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interactive educator

Building Online Learning Communities

To Blog or Not to Blog? You Decide

New Technology TRENDS for education

Educators and experts examine podcasts, e-books, Moodle and more

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As the new school year starts, school hallways and district meeting rooms will be abuzz with talk of the latest technology trends. But the work involved in tracking and finding the substance behind these new trends is time consuming – so in this issue we've done some of the legwork for you.

We talked to educators and experts who use emerging technologies such as Moodle, e-books, podcasts and blogs every day, and we interviewed thought leaders in trends such as online learning communities and technology mentoring programs.

You'll hear from Diane Curtis who defines and discusses online learning communities and describes how schools are using online tools to motivate students and encourage self-directed learning. She also provides tips from experts on starting your own online learning community (Building Online Learning Communities p. 22).

Wesley A. Fryer gives a frank insight into the pros and cons of using blogs and podcasts and includes information and resources to help you decide if podcasting and blogging are learning tools you want to put into action. (To Blog or Not to Blog? You Decide p. 28).

You'll also find out how e-books can help reluctant readers succeed (E-Readers p. 10), what Moodle is and how Middlesex County Public School District in Virginia uses it extensively to improve student learning (Do you Moodle? p. 40).

Here at SMART we talk to educators at every level to find out what they need from technology and what information they need to make sound decisions on implementing technology successfully. While many of you want to be in-the-know when it comes to the latest technology news, you don't just want headlines, you want practical suggestions. How does this news affect education? What are some concrete examples of how it can be put to good use? Where can you learn more?

So we haven't just given you expert opinions on these new tools and trends; we've included advice, real-world examples and anecdotes from people actually putting them to work in districts, schools and classrooms on a daily basis. And we've topped it all off with plenty of resources to help you learn more or even start using some of these new technologies right away.

Whether you read the many articles inside to keep up with the latest trends, to help form your technology plans for the year or to find examples you can follow, you're sure to find them useful – and save yourself some time.

Sincerely,
Wendy McMahon
Managing Editor

CONTRIBUTING WRITERS

Diane Curtis is a veteran journalist and education writer based in Mill Valley, California. She has written for The George Lucas Educational Foundation focusing on technology in schools, and has worked for the *San Francisco Chronicle*, the *Sacramento Bee*, the *San Jose Mercury*, the Associated Press and United Press International, where she was a White House correspondent. She has won numerous awards, including Best in the West for editorial writing.

Wesley A. Fryer is an educator, author, digital storyteller, technology integration pioneer, husband and father. He is a national and international presenter and speaker and addresses a range of topics related to education, technology integration, distance learning and 21st-century literacy.

Susan D. Patrick is the President and CEO of the North American Council for Online Learning. She is the former Director of the Office of Educational Technology, U.S. Department of Education and published the National Education Technology Plan to Congress.

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HALL MEMORIAL SCHOOL BET ITS BLUE CHIP GRANT ON THIS OUTCOME

The purchase? SMART Board™ interactive whiteboards for every classroom.

Hall Memorial middle school in Willington, CT, was built in 1922 and, until three years ago, seemed more about the past than the future. But Principal David Harding believes technology is the new literacy, so he took a chance and used blue chip grant money to purchase SMART Board interactive whiteboards for every classroom.

College ahead

The result? Students are more engaged in learning. It's easier to attract new teachers. Veteran teachers with little computer experience have become experts. Teachers are training other teachers. And word of their success is spreading. They've entertained a dozen school districts from across the U.S., and even one from China, that want to see what they're doing.

See a short video about the Hall Memorial experience at www.smarttech.com/Hall3

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■ Senate panel rejects "net neutrality" rules – On June 28, Internet users trying to prohibit telephone and cable companies from providing better service and better prices to preferred customers lost a large part of their battle.

Not only did the Senate Commerce, Science, and Transportation Committee approve a bill intended to let phone companies and other telecommunications providers better compete in video markets currently monopolized by cable companies, but the committee also rejected an amendment to the bill. Senators Olympia Snowe, R-Maine, and Byron Dorgan, D-N.D., proposed to prohibit phone and cable companies from limiting access to their high-speed Internet networks based on site content or financial arrangements. The vote was 11–11, and ties defeat proposed amendments.

However, the bill faces an uncertain future in the full Senate because of the controversy over "net neutrality" – how to ensure that consumers and Internet content providers continue having open and nondiscriminatory access to the Internet.

Supporters of the amendment to the bill argued that service providers could give preferential treatment to business partners or use pricing and access limits to discriminate between websites and other Internet users. Phone companies have talked about creating a "two-tiered" system in which users of their networks – including schools and other website operators – desiring faster service for the delivery of broadband or voice-over-IP applications would have to pay more. Those who couldn't pay would be relegated to the Internet "slow lane."

"What's at stake is the Internet in the 21st century," said Snowe, the only Republican to vote for the amendment. "This is the preservation of digital democracy." The chief goal of the wide-ranging bill is to

make it easier for phone companies and others to enter video markets now dominated by cable and satellite companies, in part by replacing the local video franchising system now in place with a national system.

Senate Commerce, Science, and Transportation Committee
http://commerce.senate.gov/public

■ Software Accreditation Program – SMART Technologies Inc. announces the launch of the SMART Software Accreditation Program. The program aims to identify content and software based on its level of compatibility with and customization for SMART Board interactive whiteboards and Sympodium interactive pen displays. Accreditation will enable customers to confidently purchase software and content from third-party developers to complement SMART's interactive whiteboards and interactive pen displays. SMART is working with software and content companies to ensure their offerings meet customer expectations for compatibility. The program will accredit content and software according to a three-tiered logo framework, and companies in the program will be authorized to use one of these logos on their software or content packages.

Software developers and content providers are creating a wide range of resources specifically for integration with SMART products. The SMART

Software Accreditation Program has three accreditation levels designated as *Ready, Enabled* and *Select.* Additionally, a number of the content developers will provide samples of their materials (either Macromedia Flash files or images) for inclusion in the Gallery in Notebook software, the whiteboarding application in SMART Board software.

"The SMART Software Accreditation Program will direct customers to additional resources, curriculum-based programs and digital content so they can get the most from SMART's collaborative learning products." says Nancy Knowlton, SMART's president and co-CEO.

All software titles accredited by SMART can be purchased directly from vendors. An online listing of all accredited titles will be available from SMART in September, 2006. For more information regarding the Software Accreditation Program e-mail softwareaccreditation@smarttech.com.

■ Good news for Linux users in court battle – A U.S. magistrate has struck down many of the SCO Group Inc.'s claims against IBM Corp., saying SCO failed to show its intellectual property was misappropriated when Big Blue donated software code to the freely distributed Linux operating system.

Magistrate Brooke Wells dismissed 182 of SCO's 294 claims, dealing a major setback to SCO's $5 billion lawsuit. That's good news for schools and other users of Linux software, which face the possibility of having to pay licensing fees to SCO if a decision ultimately favors the Utah company.

The suit, filed in 2003, accused IBM of donating SCO's Unix code to Linux software developers, but Wells ruled SCO had produced virtually no proof of the allegation.

She said SCO had "willfully failed to comply" with court orders to show IBM which, of millions of lines of code in

Linux were supposedly misappropriated. SCO argued that was IBM's job.

Wells dismissed SCO's arguments that only IBM engineers could verify that IBM gave away proprietary software code to Linux, the work of thousands of developers around the world.

"SCO's arguments are akin to SCO telling IBM, 'Sorry, we are not going to tell you what you did wrong because you already know,'" the magistrate wrote.

SCO acknowledged on June 30 that the ruling was a setback, but spokesman Blake Stowell said the company would continue to press its case. He said the magistrate dismissed general claims but kept several major ones that assert lines of Unix code were dumped into Linux.

IBM Corp.
http://www.ibm.com

The SCO Group Inc.
http://www.sco.com

◼ $790M in grants target "high-need" subjects

Beginning July 1, U.S. students will have $790 million in new incentives to keep up their grades and study "high-demand" subjects, such as math, science, engineering, technology and certain foreign languages. To help keep U.S. students on par with students across the world when it comes to their performance and interest in these fields, the U.S. Department of Education (ED) is launching two new student grant programs.

ED's Academic Competitiveness Grants and its Science and Mathematics Access to Retain Talent, or SMART, Grants aim to encourage students to take more challenging courses in high school and to pursue college majors, such as science and technology, that are in high demand in the global economy.

The student grants are part of the government's push to make Americans more competitive economically. In the

coming academic year, $790 million is earmarked for college students who study relevant subjects, show financial need and maintain good grades. During a conference call with reporters on June 29, Terri Shaw, the chief operating officer for ED's Office of Federal Student Aid, said $4.5 billion is being made available for the program over the next five years.

"For America to remain a world leader in innovation, our children ... must have math, science and critical language skills," Shaw said.

Eligible subjects include computer science, engineering, life and physical sciences, technology, mathematics, and languages such as Arabic, Chinese and Urdu, which is spoken in Pakistan.

Officials hope the grants will attract students to fields they might not have considered before — and give high school students an additional incentive to study challenging subjects.

Students who are in their first or second year of a two-year or four-year degree program are eligible for Academic Competitiveness Grants. Students who are in their third or fourth year of a four-year degree program are eligible for SMART Grants.

Academic Competitiveness and SMART Grants
http://www.ed.gov/about/inits/ed/competitiveness/ac-smart2.html

Letter from Secretary Spellings outlining the new grants
http://www.ed.gov/policy/highered/guid/secletter/060502.html

◼ Mississippi proposes self-paced, online curriculum

Mississippi Superintendent of Education Hank Bounds has unveiled a new $20 million proposal designed to offer seven possible career paths to high school students, as well as online courses that would help prepare them for college and the workforce.

The plan is called Redesigning Education for the 21st Century

Workforce in Mississippi. Bounds said the plan is a "vision for the future of Mississippi's middle and high schools."

The state schools chief wants high school students to select classes related to their desired career field, much like in college, and the state will offer online courses to students who want to graduate early or to those who are behind.

The goals, Bound said, are to prepare students for the workforce more effectively and to lower the state's dropout rate. About 35–40 percent of high school students in Mississippi fail to graduate, he said.

"They're all going into the workforce," Bounds said. "It's our job to make sure they capture the [required] skills."

Bounds said the default curriculum in the state has rightly been a college preparatory curriculum for middle and high school students.

"But we should have a fallback net," he said. "As a high school principal [for 12 years], I would see many students who did not go through appropriate transitional activities in ninth grade. They would fail two or three courses, get behind, and feel like they were in too deep a hole to get out."

Bounds said he hopes the proposed program will help students like these recognize they have a wider array of options beyond dropping out of school. The program will permit students to take self-paced online courses and also receive support through on-site instructors.

Bounds believes that if students can go at their own pace and complete a course in 60 days instead of 180, they should be able to. "For some, it may take longer." He said the 21st-century learning skills and technology development that make up the curriculum would seem more relevant to today's students, who often are frustrated with subject matter they perceive as out of step with the current work world.

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Kids explore their world by touch. With a SMART Board™ interactive whiteboard in the classroom, they can explore the world of learning the same way. A SMART Board's bright, touch-sensitive screen invites students to interact, which motivates them to learn and helps them retain material. The result is improved classroom outcomes.

Easy for teachers to use, SMART Board interactive whiteboards are also designed with kids in mind. Toolbars can be moved to the bottom of the screen, so smaller children and children with special needs can be accommodated. Every day, in more than 250,000 classrooms around the globe, teachers use SMART Board interactive whiteboards to help kids touch their world.

www.smarttech.com

SMART
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by Kathy Schrock

E-Readers

Can electronic books help reluctant readers?

With the U.S. federal government's fiscal year 2007 budget showing an increase in funding that is dedicated to improving reading skills, educators faced with trying to capture the attention of reluctant readers may want to consider combining research-proven learning practices with electronic books, or e-books, as a solution.

Reluctant readers aren't students who just don't want to read, they are students who have trouble reading for a variety of reasons. Perhaps a student has a visual handicap that precludes the use of the small-text paperback. Maybe a student needs access to definitions when reading and does not want to appear different from the rest of the students because he or she has to use a dictionary.

Possibly a student is simply not proficient in the reading strategies needed to read a certain genre of book.

However, e-books have features that make reading more engaging and instructionally relevant – they also provide the format of text and reading guidance reluctant readers require to improve literacy skills.

Wikipedia defines an e-book as an electronic or digital version of a book. The term can refer to either an individual work in a digital format or a hardware device. Teachers can also find e-book software that makes it possible to read an e-book on their computer.

Some e-books are tied to specific electronic book devices like the Sony Reader, which can read a proprietary book format or PDF files, view JPEGs, hold up to 80 titles, play MP3s and has a battery that can last for about 7,500 page turns. Other e-book readers are software and run on handhelds, computers or even smartphones. These include, among others, Microsoft Reader and Palm eReader. E-book readers allow the user to change the size of the font or the orientation of the page, change the color of the font or background, search the book by keyword, have access to a full electronic dictionary, insert electronic bookmarks and even create electronic "sticky" notes within the text of the e-book.

In his recent book entitled *The Digital Reader: Using E-books in K–12 Education*, Dr. Terry Cavanaugh, a visiting professor at the University of North Florida, offers advice and resources for teachers who want to use e-books to encourage the reluctant reader.

The book includes an overview of

the research of Elizabeth Lowe, which states that using large-print materials "resulted in significant sustained improvement in word recognition and accuracy, comprehension and fluency."

Cavanaugh's book also presents Janice West-Christy's useful list of five strategies for high school teachers to use to support reluctant readers. West-Christy is the English Department Chair from Louisa County High School in Louisa, Virginia. The strategies include offering a wide range of reading materials, incorporating large-print materials, engaging multiple modalities, teaching important vocabulary and using pre-reading techniques.

Cavanaugh builds on the list and adds the following suggestions for using e-books to help incorporate these strategies into the classroom. I've also added some of my suggestions.

Offer a wide range of reading materials

There are many e-books available to use with e-book devices and e-book software. Two large e-book distributors are Powells.com and eReader.com. In addition, there are many public domain titles available in plain text format that can be used with e-book software, or with any word processing program. You can find many of these on the Project Bartleby website.

An e-book reader or computer can be loaded up with titles of all types and offer a broad selection of reading materials for the reluctant reader.

Use pre-reading techniques

Cavanaugh suggests that teachers could pre-populate student e-books with leading questions or explanatory

information using the built-in note-taking function to help students both before and while reading a book.

Incorporate large-print materials

The wonder of technology is the ability to meet the needs of all learners, and making the font size larger is easily done with an e-book. This ability to change the font size also alleviates the stigma of the reluctant reader having a different version of the book from everyone else in the class.

Engage multiple modalities

Cavanaugh explains some e-book devices include a read-aloud feature with simultaneous highlighting of text to help the reluctant reader. In addition, the assistive technology tools built into many computer operating systems and third-party products also allow any text on the computer or on the Internet to be read aloud.

Teach important vocabulary

Cavanaugh discusses the interactive dictionaries that come with many e-book readers and e-book software, which allow the reader to click on a word and immediately go to the definition. A lot of e-book devices and software packages also have a feature that permits the teacher to create an e-book for the student. Teachers can also create a study guide with vocabulary and other important information, and load it on the student's e-book to teach important words.

The use of electronic books and the myriad features available, can be of help to all students. The ability to access reference material while they are reading, highlight text with a virtual highlighter for note-taking and studying, and create a side note within the e-book to come back to later, are all key factors that enhance student's reading ability.

Convincing adults, who have not grown up with technology, to use an e-book for reading will not be easy. However, our students have grown up with technology all around them, are comfortable trying new things and embrace new technologies. I encourage you to install some of the no-cost software-based e-book readers on some school computers and start the process to use the technology to reach the reluctant reader.

Kathleen Schrock is the Administrator for Technology for the Nauset Public Schools in Orleans, Maine. She created and maintains Kathy Schrock's Guide for Educators — http://discoveryschool.com/schrockguide/ *— and can be reached at kathy@kathy-schrock.net.*

Recommended websites

Sony Reader
http://products.sel.sony.com/pa/prs/index.html

Microsoft Reader
www.microsoft.com/reader

Powell's e-bookstore
http://powells.com/ebookstore/ebooks.html

eReader.com
http://ereader.com

Project Bartleby
www.bartleby.com

Thomson Gale
www.galegroup.com

Recommended reading

Allington, R. (2005) *What really matters for struggling readers: Designing research-based programs*

Cavanaugh, T.W. (2006) *The Digital Reader: Using E-books in K–12 Education*

E-book features, such as adjustable font sizes and interactive dictionaries, can help make reading more engaging for reluctant readers.

by Michelle Lomberg

Sorting out the Specs
How to find an interactive whiteboard with the right qualities

The Basics

Tips to remember when considering the resolution and tracking speed of an interactive whiteboard:

Resolution
- When considering resolution, make sure you are clear what kind of resolution you mean: touch resolution, projector resolution or computer resolution
- Computer and projector resolution are most important in your interactive whiteboard setup – these factors will affect accuracy and touch precision
- Make sure your computer can support your projector's resolution and that the computer resolution is set to the same resolution as the projector. This will optimize the projector's output.

Tracking speed
- Make sure your computer processor is fast enough to support the interactive whiteboard's tracking speed
- Using an interactive whiteboard first hand is the best way to test tracking speed

It's enough to make your head spin – roughly a dozen manufacturers and half a dozen different technologies. Pixels and points per inch. XGA and SXGA. The amount of information decision makers face when choosing interactive whiteboards can indeed be dizzying. But don't let the vast array of specifications mislead you. Relying on numerical specifications, such as tracking speed and resolution, as primary factors in your purchasing decision might not be as important as you think. And bigger numbers don't always mean a better choice.

Resolution – what do the numbers mean?

When evaluating interactive whiteboards, it's easy to assume that the higher the resolution, the better the technology, right? Not necessarily. There are actually three kinds of resolution in an interactive whiteboard setup that you should consider: projector resolution, computer resolution and touch resolution.

Projector resolution refers to the number of pixels a digital projector can display on a screen. Most of today's projectors have XGA resolution, which is represented as 1024 x 768, or 1024 pixels across and 768 pixels down, for a total of 786,432 pixels. An SXGA projector has a higher resolution at 1280 x 1024 or 1.31 million pixels. The higher the resolution of the projector, the sharper the projected image.

An important thing to note, however, is that a projector's resolution is directly affected by the resolution of the computer to which it is connected. If your computer's resolution is lower than the projector's resolution, the projector will display the lower resolution. If the computer is set to a higher resolution than the projector is capable of processing, the projector will still display the lower resolution. For example, if you set your computer resolution to 1400 x 1050, and your projector's resolution is 1024 x 768, the projected image will be 1024 x 768.

Touch resolution refers to the number of contact points that the interactive whiteboard screen can register. An interactive whiteboard with a touch resolution of 4096 x 4096, has over 16 million points that can receive finger or pen input.

A key point to remember is that an interactive whiteboard is an input device and a projection surface, not a monitor; it displays what is projected onto it. So, if the touch resolution of your interactive whiteboard is 16 million pixels (4096 x 4096), and your projector resolution is 1.31 million pixels (1280 x 1024), your interactive whiteboard is capable of handling 15 million more pieces of information than a typical projector can deliver.

What does all this mean? It means that accuracy and touch precision aren't influenced by the resolution of the interactive whiteboard – as long as your interactive whiteboard's touch resolution is greater than the projector's resolution. Interactive whiteboards that have a resolution of 15 to 20 times greater than standard projectors will meet your needs today and in the future.

The truth about tacking speed

Does handwriting on the interactive whiteboard appear smooth or jagged? This is a key consideration for many

purchasers. Writing that appears jagged could be the result of the inadequate tracking speed of lower quality interactive whiteboards, but most likely it is because your computer's processor is too slow.

However, if the issue is the interactive whiteboard, here's what you need to know about tracking speed. Tracking speed is the speed at which the interactive whiteboard registers pen or touch input and relays that information to the computer. Tracking speed is measured in points per second, which is the number of contact points reported to the computer by the whiteboard in one second.

Tracking speed is the speed at which the interactive whiteboard registers pen or touch input and relays that information to the computer.

While low tracking speed can result in jagged letters with poorly defined curves, if the tracking speed is *too* high, the abundance of points reported can overload slower computers with too much data, which also results in irregular writing.

Research by Microsoft Corporation suggests that the best tracking speed for writing is at least 100 points per second. Becta, the British Educational Communications and Technology Agency, a key supporter of the UK government in its education-technology initiatives, recommends a tracking speed of 200 points per second, which allows writing and drawing to appear on an interactive whiteboard as it is written, with no delay and without appearing pixelated.

How can you tell if an interactive whiteboard has the tracking speed you need? The best way to find out is to use it, and first-hand experience can play a

big part in the whole selection process.

Clarke County School District in Clarke County, Georgia, relies on hands-on trials and demos to test tracking speed and more. "We will run pilot projects to learn all the pitfalls, then set specifications for what we are needing. We will then typically organize a product shoot-out as part of a bidding process to determine the best solution," says Paul Sims, Clarke County's Executive Director of Technology and Continuous Improvement.

If the resolution of your interactive whiteboard shouldn't be a concern, and problems with tracking speed are more likely to be a result of your computer's processing speed, what criteria should you look for when choosing an interactive whiteboard for your classroom? Amy Gates, Supervisor of Instructional Technology for Lee's Summit R7 School District in Missouri, says it depends on your instructional goals.

"An interactive whiteboard is much more than a place to project material from your computer," says Gates. "It can be a learning center, a place for enrichment of lessons or remediation to students who are struggling. The board should be a tool in the classroom to differentiate learning for all, and this means that it is not just a tool for the teacher."

Gates says the best way to choose the right interactive whiteboard setup for your school is to consider the needs of your teachers and learners as well as subject matter. But most important, she believes, is to get some hands-on experience with the technology. You can also review our top 10 list of important things to look for when considering an interactive whiteboard.

Sifting through the specifications can be intimidating, but knowing what you want from an interactive whiteboard, and understanding which

elements are governed by the interactive whiteboard and which are influenced by outside factors will help you find the right interactive whiteboard for your classrooms.

Michelle Lomberg is a writer and editor with a background in education publishing. She has written and edited numerous education titles, including a library series and distance education courses.

Top 10 Criteria for Choosing an Interactive Whiteboard

A top 10 list can be a helpful evaluation tool when deciding to buy an interactive whiteboard. Here's what Sims, Gates and other educators say are the most important factors they look for in interactive whiteboards:

1 Ease of use
2 Content that is relevant, dynamic, searchable and shareable
3 Compatibility with existing software
4 Frequent free software updates
5 Durability
6 Support, including technical support, warranties and free training
7 Easy installation
8 Easy maintenance
9 Tactile interface
10 Expandability

An excellent source of information about interactive whiteboards is the Becta website www.becta.org.

by Cara Erenben

PD Hiring Guide
Tips for hiring external professional development providers

Knowing what to look for when hiring external professional development providers will help you get the most for your money.

Hiring an outside company to design, offer and even run a state or school-district professional development program often results in greater cost savings and better content, but experts caution school leaders to hire carefully.

"Who initiates the conversation is really key to using an outside provider," says Stephanie Hirsh, deputy executive director of the National Staff Development Council.

Companies that cold-call a school system might sell to a problem the district doesn't have, she explains. However, if school officials identify the knowledge and skills they are lacking based on standardized test scores, or other indicators, they stand a better chance of finding a company that is aligned with the district's goals.

Hirsch recommends looking at a company's proven track record and areas they focus on to determine if they have the expertise to do the job. "You've got make sure a match really exists," says Hirsh. Checking out a company's references is a good way to start. Often companies that claim to have a research-based program will have hired an independent research group to conduct a study on the program's effectiveness.

North Dakota is an example of a state whose small schools are located far apart, making face-to-face professional development difficult and costly. As a solution, the state's education department subscribed to Atomic Learning's Web-based program to provide technology training to its teachers and students.

Atomic Learning's program consists of Web-based tutorials on computer-related topics, including using interactive whiteboards, word processing, spreadsheets and design software.

"It allows our teachers to get some 'just in time' professional development on specific skills that they get hung up on," says Dan Pullen, director of the North Dakota Educational Technology Council. The self-directed tutorials are accessible via the Web, meaning teachers can access them when they need them, at anytime from anywhere, whether at school or at home.

The breadth of the content and expertise offered by an outside provider often surpasses that in the school system. In this case, Atomic Learning's training content is geared specifically to using a wide variety of technology products in the classroom — more content than the North Dakota education department has the time and budget to create itself.

"I think there would be no other way to provide the amount of K–12 [tutorials] Atomic Learning provides," says Jody French, director of EduTech, which provides North Dakota's K–12 educational technology services.

The state also purchased access to Atomic Learning's tutorial publishing system, which allowed state leaders to make custom training videos about its PowerSchool student information system. In addition to Atomic Learning's content, teachers can access approximately 50 how-to videos prepared by staff members at the state education department. The videos, which feature amateur video and voice recordings made by the staff, cover topics such as how to enter data into the student information system and how to generate reports.

Pullen feels that using Atomic Learning eliminates the need for some face-to-face technology training and requires less staff time to prepare training sessions. He also sees another benefit: "Budgets are tight and budgets are getting tighter." Compared to the traditional way of offering professional development Atomic Learning is very inexpensive, he explains. The subscription fee is based on the number of teachers and students statewide.

Having access to an anytime, anywhere professional development resource provides teachers with training as soon as they need it. The service lets teachers independently answer what would otherwise be help-desk questions. Before, they would have had to seek out a technology specialist on staff to solve their problem.

An always-available professional development program comes with a challenge, too: out of sight, out of mind. French says keeping the staff aware that the service is available is a big issue. Administrators remind teachers that the resource is available as often as they can at staff meetings, professional development workshops, and in e-mails and newsletters.

"You have to change people's habits. This is an online resource," explains Pullen. "People are used to having someone come in and do a session." With this service, teachers have to actively go out and seek the training they need.

Planning and goal setting is an important process when hiring an outside provider to fulfill a school system's professional development needs. Hirsh says school leaders should first identify their needs and then create a detailed, long-lasting plan to meet those needs.

Hirsh and other staff at the National Staff Development Council say the most desirable model of professional development is embedded daily team learning. "We can successfully change teachers' practices if we rely on the training, coaching and follow-up model," explains Hirsh.

An outside provider should focus on strategies that improve performance on a daily basis and be willing to build a great partnership with the school district and stick around for the long haul.

By choosing a professional development company with an established track record, school leaders can be confident that they will get the same results in their school district as other districts have had, says Hirsh. An outside company can also offer deep content knowledge, the latest research-based techniques, and expertise.

If you're interested in learning more about hiring a professional development company, PBS TeacherLine, FutureKids Inc., Apple Computer Inc., and the Association for Supervision and Curriculum Development, along with Atomic Learning are well-known organizations that offer commercially available professional development programs.

Cara Erenben is an Ontario-based freelance reporter. Previously, she was a full-time school technology reporter for eSchool News in Bethesda, Maryland.

Recommended websites

National Staff Development Council
www.nsdc.org

North Dakota's EduTech
www.edutech.nodak.edu

Atomic Learning
www.atomiclearning.com

Ask Before You Hire

Planning and goal setting is an important process when hiring an outside provider to fulfill a school system's professional development needs. Stephanie Hirsh, deputy executive director of the National Staff Development Council, recommends that school leaders ask the following questions before deciding on a provider:

- Has the district used its data to identify the areas in which teachers need improvement?
- Does the company's area of focus, research and track record match the district's needs?
- Can the company with pre-packaged content tailor its program to meet the district's needs?
- What resources and time will the program require?

- Does the company or district have dedicated staff to offer ongoing support?
- How will school leaders, such as principals and teacher leaders, be involved?
- How is the material the company is teaching going to be maintained over time within the school system?
- How will the program coexist with professional development programs already in place?
- How will new hires be incorporated into the program?
- How will the professional development program be evaluated?
- Does the company accommodate teachers' different learning styles?

by Wendy McMahon

Tracking TAKS Scores
Increased scores attributed to interactive technology

PHOTO COURTESY OF LORI REED

Teacher Lori Reed, says using the SMART Board interactive whiteboard has helped improve her students reading and math skills.

At Kress Elementary School, a small school in the Texas panhandle, a veteran teacher has found that adding a SMART Board interactive whiteboard to her classroom has helped improve student scores on the Texas Assessment of Knowledge and Skills (TAKS) examinations, which assess math and reading competencies.

Lori Reed has been teaching third graders for more than 17 years, and during that time she's always been open to finding new ways to help her students be successful learners. Just two years ago, Lori learned that a school in a neighboring county had a SMART Board interactive whiteboard, so she decided to visit the school to learn more about the technology.

"Well, I was so sold on the possibilities of it as a great teaching tool that I went back to my technology coordinator and said, 'Oh please, will you buy me one of these?'"

"Most kids at our school are reading below grade level by the time they get to third grade. So I saw this was a way to reach those kids," explains Reed.

With the help of a grant from the SMARTer Kids Foundation of Canada and Leah Zeigler, the technology coordinator for Kress Independent School District, Reed had an interactive whiteboard in her classroom a few months later. "And," she enthuses "I've never looked back."

Reed started using her new interactive whiteboard right away. She read the manual and tried something new every day. Step by step, she and her students learned how to hyperlink to websites for extra practice or real-world exam-

ples, and how to add streaming video clips to lessons. Over the past two years, Reed also created over 300 science, math and reading lesson activities using SMART's Notebook software.

"I did spend quite a bit of time on it to start with, but when the kids were so engaged and so enthusiastic about the learning it was not a waste of time. And it really encouraged me to go out and get new technology skills so I could use the SMART Board," she explains.

And it seems Reed's hard work is paying off.

After the 2006 TAKS results were made public, she decided to compare the scores of her six students to the eight students in the school's other third-grade class that doesn't have a SMART Board interactive whiteboard. "Since the classrooms are so similar, and we do teach the same lessons on the same days, I was just curious, for myself, to see," she explains.

First, she reviewed the data for the TAKS test as far back as two years before she got her interactive whiteboard.

"The results were good and the class scores between mine and the other classroom were pretty evenly matched. No students really excelled, maybe a few every year, but very few," says Reed.

She then looked at the results for the 2005–2006 school year. At the first math benchmark test of the year, 67 percent of the students in the SMART Board interactive whiteboard classroom passed compared to 14 percent in the traditional classroom.

Although at the end of the year all students in both classes passed the math test, 50 percent of the students in Reed's class earned commended

performance. "To me, this data shows that the early gains helped more students achieve excellence than those in the traditional classroom. They started out ahead and they were ahead at the end," remarks Reed.

Results for the reading test were similar. After the first bench mark test, 71 percent of the students in Reed's class passed and 43 percent of the traditional classroom passed, and at the end of the year, all students in both classes passed, but more of Reed's students went further, with 50 percent of them earning commended performance.

Reed feels her students are succeeding because they are more engaged now that she is teaching visual, interactive lessons on the SMART Board interactive whiteboard.

"Because of the visual nature of math, they really need to see it to understand it. Most people are visual learners, whether it's an algorithm or a fraction, making arrays or drawing pictures to match a word problem. To be able to make that information interactive and then let the students interact with it creates much longer lasting learning," says Reed.

When it comes to reading, she says her students do everything from reading from the interactive whiteboard

> *"To me, this data shows that the early gains helped more students achieve excellence than those in the traditional classroom. They started out ahead and they were ahead at the end."*

and taking online assessments to completing matching activities. "They think they're playing at the SMART Board when they're really reading. They will try to read anything off that SMART Board."

Zeigler agrees with Reed's theory on the student's TAKS success. "I think because it does hook them in, visually, verbally and kinesthetically that they remember what they've learned and have better retention."

Zeigler says other teachers have taken notice of the success Reed and her students are having, and she's received requests for SMART Board interactive whiteboards from three more teachers.

She says that may not sound like a lot, but when you consider that there are only a total of about 25 teachers in the district, it's a significant number.

Craig Setliff, principal of Kress Elementary School, says he's pleased with results coming from Reed's class.

"It has been exciting to see the energy that this technology creates in her teaching and in the student's learning," says Setliff. "From presenting the objective to teaching the objective, ... the SMART Board does it all in a way that reaches the visual and tactile learner. This greatly increases the retention of newly acquired knowledge, which in turn gives students the success and confidence that every principal loves to see."

Reed is encouraged by these results and feels she's just giving her students the skills they need to be successful in the future. "I'm 53, nearing retirement and have chosen to embrace technology integration for the sake of the children. They're the digital natives, I'm the immigrant. It's only right to teach them what they'll need to know in school and beyond."

Wendy McMahon is the managing editor of i.e. magazine. Based in Calgary, Alberta, she has written a variety of articles about education technology, including many case studies about the successful use of technology in schools.

Reading the Results

After getting an interactive whiteboard, teacher Lori Reed decided to compare the TAKS tests results for her third-grade class with the other third-grade class in her school for the two years prior to getting her new technology. She found the results were good, and the class scores for her students and the other classroom were evenly matched with few students excelling.

But, when Reed reviewed the 2005–2006 TAKS results for both classes, here's what she found:

- In the first math benchmark test of the year, 67 percent of the students in the SMART Board interactive whiteboard classroom passed compared to 14 percent in the traditional classroom
- At the end of the year, all students in both classes passed the math test, but 50 percent of the students in Reed's class earned commended performance
- After the first reading benchmark test, 71 percent of the students in Reed's class passed and 43 percent of the traditional classroom passed
- At the end of the year, all students in both classes passed the reading test, but more of Reed's students went further, with 50 percent of them earning commended performance

by Nancy Knowlton

Flexible, Appropriate and Fun
Technology can meet the needs of a variety of students

No matter which grade level students are in or what needs they have, educators say the SMART Board interactive whiteboard meets the learning needs of all their students.

Different grade levels demand different teaching strategies, and so, too, do special needs students. This is true in both the technology-free and technology-enabled classroom. It is especially important to acknowledge this truth before going down a technology path. Thinking through the appropriate use before implementation is the only way to go.

Focusing students' energy

In an elementary or primary class-room there's a certain buzz – 20 or so little bodies bursting with energy, barely able to stay in their seats or sit still. Children with unbounded energy, an excitement for life and generally sunny dispositions greet their teachers every day. Putting all of that energy to work on the task at hand and channeling it to focus on learning are the teacher's job.

From the beginning, a primary school teacher is faced with the most basic of behavioral challenges – getting the children to concentrate. But if we add a SMART Board interactive whiteboard to a primary or elementary classroom, we find that younger children are particularly keen to participate. They love to be chosen to go to the interactive whiteboard to show what they know or perform a task. Teachers often tell us about children who are exploding with eagerness to participate in class when there's a SMART Board interactive whiteboard in the room.

Rewarding strategies

Teachers have also told us about their strategies for using the interactive whiteboard to gain cooperation and attention in class. One child or a group of children can be responsible for the interactive whiteboard, getting it up and running and shutting it down each day. If things are put away properly or if everyone pays attention, a nice reward might be 20 minutes of Jeopardy or Speller, played on the inter-active whiteboard – two fun games that can test students' knowledge. These simple things put fun into the learning experience and meet the needs of both elementary teachers and students.

Early experiences

Teachers in primary and elementary schools saw an immediate applica-tion for the SMART Board interactive whiteboard when it was introduced in the early nineties. They had long been asking students to come to the front of the classroom to solve a problem on a chalkboard or white-board. So, for teachers wishing to bring the added dimension of tech-nology to everyday teaching and learning, the interactive whiteboard was a comfortable extension of a tried-and-true teaching strategy.

These teachers very quickly became a devoted customer group. They could see the power of the SMART Board interactive whiteboard to engage and motivate students, and they could develop their skill set quickly with a dedicated interactive whiteboard in their classroom.

Secondary applications

While many people immediately see the application of an interactive whiteboard in a primary or elementary classroom, some wonder how it can be applied in the upper grades.

Just as teaching strategies differ, so too must teachers' use of technology tools like interactive whiteboards. The SMART Board interactive whiteboard has been developed to be a flexible, adaptable tool – one that does what teachers and students want in a classroom, regardless of grade level or needs.

Middle and high school teachers can make experiments come alive through simulation in science classrooms. With simulation software or additional devices connected to a computer, such as a meter, probe, document camera or digital microscope, experiments can become more engaging and interactive.

The sophisticated, yet easy-to-use, tools within SMART Board software are particularly suited to middle, junior high or high school students in a classroom or lab where all students have computers.

Using LinQ software, students in networked schools can share their desktop material on the interactive whiteboard and then either stay seated for a quick show and tell or go to the interactive whiteboard to do a presentation.

Using tools such as Recorder, students no longer have to furiously copy math proofs from the interactive whiteboard during class. The teacher's

"The SMART Board interactive whiteboard has been developed to be a flexible, adaptable tool – one that does what teachers and students want in a classroom, regardless of grade level or needs."

voice and everything that happens at the interactive whiteboard can be captured and shared after class on the school's website. Students can focus on what the teacher is saying and doing, knowing that everything will be available online after class. In addition, students won't make any copying errors. Some educators tell us that math scores have shot up 10 to 15 percent in classrooms with SMART Board interactive whiteboards where students can review their teacher's notes at a later date.

Meeting special needs

Beyond the normal attention challenges in primary or elementary and secondary classrooms, many teachers are also working to meet the require-

ments of students with special needs, and we have seen through the years that the SMART Board interactive whiteboard is the perfect tool to do this.

- Children can use their fingers to control or write on the interactive whiteboard – they don't have to manipulate a special tool. This simple feature of the product has been cited many times over as one of the key aspects to its suitability for special needs students
- Teachers can move the menu in Notebook software from the top of the page to the bottom to allow even the shortest of students to access menu commands
- Special needs students sometimes don't have the fine motor skills required to operate a mouse. With a SMART Board interactive whiteboard they simply touch the application they want to open.
- A teacher can sign to deaf children while simultaneously working on the interactive whiteboard – they don't have to constantly retrieve a special tool that could distract from the flow of the class

The options for teaching to all types of students are endless, and every day teachers tell us about new teaching applications they have found for the SMART Board interactive whiteboard.

But one thing is always the same – the power to engage and the power to inspire are where they have always been – with the teacher.

Nancy Knowlton is the President and co-CEO of SMART Technologies Inc., the company whose name has become synonymous with interactive whiteboards. Ms. Knowlton is one of the world's leading experts on technology integration, and she travels extensively speaking with educators on this topic. Here, in "Nancy's Notebook," she transcribes her notes on the subjects she hears about most in her travels.

by Susan D. Patrick

New Learning Models
Transforming curriculum and instruction in a digital age

PHOTO COURTESY OF LESLIE WILLIAMS

Susan D. Patrick

Every student should have access to the best education available, regardless of family income, background or geography. Unfortunately, while some students will have access to a great education in their neighborhood schools – this is not universally true. In fact, 40 percent of high schools in the United States don't even offer a college preparatory curriculum. To make matters worse, the schools without broader course offerings or dual credit courses tend to be in rural, low-income areas – areas where children need access to excellent education the most, some would argue.

But, developing and offering high-quality online learning could make the same level of education available to all students.

Online learning provides new opportunities for high school reform and school redesign. Schools that don't offer college preparatory curricula can access virtual schools and online courses to bolster their offerings. Small, rural schools can maintain the benefits of their size but offer more choices, including advanced courses, remedial courses, foreign languages and specialized literature and arts courses.

Nations around the world are already investing heavily in digital content and instruction.

On a U.S. delegation visit to Mexico in 2004, I learned that the Mexican Ministry of Education digitized their entire K–12 curriculum. All K–12 lessons and content tied to academic standards are available in schools, community technology centers and libraries – through the Internet, CDs and 16 satellite channels of educational broadcasting.

At a fraction of the cost of producing, printing, transporting and delivering print materials, Mexico is providing the texts, illustrations, streaming video and multimedia instructional materials in formats that are more accessible for their K–12 students. With a digital curriculum, the Mexican government is seeding the foundation for the future of e-learning and preparing students for a technologically rich, global workforce.

In the United States we need to do the same, because integrating technology into old teaching models isn't the answer. We need to call for transformation, not integration. Our schools require systemic redesign, instead of continued incremental changes or layering technology on old models. Our classrooms and schools must reflect the mobile, wireless, collaborative and digital learning environments that surround us. School learning environments too often look the same as they did in the 1950s. But demands of the workplace and higher education learning environments have changed.

Transformation means that every dollar invested in education should support digital learning environments. These environments should include tools such as digital content, digital instruction and new models of digitized assessment that focus on improving student learning, student growth and realizing the full potential of every student.

While our current education model broadly calls for accountability through annual testing – a once-a-year measure is an antiquated model of accountability in the 21st century. There are new models and better ways.

New online learning models and virtual schools are data-rich, and they enable measurement and formative assessments of student progress in real time, even in traditional schools. Teachers, students and parents can receive instant feedback on their child's online learning. Virtual schools can have data systems that alert parents when students miss classes or automatically send an e-mail to parents when a student receives a low grade on a quiz, test or assignment.

I think of online learning as changing our traditional school buildings into bionic schools by plugging in offerings from virtual schools. And, there are plenty of offerings to choose from – there are state virtual schools, district virtual schools, cyber charter schools, for-profit providers, nonprofit providers, and colleges and universities offering online courses for students.

Implementing new education models also means rethinking instruction, training and curricula for a digital age. Online learning by nature is transforming curricula and instruc-

tion. In order to provide a high-quality online course, most teachers need 10–20 hours of intensive online instruction and collaboration-rich professional development courses. All content and curricula must be reconsidered and redesigned to be effective in a digital format. Methods of supporting student and teacher interactivity, assignments, pacing,

Offering online learning can bring the same level of education to all students.

problem solving and feedback must be developed. I would posit that few training or professional development opportunities require such commitment and so many factors to be considered simultaneously.

This is why training and support of teachers and students in virtual schools and blended environments is critical. You cannot magically drop the highest quality teacher into an online course with a computer and expect them to be a successful online teacher. Teachers need to learn new approaches in online delivery of courses – and intensive training and support is the key.

Teachers who have this advanced training can then bring these 21st-century skills, along with online interactive resources and dynamic content, to brick-and-mortar classrooms. Then teachers can begin to connect to students in their world – the online world. Student learning and engagement are key – and high-quality online learning environments are resulting in unscripted student responses, such as "different," "energizing," "exciting" and "challenging," when asked about their experiences.

If we provide our teachers with the skills to teach online and use technology ubiquitously, learning environments will become mobile, interactive and effective whether they are face-to-face or at a distance. Teachers spend time in pre-service preparation, in-service professional development and training – why not train appropriately for a digital age and a digital generation?

This is the beginning of transformation. Making the very best education available to every student, regardless of their economic status and neighborhood is transforma-

tional. Teaching courses any time, any place, by any path, or at any pace with self-direction also borders on the revolutionary.

Online learning is growing rapidly. In 2000, there were 40,000–50,000 online enrollments in K–12 education. In 2002–2003, the U.S. Department of Education reported 328,000 enrollments in distance education in K–12 schools (National Center for Education Statistics 2005). And, in 2005, the Peak Group estimated 500,000 enrollments in K–12 online learning.

Recent studies, including North Central Regional Education Laboratory's (NCREL) *Synthesis of New Research on K–12 Online Learning*, note that online learning is "equal or better" than face-to-face courses when looking at student achievement. If we can reach so many more students with highly qualified teachers, rigorous advanced courses, foreign languages, virtual laboratories and offer so many more choices, then we should get beyond whether or not we should consider online learning – and just "do it."

A recent report from the Gates Foundation, Silent Epidemic, pointed out that the majority of high school dropouts left their schools because they felt they "weren't being challenged enough" even though they had the grades to finish. We've seen that students think online learning is "challenging," "different" and "energizing" – surely this is a green light for getting this type of learning into our schools.

The choices and opportunities provided by offering virtual schools and blended models are creating tremendous opportunities. A revolution is beginning. Our student's can't wait.

Susan D. Patrick is the President and CEO of the North American Council for Online Learning.

by Diane Curtis

Building Online Learning Communities

A worldwide audience may be the motivation students need to succeed

Ask three teachers what constitutes an online learning community, and you're likely to get three different examples. One teacher might point to a brainstorming e-mail exchange between two students. Another may recall a weeklong project that culminated in a 10-person podcast. A third will mention a global warming blog. There are common features that link these examples, such as student collaboration, an audience beyond the teacher, lack of dependence on time and space, and feedback. But just like the technology behind it, the definition of an online learning community is in flux. However, pioneering educators, like those we're about to hear from, help refine the meaning as they create new online communities.

Today's technology, tomorrow's workforce

David Warlick, a well-known education author, speaker and consultant, says there are two types of online learning communities: personal learning networks, such as blogs and podcasts; or the more structured distance learning and online learning courses that use tools like Blackboard and Moodle e-learning systems. However, Warlick says both types of online learning communities have a common theme: "Learning is taking place through conversation and not delivery."

Warlick believes the kind of learning that comes with the Internet, podcasts and blogs, makes sense in an era when students will likely have 10 or more jobs during their working lives and will need to know how to teach themselves new skills and concepts. They won't be learning those skills and concepts by sitting in a classroom; they'll be learning them through conversations and connecting digitally with others through blogs and podcasts, or whatever tools become the technological favorites of their particular eras.

New generations will also need to know how to sift through an ever-expanding amount of information and distinguish between what is true or false, and useful or not. As Warlick explains, "Industrial-age literacy was reading the piece of paper in front of you. That information today is on a computer screen. But it's not enough to read it. You have to have the skills to organize that information."

Encouraging self-directed learning

Bob Sprankle, a teacher for 10 years, was named a 2005 Edublog Award winner and one of two Technology Educators of the Year for 2005–2006 by the Association of Computer Technology Educators of Maine. He religiously scours the Internet for new ideas on how he can use technology to create his ideal learning setting – one where the learning is directed mostly by the children themselves. He shares his findings with other teachers in his blog, Bit by Bit.

During Sprankle's early teaching years, he used computers to e-mail parents or showcase student work on a website. Over time, he introduced e-Pals and a classroom chat room. Now his students make podcasts about the books they read, the field trips they take and the presentations they make to teachers and administrators. They also create blogs of poems, art, essays and weekly journals.

They're inviting the whole world to view, listen and comment – and their efforts aren't going unnoticed.

"I love your first vodcast on podcasts," Paula Thomas from Brisbane, Australia, wrote about a video podcast the students made. "It's a brilliant idea."

Online learning communities can help students learn how to sort through an ever-expanding amount if information to determine what is useful and accurate.

"We listened into your podcast as college seniors, and we are impressed," wrote communications students from Fitchburg, Massachusetts. "Great work and great stuff by everyone."

This kind of feedback is getting students excited about learning.

"Podcasting is the funnest part of the day," says Emily B., one of Sprankle's students "We're reading to the world and it helps us express ourselves. It's really helped us step up in our learning."

Sprankle says now he can step to the side and free the students to direct their own learning. He may ask students to read a particular sentence or paragraph again to prod them to think critically about something they wrote, but often classmates will already have picked up on weaknesses

> **You can set up a blog in a matter of minutes – seconds, even. From there, the networking starts. If you build it, they will come.**

in their peers' work and, through e-mails or blogs, discussed how to improve it. It's a quick, efficient way of getting feedback from many students. "They're very supportive, real gentle," Sprankle says about the peer critics.

Worldwide exposure motivates students

Warlick says when students know they have an audience, they're going to put in more effort. Research shows students think problems through more carefully, polish more richly and are more careful about punctuation and spelling. When students write a paper, hand it to the teacher and then get it handed back to them, they call it "playing school," Warlick says. "When they're writing a blog, they're communicating."

Sprankle agrees, calling his students' work "product with a purpose." He says the difference between producing something that their parents may or may not tack on the refrigerator versus producing something that can be accessed around the globe is very motivating. "They've just become so empowered," Sprankle says. "It constantly blows me away."

Gordon Brune, a fifth-grade teacher at Mamaroneck Avenue School in Mamaroneck, New York, who uses blogs to showcase student work, feels the same way. "My students no longer see themselves writing for a teacher or a bulletin board but for a real audience. Many times, my students have excitedly and incredulously stated things like, 'Man, people all the way from China are reading my stuff!' Some students' writing has become stronger," he says.

Beyond blogging

Lynne Sueoka has another version of an online learning community. Sueoka is a staff developer at Honolulu's Moanalua High School and a teacher in the school's MeneMAC program – a school-within-a-school program focused on integrating subjects and illustrating yearly themes through a variety of media, including video, audio and Web production.

Staff working on the MeneMAC program decided to add an online component to deepen the sense of community and nurture supportive relationships among the students, teachers and parents. The primary computer tools Sueoka and her colleagues use to create that sense of community are a website that houses the students' digital portfolios, e-mail, listservs and Web videoconferencing software.

Sueoka uses different tools than Sprankle and Brune in her online learning community, but her philosophy and goals are similar – create students capable of initiating and directing their own learning, and share knowledge in a way that enriches and deepens what they learn.

Sueoka says e-mail, for example, allows students to write precisely and get their message across while maintaining their own voices. With an online conversation, unlike a classroom conversation, the students have a chance to edit themselves, to find just the right words for what they're trying to convey, while maintaining a conversational style. Listservs give them room to expand the group of people who can give them feedback, offer suggestions or just provide moral support.

Bob Sprankle says adding podcasts and blogs to his curriculum has helped him create an environment where students direct their own learning.

MeneMac teachers also created a space on the website for parents to comment on student portfolios and did four collaborative Web videoconferencing projects with a sister school in Molokai, Hawaii, and a class of students who speak English as a second language at a Japanese university.

Sueoka knows there is faster, better, cheaper technology out there – and there always will be. "But," she explains, "we set up a whole infrastructure and it works well for us." That doesn't mean she isn't trying new things. She and her principal, Darrell Galera, are studying podcasting and starting to use Blackboard's online discussion forum feature.

Start Your Online Learning Community Now

There are a host of online resources for educators interested in starting – or enhancing – an online learning community.

MeneMac
View the portfolios of students in the MeneMac program at Moanalua High School at www.mohs.k12.hi.us/media-central/index2.html.

Bob Sprankle's Room 208
Maine teacher Bob Sprankle showcases his student's podcasts and blogs and also offers a blog with tips for teachers at www.bobsprankle.com.

edublogs.org
http://edublogs.org provides free, fully functional blogs hosted on their dedicated server. Edublogs is the brainchild of James Farmer, a Melbourne-based education designer and social software consultant who also has a personal blog at http://incsub.org/blog.

Weblogg-ed
Will Richardson, author, speaker and supervisor of instructional technology at Hunterdon Central Regional High School in New Jersey, publishes a website and blog at www.weblogg-ed.com. He shares his thinking about using blogs and provides information and discussions on wikis, RSS, audiocasts and other technology products for K–12 educators.

Gordon Brune
View the class blogs of New York teacher Gordon Brune at http://classblogmeister.com/blog.php?blogger_id=251.

Tips from the experts

If teachers or administrators are interested in joining the online learning revolution, Sprankle recommends they start with a blog because it's so easy. "You can set up a blog in a matter of minutes – seconds, even," he says. "From there, the networking starts. If you build it, they will come." And once a teacher connects with even one teacher-oriented blog, "you'll find everybody else."

Brune likes the fact that blog programs, especially those from advocates who are educators as well, like David Warlick and James Farmer, are easier to master than webpage software. "The technology behind [blogs] isn't hard," he says. "If you've ever shopped and filled out a form [online], that's essentially it." Before he started using blogs, he was using FrontPage Web design software, but was looking for something that would be easier to explain to other teachers. He found what he wanted in the blog programs of Warlick and Farmer.

When teachers at Moanalua want to get their feet wet in an online learning community, Sueoka suggests they start with a forum on Blackboard, which is secure. A social studies teacher did just that last year when he decided a current events online forum would be more dynamic and interesting than just cutting out newspaper articles and bringing them to class for discussion. The in-class blog was a success, and now the teacher is studying other forms of online communication for his class.

Galera is always open to teachers' ideas that incorporate technology into the curriculum, but both he and Sueoka emphasize that content always comes first. And Galera's main advice about creating an online learning community is that "teachers first need to build a learning community within their classrooms." In high school, especially, students in one class may not even know each other. Galera encourages his teachers to use the kinds of strategies that are more often used in the elementary grades – Moanalua groups students into tribes – to establish a sense of camaraderie and cohesion among students. Then, says Galera, the class may be ready to move to an online environment "with the skills to communicate effectively and naturally."

Sprankle, Brune, Sueoka and Galera are just a few of the teachers and administrators across the country who have successfully built online learning communities. All agree that the effort has been worthwhile in terms of student engagement and a deeper learning that incorporates more critical thinking. But they also realize that commitment to online learning requires flexibility and the recognition that the only thing certain in an online learning community is change.

In Warlick's words, "It's an amazing time. It's kind of like the World Wide Web is being reinvented." And educators like those mentioned above are laying the groundwork.

DON'T TRY THIS AT HOME

AFTERSCHOOLSCENE.COM
AFTERSCHOOL PROGRAMS ARE A WAY BETTER PLACE

by Wesley A. Fryer

To Blog or Not to Blog? You Decide

Wesley A. Fryer gives a frank insight into blogs and podcasts in the classroom

Wesley Fryer knows education technology, especially blogs and podcasts. His blog, www.speedofcreativity.org, was voted Best Learning Theory Blog for 2006 by *eSchool News* and *Discovery Education*. In this article, he outlines the pros and cons of using blogs and podcasts in the classroom and provides a wealth of examples to help you decide if these tools will work for you and your students. For those interested in using these new teaching and learning tools, he includes tips on how to get started.

The terms blogging and podcasting have changed relatively quickly from mysterious terms to mainstream ideas in our technology-infused society. However, many classroom teachers and school administrators remain wary and unconvinced of the educational value of blogs and podcasts. Attitudes toward these tools take many forms, but the following are some of the most common:

Time "I don't have time to allow students to create podcasts or moderate blogs and comments. I'm already overloaded with work!"

Yawn "These are just the latest fads in technology; like other trends they will come and go. Why should I get excited about them?"

Security alert "Students and teachers publishing ideas and exchanging messages on the Internet worry me. I'd rather not jump on the blogging and podcasting bandwagon until they make it safer. I'll just see what happens."

Have you heard teachers or administrators in your school district respond to the idea of students blogging or podcasting with any of these statements? Have you responded like this yourself? The idea of letting students and teachers engage in content publishing in school can certainly be nontraditional and controversial, but let's explore the potential pros and cons of both blogging and podcasting in the classroom before you write these technologies off as scary, time consuming fads.

What are the pros?

They're safe

One of the first fears many administrators, teachers and parents have about classroom blogging and podcasting is student safety. No educator wants to endanger students, and mainstream media reports about child predators frequenting social networking sites like MySpace are common, sadly. However, teachers can set up classroom blogs so that only students' first names are used, and blog visitors cannot virtually reach out and touch the student (by e-mail, instant message or other method) except by contacting the teacher first. Similarly, teachers can moderate comments posted to classroom blogs to ensure inappropriate or offensive content is not published. Podcasting can also be done safely, especially when audio podcasts, which do not include photos or videos of students, are used. Student privacy can be respected, but students can still publish their ideas and share their perspectives with a much wider audience than in a traditional classroom.

Blogging and podcasting can be safe, fun and low-cost learning tools that help students construct their own knowledge.

Low cost, high viability

Both blogging and podcasting are extremely inexpensive and viable instructional activities in the classroom. You just need a computer connected to the Internet and a microphone. If your computers don't have built-in microphones, you can buy them from Wal-Mart for $7. Many schools also have microphones available to borrow from the computer lab. Blogging software tools and Web resources are available for free, as are tools for podcasting. Money doesn't have to be an issue when it comes to these new learning tools.

Connects parents with schools

Teachers and school administrators are always looking for new ways to connect parents to the school so they can find out about what their children are doing and learning in the classroom. Blogs and podcasts offer outstanding opportunities for parents and other community members to have a virtual window into the school, its activities and the benefits of studying there.

Supports content creation

Students actually learn more when they construct their own knowledge and create products that reflect their understanding of ideas, processes and relationships. In addition to this, teachers know repetition can be a good thing when it comes to student learning and retention. When students create a knowledge product like a podcast, chances are extremely high that they and others will listen to it repeatedly. Students are likely to invite others to listen to their podcast and may even plead with their teachers to play their podcast again for the entire class!

> **Laughing and having fun seem to make people learn better. Blogging and podcasting can be fun and extremely engaging activities for students.**

Contrast these scenarios with a typical student essay where it can be like pulling teeth to get students to re-read their final draft after an assignment has been submitted, and often other students or parents are not very interested in reading it either.

They're fun

Research such as *The Broadening Studies* at the University of Michigan indicate that laughter (a type of "positive emotion") can "broaden the scopes of attention, cognition and action, widening the array of percepts, thoughts and action presently in mind." In other words, laughing and having fun seem to make people learn better. Blogging and podcasting can be fun and extremely engaging activities for students, and this not only keeps students motivated (which directly assists achievement) but also helps classroom activities become lifelong learning opportunities.

What are the cons?

Zero-sum schedules

The reality of school schedules is that they are zero-sum. Adding a new activity necessarily requires losing time for other activities. Some administrators and teachers may cringe at losing time for test preparation to blogging and podcasting. And there is no getting around the fact that these activities do take extra time. After recording podcasts, the teacher and students must edit the podcast together, preview it, ensure it is ready for publication and then upload the file to a Web server to share it with the world. Blogging is much faster than publishing a traditional webpage, but it still takes time away from other classroom instructional and administrative tasks. However, many teachers successfully using blogging and podcasting in the classroom contend the extra time is worth it in rewards such as student intrinsic motivation and learning.

New IT demands

Blogging, and particularly podcasting, can present new demands for district IT staff, available server resources and available Internet bandwidth. If large numbers of people subscribe and regularly download published school podcasts, even if file sizes are minimized, that IP traffic can substantially increase loads on district file servers. Additional bandwidth and dedicated podcasting servers may be required to support large-scale district podcasting initiatives and share the digital content with interested people.

Requires administrator support

Perhaps more of a challenge than a con, classroom blogging and podcasting definitely require administrators to support using this technology. Teachers should not assume that school district administration support will be automatic and forthcoming. Administrators will need to be fully aware of the instructional payoffs and technical requirements of these activities. They may need to learn how blogging and podcasting can be leveraged to help students become better writers, oral communicators and digital citizens. Some Texas teachers have had to make presentations to local school boards explaining how a classroom blog can be safely and efficiently maintained, before they were given permission to use a classroom blog as an instructional tool. Teachers must be prepared to make their case persuasively for the use of blogs and podcasts in the classroom because many administrators may have negative perceptions of these activities, which are shaped in part by media coverage of MySpace and other unmoderated social networking environments.

Disruptive technology may be opposed

Both blogging and podcasting represent potentially disruptive technologies in schools because they challenge traditional notions of content and curriculum control. In traditional education settings, learning is seen as an act of transmission; content is transmitted from the mouth of the teacher and the page of the textbook into the mind of the learner. With blogging and podcasting, students are generally approaching traditional problems by refashioning and synthesizing them into new forms. This can involve thinking at higher levels of Bloom's taxonomy, and this type of critical thinking is often not encouraged in classrooms where the focus is on memorizing and regurgitating content on cue. Blogging and podcasting are often perceived by administrators as controversial uses of technology. Advocacy for these tools in the classroom may invite opposition from school leaders.

PHOTO COURTESY OF BOB SPRANKLE

Through blogging and podcasting projects, students can learn how to present their ideas and find their voices.

Tips for success with blogs and podcasts

Learn from teacher experts

Classroom teachers and campus administrators wanting to explore the potential benefits of using blogs and podcasts with students should begin by listening to a wide variety of educational podcasts and reading a variety of educational blogs. Teachers with different competency levels in using these tools successfully are the best source of practical information and techniques.

Create a storyboard and script

Educators should get their students to create storyboards and write scripts for each segment of a podcast. Podcasting and blogging can be elements of the publishing process in the classroom. Rather than only assessing the final product, teachers can and should assess students' completion of intermediary rough drafts, storyboards and outlines of podcasts as they move through stages of planning, production and editing.

Encourage personal connections

The ability to express ideas and share perceptions is critically important in literacy development. Done safely, classroom blogging and podcasting can provide an environment that can powerfully motivate students to communicate ideas with high levels of quality and craftsmanship. Blogging and podcasting are most powerful when they are used in ways students perceive to be personally meaningful and relevant. Teachers should encourage students to make personal connections with studied topics and to synthesize ideas by engaging in higher order thinking. For example, students can interview others during podcasts and tackle real problems within their community that likely do not have clear solutions.

Get everyone involved

Avoid the tendency to reserve activities like blogging and podcasting for the gifted and talented kids. All students should be able to experience the opportunity to publish their ideas for a wider audience using these methods. Every child has perceptions worth sharing and a voice worth listening to. Teachers should use blogs and podcasts as loudspeakers to help students find their own voices and talk about topics they care about and value.

Use an interactive whiteboard

When creating podcasts together as a class or in small groups, teachers can use an interactive whiteboard to facilitate the creative process. The larger image provided by the interactive whiteboard permits larger numbers of students to see and participate in the decision-making processes involved in creating a podcast. The tactile nature of an interactive whiteboard invites active participation by students in podcast production and is ideally suited to cooperative activities like this.

Don't wait until after the test

Because podcasting and blogging can engage students in the process of acquiring authentic literacy skills, teachers should introduce students to these activities from day one of the semester. In many schools, where accountability pressures for state-mandated test performances are high, teachers can sometimes postpone projects and hands-on learning experiences that don't seem to readily and directly support didactic test preparation. This can lead to bored students, who are disengaged from the educational experience and result in discipline problems the teacher has to deal with.

Blogging and podcasting are potentially valuable in both intrinsic and instrumental ways. Students learn better and retain information and skills longer when they are actively engaged in the learning process and self-motivated. Blogging and podcasting can support both of these learning conditions in the classroom.

Why focus on content transmission in the classroom when we can help students become content creators as well as consumers. Blogging and podcasting can be powerful allies supporting this educational goal at all levels.

Classroom Blogs and Podcasts

Blogs to watch

- **Scribe Post Hall of Fame**
(Daniel McIntyre Collegiate Institute)
http://thescribepost.pbwiki.com/HallOfFame

- **Room 613 Student Blogs**
(Horace W. Porter School)
http://hetherington.learnerblogs.org

- **Applied Science Research**
(Newton High School)
http://appliedscienceresearch.blogspot.com

- **Room Twelve Student Blogs**
(Arbor Heights Elementary)
http://roomtwelve.com

Best blogging tools

- **Class Blogmeister** David Warlick's free classroom blog tool facilitates teacher moderation of student posted content
http://classblogmeister.com

- **ePals SchoolBlog** A robust and safe commercial solution free of advertising, designed for literacy development http://schoolblog.epals.com

- **Wordpress** A free, open-source blogging software program that can be downloaded and used by individual teachers or entire school districts
http://wordpress.org

- **Learnerblogs** An Australian-based Web service offering free Wordpress-based blogs for students
http://learnerblogs.org

- **Blogger** One of the most popular and powerful free blogging platforms http://blogger.com

- **HaloScan** Free Web commenting and trackback services for any blog or website – permits teacher moderation www.haloscan.com

Tune in to these podcasts

- **Radio WillowWeb**
www.mpsomaha.org/willow/radio

- **Mabry Middle School**
http://mabryonline.org/podcasts

- **Long Elementary Podcasts**
http://long.dearbornschools.org/
podcast/Long%20Elementary/HOME.html

- **Our City Podcast**
http://www.learninginhand.com/OurCity

Top podcasting tools and resources

- **Podcast for free** A great website with links and tutorials to everything you need to create podcasts with just a computer and microphone
www.castwiki.com/index.php/Podcast_for_free

- **FeedBurner** A free service (also available commercially) to monitor podcast or blog subscribers – great for monitoring podcast impact www.feedburner.com

- **GarageBand and iWeb** Included with the iLife software package on Macintosh computers, these software programs offer powerful ways to create audio podcasts, enhanced podcasts (with photos) and video podcasts www.apple.com/ilife

- **ACID XPress** Free audio editing software from Sony, similar to GarageBand but for Windows-based computers www.sonymediasoftware.com/
download/step2.asp?DID=551

- **Audacity** A free, cross-platform audio editing software program ideal for podcasting
http://audacity.sourceforge.net

- **ccMixter** A community music site offering downloadable music that can be legally remixed and used in podcasts http://ccmixter.org
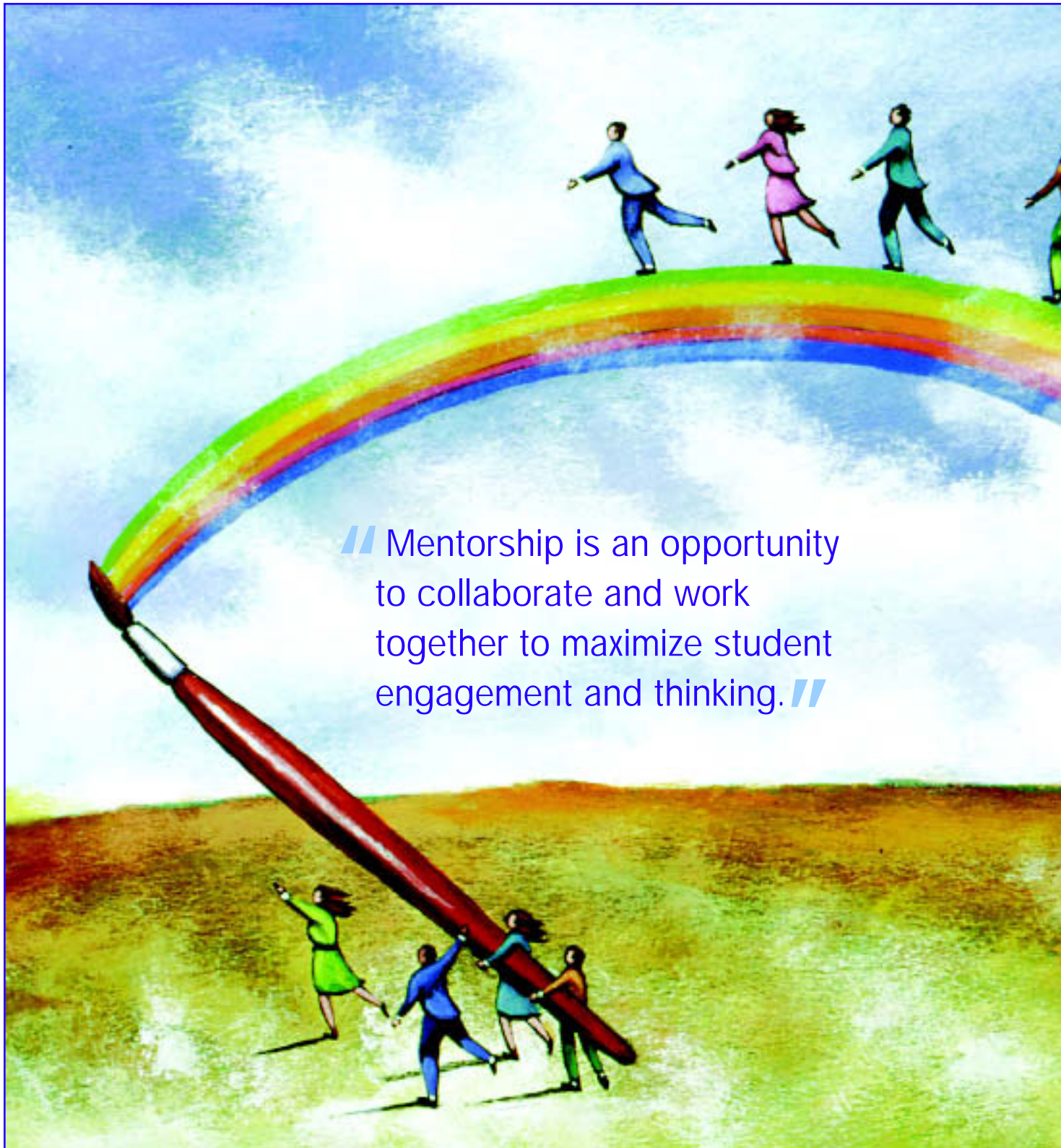
" Mentorship is an opportunity to collaborate and work together to maximize student engagement and thinking. "

by Jacob Milner

Tap into Your
School's Technology
MENTORS

School districts around the country are finding the best way to teach technology is by example

t's a hot and sunny day in Bartow, Florida, and in the back corner of a small room at Bartow Middle School, the lesson begins. A teacher, standing patiently at the front of the room, begins demonstrating how to use Microsoft PowerPoint, walking students step by step through the process of creating, cascading and collapsing slides into a complete presentation. Students, sitting at desks in rows, follow eagerly on laptops of their own, clicking and clacking on touch pads, learning all the while.

The scene is technology education at its finest – a true exchange of knowledge about how a particular software application can maximize efficiency and productivity. This, however, is no ordinary class. One student is 54. Another just became a grandmother. A third plans to retire at the end of the current school year. All of them, including the instructor, are teachers at Bartow Middle School, part of Polk County School District. On this day, they are participating in the district's technology mentorship program.

Increasingly, K–12 districts across the United States are turning to mentoring programs as a way to turn inexperienced teachers on to technology. Through these programs, educators interested in technology learn from their peers about the latest innovations in IT, and they learn how to restructure teaching strategies and curricula around technology. What's more, these programs inspire teachers to embrace technology like never before.

We talked to three teachers at Bartow Middle School, Manheim Township School District and Lower Merion School about their experience of creating and implementing these mentoring programs. In this article, they provide an overview of these programs and share their knowledge about technology mentoring for those who want to follow in their footsteps.

How mentoring programs work

While there is no standard mentorship program for schools to follow, most districts follow a similar structure. At the heart of every mentorship program is a pool of mentors, or peer coaches. These people are educators who generally have been recognized by their colleagues as strong leaders and have had success in integrating technology into their classrooms. As Kay Teehan, media specialist and director of technology mentorship for the Polk County School District, explains it, mentors are the "technology thought leaders" of the entire district, the educators who demonstrate knowledge broad enough to share with others and the passion to do so.

Enrollment as a mentor is completely voluntary. Once they sign up, mentors endure a rigorous training program, provided by the school's technology staff, to make sure they are up to speed on all the latest and greatest technology products the district wishes to implement. Next, mentors recruit students, or protégés, to participate in the program. Jill Greiner, assistant director of technology for the Manheim Township School District, in Lancaster, Pennsylvania, says these are the teachers who have the desire to work with technology but not the skills.

"Just because someone doesn't know that much about computers doesn't mean that person isn't entitled to the opportunity to try things out," says Greiner, who oversees her district's technology mentoring program. "That's what our program is all about – giving that equal opportunity when and where teachers need it most."

questionnaire, created by technology specialist Dr. Christopher Moersch. The questionnaire, which has been tested for validity and reliability by Temple University, measures authentic classroom technology use and is used in 10 states and thousands of school systems worldwide.

"The test is purely an assessment," explains Bill Dolton, educational technology facilitator at the Lower Merion School District. "We use it for the sole purpose of establishing where our teachers may have gaps in knowledge so we can bridge them."

Scheduling and incentives

But, these types of professional development programs don't happen overnight and they don't come without challenges.

Mentorship is a year-long commitment, something that many teachers find difficult. Participation requires creative scheduling since teachers and their mentors are very busy. Most teachers feel that professional development is a good thing – time well invested in their collective future. However, when an extracurricular development program stretches over more than one or two classes, quite simply, life gets in the way, and teachers have to drop out. In addition, teachers' schedules are full to begin with, and many mentors and their protégés just can't find time to get together before or after school.

To solve this problem, many districts have adopted incentive programs to compensate protégés for their efforts. At Lower Merion School, protégés get three full days of release pay or 12 hours of after-school time at over-

> **If we want them to be successful, we need to make sure we give them the tools that can show them the way to success.**

Depending on the district, each mentor selects two to five protégés. The protégés then formalize the arrangement by signing contracts for one year. During that time, protégés and mentors are expected to meet a certain number of times each month. Some organizations, such as Bartow Middle School, allow the meetings to occur during school time and will bring in substitute teachers. Other districts require mentors and protégés to meet outside of school, either before classes in the morning or after classes are done.

At the end of the year, mentors administer a skills assessment test to protégés to determine exactly how much they've learned. The test isn't something protégés can fail; instead, it is designed to determine what types of skills they've learned and what types of skills they still lack. At Lower Merion School, in Ardmore, Pennsylvania, for instance, mentors administer the Levels of Technology Implementation (LoTi)

time rates. At Manheim Township School, protégés get paid overtime pay for every hour they spend learning outside of the ordinary work day. And at Bartow Middle School, Teehan says they receive a laptop computer or LCD projector, along with a boatload of software programs to use with their new technology.

"We made sure our [protégés] had all the tools," says Teehan, noting that in many cases, some also received digital cameras and scanners. "If we want them to be successful, we need to make sure we give them the tools that can show them the way to success."

Mentors are compensated for their efforts as well. At Bartow Middle School, these thought leaders receive the very same laptops that protégés get. At Manheim Township School, mentors receive laptop computers as well as overtime pay. Finally, at Lower Merion School, where a pre-

existing program has resulted in laptop computers for 95 percent of the staff, mentors receive a cash stipend of US$2,500 – $1,250 midway through the year, and the remainder when the year is over.

However, even if a district is willing to pay for substitutes in order to allow mentors and protégés to meet during the day, there may not be enough substitutes available, creating a conundrum in which schools must choose between supporting mentorship and supporting education as a whole.

But schools and districts aren't letting issues like these get in their way, even if they don't have a solution yet, they know they'll deal with it to keep their mentoring programs going.

"I'm guessing our program will double every year until we say it's impossible to find enough subs," explains Teehan. "At that point, I'm not sure what we'll do, but I know we'll come up with something."

Getting buy-in

Of course, buy-in from the administrative level is necessary for technology mentorship programs, as well. Here, the issue isn't as much about remuneration as it is return on investment. District leaders want to know the money they allocate to substitute teachers or overtime benefits students and teachers. According to Greiner, the best way to demonstrate the value of these expenditures is to present administrators with a clear overview of how many protégés participate each year and the total percentage of teachers trained since the program's inception.

"District wide, there aren't that many of our K–12 teachers who haven't done the program," says Greiner. "Those kinds of statistics help our administrators see that the money they spend on our mentorship program is money well spent."

For districts that don't have statistics and are thinking of starting a mentorship program, Dolton adds that administrators should communicate with mentorship directors at other schools and ask them for specifics on their experiences. This type of powwow can be eye-opening, he says. It can also help eager districts get real-world information to build a case for mentorship programs of their own.

Keep learning

Educators agree that perhaps the biggest challenge to engineering successful mentorship programs is keeping things current. As technology changes, technology mentorship must evolve to focus on the latest innovations. At Manheim Township, this means monthly mentor meetings to make sure every mentor is up to speed on what's new. At Lower Merion, it means updating the program every year, according to feedback from outgoing protégés.

Check out this sample peer coaching program

Many schools that have implemented technology mentorship programs have mirrored them after the free Peer Coaching model from Microsoft. For more information on Microsoft's peer coaching model, visit http://pc.innovativeteachers.com.

Dolton, says his district encourages mentors and protégés to stay in touch and continue to meet regularly once their formal tutelage has ended. It is, he says, the very least the district can do to keep up its commitment to professional development.

Even when a school's entire teaching staff is trained, technology mentoring shouldn't end. Mentorship advocates say it's important for teachers to go through the program regularly, every five years to stay current. Otherwise, it can be tempting for teachers to build lesson plans around a curriculum and use them for years.

At Manheim Township, where the technology mentor program began in 2003, 85 percent of the district's 105 teachers at the K–5 grade level have completed the program. Greiner estimates all of the elementary school teachers will be trained by the end of next year.

Greiner sees this trend as a blessing but notes that graduation from a technology mentor program doesn't mean the learning has ended.

"We don't look at it from the standpoint that you're ever done," says Dolton. "Mentorship is an opportunity to collaborate and work together to maximize student engagement and thinking. Why would you ever want to finish that?"

Educators at Bartow Middle School, Manheim Township School District and Lower Merion School know there are challenges that come along with technology mentorship programs but they also understand that this is a great way to bring technology to teaching and learning at their schools.

As Teehan explains, "Whether you're helping someone figure out how to put a digital movie together or how to use [software], if you don't know that much about technology, you need to learn it, and there's no better person to learn it from than someone you see every single day."

by Matthew Miller

E-Learning for Teachers

Melinda George lauds online professional development

PHOTO COURTESY OF MELINDA GEORGE

Melinda George

As the new senior director for PBS TeacherLine (a nonprofit provider of standards-based online professional development courses for pre-K–12 teachers and school districts across the United States), Melinda George has made it her goal to spread the word about the professional development options available to educators.

George acquired her impressive background in education technology from years of dedicated work as a fourth- and fifth-grade teacher in the District of Columbia, before becoming the director of the education division of the Software Information Industry Association (SIIA) and eventually taking over as executive director of the State Educational Technology Directors Association (SETDA). In her new role at TeacherLine, George will focus on online professional development and its impact on teaching and learning, which is the topic we discussed with her.

Q: **What are the benefits of online professional development?**

A: Online professional development is taking off because teachers are realizing that it gives them [several] big opportunities – first, it provides an array of courses that lets educators individualize professional development to the needs of their classrooms, schools and districts. Second, it provides access for teachers in rural or remote areas to be able to take courses they otherwise might not have exposure to. Third, online courses are available anytime. We have found that one of the busiest times for teachers logging on to TeacherLine is between 11:00 p.m. and midnight, which speaks to the fact that in these facilitated environments, teachers can log on whenever it's convenient for them to do their professional development.

Q: **How far off are we from all professional development being delivered online?**

A: We're still a ways off, but there's a growing move toward it. Unfortunately, a lot of teachers still haven't experienced an online course, which is why we're working to familiarize educators [with] what taking online courses actually means as well as show their benefits. Increasingly, there's also a spreading by word of mouth among teachers. It is interesting that an online environment can be national, and yet the spread of information about [that environment] often happens at the local level.

Q: **Are there certain subjects or areas that are most popular among professional development courses?**

A: It really spans all content areas. Certainly, TeacherLine places a big emphasis on math courses, and that's continuing to grow as the Bush administration and Congress are supporting new math and science initiatives. One of the things we believe our online courses do is help mathematicians who have never taught and who haven't been trained in pedagogical methods bridge that gap by giving them some of the tools and resources necessary to be teachers as well as experts in the field of mathematics.

Q: **How important is it to offer professional development courses on technology?**

A: We can't be talking about 21st-century education without technology. As we look at studies of students in this generation and what they think of their teaching

experience, we're struck by their feeling that technology needs to be part of a classroom experience. Therefore, it's critical for all teachers to have the ability to bring technology into the classroom in order to integrate it into their curriculum and lesson plans. That's why there has been an emphasis at TeacherLine to develop courses that help teachers. Some of the fears that teachers have about using technology in the classroom are allayed if they're given some ideas and solutions to help them utilize it effectively.

Q: **How has professional development helped meet state and federal mandates?**

A: States and districts are seeing online professional development as a way to meet the mandates of No Child Left Behind and the state requirements for highly qualified teachers. In the last couple of months, we've had two big statewide initiatives.

The Nevada Department of Education's Commission on Educational Technology awarded US$250,000 to two of its largest school districts – Clark County and Washoe County – to work in conjunction with local PBS stations to provide [online] courses to its teachers who needed to meet their highly qualified teacher status. So now we've brought together a collaborative workgroup of educators from the state department, educators from the districts and individuals from local public broadcasting stations in Nevada to inform teachers about this opportunity and to help get them engaged in this online professional development community.

The other place where we've seen a great statewide initiative is in Arkansas. Last year, the Arkansas General Assembly passed legislation requiring all of its teachers to take an online professional development course. TeacherLine qualified as the vendor to provide those courses in conjunction with Arkansas' public broadcasting station AETN. So we are now working with the people in Arkansas to figure out how to gear up to support 4,000 educators taking TeacherLine courses over the next year, and probably up to 30,000 educators over the next six years.

Q: **What are the most important factors to consider when choosing a professional development provider?**

A: It is critical that you do a needs assessment at the school or district level to ensure that the professional development you eventually sign up for will meet your needs. First, you want to find a provider that has the breadth and width of courses to meet teachers' needs. Second is a question of access: You must make sure you have someone who can deliver on those needs, and depending on where the school or the district is located, that can be a real issue.

Q: **Are there any misconceptions regarding online professional development?**

A: It's interesting because we're not seeing trends that say only younger teachers are taking online professional development courses – in fact, it's just the opposite, [and this] may have to do with the professional learning communities. In

many ways, any teacher who hasn't had the opportunity to experience an online professional development course may have some hesitation. But what we're finding is that as teachers become involved with online courses, they realize the practicalities, the learning and the access that they're able to gain through them. It's really a question of getting teachers to try it once.

Q: **What trends do you see for the next school year, and going into 2007 for professional development?**

A: It's only going to get hotter. We're coming up on the No Child Left Behind deadline for meeting those highly qualified teacher requirements, so we're going to see a lot of educators wondering how to help meet those needs. So professional development will continue to grow, and online professional development is progressively becoming the way to deliver professional development because of the quantity, the quality and the access that we're able to help afford.

Melinda's recommended professional development links

PBS TeacherLine
http://teacherline.pbs.org/teacherline

National Staff Development Council
www.nsdc.org

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by Deena Cox

Do You Moodle?

"Moodle: [[unknown origin]] the process of lazily meandering through something, doing things as it occurs to you to do them, an enjoyable tinkering that often leads to insight and creativity. As such, it applies both to the way the Moodle system was developed and to the way a student or teacher might approach studying or teaching an online course. Anyone who uses Moodle is a Moodler" (source: moodle.org).

First MUDs. Then MOOs. Now Moodle? The community-based platforms in cyberspace seem to evolve faster than you can say Multi-User Domain, MUD Object Oriented or Modular Object-Oriented Dynamic Learning Environment. Just keeping up with this myriad of ever-catchy Internet acronyms can be time consuming, if not a little tedious. In the case of Moodle, however, figuring out the playful abbreviation poses more of a challenge than actually using the open-source course management, e-learning software to which it refers.

On the most basic level, Moodle is a free software package that teachers can use to create or tailor their own online courses. Teachers using Moodle have access to a variety of features and activities – such as wikis, testing capabilities and discussion forums – and by adding these various elements, they are able to build online courses that precisely suit their needs.

With more than four million users accessing nearly 400,000 courses worldwide as of April 2006, Moodle's exponential growth over the past five years is obvious and can be attributed to its intuitive, flexible, modular format. Moodle is free to use and easily modified, making it an attractive e-learning alternative to rigid retail systems such as WebCT and Blackboard. Moodle's open-source design also means teachers who aren't comfortable creating an online course can simply log on to the system and download an entire course or activities and features that another teacher has posted through Moodle Exchange.

Educators creating courses in Moodle will typically include a list of course participants, a syllabus, a calendar charting assignment dates and deadlines, and message forums in

> "I tell [administrators] to try it and experiment with it and to not be afraid to allow teachers to play with it a little bit. Give them the freedom and see where they will go with it."

their virtual classrooms. Moodle promotes a collaborative, student-centered approach to learning, and it's precisely this underlying constructivist pedagogical philosophy that has educators marveling over Moodle.

Middlesex County Public School District in Virginia is one of many districts in the United States that is using Moodle extensively in its curricula. Introduced to the district by Middlesex technology director Mark

Burnet in September 2004, Moodle was implemented because its open-source, modular format makes it easily customizable, and the simple interface means students and teachers alike have very few navigation problems.

In addition to Moodle's team of dedicated programmers, users around the world contribute to the creation of Moodle modules and activities. On the Moodle.org website, teachers can pick and choose from a plethora of quizzes, surveys, polls and peer assessment activities to add to their particular Moodle course modules. They can also add various plug-ins for colors, fonts, layouts and languages to modify the look and feel of a course. When the online course is ready, students simply use an ID and password to gain access to the materials.

To ensure the district-wide implementation in Middlesex County was as seamless as possible and fulfilled the full potential of Moodle's student-centered approach to learning, Burnet and his team developed staff and student training courses on Moodle. Burnet, who was named Technology Administrator of the Year by a local television station, says adequate training and hands-on experimentation is essential to the successful adoption of Moodle in any school or district.

"I've talked at a couple of conferences, and I tell [administrators] to try

it and experiment with it and to not be afraid to allow teachers to play with it a little bit. Give them the freedom and see where they will go with it. I think that is the first step," he says. "It is a solid system. One of the things that [administrators] often fear is that when something is free, they think it is only worth what you pay for it. [Moodle] is one case where, even if I had to pay for it, it would be worth having."

Mary Swihart, a Middlesex County biology teacher, agrees.

In 2005, her 26th year of teaching, Swihart was honored with a technology integration award from the then state governor, Mark Warner, in recognition of her enthusiastic use and championing of Moodle within the Middlesex Country Public School District.

Swihart says Moodle gives her the freedom to tailor the online component of her biology class to suit the course syllabus. It also allows her students full access to their courses in a hybrid learning environment – where course work is divided between in-class and online from home.

To encourage her students to guide their own learning, Swihart posts PowerPoint files of her in-class presentations, biology-related animations, quizzes and discussion questions in her course module.

Swihart also uses Moodle to conduct pre-tests and post-tests to help better assess her students understanding of the course work. Moodle automatically evaluates which questions students are answering correctly or incorrectly, allowing the teacher to develop future lessons and quizzes around the results.

In addition to the pre- and post-test functions, Swihart finds the Moodle forums add significant value to her class.

"When you have a discussion question – a controversial discussion question, for instance – and you throw it out to your students [in class], you

Mary Swihart's students use Moodle for the online component of their biology class.

may get a fourth of them responding, well, maybe not even that many," she says. "The rest will sit back and just listen, and they won't take part. It can be very hard to draw them out, but I can put that question into a Moodle forum where they are required to respond and they respond. I can also set it up where they have to respond to each other, so that way, I can get a lot more thought and participation in a discussion than I can in the classroom."

It is this type of endorsement that Moodle creator Martin Dougiamas hoped for when he created the course management software as part of his Ph.D. dissertation: *The use of Open Source software to support a social constructionist epistemology of teaching and learning within Internet-based communities of reflective inquiry*.

"Moodle is very much against just publishing information and requiring a quiz at the end – which is what we call dump and pump," says Dougiamas, a native of Australia. "Moodle has a number of activities where students have to do things. These can be complex, like ... wikis for example – individual wikis or group wikis – which are getting people to collaboratively write something. We are always looking for opportunities for students to create something for others to see."

Like Dougiamas, Swihart is excited by the possibilities Moodle is bringing to her teaching and her students' learning, so much so that across her school district and in conference presentations, she actively encourages other educators to give Moodle a try.

"I think it is probably the best thing [teachers] can do for their students. Moodle gives them so much more access, and because it's free, I don't see why most schools aren't using it," she adds. "For me, it is just phenomenal. It has allowed me to do so many more things with my students because I put the more time-consuming activities online and the students access those activities there, so it gives me more time teach in the labs and other lessons."

Related website
www.moodle.org

by Deena Cox

Pooling Your Resources
Using integrated systems to improve learning

As the technological maturity of classrooms continues to grow, the array of peripherals filling schools across the country does too. VCRs, DVD players, document cameras, projectors, interactive whiteboards and audio systems are fast becoming the preferred elements of an in-class technology suite, in addition to the standard PCs and laptops. Having access to all of this equipment is appealing to both students and teachers, but wrestling with scattered controls and connectors is often cumbersome and can eventually prevent the full utilization of classroom technology products.

Schools and technology manufacturers are quickly realizing that integrated technology systems – that teachers can get up and running with the click of a single button – are the key to ensuring technology tools are easy to use and don't end up sitting in a closet gathering dust.

To get an integrated system, schools can turn to an audiovisual dealer or their IT specialists for installation and integration services. And now, they can also look to manufacturers, such as SMART Technologies Inc., who are trying to save schools time and money by offering off-the-shelf integrated technology systems. SMART's offering – the SMART Board 600i interactive whiteboard system – is a wall-mounted Unifi short-throw projector with a built-in audio system and a SMART Board interactive whiteboard integrated into one complete unit.

According to Stephen Tate, an instructional technology resource teacher at Spotsylvania High School in Spotsylvania, Virginia, integrated

Using integrated technology systems, teachers can easily get up and running with the click of a single button.

systems are not just a cost-effective way of combining and managing classroom technology products. These systems address his school's need to accommodate a new generation of digital natives, while taking into account the technological learning curve its teachers face.

"Properly used, [an integrated system] can improve student learning," says Tate. "It allows for a blend of traditional and contemporary teaching strategies that allow 'old school' instructors to meet the needs of a new generation of students through [a] dynamic presentation ... that speaks their language while at the same time providing an outlet for cutting-edge educators to hone their skills."

Tate says interactive whiteboard systems – such as the 600i – that offer quick, easy access to a complete range of education technology products enhance lesson delivery and student learning.

"We have observed that this technology leads to increased student motivation and engaged active learning," explains Tate. "It provides a seamless way to display instructional materials across a variety of presentation media – audio, still video, streaming video and data projection ... [all in] one centralized instruction station."

With a streamlined system, teachers no longer waste time on setup and connections. Once installed, the wall-mounted projector and interactive whiteboard are always aligned and ready to use, and the integrated stereo audio system is always on and available. All of the cables are concealed behind the SMART Board interactive whiteboard, eliminating tripping hazards, and because everything is permanently installed and secured with a locking mount, theft is less of an issue.

The control panel provides audio and video connections for a computer, a DVD or VCR player, and a document camera or other video source. It also provides a USB port where teachers can simply plug in a USB key and save their work – without a PC.

"The SMART Board 600i interactive whiteboard system is one more SMART product specifically designed to give educators the freedom to focus on teaching instead of managing technology," explains SMART product manager James Rempel. "The 600i installs quickly, reduces implementation time, and, once installed, becomes an embedded education technology system that doesn't disrupt the focus of students when switching from one multimedia source to another."
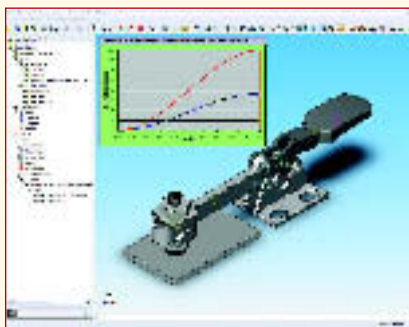
As Rempel explains, integrated systems such as the 600i let teachers do what they do best – teach.

by Cara Erenben

Tools for Schools

Digital resources for the interactive classroom

Create 3-D models

Spark student interest in math and science careers when you use SolidWorks Education Edition software on your interactive whiteboard. SolidWorks, a three-dimensional mechanical design software used by institutions worldwide, introduces students to the math and science fundamentals behind engineering, medicine research and other technical fields. In 3-D, students and teachers can build virtual models of anything to examine structure, form and movement. Using SolidWorks, geometry teachers can transform static blackboard drawings into dynamic 3-D images that clearly show relationships in space. Statistics teachers can export graphs in Microsoft Excel software to SolidWorks to provide graphical representation of statistical trends.

The SolidWorks Education Edition 2005–2006 combines the latest in 3-D CAD software, COSMOS Design Analysis software and comprehensive courseware. It comes with complete courseware and curriculua in electronic and printed formats. SolidWorks Education Edition costs US$100 per user.
Go to www.solidworks.com.

Be a news hound

Get a weekly online newspaper that will excite and encourage beginner readers or readers with special needs when you subscribe to News-2-You. Issues of this online newspaper are published every Thursday throughout the school year and sent to you in PDF format. Each issue focuses on one topic that is currently in the news. The topic is presented in an easy-to-read, symbol-based format where each line is a simple sentence illustrated with Symbolstix (simple line-drawn pictures).

Each issue also includes 16–30 pages of related content, such as current events information, activity pages, puzzles, a word of the week, jokes, recipes and more. All content is designed for students who need concise, visual concepts to understand new information.

Subscriptions are valid for one full year, based on the date of purchase. Subscriptions are license-based and range from US$82 for one user to $2,200 for 100 users. Additional worksheets, games, storybooks and cartoons related to the weekly topic are also available for a fee.
Go to www.news-2-you.com.

Get free content

MarcoPolo provides Web-based content aligned to state education standards and professional development free of charge to K–12 teachers. The MarcoPolo site is a gateway to seven discipline-specific sites, with resources created and supplied by the nation's leading education organizations, including the John F. Kennedy Center for the Performing Arts, the National Council of Teachers of Mathematics, the International Reading Association, the National Council of Teachers of English and the American Association for the Advancement of Science. Teachers will find lesson plans, images, videos, interactive content, downloadable worksheets, links to panel-reviewed websites and additional resources.

Topics covered include the arts, economics, humanities, mathematics, reading and language arts, geography, and science. MacroPolo, which was launched by MCI in 1997, is a partnership of leading education organizations and the Verizon Foundation. Nationwide, more than 225,000 educators have participated in training to use MarcoPolo as a curriculum tool.
Go to www.marcopolo-education.org.

Online Library

Web resources for the interactive educator

Science

Center for Educational Resources (CERES) Project

http://btc.montana.edu/ceres

Explore the universe with online and interactive science education materials that have been developed by educators from across the nation. Using resources, data and images from NASA, these lesson materials include real-time satellite locators, data from the Hubble Space Telescope and virtual missions to Jupiter. All materials are closely aligned with National Science Education Standards.
Elementary/Secondary

Nobelprize.org

http://nobelprize.org/games_simulations.html

Learn about the contributions of Nobel Prize winners through games and simulations based on their Prize-winning achievements. This comprehensive, thought-provoking collection of interactive resources focuses on key Nobel Prize categories, including physics, chemistry, physiology, medicine, literature, peace and economics.
Elementary/Secondary

World Wildlife Fund

http://worldwildlife.org

Learn about the delicate biological balance of the world through the World Wildlife Fund's interactive maps, photographs, quizzes and games. These activities encourage a deeper understanding of conservation and extinction issues, biodiversity, global warming, deforestation, illegal wildlife trafficking and poaching.
Elementary/Secondary

Reading and language arts

BEEweb

http://edutech.cs.brandeis.edu

Become part of the buzz surrounding this online education community where students from across the United States are encouraged to become each other's teachers. All BEEweb games – SpellBEE, PatternBEE, GeograBEE and MoneyBEE – are two-player games in which students log on and test each other's knowledge of geography, math, spelling and problem solving in a series of virtual challenges.
Elementary

Sadlier-Oxford Phonics Interactive

www.sadlier-oxford.com/phonics/control_page/front2.htm

Explore phonetics with this extensive education resource site that uses word-match games, memory cards and a host of in-depth activities to teach students about letters, sounds and words.
Elementary

Quiz Hub

http://quizhub.com

You don't have to be a subscriber to check out the selection of free, cross-curricular, thinking games, quizzes and logic puzzles on this fee-based, question-and-answer site. From geography to grammar, Quiz Hub provides links to interactive websites that cover a wide range of interests, including art, crossword puzzles and math.
Elementary/Secondary

Math

Math Playground

www.mathplayground.com

Try out this award-winning collection of math games that include flashcards, memory games and word problems. This expansive site includes Macromedia Flash-based interactivities that keep students engaged while they practice their math skills.
Elementary

Math Slice

www.mathslice.com

Make math class more exciting with an interactive game of Math Jeopardy or Math Millionaire. These games are complemented by a wide selection of online multiple choice activities that test class knowledge of math concepts from basic counting to algebra and statistics.
Elementary/Secondary

Amusement Park Physics

www.learner.org/exhibits/parkphysics/coaster

Physics is fun on this site where visitors build a conceptual roller coaster using concepts that are used to design real coasters. Students determine the height and shape of hills and loops, and their exit paths. Once completed, designs are subject to a safety inspection based on the laws of physics.
Elementary

Cross-Curricular

National Geographic Eye in the Sky

www.nationalgeographic.com/eye/index.html

Learn about the history and relationship between Earth and mankind from a satellite's view. This interactive resource offers lessons on nature's fury, human impact on, and exploration of, the planet in a polished blend of text, video and still photos that is comprehensive, informative and engaging.
Elementary/Secondary

Digital History Interactive Timeline

www.digitalhistory.uh.edu/timeline/timelineO.cfm

Explore U.S. history with this easy-to-use, uncluttered resource. Slide a bar along a timeline beginning in 1580 and watch history unfold to the present day on an interactive map. As time progresses, historical points of interest appear on the map as icons, which can be clicked on to link to more detailed information.
Elementary/Secondary

Correction notice

In the spring 2006 issue of i.e. magazine we listed the incorrect link for Scholastic Ready-to-Go Resources. The correct link is http://teacher.scholastic.com/lessonplans/index.asp.

Win an AirLiner™ wireless slate!

All you have to do is tell us about the biggest technology-related challenge your school or district faces for the upcoming school year.

Send your response with your name and contact information to ieeditor@smarttech.com by October 30, 2006. Please include information about your school, the technology challenge your school faces and ideas for how you might overcome this challenge.

Congratulations to last issue's contest winners. Each winner will receive an AirLiner wireless slate for sharing their technology success stories.

Linda Bechtol
(Brookline Regional Catholic)

Angie Vandewarker
(Carson City-Crystal Area Schools)

Daniel Daneker
(Conestoga Valley Middle School)

Karl Ochsner
(Pope John XXIII Catholic School)

Deb Ray
(Lexington Local Schools)

Five lucky winners will receive their very own AirLiner wireless slate.

In 250 words or less, describe the technology challenge, how it affects your teaching and what would change if it were resolved.

Send a description of your technology challenge to ieeditor@smarttech.com by October 30, 2006. One entry per person please.

About AirLiner wireless slate

Interact wirelessly with your SMART Board interactive whiteboard or Sympodium interactive pen display from 52 feet (16 m) away. The battery-free tethered pen lets you or your students control any software application, write notes and highlight information in digital ink. For more information, visit www.smarttech.com/airliner.

by Deena Cox

Percentage of children between the ages of **5 and 17** who **use computers**: **90**

Percentage of children between the ages of **5 and 17** who have **created their own webpages**: **24**

Percentage of **teens** who do **school-related research online**: **94**

Number of **states** where at **least one cyber charter school** was **operating** in 2004–2005: **16**

Number of **states** that had **established virtual schools** in 2004–2005: **22**

Percentage of **school districts** that have **students enrolled in distance education** courses: **36**

Percentage of **high-poverty school districts** that have students **enrolled in distance education** courses: **42**

Get the easily digestible cure for technology headaches

Tight budgets and a confusing array of options can make choosing the right mix of technologies for the classroom time consuming and stressful. *i.e.* magazine is here to help by providing reliable information on a range of issues – from assessment and funding through to implementation, support and training. And it does so with understandable articles from credible experts and leading thinkers in the field.

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Yes ☐   No ☐

SMART Technologies

Good for
Thinking
Learning
Sharing
Good to grow

The new SMART Board™ 600 series interactive whiteboard

As educators like you work to integrate technology, digital content and pedagogy, schools are recognizing the value of SMART Board interactive whiteboards in the classroom. Students can use them to grow ideas through brainstorming, researching and collaborating on projects. You can use them to grow the skills and knowledge you need to encourage inquiry-based learning with digital content.

But growth doesn't have to come with steep learning curves. If you can use a computer, you can use a SMART Board interactive whiteboard.

Get the world's leading interactive whiteboard. It's good to grow.

Grants are available through the

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