American Life project, 40 percent of adults now use mobile phones for internet access, eMail, and instant messaging. Other popular non-voice-related applications include texting, playing music and games, recording video, and taking photos.

This trend isn't just for teens and tweens. When it comes to using mobile applications, 18- to 29-year-olds are leading the way, particularly African-Americans and English-speaking Latinos, according to Pew research. Soon, experts say, all cell phones will become smart phones.

Not surprisingly, mobile web browsers have proliferated quickly to meet this new demand. When a company, retailer, or organization doesn't have a mobile web site, the browser will try to access the desktop-oriented site.

Unfortunately, sites designed for a 15- to 24-inch screen and platforms that easily support complex programs such as Flash or Java don't do well when reduced to postage-stamp size. After all, even the iPhone 4G screen is only 3.5 inches.

These pint-sized screens require a different approach, one that also recognizes the limitations of touch screens and miniature keyboards. As anyone whose thumbs have hit the wrong app or bungled a text message knows, on-the-go communications must be simpler, faster, and less graphic-intensive.

According to Taptu, a search engine designed specifically for touch-screen phones, 440,100 web sites now offer touch-friendly content, representing an annual growth of 232 percent.

While some tech gurus argue that the increasing power of smart phones will make mobile web sites obsolete, the reality is that most users don't have the time or patience required to access desktop-oriented sites.

As a result, mobile web sites need to be designed and optimized for smaller screens with less-than-stellar resolutions.

The key is to tailor, personalize, and repurpose information in a way that leverages these tools' unique benefits. Simply moving content from one medium to the next is a prescription for user frustration.

Here are some tips for creating content and web sites that take advantage of mobile phone features.

- Recognize that mobile users are different than desktop or laptop users. If they're checking you mobile site, they're either trying to find time-sensitive information or killing time during a meeting or between appointments. Set realistic goals and develop an action plan that helps focus your efforts more strategically.
- Purchase your ".mobi" domain name. Even if creating a mobile web site isn't an immediate goal, purchasing your ".mobi" domain name or names makes good sense. If nothing else, you can prevent others using your school or district ".mobi" domain for nefarious purposes.
- Use RSS feeds. Really Simple Syndication can feed content to your mobile web site automatically. As with traditional web sites, offering breaking news and frequent updates are key strategies for building return visits and audience share. Make sure to post either a permanent 301 or temporary 302 redirect on the traditional web site whenever content is being shared with the mobile site.
- Less is more. Simplify the content and design to speed download times and to make it easier to find information while using a touch screen or mini-keyboard. Fewer keystrokes, pinches, and touches means mobile users can get what they need with minimal frustration and retries. Because people only have time to type in one- to three-word searches, align keyword searches accordingly.
- Interactive is in. Smart-phone users typically have access to a camera, cell phone, text messaging, GPS, and other tools. Use and combine them to keep users interested. For example, a mass-notification system can call parents about a new survey they can either fill out online via the mobile web or by using their cell phone keypad or touch screen.
- Navigation should help, not hamper. If a school is on lockdown, frantic parents will want this information at the top of the screen, where it's easiest to find. Less urgent information should be organized into categories and posted in list formats with simple bullets or access points. Offer a search function on every page. The main navigation bar or tools should use "access keys" that enable users to punch in a number on their keyboard to get content. Phone numbers should be accessible by clicking a link.
- Offer information, not animation. Keep more memory-intensive content such as photos, graphics, and videos on the traditional web site. The goal is information, not animation, for mobile web sites. Long download times, always a pain, are worse when experienced while on-the-go. Keep file sizes low on every page to optimize access and download times.
- Deploy text messaging strategically. Need to remind parents about the science project due tomorrow or the PTA's project to replace tattered media center books? Try text messaging. In 2009, the American Red Cross raised $22 million via text-based donations for earthquake relief in Haiti.
- Show interest in what mobile users are doing. In communications, context matters. Because many mobile phone users are literally moving through time and space on "planes, trains, and automobiles," content should be matched to their needs. For schools, this means posting the addresses of schools, special events, meetings, and athletic competitions as well as the time, date, and location. That way, smart-phone users can tap into their GPS to get directions.
- Explore free mobile web site solutions. Google, mobiSiteGalore, Yahoo, and other search engines and web sites offer free tools can help you create mobile-friendly web sites and convert content from your traditional web site and RSS feeds.

As more people go online via a mobile device, school web sites should adapt.

If this all sounds a bit overwhelming, don't worry. Trying to keep up with new and emerging technologies is challenging work, especially with budget cuts thinning the ranks of communications and IT personnel. Thankfully, aggregators such as Google Buzz, Spindex, YackTrack, ConvoTrack, and FlavorsMe can help you update mobile web sites and social media networks simultaneously.

There's also time for experimentation. With businesses slow to catch on to the need to design and deliver content specifically for mobile media consumption, schools have some time before employees, students, and parents start demanding it. By starting now, you'll be ahead of the game when the pressure is on to really deliver mobile content effectively. eSN

Award-winning eSchool News columnist Nora Carr is the chief of staff for North Carolina's Guilford County Schools.

Netwatch

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Curriculum

Best new instructional resources on the internet

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http://www.nautiluslive.org

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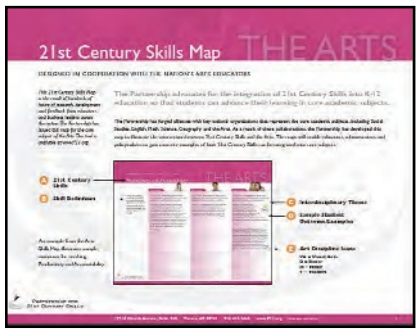
New tool shows how arts education boosts 21st-century skills

http://www.p21.org/documents/P21_arts_map_final.pdf



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'Terapixel' project lets users explore the cosmos from a PC

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Leadership

Research and management resources for the K-20 decision maker

New web site makes education data easier to find—and use

http://www.eddataexpress.ed.gov

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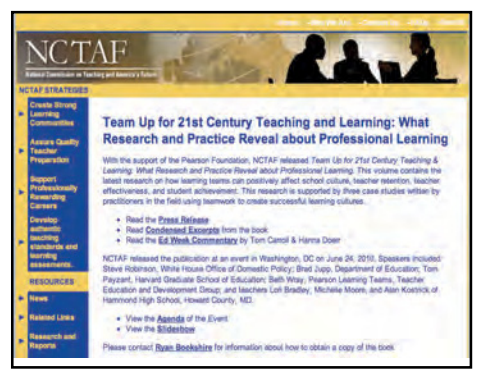
NCTAF: Collaboration is the key to successful teaching

http://www.nctaf.org/TeamUp.htm



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SafetyWeb helps parents monitor their children's online activity

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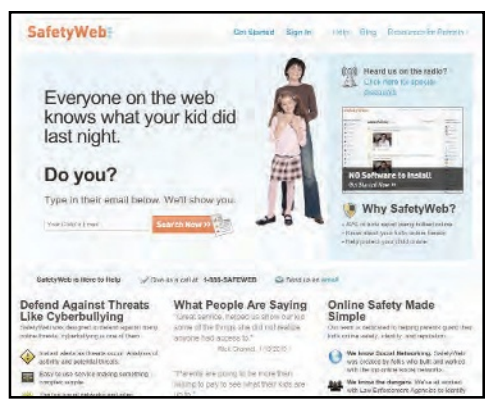

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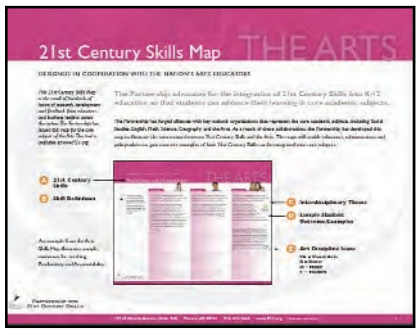

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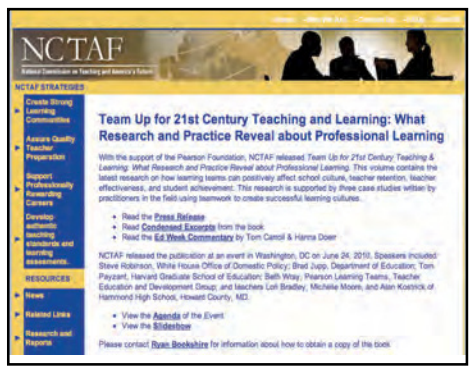

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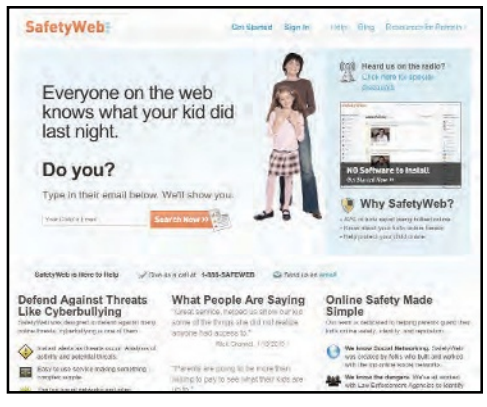

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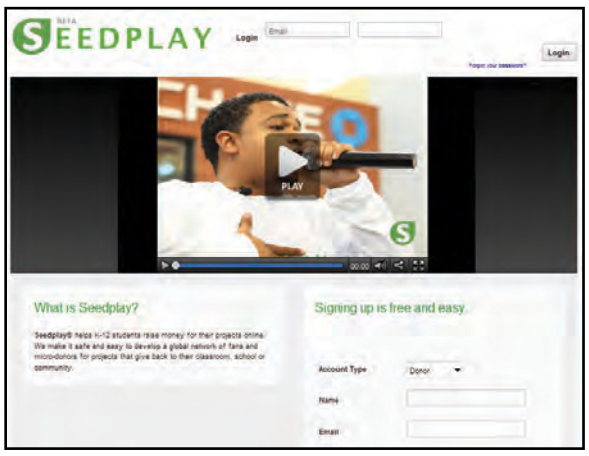

Seedplay helps empower students to solve real-world challenges

Seedplay, from CORE K12, is a new low-cost, high-tech solution that maximizes student engagement, enrollment, and achievement. Seedplay leverages the iGeneration's natural affinity for social networking to link learning to leadership. The web site empowers every student to identify a real-world problem facing his or her school or community. Once students identify a problem, they design a project to help solve it. Students then form teams, launch their project, and tap into a global support network of micro-funders and fans that help them reach their project goals. Through the power of social networking, students grow this support network and carry it over to the next project they tackle.

Seedplay is an effective dropout prevention, talented and gifted, or community service program designed to help students identify a need within their community, propose a solution, form a team of fellow student collaborators, and reach a variety of potential funders, micro-donors, and stakeholders across the globe, who provide cash donations via the Seedplay web site. Teachers use the Seedplay curriculum to guide students through a process of creating a project plan, which includes action plans, budgets, and organizational models to govern each project.

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http://www.seedplay.com

http://www.corek12.com

MimioVote assessment system takes the guesswork out of lessons

What if your assessment tool solved problems, instead of creating them? The MimioVote assessment system from DYMO has a unique, patent-pending design that's much easier and more intuitive for both you and your students.

Four flexible options simplify creating both custom and standardized assessments:

- Use the MimioVote question templates to create custom items quickly and easily.
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- Import state assessment or publishers' question banks into MimioStudio software.
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MimioStudio software keeps a running tally of scores for both the entire class and individual students. Final results are stored in the MimioStudio Gradebook, where they can be reviewed, modified, or downloaded into spreadsheets. Only DYMO makes assessment so easy for you and your students.

http://mimio.dymo.com

Follett's new digital learning platform allows for discovery, retrieval, communication, and collaboration

Cognite from Follett Software Co. gives you the tools to create a digitally powered classroom where the lights are always on. Integrating information discovery, retrieval, and communication into one user-friendly learning environment, Cognite provides educators, students, and parents with an intuitive interface that combines searching, calendar/scheduling, access to shared resources, and easy-to-use communications. Users at all levels in your school can access digital resources online, from anywhere, through this engaging, leading-edge tool.

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With Cognite's highly interactive learning space that encourages digital discovery, students collaborate on group projects outside the classroom and access the resources they need to complete assignments. Educators can locate materials for curriculum development to align lessons with district academic goals and improve instructional techniques through idea-sharing and teacher collaboration. Parents stay informed about their children's progress and keep an open communication channel with teachers.

Cognite is the newest offering in the Follett Software suite of industry-leading solutions, helping districts to streamline, centralize, and automate management functions, while maximizing the power of data to put more resources into educational needs. Follett Software helps educators support staff and engage students in today's digitally rich environment, empowering 21st-century learning and discovery. Watch a video about Cognite online to see how educators, parents, and students can organize, share, and discover.

http://www.follettsoftware.com/cognite

iStartSmart all-in-one learning system helps boost school readiness skills

Developed by HATCH, iStartSmart is an educational learning system designed to increase school readiness skills. Based on the most current research and learning standards, iStartSmart is an engaging, play-based system that has been child-tested in classrooms. The program is driven by adaptive teaching technology that moves children through skill areas in a way that ensures competency before moving to the next level. The system includes built-in progress monitoring with fully formatted and printable reports for teachers, administrators, and parents.

The skill development area of iStartSmart, Shell Squad Games, includes five skill families identified for school readiness: Phonological Awareness, Numeric Operations, Language Development, Alphabet Knowledge, and Logic & Reasoning. Within these families, there are 18 skills identified and five different levels for each skill. Henry's Hideout, the program's "free play" area, enhances the skill development with enrichment activities that include an art game and a nutrition game, as well as a playful, interactive room for children to explore. iStartSmart also includes Storytime, an enrichment area where children can access eBooks.

The All-in-One iStartSmart Computer Learning Center features an age-appropriate computer desk, the latest multi-touch computer hardware, and HATCH's exclusive ECLaunch, a utility software program that provides a safe, child-directed desktop management system for teachers and children.

HATCH representatives install Computer Learning Centers in each classroom, advise teachers on implementation, and provide complimentary, comprehensive staff development workshops with teachers to ensure the iStartSmart Computer Learning Center becomes an active, child-directed interest area in the classroom.

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The removable camera head fits snugly in your hand or onto the sleek, sturdy metal base. kena has 2x, 4x, and 10x objectives (for 20x, 40x, and 100x magnifications) and cool, bright LED lighting on top and bottom for viewing of specimens and slides. The unique silicone stage pad eliminates the need for stage clips.

Additional features include a convenient handle that acts as a cord wrap, an easy-turn turret that houses the objective lenses and top light, a touch tube extender to gauge focal distances when being handheld, and a storage bag.

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Those are the things you would expect from classroom-management software. However, NetSupport School provides additional unique features as well, such as printer management, a language lab including microphone recording and playback, student journals to retain a digital copy of all class content, an interactive lesson planner and custom test designer, and a built-in interactive whiteboard environment. With all these extra features included in the standard version, NetSupport School provides the most comprehensive classroom-management solution available today.

Classroom management need not be restricted to a traditional classroom. As well as full wireless support, NetSupport School also includes a unique Technician Console that allows support staff to discretely perform remote diagnostics and troubleshooting to ensure equipment is always available when needed most. The technician is able to see real-time thumbnails of which teachers are connected to students within each room and take full remote control of any PC that requires attention.

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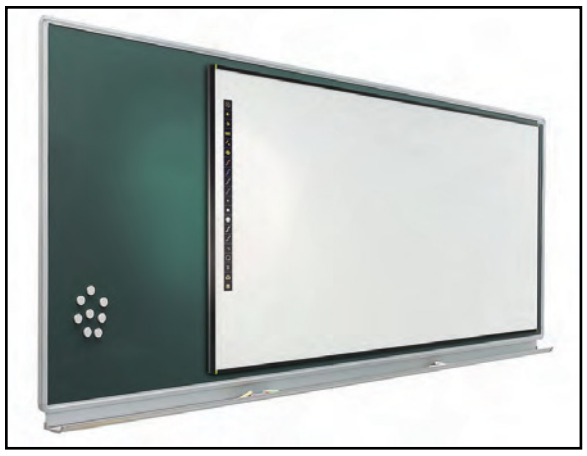
Bring learning to life with ïno click by PolyVision

Get interactivity in an instant with the ïno click interactive whiteboard from PolyVision. Designed with built-in magnetic-mounting hardware and no cords or cables to manage, ïno click attaches instantly to most any chalkboard or whiteboard without damaging the surface—no tools required. Since ïno click can be removed as quickly as it installs, you have the flexibility to move the board to another wall or share it with another classroom as often as needed.



Like all other ïno interactive classroom solutions, ïno click is environmentally certified and combines the simplicity and ease of a traditional dry-erase board with high-performance interactivity—without cords, cables, or costly installation. With a "Forever Warranty" on ïno's virtually indestructible e3 environmental ceramicsteel surface, plus an open architecture for using any software, ïno offers the lowest total cost of ownership on the market.

When it comes to teaching and learning, ïno click opens a world of imagination for students. According to Eva LaMar, third grade teacher and technology integration specialist at Riverbend Elementary School in Springfield, OR, "It is extremely motivating to watch my students develop a thirst for knowledge when using ïno click. When students have the drive to explore, take chances, and learn alongside their teacher, they are learners by choice."

http://www.polyvision.com

Epson's DC-06 Document Camera spotlights instructional detail

The Epson DC-06 Document Camera fits easily and conveniently into any classroom or lab setting. With native XGA (1,024 x 768) resolution, teachers can display ultra-fine detail in math, science, visual arts, and across the curriculum to engage students in the instructional process.

The DC-06 will display items up to 10.7 inches by 14.3 inches and offers 90-degree vertical and horizontal rotation, so educators can use a variety of instructional content and objects as part of a lesson. This document camera offers flexible setup with a USB connection, so it can be moved within a classroom or around a school building conveniently, making it possible for interdepartmental sharing.

As part of a special offer program through Epson Brighter Futures, schools and districts can purchase seven DC-06 document cameras and receive one free. This special limited-time offer is available through Sept. 30. Details about the offer are available online.

http://www.epson.com/bfoffers

Epson's AP-60 Projector Sound Solution makes audio part of learning

The Epson AP-60 Projector Sound Solution gives educators the option of adding audio capabilities to any new or existing Epson projector. The AP-60 solution includes four speakers and 60 watts of sound (two 30-watt channels), along with a wireless infrared pendant microphone. The speakers will enable educators to optimize the audio components of multimedia instructional content. The wireless IR pendant microphone enables a teacher's voice to be heard more clearly throughout the classroom and helps to preserve teachers' voices throughout the school day.

As part of a special offer program through Epson Brighter Futures, schools and districts can purchase seven AP-60 Projector Sound Solutions and receive one free. This will enable schools and districts to add the dimension of audio to more classrooms affordably. This special limited-time offer is available through Sept. 30; details about the offer are available online.

http://www.epson.com/bfoffers

RM SecureAudio System combines increased student performance with greater school security

Two critical issues that all schools and districts face are student achievement and security. Numerous studies show that enhanced audio increases student achievement, especially with targeted NCLB students. And while teachers are required to teacher their students, they also serve as the first responders in classroom emergencies where they are often isolated.

RM SecureAudio System is a full-featured classroom audio enhancement system with one important addition—it incorporates the "SAFE" system security alert function to provide alerts from the classroom. The SAFE system allows a teacher to push a single button to activate a silent

alarm, which continues to broadcast until the microphone is turned off and beacons the alert wherever the teacher goes. The alert can activate a security camera and provide visual surveillance of the room, and it send eMails with pictures attached.

In addition to the SAFE system, the RM SecureAudio System is a high-quality audio system, with a True Stereo Amplifier providing 50 watts of total output power. The teacher microphone features a remote volume control that allows the teacher to adjust the volume level on the system. The teacher has independent control of the auxiliary input level, the second microphone in the room, and his or her own volume level, as well as Selectable Teacher Voice Muting, which allows the teacher to mute the auxiliary inputs when he or she is talking.

(866) 728-6758

http://www.RMeducation.com

Skyward's Data Warehouse helps districts target their resources more effectively

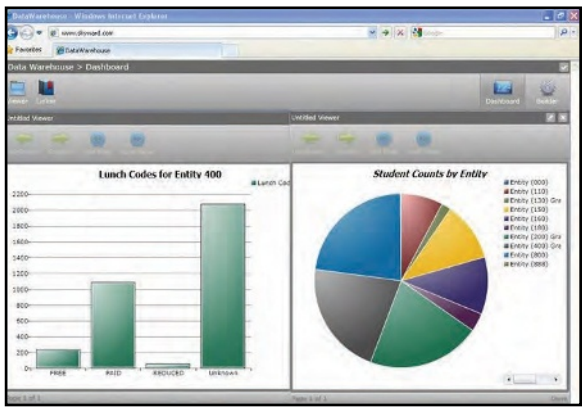
The pressure is on schools to analyze how and where they're using their funding and what effect those funds are having on educational programs. In response to this trend, Skyward has created a solution that allows districts to analyze their key information and conduct an in-depth analysis of their data.

Skyward's Data Warehouse module allows districts to create a visual representation of student data to see trends over time and to target which services are producing the best results and which are in need of modifications. By integrating seamlessly into the Skyward School Management System, it eliminates the hassle of difficult field mapping or third-party tools. All of the student data entered into Skyward easily can be uploaded into the Skyward Data Warehouse, allowing for comprehensive analysis of district data to better evaluate educational services—and make better long-term decisions about these programs.

Custom displays of key indicators allow district officials to visualize complex data at a glance, ensuring that students are receiving the top-notch programs they need to achieve their educational goals.

(800) 236-7274

http://www.skyward.com/products/datawarehouse.aspx



eSN.tv viewer's guide www.eschoolnews.com/eSN-TV/ViewersGuide

With dozens of videos being uploaded each week on eSN.TV, *eSchool News* has created a **Video Viewers' Guide** to help navigate our archive. Below you will find our videos of the month—selected based on their relevance to educational technology and viewer popularity. Our video site is powered by Eduvision from JDLHorizons—http://www.jdlhorizons.com/eduvision/

From the Student Video Network to interviews with leading experts in education, and from important vendor information to conference keynotes, we've collected a large variety for you to choose from. Simply go to our **Video Viewers' Guide** page on our web site www.eschoolnews.com/eSN-TV/ViewersGuide to check out our top videos.

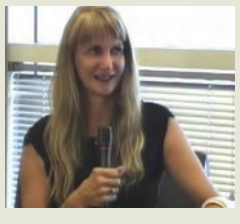
And remember, you too can upload video to our site! Be sure to visit www.eschoolnews.tv and click on the 'Upload Video' tab, where you will find instructions on how to submit your videos.

www.eschoolnews.com/eSN-TV/ViewersGuide

Highlights

Robot Teachers
Simon, developed by the Georgia Institute of Technology's SIM Lab, can learn simple tasks, and may become an assistant teacher in classrooms in the near future.

Dr. Yvonne Marie Andres Interview



Andres, president of GlobalSchoolNet.org, explains the organization's focus on project-driven learning and content-based collaboration.

More ISTE 2010

Shari Sentlowitz Interview
Sentlowitz, nat'l marketing manager for education and government for Sony, explains how Sony sees video being used in education today.

Timothy Taylor Interview
Taylor, tech coordinator for the Marion SD discusses how his district leverages technology for learning in the classroom, including the use of ISTE's NETS standards.

Keith Pratt Interview
Pratt, contributing faculty at Walden University, talks about his new book "The Excellent Online Instructor," as well as K-20 ed-tech.

Vendor News

A Teacher's Perspective
Heather Temske, a fourth grade teacher from Sweet Apple Elementary School in Roswell, GA, talks about her experience using Promethean in the classroom. For more information: http://www.prometheanworld.com/toolsforschool.

eInstruction Cornerstone Education Suite
Administrators at Hellgate School District share their experience using eInstruction's Cornerstone Education Suite to collect student performance data instantly, and review the data to pinpoint areas of strength and weakness in real-time.

BenQ MP780ST PointDraw at Plano ISD
The BenQ MP780ST delivers PointDrawT interactive application that enables the use of any surface for curriculum lessons. This includes future-proof Connectivity, while combining the functionality of a whiteboard and projector into a single portable solution.

Partner index

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