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interactive educator

# Need Funding?

Grant providers and winners share tips for getting approved



## How to Hire Tech-Savvy Teachers

**Point of View**  
Stan Levenson  
reveals new funding  
options for schools



## 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.



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](http://www.smarttech.com/Hall3)

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## interactive educator

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[education.smarttech.com](http://education.smarttech.com)



**M**oney for technology – finding it, working to get it and deciding how to spend it effectively. It’s a topic that constantly weighs on your mind as you work toward providing students with the best education possible. If government and school district coffers were limitless, getting the right technology into the hands of teachers and students would be easy – unfortunately, as you know too well, that’s not the case.

While the folks here at SMART are working hard to make purchasing technology easier for you with initiatives like our new education pricing program, we know that you still face a multitude of challenges when it comes to technology funding.

So, whether you’re operating in a zero-sum environment or want to learn how other schools are making the most of their limited technology budgets, we have ideas and advice from leading educators, grant providers and funding experts to help you find, get and stretch your technology dollars.

Want to win more grants? Diane Curtis went straight to the source and asked leading grant providers what they look for in a winning grant application. In this story, she also shares

grant writing tips from those educators who always seem to win grants (Need Funding? p. 22).

Frugal school leaders share their tactics for making the most of a tight technology budget (Stretching Technology Funding Dollars p. 34), and guest columnist Doug Johnson gives you advice for standing out and getting technology funding when you have to compete for budget dollars (Fight the Zero-Sum Factor p. 20).

Outside the budgeting realm, we’ve covered plenty of other issues. If you’re searching for technology literate teachers, Don Lipper discusses the qualities to look for in candidates. He suggests probing interview questions and explains why it’s important to find teachers who know how and when to use technology (How to Hire Tech-Savvy Teachers p. 28). And for those of you who are wondering why there’s such a big fuss about RSS feeds, Wesley Fryer explains what they are and how they can help students and teachers (Lowdown on RSS Feeds p. 42).

Once you’ve read through this issue, we invite you to take our reader survey and tell us what you think of *i.e.* magazine. This is your chance to give us some feedback. Tell us what works, what you’d like to see change and how we can provide you with a resource that meets your needs.

With that in mind, our February issue will include a new Letters to the Editor section where you will have a platform to tell us what’s on your mind and voice your opinions about our stories, interviews and the latest education technology issues. So send us a note, and watch for your comments to be published in our next issue.

Sincerely,  
Wendy McMahon  
Managing Editor

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**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.



**Doug Johnson** has been the director of media and technology for the Mankato Area Public Schools since 1991 and has served as an adjunct faculty member of Minnesota State University, Mankato, since 1990. His teaching experience includes work in K–12 schools in both the United States and Saudi Arabia. He is the author of four books, including *The Indispensable Teacher’s Guide to Computer Skills* and *Teaching Right from Wrong in the Digital Age*.



**Don Lipper and Elizabeth Sagehorn** are a husband-and-wife writing team ([www.WriteTheFirstTime.com](http://www.WriteTheFirstTime.com)) who have written for countless consumer, trade and business publications and websites including, the *New York Post*, *Time*, *People*, *Money*, *Premiere*, *In Style*, *CNet.com* and *Space.com*



**Heather Ellwood** is a freelance writer based in Calgary, Alberta, Canada, who has an ongoing interest in writing about education issues, practices and innovations owing to her former career as a high school English teacher. She was also the editor of a sports and fitness magazine, and most recently, she was an in-house writer for one of Canada’s largest agricultural cooperatives. This issue marks her first contributions to *i.e.* magazine.



# Kids learn better when learning is interactive

**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](http://www.smarttech.com)

**SMART**  
Technologies



### ■ No hassle SMART pricing

SMART Technologies Inc. has introduced a new education pricing program that makes purchasing SMART's popular line of products much easier. Some of the products covered by the new program include SMART Board interactive whiteboards, Symposium interactive pen displays, SMART Ideas concept-mapping software and SynchronEyes classroom management software.

This new education pricing, which commenced October 1, 2006, replaces the product grant programs previously offered by the SMARTer Kids Foundation of Canada. The new program provides grant-equivalent pricing to all accredited, not-for-profit education institutions, including schools, universities, museums and libraries. Customers can expect a smoother purchasing process with less paperwork and less hassle than applying for a product grant.

Anyone interested in purchasing SMART products or receiving more information on the education pricing program should contact their local, authorized SMART dealer.

SMART Technologies Inc.  
[www.smarttech.com](http://www.smarttech.com)

### ■ E-Rate filing window opens

– Schools and libraries hoping to receive telecommunications funding from the US\$2.25 billion-a-year Schools and Libraries Program of the Universal Service Fund – commonly known as E-Rate – will have to submit their applications between November 14, 2006, and February 7, 2007. The dates were announced by the Federal Communications Commission (FCC). This government entity, which is responsible for the telecommunications program, also released its annual Eligible Services List (ESL), the official roster of technologies and services that qualify for E-Rate discounts.



Before applicants begin filing their applications for 2007 telecommunications discounts, they should note the changes to this year's program and ESL. Among the more significant additions to the list is the interconnected voice over Internet protocol, or VoIP service, which enables users to place and connect calls using the Internet, instead of traditional phone lines. Officials have also added the KVM switch to the list. Short for "keyboard-video-mouse," a KVM allows users to control more than one computer with a single keyboard, monitor and mouse.

To help schools and libraries better navigate the list and make sense of these and other changes, the new ESL includes an index and glossary of terms. Ineligible services or components, which were previously listed alongside eligible services, are now in a separate section. The announcement reminds applicants to review the information in the ESL before submitting applications and to keep in mind, the earlier applications are received, the earlier they can be processed.

Schools and Libraries  
 Division of USAC  
[www.universalservice.org/sl/about/overview-program.aspx](http://www.universalservice.org/sl/about/overview-program.aspx)

### ■ Game for learning

– The Federation of American Scientists believes it has discovered something so captivating for students that they'll spend hours learning on their own. The discovery? Video games. The kind that have the potential to redefine education.

The group has requested federal research into how the addictive pizzazz of video games can be converted into serious learning in schools. There's already an audience for this type of learning – research indicates that more than 45 million homes have video-game consoles. The federation's action plan is based on deliberations from the National Summit on Educational Games, which was held in October 2005 in Washington DC and brought together more than 100 experts to examine how to harness the power of video games for learning.

These experts theorize that video games teach the skills employers want, including analytical thinking, team building, multitasking and problem solving under stress. Unlike humans, the games never lose patience. And mastering them is second nature to many kids.

During a news conference, federation president Henry Kelly said the idea might stun those who consider games to be the symbol of teenage sloth, but the intent is to create and evaluate games with the goal of raising achievement levels.

"If we can't make the connection, shame on us," said Kelly. What's needed, he explained, is research into which game features are most important for learning and how to test students on the skills they gain from games. The education and labor departments, and the National Science Foundation will lead the way under this plan.

Federation of American Scientists  
[www.fas.org](http://www.fas.org)

## ■ Web 2.0 goes to school

High school and university students will gain early exposure to emerging and influential, technologies, thanks to a course co-developed by IBM and the University of Arizona.

IBM and the U of A decided to launch a collaborative initiative because Web 2.0, referred to by many as the second generation of Internet-based services, is becoming more and more prevalent, not only in education circles, but in the business world as well.

The Gartner Group, a leading provider of research and analysis to the global IT industry, anticipates that by 2008, the majority of Global 1000 companies will have adopted several technology-related aspects of Web 2.0 to advance their businesses. As these companies increase their reliance on new Web-based technologies in order to capitalize on new business opportunities, they will in turn have a greater demand for experts who can build and manage Web 2.0 technologies such as wikis, blogs, user groups and forums.

The course, which will be offered to students in the University of Arizona Management Information Systems Department, is aimed at helping users build online communities and social networking systems with Web 2.0 technologies. The class will also address topics such as the role of online communities, common types of community tools and environments, and building successful communities.

For their final project, students from the university will work with students from Howenstine High School in Tucson, Arizona, to organize micro-communities, providing both groups with valuable real-world experience.

## ■ Google resources

Google Inc. has launched a new resource called Google for Educators, which contains classroom activities and teacher guides for using various

Google applications to support and enhance the curriculum. Many educators are already familiar with Google Earth, which is a satellite image-based mapping product that lets users view the Earth from space or at street level and is essentially a three-dimensional model of the planet that users can grab, spin and manipulate.

The Google for Educators site will help schools take advantage of Google Apps for Education, an IT solution that brings communication and collaboration tools such as Gmail and Google Calendar, to the academic community free of charge. Google says the solution will help school IT administrators provide e-mail, online calendars, instant messaging tools and a dedicated website for faculty, students and staff. All of the tools are delivered online so schools don't need to install hardware or software to use the resources.

Other available applications include Google Book Search, which allows users access to the full text of many books; Google SketchUp, architectural and modeling software; and Picasa, photo editing software.

Although the applications offered through the site are free, some include advertising and that may concern some schools, said Tom Hoffman, an education software developer and contributor to the *eSchool News* Ed-Tech Insider blogs.

Hoffman explained that whether or not to use the tools could be a tough decision for some schools. While many schools could save a significant amount of money farming this work out to Google, some may question whether it is appropriate to use tools that contain advertising content, such as Gmail or Google Calendar in the classroom.

Google for Educators  
[www.google.com/educators](http://www.google.com/educators)

## ■ Digital learning research

The John D. and Catherine T. MacArthur Foundation recently announced plans to donate US\$50 million to study the impact of digital media on student learning. The five-year project will fund research and innovations that explore the impact of digital media on youth culture and will investigate how new media, from instant messaging programs to social networking websites, can be used to help students learn.

In an age when 83 percent of young people between the ages of eight and eighteen play video games regularly and nearly three-quarters communicate using instant messaging, MacArthur Foundation president Jonathan Fanton said his organization's investment should go a long way toward helping educators understand the potential of digital learning.

"This is the first generation to grow up digital – coming of age in a world where computers, the Internet, video games and cell phones are common, and where expressing themselves through these tools is the norm," Fanton said. "Given how present these technologies are in their lives, do young people act, think and learn differently today? And, what are the implications for education and for society?"

Beginning in 2007, the MacArthur Foundation will donate \$2 million a year toward research projects to explore the influence and impact of digital media on today's youth. It will also fund the creation of a new online portal, [www.macfound.org/digital](http://www.macfound.org/digital). Organizers say the website will serve as a central hub where educators and other stakeholders can access information about digital learning and share their opinions on its potential for schools.

MacArthur Foundation  
[www.macfound.org](http://www.macfound.org)





## THE SCHOOL DISTRICT OF JENNINGS DOESN'T BELIEVE IN AN ACHIEVEMENT GAP

SMART Board™ interactive whiteboards help Jennings' at-risk students learn at higher levels

Jennings believes that classroom instruction has to meet the needs of individual students. SMART Board interactive whiteboards are part of the solution. "As a teaching tool, the 52 SMART Board interactive whiteboards allow the children to participate in the instruction," says former



Superintendent of Schools Dr. Terry Stewart. "Just by being able to create their own type of learning, they are more interested, they are more engaged." The result? Attendance improved and so did test scores – and Jennings became the only fully accredited at-risk school district in the state of Missouri.

See a short video about the Jennings experience at [www.smarttech.com/2ie3](http://www.smarttech.com/2ie3)

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by Heather Ellwood

# Can You Hear Me Now?

Classroom acoustics can affect student learning



Classroom audio systems can help reduce the problems caused by poor acoustic design and ambient noise, resulting in increased student achievement.

**S**imon and Garfunkel might have harmonized beautifully about the sounds of silence, but they likely weren't singing about the average classroom. School is a noisy place, and for the most part, that's just fine. Teachers and administrators agree that modern learning is often a boisterous affair, filled with questions and answers, discussion and debate, lecture and listening. Not the sounds of silence, but rather, the sounds of learning.

Julie Barton's fourth-grade class in University Elementary School in Calgary, Alberta, Canada, is an example of a vibrant, noisy setting. On a typical Wednesday morning in October, her 22 students are spread out around the classroom, tackling various tasks. Working in groups, their voices mingle and merge, and

the entire room is humming and thrumming – alive with learning.

Then, Barton claps twice, waits for a semblance of silence to fall and instructs the students in group A to line up for gym, those in group B to get out their black journals and the students in group C to get ready for buddy reading. One student, clicking away on the computer, looks up in confusion. She just missed the instruction. Did her teacher say "Get your black journals out," or "Get your agendas out of your backpacks?" She's not the only one to miss what Barton said. Around the room student's arms fly up to find out what they missed. More precious minutes tick by as Barton repeats her instructions and organizes her students into the appropriate groups.

Many researchers believe that learning begins with hearing. If that's

the case, some of our students are obviously not learning to their full potential when they don't hear vital aspects of a lesson. Research shows a classroom audio system alleviates this problem and acts as a learning accelerator.

In the early 1980s, a U.S. government-funded project called MARRS (Mainstream Amplification Resource Room Study), set out to prove that an in-class audio-amplification system increased the learning of hearing-impaired students. Ultimately, that was proven, but MARRS accomplished even more. It also illustrated that students with normal hearing or very slight hearing loss showed significant improvement in test scores after the teacher wore a wireless microphone and the classroom was set up with an amplification system. A good thing to note here is that studies estimate about 25 percent of the student population has minimal hearing loss, whether from ear infections, fluid on the ear, colds or other maladies.

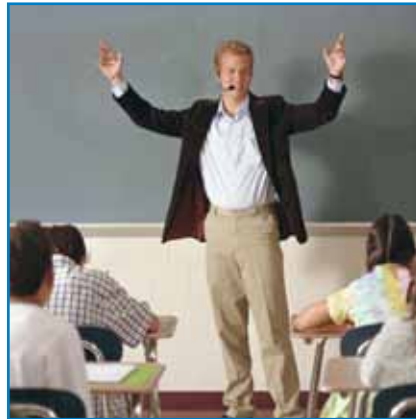
The poor acoustic design found in many classrooms, coupled with the additional noise from such essentials as air conditioners, heating systems and computers, reduces the clarity or intelligibility of speech by more than 25 percent. Such a noisy situation is a recipe for imprecision, increased mistakes and lack of achievement from students, through no fault of their own.

In an effort to counter this, some schools have adopted the use of classroom audio systems and are showing outcomes similar to those of MARRS. In Florida's Ocoee Middle School, an infrared audio-enhance-

ment system was installed in each classroom to attain maximum learning. As a result, students' ability to hear in classrooms was enhanced, attention levels increased and in-class behavior improved. Ocoee Middle School also reported 10 percent gains in achievement testing after the first year of audio-enhancement use.

techLEARNING.com, authored a report in November 2004 called "The Top Ten Returns on Investment." It offers expert opinions on which technology investments yield the best returns for schools. Number four on their list is microphones for teachers. At a cost of about US\$950–US\$1,500, a complete audio infrared amplification system can be installed in one classroom. For roughly the price tag of

Additionally, teachers note that their own high stress levels, often brought on by the need to use a loud voice or forceful command are eliminated because they don't have to raise their voices above conversational level to bring students back on task or



**“Perhaps most importantly, class interaction improves and participation increases when all students can clearly hear instructions and questions. When students are uncertain about what is happening in the class or what is being asked of them, they are reluctant to get involved.”**

one or two computers, an entire classroom's acoustics can be improved.

An article posted on the Light SPEED Technologies, Inc. website titled "The Benefits of Classroom Sound-Field Amplification" highlights the multiple benefits of using audio-enhancing technology. The article explains that, on average, students with normal hearing score 7–10 percent higher on tests because the technology helps overcome the effects of high ambient noise levels. Every child hears the teacher at the same level no matter where they sit. Teachers and administrators also cite significant improvements in student attention and on-task times because distractions are reduced and repetition of instructions is unnecessary.

provide correction. In fact, teachers also report fewer behavior problems and far less classroom management issues. These same teachers have fewer sick days. Absenteeism is reduced by 8–13 percent because they experience less vocal strain and throat problems.

Perhaps most importantly, class interaction improves and participation increases when all students can clearly hear instructions and questions. When students are uncertain about what is happening in the class or what is being asked of them, they are reluctant to get involved.

Back in the fourth-grade classroom in Calgary, Barton begins to read aloud a chapter in a novel. Her voice, softly modulated and very pleasing, is – according to research – probably

about five decibels louder than the ambient noise of the classroom, but it doesn't seem to be reaching one boy at the edge of the listening circle. That's no surprise, as the same research indicates that a teacher's vocal level needs to be about 12 decibels higher than the ambient noise for 100 percent accuracy. Not only is her voice too quiet, but he is also sitting beside a humming computer with a printer that is churning out 25 copies of the students' journal entries. When Barton asks for an explanation of the latest plot twist, the boy by the computer printer and his classmates nearest him are the only children with their hands in their lap. They didn't hear the question. Had this classroom been equipped with an audio system, those hands would likely be waving frantically as well, along with their fellow students seated closest to the teacher, all eager to answer the question asked of them.

In an audio-friendly classroom, one equipped with an infrared amplification system, when a teacher asks that old question "Can you hear me now?" the students will no doubt answer with a resounding "Yes, we can!"

*Heather Ellwood is a freelance writer based in Calgary, Alberta, Canada. Formerly an in-house writer for an agricultural cooperative, and once a high school English teacher, Heather has an ongoing interest in education issues, practices and innovations.*

### Recommended websites

MARRS Study  
[www.marrs-study.info](http://www.marrs-study.info)

Audio Enhancement  
[www.audioenhancement.com](http://www.audioenhancement.com)

LightSPEED Technologies, Inc  
[www.lightspeed-tek.com](http://www.lightspeed-tek.com)

by Heather Ellwood

# Technology Mergers

Combining technologies can benefit students



Creative classroom technology combinations can provide students with real-world experience.

“For the education community, the digital age is not about technology. It’s about what learners are doing with the technology to extend their capabilities...” (*Technology in American Schools: Seven Dimensions for Gauging Progress*. Milken Family Foundation Research Paper.)

Teachers have long known that to be truly effective, standard classroom technology must be used to its full potential. In 2006, this means adapting and combining various technologies in order to get more learning bang for each technology buck spent. Teachers and students push the capabilities of the standard technology equipment available in their class-

rooms – computers and basic audio and visual equipment – and, using their creativity and expertise, find ways to use them in concert, rather than individually.

Stephen Hockett knows this truth firsthand. He has been an elementary principal at Fairfax County Public Schools in Reston, Virginia, for the past seven years and an educator for twenty. Now the educator in residence at the U.S. Department of Education’s Office of Educational Technology, Hockett has seen many teachers taking standard technologies and combining them to create phenomenal learning experiences for students. He says, “Teachers have always been

experts at taking advantage of the tools that are available and then finding creative ways to employ and integrate them into instruction.”

He is speaking of the excitement and learning he saw generated among Maria Kappel’s fifth-grade students at Hunter Woods Elementary School for the Arts and Sciences in Reston. Under Kappel’s leadership, the students developed guiding questions and a rubric for their study of ancient cultures. For this project, students selected an item invented within the time period of the culture they were studying, described its use and structure at that time and how it has evolved. They then predicted what the invention might look like in the future. To help them with their project, the students designed and constructed a prototype of this future product. They worked in groups, and during the course of the project, they created a marketing package for their product, including a commercial. Parent volunteers assisted by sharing their real-life experiences in advertising, marketing and video production and showed interactive PowerPoint presentations on a SMART Board interactive whiteboard. Additionally, Kappel instructed her entire class on the effective use of the Internet as a research tool, again using a SMART Board interactive whiteboard to access online encyclopedias. Then, out came the digital video cameras and the video editing software. Using these tools with their wireless laptops, students shot, edited and put the finishing touches on their commercials.

As Hockett explains, “Through this project, students used integrated technology to incorporate conceptual

learning, higher level thinking skills that included application and synthesis, real-life experiences, and collaborative decision making and teamwork, all of which have objectives aligned with the state of Virginia's standards of learning."

As was the case at Hunter Woods Elementary School for the Arts and Sciences, digital cameras have quickly become an integral aspect of teaching and learning in many classrooms. With their relatively low-ticket price and compatibility with any operating system, digital cameras give you an add-on technology that enhances learning without blowing the budget or pushing the boundaries of a school's technology limitations.

Often projects like the one on ancient cultures at Hunter Woods come together with an interactive whiteboard. Like digital cameras, interactive whiteboards are becoming

**"Teachers have always been experts at taking advantage of the tools that are available and then finding creative ways to employ and integrate them into instruction."**

standard technology equipment in many schools throughout North America. But whether they act as standard technology equipment or as add-ons, educators have found the interactive whiteboards to be great for combining in-class technologies.

Another illuminating example of combining technologies comes out of a Willowdale Elementary School's fifth-grade class in Millard Public Schools in Omaha, Nebraska. Under the guidance of their teacher Tony Vincent, students were given Palm handhelds as a technological aid to develop their writing skills. According to Vincent, who now acts as an independent consultant and presents workshops on using Palm handhelds in classrooms, the devices were an inte-

gral aspect of his instruction, especially when it came to teaching writing.

In an ongoing unit of study called Interactive Stories, Vincent began by "beaming" sample stories to the students' handhelds via the infrared technology built into the Palm. As a group, they discussed what made the stories effective and what could be improved. Vincent then projected his pre-writing organization chart on to a screen at the front of the class using a document camera attached to his handheld device. After a brainstorming session, his students were "bubbling over with ideas," and they began writing their own stories, using attachable keyboards on their Palm handhelds.

Vincent, whose classroom work can be accessed via his website, [learninginhand.com](http://learninginhand.com), says putting the finishing touches on the project was easy. "Once everything was written,

revised and edited, it was time to turn the word processing document into a webpage. I loaded an HTML template in the computer lab and demonstrated, with a projector, how to use Mozilla Composer (a free software) and Microsoft Word to copy and paste what the students typed on their handhelds into the HTML template. Within 45 minutes, the linear template was turned into an interactive, hyper-linked story. I posted those stories online for a worldwide audience to read. Lastly, I beamed all of the stories to all of the students so they could read each others' work on their handhelds whenever they had free time."

Hockett, Vincent and many other educators talk about the excitement

generated in a classroom when technologies are used in combination. They have many examples of students who are fully engaged in the learning process and of students who can't wait to get working on projects that integrate different technologies. Lessons become super-charged and learning is enhanced.

"When we used the handhelds, students actually loved to write!" says Vincent. "I was amazed because they would interrupt my writing lesson and say, 'Can we just get started on ours now?' because they were so excited. In my experience, students had never written anything like this. Not only was this a fun activity with a great end product, but the students' writing improved."

Uniting technologies in various configurations, whether they are digital cameras to create commercials, SMART Board interactive whiteboards for interactive teaching and Internet research, or handhelds to practice writing, allows students to not only become active participants in their own learning, but also technology innovators and improvisers. Through these technology mergers, students are given the opportunity to engage in real-world activities, especially when they are focusing on deadline-driven projects. Rather than learning by rote, students demonstrate increased critical thinking and problem-solving skills and become adaptable and resourceful learners. By using common add-ons, instructors and teachers are finding they can raise the bar for their students, both in achievement and interest levels.

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*Heather Ellwood is a freelance writer based in Calgary, Alberta, Canada. Formerly an in-house writer for an agricultural cooperative, and once a high school English teacher, Heather has an ongoing interest in education issues, practices and innovations.*

by Cara Erenben

# Guide to Training Grants

## Tips for finding grants to fund professional development



Professional development can be expensive for schools and teachers, but private grants can help cover the costs.

**T**ight school budgets and restricted spending make funding professional development programs difficult for many schools – in fact plenty of teachers end up paying out of their own pockets for training. But there are many private grant programs that administrators can take advantage of to help cover the costs.

Deb Ward is a grant writing consultant at Saint Mary's University of Minnesota. As a master's program director at Saint Mary's and writer of a monthly grants-and-funding column for *eSchool News*, Ward has learned that many grants exist purely for the purpose of paying for teacher training.

For example, the Mathematics Education Trust, operated by the National Council of Teachers of Mathematics

(NCTM), offers grants to its members that are designed to improve a teacher's ability to teach mathematics. The grants the NCTM offers include the School In-Service Training Grant, which gives up to US\$4,000 to elementary school, middle school and secondary school teachers, and the Teacher Professional Development Grants, which provide up to US\$3,000 to elementary, middle and secondary schools.

Schools that are interested in creating a community of teachers who learn from each other can participate in the Intel Teach to the Future initiative, which has trained more than three million teachers worldwide since 2000. This initiative uses a train-the-trainer model, so teachers learn

from other teachers' best practices about how, when and where technology can enhance student learning. The program is free and targets teachers, school administrators and school leaders. Schools and districts can enroll on the program website.

Other options include the National Geographic Education Foundation, which awards US\$100,000 each year in teacher grants. These are worth up to US\$5,000 each and are aimed at improving geography teaching and understanding. The Edwyna Wheadon Postgraduate Training Scholarship Fund, operated by the National Council of Teachers of English, also provides US\$500 scholarships to pay for postgraduate training to enhance teaching skills.

And these aren't the only funding prospects. Ward advises educators to look beyond obvious choices for grant opportunities to help pay for professional development. For example, she says project-based grants may provide professional development funding as a component of an overall proposal. Some of these grants may even cover the cost of teacher stipends for teachers who receive training after school hours, or the grants may pay for substitute teachers to cover those who attend training during school hours.

When seeking funding for a new project, school districts should outline thorough plans for professional development. If middle school teachers are going to be using new software, for example, it's only logical to include plans for training teachers to make the most of the new technology, explains Ward.

When applying for these types of grants, be sure that the professional development component of the grant proposal discusses what the content of the training program will be, who will present the content, what credentials the presenter has, what provisions will be made for teachers to attend training and what the plans are for evaluating the training's effectiveness.

Janice Patton, second-grade teacher at Dry Hollow Elementary School in The Dalles, Oregon, has learned from experience that teacher training can be covered by grants that aren't necessarily focused on professional development. Patton, along with four other teachers at her school, recently won a K-12 HP (Hewlett Packard) Teaching for Technology Grant that provides a team of five teachers with US\$35,000 worth of HP products, including a Tablet PC, projector, digital camera

**“This is an opportunity to leap into the future. We can't really do that given the budget constraints right now, but we can do that with grant opportunities like this being available.”**

and scanner for each teacher. Each teacher also gets nine months of mentoring and technology training from the International Society for Technology in Education.

Patton's winning proposal will not only provide students and teachers with a technology-infused classroom, but this grant will also give Patton and her colleagues professional development, mentoring and networking opportunities they would have not received otherwise. She says she is excited to share ideas with teachers from all over the United States and to learn more ways to use her new classroom equipment.

“This is an opportunity to leap into the future. We can't really do that

given the budget constraints right now, but we can do that with grant opportunities like this being available,” Patton says.

In 2006, HP has awarded more than 300 of these grants, which has provided schools with the educational equipment, the professional development and the support they need to effectively integrate technology into their instruction.

An important thing to remember when applying for any of these grants is that you'll be competing against a host of other schools or teachers, so be sure you submit a well-thought-out and effective application. As Jim Rubillo, executive director of the NCTM explains, “it's never a problem finding good ideas to fund.”

In fact, Rubillo says, the number of grant applications NCTM receives has tripled over the last three years. He

speculates that this is due to a combination of the association's increased marketing efforts and the need for high-quality teachers imposed by the No Child Left Behind Act.

“A big reason we see so much interest in our grants is because teachers have to support professional development themselves,” explains Rubillo.

So, figuring out how to submit a winning grant proposal to fund professional development is essential – especially when the remaining options are to use personal money or to forego professional development altogether.

Following the grant guidelines is the first step. “People should read what the grant purpose is,” Rubillo says. “It's amazing how many times

people don't read the grant information and expectations.”

Ward agrees that a strong application is essential, “the more specific information you can include, the stronger your proposal will be. A weaker proposal would say ‘we will do some kind of professional development – we're just not sure what it's going to be yet.’”

So get out your computer and start applying – your teachers and students will thank you for it.

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

**Want to find grants for PD funding? Start with the following organizations:**

National Council of Teachers of Mathematics  
[www.nctm.org](http://www.nctm.org)

National Science Teachers Association  
[www.nsta.org](http://www.nsta.org)

HP Technology for Teaching Grant Initiative  
[www.hp.com/go/hpteach](http://www.hp.com/go/hpteach)

National Geographic Teacher Grants  
[www.nationalgeographic.com/foundation/grants\\_teacher.html](http://www.nationalgeographic.com/foundation/grants_teacher.html)

National Council of Teachers of English  
[www.ncte.org/about/grants](http://www.ncte.org/about/grants)

Intel Teach to the Future  
[www.intel.com/education/teach](http://www.intel.com/education/teach)

by Wendy McMahon

# Integrating Successfully

## Hall Memorial's journey from ordinary to exemplary



Students at Hall Memorial excelled with the help of new technology.

**H**all Memorial may be a small fourth- to eighth-grade rural school with just over 330 students, but the right principal, a Blue Chip School Grant and SMART Board interactive whiteboards have transformed this Willington, Connecticut, school into a technology success story. Students are engaged, teachers are tech-savvy and sharing what they learn with each other, and parents are enthusiastic about the school's technology integration.

### Integrating technology 101

When Principal David Harding joined the school in 2001, technology wasn't a high priority for Hall Memorial. But Harding wanted that to change. "One of the reasons I came here was because I thought I could

make a difference with respect to technology," he explains.

Like many rural schools, Hall Memorial doesn't have much money for technology, so during his first year at the school, Harding and a few teachers searched for technology funding. Along with 16 other schools in the state, Hall Memorial was awarded a Blue Chip School Grant of US\$225,000 for technology and professional development in 2002.

Wanting to use the money effectively, Harding researched everything from laptops to handheld devices, eventually choosing SMART Board interactive whiteboards.

"When I was teaching, I used a multimedia projector in the classroom, and it was an invaluable tool. The SMART Board interactive whiteboard seemed like a natural extension of that tool; not only could you project, but now it became interactive," explains Harding.

But Harding was cautious. He purchased one SMART Board interactive whiteboard and put it in his most tech-savvy teacher's class to test it out — math teacher Lynn Reedy.

"The kids were excited," says Reedy, "and parents were calling the principal asking why this technology wasn't in their own student's classroom."

"There was also so much excitement from the teachers about the interactive whiteboard and how versatile and easy to use it was that I started holding training sessions on how to use it," says Reedy.

Seeing the enthusiasm, Harding bought four more SMART Board interactive whiteboards and gave them to the teachers who showed the most

interest in technology. This sparked a major change. Teachers who were traditionally isolated in their classrooms developed what Harding calls a professional education community.

"When teachers found a new resource, a new way to use the SMART Board interactive whiteboard or a new feature, they would run across the hall to show another teacher. It changed from a closed-door environment to a more collaborative environment," says Harding.

### Students and parents speak up

Harding also created a student technology committee that surveyed students about SMART Board interactive whiteboards. He learned that students felt more engaged and excited about learning, they were more likely to want to go to the interactive whiteboard, and they found lessons easier to understand because they could see exactly what the teacher was talking about.

He also got parents involved, holding a technology night where students and teachers demonstrated how they were using the SMART Board interactive whiteboard in their classes. Reedy says parents were surprised at how well the students used the interactive whiteboard and had a lot of positive things to say about the school's technology integration.

### Encouraging the integration process

Harding knew he'd made the right decision. Within two years, he gave every teacher a laptop and put a SMART Board interactive whiteboard in every classroom. He says the



laptops helped the integration process because teachers could take them home at night to work on lessons.

“Now, our art teacher, our music teacher, our shop teacher – everybody uses a SMART Board interactive whiteboard,” says Harding.

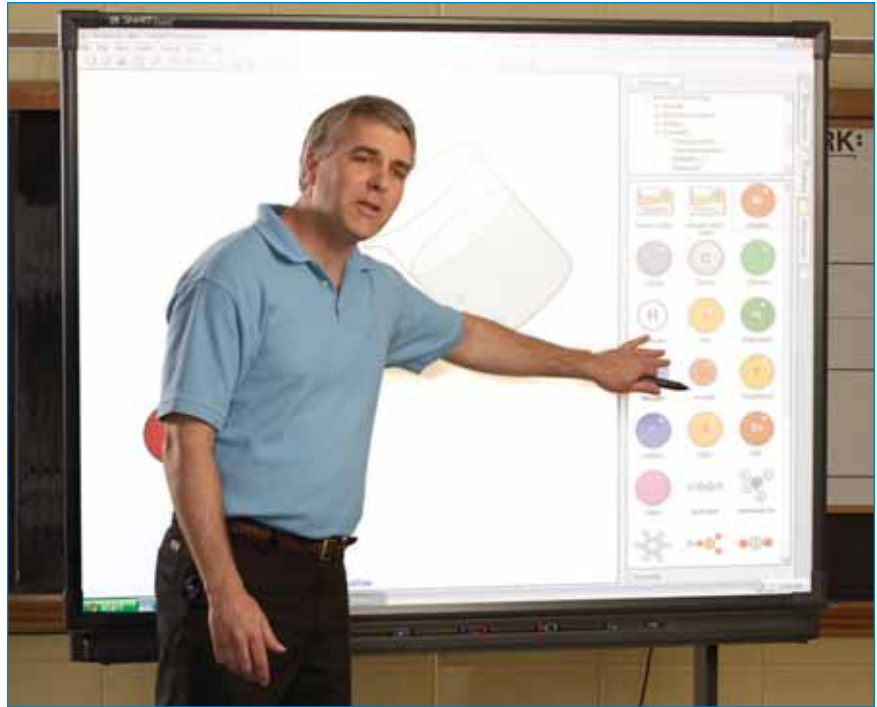
As part of his plan to integrate technology into the curriculum, Harding also eliminated the school’s computer class and created a Technology Integration Specialist position. Lynn Reedy, the first teacher at the school to have an interactive whiteboard, filled the position. Teachers became responsible for integrating computer competency into their regular classroom instruction, but they could call on Reedy as a resource to help them use technology in their classes.

“As a result, teachers who had 35 years’ experience but very little technology skills are now doing integrated technology lessons in their classrooms with SMART Board interactive whiteboards. It’s pretty phenomenal,” says Harding.

### Students excel

Although Harding doesn’t believe that technology alone improves student performance, he does expect to see rising scores over the next few years. He believes that integrating SMART Board interactive whiteboards has increased engagement and improved performance. He says adding technology such as a wireless Internet connection, video cameras, scanners, digital cameras and subject-specific software that students can use with the interactive whiteboards has also made a difference.

Seventh-grade students, for example, participated in a live exchange with scientists studying thermal vents on a submersible underwater vessel off the coast of South Africa. Using the SMART Board interactive whiteboard and a phone line, students



“...teachers who had 35 years’ experience but very little technology skills are now doing integrated technology lessons...”

asked the scientists questions. As the scientists responded, they could also show the students what they were talking about through the video feed to the interactive whiteboard.

Harding says even the culture of the school has changed – teachers and students are excited to be there every day. With so much excitement about learning, discipline issues are nonexistent. This gives teachers more time to focus on teaching. “We don’t have discipline issues here – all the focus is on curriculum alignment and strategies for improving curriculum.”

### Attracting statewide attention

The original Blue Chip School Grant was awarded to 16 schools, but Harding says Hall Memorial was the most successful school. Now many of these schools and school districts from across the state want to duplicate Hall Memorial’s success.

“They’ve started to contact us and say, ‘Wow, those SMART Board interactive whiteboards were a great investment, how can we get them?’” explains Harding.

He attributes Hall Memorial’s success to a slow integration process and support from parents and teachers who were willing to tackle new technology in the hopes of bringing students a better education.

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

### Want to learn more?

Watch a short video about the Hall Memorial experience at [www.smarttech.com/ads/hall3](http://www.smarttech.com/ads/hall3).

by Nancy Knowlton

# Investing in Integration

How you introduce new technology can impact its success



Create an environment where teachers share new technology and support each other, and you'll get the maximum value from your technology investment.

**T**he reality for most schools and school jurisdictions is that they must outfit classrooms with interactive whiteboards and other technology over time rather than all at once. They can do this in a number of ways, but for many, the question is which way offers the greatest benefit. Is one approach better than another?

## Maximum value

Most people will agree that the greatest value offered by any technology is the positive results it brings to student learning. When children are actively engaged in their lessons and activities, true learning can occur. To ensure you achieve maximum value, you need to know which integration model works best for your district, school, teachers and students.

## Available for all schools

One approach says that all schools in a district should have the opportunity to get started with interactive whiteboards. Often this means that one classroom (single user) or computer lab (multiple users) will be outfitted in each school.

In the single-user model, a teacher receives professional development prior to getting the product and then ongoing access to technical support. Getting this teacher to share experiences with colleagues is a good way to multiply learning experiences for all. Colleagues may be invited to observe one of the teacher's classes, for example, or the teacher may keep a diary of proven strategies and activities that received strong, positive responses from students, all in an effort to

prepare these colleagues for additional installations over time.

Multiple teachers sharing an interactive whiteboard in a computer lab or school library need a different approach. They need professional development at the outset, too, but they also benefit from having regular opportunities to share what they learn with colleagues who also use the product. Someone may even be appointed to organize a weekly exchange. For example, a librarian may deliver courses on how to conduct research or how to integrate information from a variety of sources. Or a technology specialist may lead sessions on how to use the interactive whiteboard.

## Clusters

A very different strategy involves aggregating the technology and placing it in clusters within schools. So every second school may outfit two classrooms or every fourth school may outfit four. The chief benefits of this approach are increased sharing among teachers and centralized technology support. If two first-grade teachers have continuous access to the technology, they support each other by sharing their favorite resources and activities, and also what has worked and what hasn't.

## Which way?

In my experience, regardless of where in the world our products are deployed, the schools that appear to make the greatest progress in the shortest amount of time are those with technology clusters. Why? Sharing and support seem to be most

critical to success, and these are achieved to a much higher degree with the cluster model.

Teachers openly acknowledge and appreciate that feeling of support and say it makes them more capable of



**“To ensure you achieve maximum value, you need to know which integration model works best for your district, school, teachers and students.”**

quickly adapting their style to a technology-enabled environment. Where it is not possible to cluster the technology in a phased roll-out scheme, other methods can work, including the single-user model. You may also try scheduling a regular conference so all your schools and teachers can share what they’ve learned, or you may develop a user blog or an easily accessed online support site.

### Selecting candidates

Once you’ve decided on an approach, another challenge, according to many administrators, is how to select

who receives the first interactive whiteboards. An application process seems to work best. Through it, teachers outline their plans for integrating interactive whiteboards into their teaching and curriculum. Not only does the application provide an objective measure of who may best use the technology, but the process itself brings out the best in teachers who want to learn and offer new opportunities to their students.

Whatever model you finally choose and however you select your candidates, taking the time to think through professional development and the availability of resources and support will ensure you receive maximum value from your investment.

*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.*

### Read more articles from Nancy

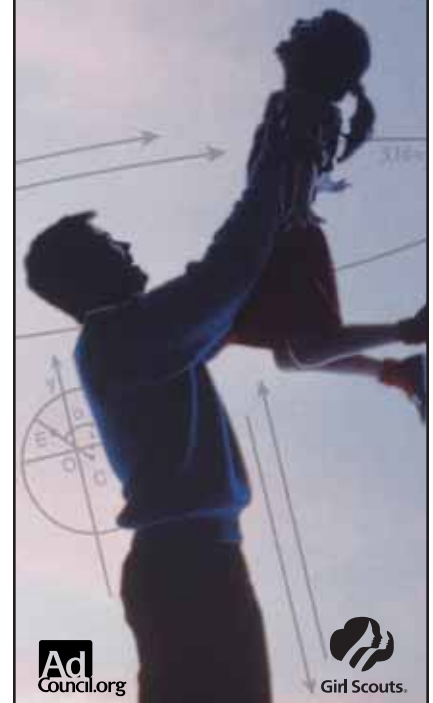
SMART’s president and co-CEO, Nancy Knowlton, has written a series of practical articles on technology integration in the classroom. These articles compile what she’s learned from her conversations with thousands of educators around the world and she hopes they will be helpful to educators everywhere. To read these articles, visit <http://education.smarttech.com/site/en-US/About+SMART/CEO+Articles.htm>

## Ring Around the Rosie

(resung by math)

Ring around the radius.  
Let’s find the circumference.  
Diameter, diameter...  
Times it by pi!

By the 6th grade, many girls lose interest in math and science, which they may need for future jobs. So next time your daughter wants to play, math is always a great addition. For some simple ideas, go to [girlsgotech.org](http://girlsgotech.org).

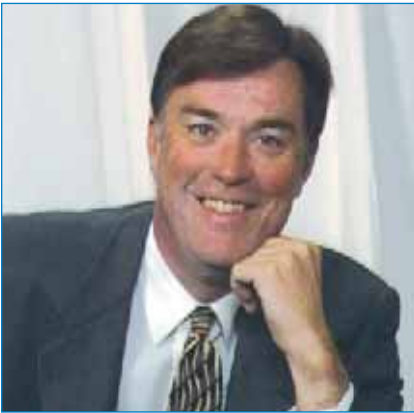


by Doug Johnson

# Fight the Zero-Sum Factor

## How to stand out when competing for budget dollars

Zero-sum describes a situation in which a participant's gain or loss is exactly balanced by the losses or gains of the other participant(s). Wikipedia



Doug Johnson

**D**avid Lewis's pithy article, "Eight Truths for Middle Managers in Lean Times" (Library Journal, Sept. 1991), had a major impact on the way I approach budgeting. His first "Truth" is as applicable now as it was then: "It is a zero sum game." Using an example of public library budgets, he explains, "There is no more money.... The important truth is that those who provide the cash ... will not give the library any more. They can't because they don't have it."

Schools, too, seem to have reached a level of funding that is unlikely to substantially increase, and more likely will decrease, given today's anti-tax climate. Although school boards and administrators may sincerely want to provide more money for technology, "they don't have it."

Does this mean there won't be any additional funds for your technology program? Not necessarily. Mr. Lewis

suggests a way that middle managers (like technology coordinators) can get more money for their programs: "You can take it away from somebody else. If you believe in what you are doing, you have an obligation to try this."

This might seem harsh, but fighting for an adequate budget isn't much fun. Not many people like the idea of losing the funding for their program so it can be used by another educator. When they are looking at a lab of shiny new computers, how many teachers think, "Is THIS how the funds to reduce class size were spent?"

If you find yourself in a zero-sum climate, here are a few budgeting strategies to help you find the money you need:

### Write outcome-driven budgets

Budget types can basically be divided into two groups – those that are arbitrarily created and those that are outcome driven. How does budgeting work in your school? Are you given a sum of money and then told to make the most of it, or are you developing an effective program and then asking for the money to support it?

When writing your budget, show how the outcomes you are striving for will be in line with curricular and school improvement goals. Get out your spreadsheets and clearly show decision makers how much money your program requires to be effective. How can anyone give you what you want if you can't determine or communicate what you need and why?

Outcome-driven budgets have three major components – the first is goals. When stating your goals, explain what effect your funded program will have on student learning. Also, relate your budget to your district's or school's long-range plans. The second component is specificity. Clearly explain how much money you need and exactly how you will spend it. The third component is assessment. You need to explain how you will report back on whether or not the funding you received helped your program meet its goals.

Communicate information about standards and studies, but build a budget based on the specific needs of your individual curriculum, students and teachers. For example, the fact that Mrs. Green's science students need more current and varied resources for their solar system unit will carry more weight than any state or national standard because this is the type of challenge teachers and students face every day.

### Describe the consequences of underfunding

You need to make the case that inadequate technology funding will have a negative impact on school programs, the classroom curriculum and student achievement. In other words, outline what will happen to the kids and teachers.

This is easier to do if your budget proposals are specific and goal driven. Budget decision makers need to hear

clear-cut consequences, such as how you won't be able to purchase the online database requested to support the revised ninth-grade history class, how teachers will only get one toner cartridge for their printers this year instead of two, how only four students at a time will be able to use the research terminals in the library and how the current bandwidth will not allow the school to administer the state's online tests.

You need to use your best interpersonal skills to make sure these predicted outcomes don't simply sound like threats. Give budget decision makers the entire budget, and be open to their ideas about how to economize.

### Explain technology maintenance

Administrators understand maintenance. They regularly budget for replacing roofs, tuck-pointing brickwork and resurfacing parking lots. What they don't always understand is that instructional technology must be regularly maintained as well. Use the following formula on your equipment, share the results with your budget people, and see if it makes a difference.

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**Maintenance budget =**  
 replacement rate x total number  
 of items x average cost

To find a replacement rate,  
 use the following formula:

$$\text{replacement rate} = \frac{100\%}{\text{number of years in the life span of equipment}}$$


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For example, if a school has 100 student computers that cost \$800 each and have a life span of five years, the maintenance budget for student computers should be 20% x 100 x \$800, or \$16,000. These dollars should be spent annually or the technology will deteriorate.



**“Operating in a zero-sum budget environment, you need both a thick skin and a deep-felt mission.”**

### Use an advisory committee

Form an advisory committee if you don't already have one. It can be a great help for the technology coordinator. My advisory committees have given me terrific ideas and timely warnings over the years.

In all but the largest schools, there is rarely more than a single technology coordinator. An advisory committee is one way of giving ownership of the technology program to a body of stakeholders in the building. If the goals, the budget, the assessments and the long-range plan are known to be important to more than just a single person, they will carry more weight. And if your advisory group includes parents, community members and students, it will be a very important body indeed.

### Take on leadership roles

At the school level, volunteer or run for governing committees. I am always shocked by how few individuals in an organization want to be decision makers. Serving on these bodies always takes extra time. But hey, one learns to love those 7:00 a.m. meetings!

Make a list of groups who make decisions in your school and district,

such as site councils, curriculum committees, staff development committees, parent-teacher organizations, etc. Attend their meetings. If you have a chance to have your voice heard and don't use it, you will lose all your whining rights.

Nearly all state and national associations with education affiliations have legislative platforms – get involved. Join ISTE (International Society for Technology in Education), which speaks for technology folks at a national level.

Folks, we'd better all believe deep in our hearts that what we are doing is in the very best interest of our students and community and that spending what is necessary on technology is better than buying new textbooks or violins or having smaller class sizes. Operating in a zero-sum budget environment, you need both a thick skin and a deep-felt mission. Without them, you'll get eaten alive; with them, you can accomplish anything.

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*Doug Johnson is the director of media and technology at Mankato (Minnesota) Area Public Schools. He can be reached at [dougj@doug-johnson.com](mailto:dougj@doug-johnson.com).*






# Need Funding?

Grant providers and winners share tips  
for getting grant applications approved

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**T**he National Science Foundation, the Texas Instruments Foundation, EDS. You know the names of these major grant providers, but what do you really know about these foundations and what they want from a winning grant application? *i.e.* magazine writer Diane Curtis spoke to foundation representatives and schools that have been awarded grants. Read on as she shares their tips on how to get your grant proposal approved.



### Establish relationships with foundations

Foundation leaders say it again and again in every possible way: “Get to know us.” Every foundation has specific goals and interests, and their grants reflect those goals and interests. “Do your homework. Know what a foundation is looking for and what they fund,” says Ann Pomykal, director of the Texas Instruments Foundation in Dallas. “So many people come through and say, ‘I thought if I proposed this, they’d do it anyway.’” But it doesn’t work that way, “If someone comes forward with something that does not fit our objectives, no matter how exciting we think it is, we have to turn it down,” explains Pomykal.

Peggy Bryan, the recently retired founding principal of Sherman Oaks Elementary in San Jose, California, has a stellar track record in winning grants. She agrees that applying for a grant that you aren’t sure your school is right for wastes everybody’s time. “[It’s] insulting to lenders from the local to the federal level [for applicants] to send in something that’s generic,” she explains.

Bryan’s charter school has been recognized for its success and innovation in a low-income, multicultural area. She doesn’t believe most of the school’s achievements would be possible without the grant funding they received. In fact, she says that without funding, the school’s program would lack many essentials.

One of Bryan’s tactics for winning grants is establishing ties with foundation representatives – through phone, e-mail or in person – to not only maintain contact but also to keep up with foundation directions and strategies.



consideration and about what dollar amounts are appropriate requests.”

You may learn that the grants from these foundations aren’t the right fit for your school, but Valentine notes, talking to foundations may lead to other avenues of support. FirstEnergy, for example, has a Community Initiatives Department with its own grants and gifts program. Many companies that have foundations also have separate giving departments that are often aimed at contributing to their local communities. One of these departments may offer grants or gifts for your community, but you’ll never know unless you ask.

### Network, network and then network some more

Although some foundations appreciate being contacted, there are those, like the Bill and Melinda Gates Foundation, that do not accept letters of inquiry or unsolicited grant applications and instead rely on their staff to identify potential grant recipients. However, it is still possible to receive some funding from these groups.

Pamela Burdman, education program officer at the William and Flora Hewlett Foundation in Menlo Park, California, says gaining recognition from foundations that don’t accept unsolicited grant proposals is more an art than a science. But, she says, there are ways to grab a program officer’s attention. Networking, attending conferences and participating in relevant organizations help get out the word on what a school is about. In addition, disseminating information about the school at the local, regional, state or national level can help.

Derek Pierce, principal of

**// Knowing your school – its goals, direction and needs – and only applying to grants that fit your school community’s needs are key points to remember. //**

In fact, many foundations, such as the National Science Foundation and FirstEnergy Foundation, welcome early-in-the-process direct contact. Donna Valentine, director of contributions for the FirstEnergy Foundation in Alliance, Ohio, says grant providers prefer organizations to “inquire if their programs would qualify for

Casco Bay High School for Expeditionary Learning in Portland, Maine, knows this from experience. His school, which received Gates Foundation money when it started a year ago, got the funds through two larger groups with which the Gates Foundation had relationships: Expeditionary Learning Outward Bound and the Mitchell Institute.



## Use your head and your heart

Barbara McCann, technology grant manager for EDS in Plano, Texas, stresses the need to follow the format directions for a grant application. “We receive lots of applications, and if everybody fills the form out in different ways, that’s a problem.” Her organization wants to know what a project is about, how the educator is planning to use the money or equipment and how many students are going to benefit. A common mistake, she adds, is conjuring up a budget figure for a project without backup evidence. “We want to make sure they did the research and found exactly what they needed.” Another common mistake, she says, is not checking spelling. While a spelling or grammar mistake won’t knock you out of contention, failing to clearly articulate your project’s purpose could hurt your chances of being awarded a grant.

Chris Kunkel is principal of Key Learning Community, an Indianapolis school created with the help of grants from the Department of Education and Lilly Endowment Inc. Kunkel likes to “put a little bit of heart” in her grant proposals, and she doesn’t believe that adhering to a particular foundation’s rules or guidelines means you can’t show some personality. “Find a thing that resonates with people,” she suggests. She also recommends that administrators aim high. “Sometimes you’re going to be disappointed, but somebody’s got to get those grants.”

Whether you appeal to the heart or the head, Casco Bay’s Pierce recommends standing out from the crowd. Foundations “are looking to fund something that makes them feel good and something they know is special... Whatever it is you’re writing, try to find something that is going to make your pitch seem exceptional.”

## Can’t state your needs clearly?

### Find someone who can

Sheldon Berman, superintendent of Hudson Public Schools in Hudson, Massachusetts, can’t stress enough the importance of being “clear, concise and specific.” A successful grant recipient in his current position and a former grant reader, Berman says unclear applications – often those that are wordy for no good reason – are fatal. “If you can’t say it in one sentence, you don’t know what you’re saying.” Hiring or enlisting an editor may be the most important action grant seekers can take, he says, because an editor can turn vagueness into clarity and make sure that questions are answered in a direct manner.

A national leader in such school innovations as the Virtual High School, Berman has a slew of grant acceptances, demonstrating that his approach works. His district’s website boasts an 11-page description of grants



## Tips for Tackling Grants

In the end, the information and how it is written in the application document can make or break a would-be grantee. The U.S. Department of Education offers these practical tips for grant proposal writers:

- Allow plenty of time to prepare your proposal carefully and thoughtfully
- Read the application package in its entirety before starting to write
- Follow the formatting guidelines carefully and precisely
- Structure your narrative according to the selection criteria
- Be clear, concise and specific
- Justify your funding request in accordance with project activities, keeping in mind that all costs must be reasonable and necessary
- Check your budget figures for consistency
- Proofread your proposal
- Use the checklist printed in the application process to ensure that all required information is included
- Submit your proposal by the deadline date

received that include everything from a \$3,000 Hope Foundation gift for elementary school software to a \$929,000 U.S. Department of Education grant supporting development of a national Virtual High School.

When a good editor wasn't enough, Peggy Bryan went outside the district for grant-writing help. For large federal grants that require extensive documentation and can sometimes run to 90 pages, Bryan sometimes hired a professional grant writer. For others, she wrote them herself, admitting to actually loving the grant-writing process.

### Think beyond your district

Grant providers are particularly appreciative of proposals likely to have impact beyond just one school or district. The Bill and Melinda Gates Foundation education website states that it favors "projects with the potential to attract additional funding and make a difference beyond an individual school's walls." The William and Flora Hewlett Foundation also wants its education investments to multiply. "Sometimes people write proposals about how funding might help them or their organization, but often foundations want to be told how an investment will have a broader impact," notes Hewlett's Burdman.

### Don't let past failures stop you

Berman of the Hudson School District notes that past missteps are not always regarded as failures. His district won a state grant to create an electronic data warehouse for teachers and administrators to access demographic and testing statistics. The goal was to complete the system in two years, and the grant money was awarded for that time period. But innovation is often a process of trial and error. The grant ran out two years ago, and the district has since been working on completing the system on its own. Grant providers are aware that the best-laid plans sometimes produce bumps along the way, and, Berman says, they can be sympathetic.

With many of the kinks ironed out, and having learned over time what it will take to make such a system work, Berman is prepared to go back to the state with another grant proposal to get the data warehouse fully operational. He believes such a database will be helpful not only to his own district, but also to other districts as they create their own electronic warehouses. The important thing, he emphasizes, is being clear with the grant providers about what happened and what the next steps are.

// The federal government awards \$38 billion annually in education grants for elementary and secondary schools. //



## Be honest, but be creative

Knowing your school – its goals, direction and needs – and only applying to grants that fit your school community’s needs are key points to remember. In fact, adds Berman, pursuing a grant just because the money is out there “can take you off course.” With that in mind, Berman says that educators should still think creatively when looking at a foundation or government’s grant requirements. When he was considering creating his data warehouse, he was thinking assessment, not technology. But he molded a grant offering money for technology to his assessment plan and won.

## Grant providers aren’t the bad guys

McCann of EDS emphasizes that grant providers are on the applicants’ side and do everything in their power not to disqualify a grant proposal. “We know how much teachers struggle with budgets and how difficult it is to find the time to complete an application,” she says.

But sometimes educators make it hard for foundations to justify accepting an application. Gerhard Salinger, program director in the Directorate of Education and Human Resources at the National Science Foundation, collected a list of complaints from grant reviewers about the grants they had read. One grant said it was building on previous work but included no evidence to show how. Another was filled with jargon. Another took pains to describe the national climate of science education, leaving little space for a description of the proposed project.

However, those educators who give grant providers a clear picture of why their school or district deserves support and can clearly make a case that a grant will improve education for their students and, possibly, for others – have a good chance at getting the help they need.

## Grants abound, but so does the competition

According to the New York-based Foundation Center, 26,000 education-related grants totaling US\$36.2 billion were awarded in 2004, the last year for which complete statistics are available. The federal government awards \$38 billion annually in education grants for elementary and secondary schools. The Bill and Melinda Gates Foundation has handed out an average of \$200 million a year for education since 1994. The William and Flora Hewlett Foundation budgeted \$43 million for education in 2006. So there is a lot of money out there for the taking.

However, there are also plenty of applicants and competition for grants can be tough. But if you take these tips from the pros and put them into practice, you may find yourself in the sought-after position of successful grant writer.



## Start Applying!

The **Foundation Center** has a wealth of information on education grants, including a listing of libraries and nonprofit resource centers that offer listings of grants, free of charge. They also offer workshops and advice on obtaining grants.  
<http://foundationcenter.org>

The **U.S. Department of Education** is the biggest provider of education grants.  
[www.ed.gov/fund/grant/find/edpicks.jhtml?src=ln](http://www.ed.gov/fund/grant/find/edpicks.jhtml?src=ln)

**Michigan State University** has compiled a list of webpages for interested educators and nonprofit organizations seeking funding opportunities for computer technology.  
[www.lib.msu.edu/harris23/grants/2comptec.htm](http://www.lib.msu.edu/harris23/grants/2comptec.htm)

The **Catalog of Federal Domestic Assistance** offers lists of grants and advice on writing successful grant proposals.  
<http://12.46.245.173/cfda/cfda.html>

In 1999, a former supervisor in the federal accounting department of the **Dallas School District** created **School Grants**, a website aimed at helping teachers and administrators find and write grant proposals.  
[www.schoolgrants.org](http://www.schoolgrants.org)

# How to Hire Tech-Savvy Teachers

Hiring tips to help you fill your classrooms with teachers who *get* technology

The need for tech-savvy teachers is heating up coast to coast. But when it comes to filling your classrooms with educators who are effective teachers and capable technology users, how can you be sure you're hiring the right teachers for the job? *i.e.* magazine spoke to education leaders who have learned from experience, and here, they share their hiring tips to help you find the right teachers for your schools.



## Why you need tech-savvy teachers

The kids sitting in today's classrooms are not like the kids of previous generations. "Raised in the world of interactive media, the Internet and digital messaging technologies, 'Generation Y' has different expectations and learning styles than previous generations," says Derek E. Baird, an education-technology consultant and cofounder of the Blended Edu website. "The education ecosystem is changing. When a course is revised to incorporate technology, the learning that students achieve goes far beyond the boundaries of what they are taught because individuals create meaning for themselves."

Baird says there are five basic digital learning styles that tech-savvy teachers must address to be able to meet the learning needs of today's kids – interactive, student-centered, authentic, collaborative and on-demand.

So here are some factors to consider when searching for teachers with the technology skills that are a perfect fit for your classrooms.

## Experience teaching with technology

"For me, the key to hiring a tech-savvy teacher is [finding] someone who understands that we are preparing these kids for a different world where technology will be a big part of their lives," says Chris Corallo, staff development director



Tech-savvy teachers should be comfortable creating lesson plans from the Internet on the fly.

at Henrico County school district in Richmond, Virginia. "I'm looking for people who understand what that world is going to look like for these kids."

In 2001, Corallo's school district started a program to give every high school student and teacher a wireless Apple iBook notebook (that's 12,000 iBooks). The campuses were also outfitted with a wireless network. In 2003, the middle schools got the same treatment and received 13,000 iBooks. Working wirelessly was a change for both students and teachers, and it led Corallo on a search for some new teachers who could support the district's desire to enhance teaching and learning with technology.

Corallo says he uses the interview process to ask applicants how they use technology in the classroom. He can usually get a pretty good sense of their comfort with technology from the examples they give, how much of it is Web based and how technology is integrated into the instructional day.

He also suggests asking specific questions, such as how an applicant would use the Creative Commons search in Flickr to find photos for the classroom or how they would use a blog to facilitate communication between students, parents and the school community.

Dr. B. J. Fogg, a consulting professor in Stanford University's School of Education, says if you want to find out quickly how technology-savvy your applicant is, "Ask them to explain what Web services they use on their mobile phone. Ask them what their favorite gadget is and why. If they are the person everyone goes to with their tech questions, that'd be ideal for someone who will feel very comfortable using technology in an educational environment. For them, it will be fun and natural."

## Continuous learning and flexibility

Don't forget that a tech-savvy teacher isn't just familiar with computers. They should also be happy and comfortable with incorporating other types of technology, including mobile technologies, interactive whiteboards, MP3 players and PDAs into their lessons.

Graham Wegner, who maintains an education blog called Teaching Generation Z, explains on his blog that this flexibility is a key quality to watch for in a technologically knowledgeable teacher.

"You want someone who is open to new challenges and wants to be at the front of the queue when the new tech tools are being wheeled in. You want some history of developing initiatives or projects that explore the boundaries of learning," explains Wegner. A teacher who isn't willing to learn new technologies should be a warning sign to someone who is searching for a tech-savvy teacher.

Doug Johnson, director of media and technology for Mankato Area Public Schools, has a similar theory. He also likes to ensure that he hires teachers who are open to learning new things.

“The question I always ask is, ‘What is the last new piece of hardware or software that you learned, and how did you learn it?’ If there is not a fairly ready and recent response, I worry,” says Johnson.

Johnson believes that truly technologically literate teachers are flexible enough to know when to use technology and when not to use technology. He points out that a good teacher will use a variety of instructional strategies, depending on the needs of the individual learner and the skill to be mastered.

### Can they customize lessons?

Ben Daley is the chief academic officer at High Tech High. The school began in 2000 as a single charter high school, launched by a coalition of San Diego business leaders and educators. It has evolved into a school development organi-



Teachers who understand technology will know how and when to incorporate technology into lessons.

zation with a growing portfolio of innovative charter schools spanning grades K–12. High Tech High has arguably the longest track record for molding tech-savvy teachers.

Daley recommends that tech-savvy teachers be project oriented, and their ability to create customized lessons, based on students’ talents, is an important trait. He paints a picture of a class learning circuits in order to build robots. One advanced student is given college-level physics robot-

ics problems to chew on while, at the same time, a struggling student is given robot-related fraction problems to solve. A tech-savvy teacher has to learn how to create multiple tracks within a lesson plan.

This type of teacher also needs to learn how to adapt lesson plans at the drop of a hat when news presents teachable moments. Instead of relying on old textbooks, these teachers need to know how to create a lesson plan from the Internet.

Consider the recent changes in Pluto’s status as a planet – every textbook says there are nine planets in our solar system. Because educators can now deal with primary-

## Hiring “Dos” and “Don’ts” from Ben Rimes of TechSavvyEd.net

- Do** hire someone who was trained as a teacher, not a technology expert. They are more likely to provide engaging and meaningful technology lessons that are driven by the content, not just the technology.
- Do** look for someone who has a decent knowledge of state and national technology benchmarks, especially the ISTE (International Society for Technology in Education) benchmarks
- Do** hire someone who belongs to and is an active member of a state or national education technology organization
- Do** hire someone who has decent knowledge of the technical side, such as how servers and Internet filters work.
- Don’t** hire someone who has little or no education training. You want someone that understands education theory.
- Don’t** hire someone who is unwilling to learn new programs or expand their own horizons
- Don’t** hire someone who only views technology as an extra layer of fun mini-games for learning (math games, spelling and word games, etc.). These teachers are just creating electronic worksheets with little real educational value.

source material rather than a five-year-old textbook, there are plenty of resources out there to teach an accurate lesson on the planets – using the recent information from editorials, scientist blogs or even NASA sites.

## Weigh teaching skills against technology skills

It's important to remember that just being tech-savvy doesn't make a great teacher. However, many great teachers will see the benefits of understanding technology. "Highly successful teachers have a certain degree of risk taking built



century, you shouldn't confuse their technology comfort level with technology teaching skills.

"A lot of young teachers know how to use the latest technology, but they don't know how to teach with technology," says Mao. "On the other hand, highly experienced teachers who don't use technology a lot learn a few simple technology tricks to leverage what they know while the young teachers are still trying to keep the kids in chairs."

Will Richardson, supervisor of instructional technology and communications at Hunterdon Central Regional High School in Flemington, New Jersey, and creator of Weblogged, takes a similar approach to finding teachers. "From a hiring perspective, if you hire learners who can teach, the technology will take care of itself. If you hire teachers who aren't really lifelong, continual learners, then you'll have problems, not just with technology."

## What's the cost factor?

Cost is always a consideration when it comes to hiring. However, the question of whether more tech-savvy teachers can command a higher salary than less technologically gifted teachers is mostly a matter of what kind of school (private, charter, public) is launching the program. The tech-savvy teaching market hasn't hit the fever pitch (seen in other employment sectors) of school districts with the will and the wallet lavishing large signing bonuses for star players. But basic economic principles still apply. If your school can pay more, you'll get a wider selection.

**// The key to hiring a tech-savvy teacher is [finding] someone who understands that we are preparing these kids for a different world where technology will be a big part of their lives. //**

in. They try new things and think outside the box," says Jeff Mao, coordinator of educational technology for the Maine Department of Education.

In 2002, as part of the Maine Learning Technology Initiative, the Pine Tree State and Apple Computer Inc. signed a four-year, \$41 million contract to equip 32,000 seventh- and eighth-grade students and 4,000 teachers with iBook notebook computers, wireless networks, training and technical support.

Mao and his colleagues had to hire tech-savvy teachers to support this initiative, so they learned firsthand what to look for.

Mao stresses that when you are discerning whether an applicant has what it takes to lead the charge into the next

However, hiring a teacher who is truly skilled with technology doesn't have to be a budget buster. A tech-savvy teacher knows how to leverage what's free and already out there. "This will help encourage other students, teachers and educators to replicate and improve upon your results instead of worrying about finding the money to purchase the fantastic software," says Ben Rimes of TechSavvy Ed.net.

Salaries aside, High Tech High's Daley says that remembering why you're trying to hire a teacher in the first place will be the best way to gauge a candidate's suitability. "It's not about technology. We are looking for adults who connect with kids. They must have deep content knowledge and be flexible in their thinking."





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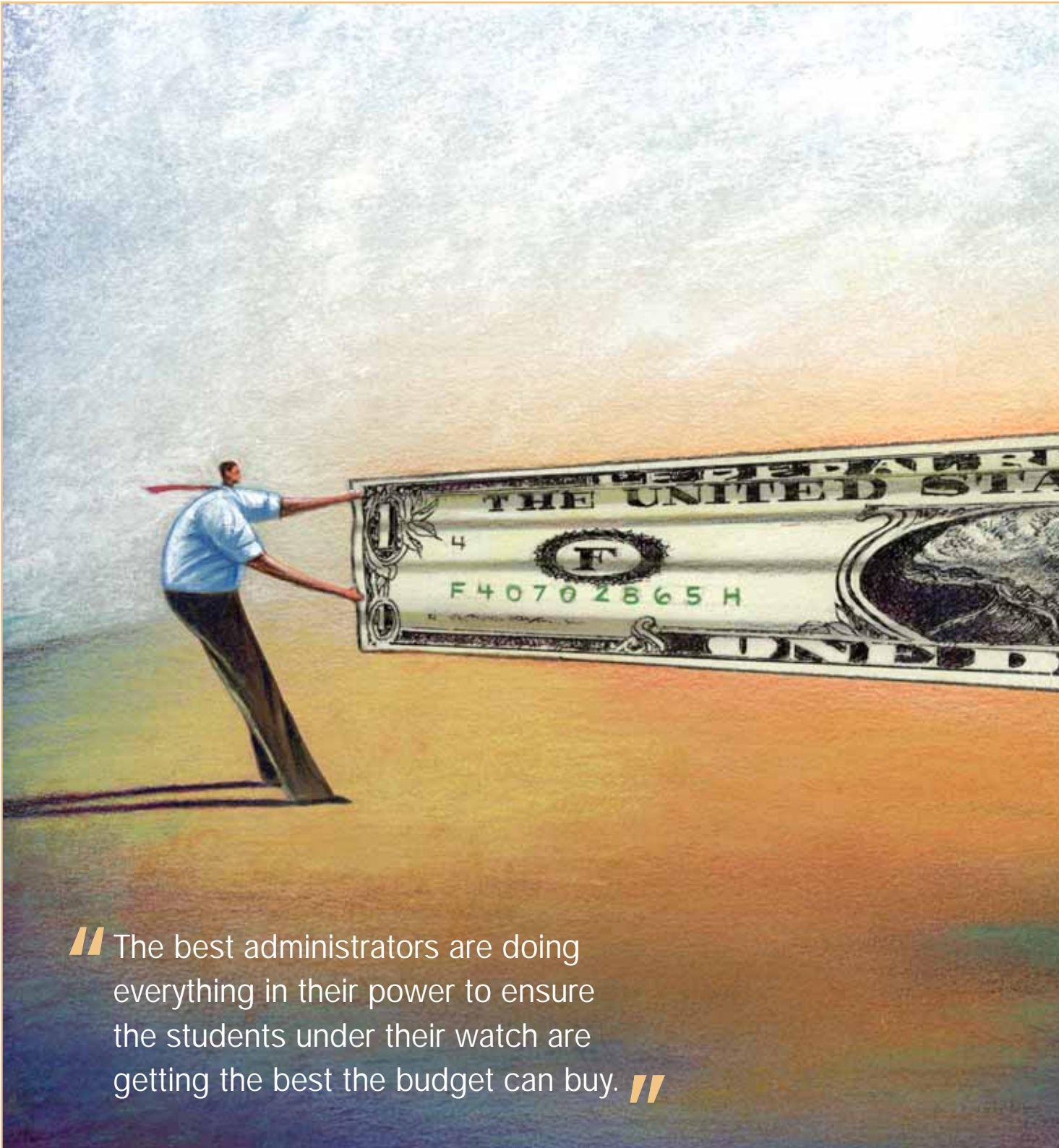
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“ The best administrators are doing everything in their power to ensure the students under their watch are getting the best the budget can buy. ”



# Stretching TECHNOLOGY FUNDING Dollars

Tips to help you make the most of a tight technology budget

**T**he scenario is all too familiar: eager students, energetic teachers and not nearly enough technology. Each year school district budgets get slashed, and administrators are forced to make tough decisions about where each dollar is spent. To meet the challenge of technology funding, many school leaders are taking creative and ingenious steps to make those technology dollars go further and buy more.

## **Know when to lease and when to buy**

While some hardware products, like high-quality interactive whiteboards and audio systems, have a long life-span and can stand up to the wear and tear of classroom use for many years, other pieces of equipment need replacing more regularly. So when you're searching for new hardware, you should consider its expected life-span. Leasing rather than buying could be an option that saves your school money.

Bailey Mitchell has been the chief technology and information officer for Forsyth County Schools in Cumming, Georgia, for the past 10 years and an educator for 21. He is a strong advocate of leasing rather than purchasing certain pieces of hardware. In Forsyth County, with its 27 schools and 28,000 students, he has found that leasing computers on a rotating cycle is an excellent use of the district's technology funds.

According to Mitchell, the advantages of leasing far outweigh the disadvantages, especially when it comes to computers. Because lease terms can be matched to the useful lifespan of the equipment, his schools can pay the lease until the technology becomes outdated. That way, his schools aren't spending money on equipment that is no longer current. At the end of the lease, Mitchell and his staff sell the equipment to a used-computer vendor and usually make a profit. Using this approach, equipment can be refreshed or replaced on a regular cycle, so students and teachers avoid the problems and downtime that usually go hand-in-hand with older technology. This cycle ensures that in the Forsyth County district, no server or workstation is more than four years old and all equipment is regularly replaced to keep the functionality up to date.

Mitchell believes the refresh or replace cycle is essential because, he says, "Hardware problems typically increase with age. I've found the useful life of most hardware to be around three to four years, and after that, software requirements begin to exceed the machine's capabilities. We've also found, both from an administration and instructional point of view, that computers over four or five years old typically have very low utilization."

found they can stretch their technology dollars by buying in bulk. There are more than 8,740 K–12 schools in the state of California, and when these schools looked to purchase technology individually, through normal education pricing channels, they had no significant buying power. That's why CalSAVE came into being. CalSAVE, now in its seventh year, is a statewide project designed to help California's K–12 schools buy technology and instructional resources easily and at a reduced cost. The CalSAVE website explains that the project "leverages the collective buying power of these schools, using strength in numbers to secure the lowest possible price," something that other school districts and state departments would do well to emulate.

### Open the door to open source

"Open technology resources can be a key factor in maximizing the value of district hardware and software investments," says Jim Hirsch, associate superintendent for technology, Plano Independent School Division in Plano, Texas, and board member of the K–12 Open Technologies Initiative, a program offered by the Consortium for School Networking (CoSN). In a March 2006 press release, Hirsch explained that "By better understanding

// By employing one person, whose primary function is to seek out these creative financing options, the end result might be a financial boon to budget-conscious school districts. //

Many companies are open to leasing computers because it works for them as well as the customer. The world of branding is ultra-competitive, and the fact that K–12 students represent the future consumer base of North America is not lost on technology manufacturers. They know that any foothold in this customer base is advantageous. By creating brand loyalty at an early age, technology manufacturers are effectively insuring their long-term survival. For a company like Apple, offering schools a leasing option for MacBooks today, establishes loyalty from consumers tomorrow.

Take a quick tour through the websites of Apple, Dell, IBM, Hewlett Packard and Microsoft, to name but a few, and you will see that they not only offer grant programs, education discounts and special offers, but also leasing programs.

### Buy in bulk

The K–12 school market is a large one, and educators would do well to use their buying power to their advantage. Administrators in California understand this and have

the applications of these open technologies, education leaders will be better positioned to manage their districts and educate their students." According to these users, opensource tools are a fully functional, free or lowcost alternative to much of the expensive, proprietary software available for desktop computers.

And just what is open technology? It refers to applications such as productivity suites, graphics tools, and Internet and networking software that users can modify to suit their needs.

School CIO, a website dedicated to developing and communicating strategies for K–12 technology leaders, recently reported that in the state of Indiana, educators launched a one-to-one computing program based entirely on Linux desktops. The program, called the Indiana Affordable Classroom Computer for Every Secondary Student (InACCESS), was first launched in 2003 as an alternative way to put computers in the hands of every one of its 300,000 students.

The School CIO reports that the state used grants to purchase Linux desktop computers for US\$199 each and

monitors for \$99 each. Part of the overall plan to keep costs low was the implementation of open-source programs such as StarOffice 8.3 and Moodle. By the end of 2006, more than 100 Indiana high schools will have open-source software on their computers.

According to Mike Huffman, special assistant for technology at the Indiana State Department of Education in Indianapolis, the state was previously spending \$100 a year per machine to license software from vendors. Today, the state pays no more than \$10 per year. When these savings are applied to the more than 300,000 computers the state plans to support, the annual savings amount to \$27 million.

But open-source technology does have its downside. Often there are difficulties merging it with proprietary software. Technology support is another issue. While open source is free, the programming can be sophisticated, and some users have found they need programmers on site to trouble shoot and provide support, which can be an expensive proposition for a school district already struggling with staff cutbacks and shrinking budgets.

Before making any decisions regarding open-source systems, administrators are advised to do their homework by questioning districts, such as those in Indiana, who have already made the switch, or visiting the CoSN K–12 Open Technologies Initiative website.

### Take it for granted

The state of Texas has undergone a full-scale examination of the role technology plays and should play in their public schools. In 1995, Texas Comptroller Carole Keeton Strayhorn, a former teacher and school board president, created the Texas School Performance Review (TSPR), a commission charged with making recommendations for integrating technology effectively in public schools. Since then, the TSPR has focused on assessing how well districts use technology to improve operations, reduce costs and enhance education service delivery. Additionally, the TSPR developed a list of information technology challenges facing public schools and included advice to help the Texas state government overcome them. One of the recommendations the TSPR advocates is that school districts pursue grants to help fund technology programs. However, the grant application process is well known to be time consuming and difficult, and because of this, the TSPR advises hiring a grant writer who is focused on aggressively pursuing grant money.

One school that found massive grant success by following this recommendation is Wimberley Independent School District in Wimberley, Texas, a small district outside

Austin with five schools and approximately 2,000 students. Wimberley ISD retained the part-time services of a retired professional to pursue grants for technology. In a little over a year, he generated more than US\$670,000 in grant money. The monies awarded paid the grant seeker's salary a hundred times over.

Hiring someone who can deal with far more than just grant applications may also be beneficial. Other school districts have had success raising additional funds through creative financing options like bond sales, endowment funds and joint projects with local corporations. By employing one person, whose primary function is to seek out these creative financing options, the end result might be a financial boon to budget-conscious school districts.

### Mix it up and make do

Some leaders are finding if they do a thorough analysis of what technology currently resides in their schools and what is currently functioning well, according to their stated objectives, they can get away with purchasing less new technology. Instead, they effectively combine the old with the new.

Jamie McKenzie, editor of the online magazine, *From Now On: The Educational Technology Journal* (FNO.org)

## Know Your Stuff – Six Strategies for Better Budgeting

A strong technology plan goes a long way in keeping a budget on track, according to Bailey Mitchell, the Chief Technology and Information Officer for Forsyth County Schools in Cumming, Georgia. He keeps six strategies in mind when he crafts his yearly technology to-do list for Forsyth County's 27 schools and 28,000 students.

- 1 Be aware of district priorities
- 2 Be realistic about what can be achieved
- 3 Be prepared to justify recommendations
- 4 Simplify current processes and technology standards
- 5 Reduce duplicate work efforts
- 6 Reduce the complexity of managing the desktop/notebook environment

and the former director of libraries, media and technology for Bellingham Public Schools in Washington, believes the ultimate goal of classroom technology should be to enable students to become engaged learners. In his 2002 article, “Creating Technology Enhanced Student-Centered Learning Environments,” McKenzie explains that he believes schools can accomplish this and they can do so with less. He states, “In every classroom, at least one high-end networked computer is required for every three or four



Stretching budget dollars can be easier than you think if you're open to exploring new money-saving options such as leasing and outsourcing support.

students. Less powerful computers are also useful for the editing and printing of documents. The use of low-end computers to supplement more expensive high-end computers is an effective means to stretch an educational technology budget.”

### Hiring versus outsourcing

Outsourcing versus in-house technology support – which is better? This question is widely debated in the education technology world. Whatever choice a school district makes, the decision should be made with the budget in mind. Both alternatives can be successful and both can save the district money. The key is to analyze technology needs very closely and then determine a long- and short-range plan that fits those needs.

Strayhorn and the TSPR say outsourcing technology support can be an effective way to control expenditures, one that many Texas school districts have found successful. In an article called “Helping Schools Make Technology Work,” Comptroller Strayhorn states that all goods and

services should be put to the “Yellow Pages test,” that is, if there is a business listed in the Yellow Pages that can do a job better and at a lower cost, then local, state or federal governments should let them take on that job. When investigating outsourcing, a combination of due diligence, a three-quote system and clear bidding process will yield the best results.

Some school districts say contracting or outsourcing computer repairs and maintenance provides better and timelier service than that of an in-house technician. Still others found retaining an in-house employee better fit their needs because they received more personal and ongoing attention to problems that an outside contractor might not know of or might overlook.

In Texas’s Port Arthur Independent School District, officials found in-house staff delivered technical support more efficiently than contractors. The district saved US\$73,500 in one year by hiring a computer technician to support the more than 2,000 computers owned by the district, rather than paying for the two maintenance contracts needed to maintain and service both their PCs and Macintosh computers.

Today’s school administrators, like the best private-sector CFOs, know that when it comes to stretching budget dollars, there are many different paths that can be followed. Whether they tackle the brave new world of open-source systems, buy in bulk, lease rather than purchase, mix old technology with new, outsource or opt for in-house technology support, or explore fresh avenues such as aggressively seeking grants, the best administrators are doing everything in their power to ensure the students under their watch are getting the best the budget can buy.

### Recommended websites

CalSAVE  
[www.calsave.org](http://www.calsave.org)

*From Now On: The Educational Technology Journal*  
[www.FNO.org](http://www.FNO.org)

TSPR  
[www.window.state.tx.us](http://www.window.state.tx.us)

School CIO  
[www.schoolcio.com](http://www.schoolcio.com)

CoSN  
[www.k12.opentech.org](http://www.k12.opentech.org)

# EDUCATION BY THE NUMBERS

by Heather Ellwood



Total expenditures for public education, pre-K–12, in 2002–2003:

**\$455 billion**

Total expenditures by public elementary and secondary schools per student in 2002–2003:

**\$9,644**

Total expenditures on replacement equipment for public elementary and secondary schools in 2002–2003:

**\$6 billion\***

\*Technology expenditures fall under the replacement equipment listing.

Amount in grants awarded to public elementary and secondary schools by charitable foundations in 2004:

**\$1 billion**

Amount in grants the Bill and Melinda Gates Foundation awarded to elementary and secondary schools in 2004:

**\$142 million**

Percentage of school districts that expect to mount a major technology initiative during the next 24 months:

**47**



Projected enrollment for fall 2007 in U.S. public elementary and secondary schools:

**55,102,000**

Revenues and Expenditures for Public Elementary and Secondary Education: School year 2002–2003, National Center for Education Statistics (NCES). Contexts of Elementary and Secondary Education, NCES. Education Statistics Quarterly 7, Nos 1 and 2, NCES. Digest of Educational Statistics, 2004, NCES. National Technology Assessment Survey, 2005–2006, QED – Quality Education Data, a subsidiary of Scholastic Inc.

by Jacob Milner

# Are You Missing Out?

Stan Levenson reveals new funding options for schools



Stan Levenson

If anybody knows how to get grants for public schools, it's Dr. Stan Levenson. The independent consultant and author of *How to Get Grants and Gifts for the Public Schools* (Allyn & Bacon, 2002) has been speaking about funding issues for decades, and has helped dozens of public and private school districts formulate funding strategies for the future. Now, as Dr. Levenson prepares for the release of his latest book, *Big-Time Fundraising for Today's Schools* (Corwin Press, 2006), he has shifted his area of focus from developing strategies to strengthening ones that already exist. Contributing writer Jacob Milner caught up with him to talk about what new advice he has for schools in search of funding.

**Q: Are there new sources of technology funding for schools to consider?**

**A:** There's a lot of competition for funding projects for schools and school districts in the United States. While the federal and state governments continue to give monies, we are beginning to see a lessening of funding from these sources. I would recommend that schools and school districts explore with vigor corporate and foundation grant opportunities at this time. These entities know the importance of technology and the impact it has in business, commerce and our everyday lives. Therefore, they will welcome strong, well-thought-out projects that have positive implications for change in schools.

**Q: How much money is available?**

**A:** According to the American Association of Fundraising Counsel (AAFRC), more than \$248 billion

was contributed to worthy causes across America in 2004. Of this amount, approximately \$34 billion (13.6 percent) went to education, second only to religion.... What is most interesting is the fact that more than \$197 billion of all contributions, including bequests, came from individual donors, and more than \$40 billion came from corporations and foundations. What does all this mean to public schools trying to bring in outside monies? It means that the schools need to learn how to pursue individual donors like never before. It also means that going after grants and gifts from corporations and foundations should also be a part of the overall fundraising strategy.

**Q: How should educators go after this money?**

**A:** Utilizing a group-process technique, prepare a case statement of two to five pages in length that is

clear, concise and compelling. It is imperative that you include the precise reason for your appeal, what you will achieve if your objectives are met, and the students and staff who will benefit.

Next, recruit volunteers in your community to work on your fundraising committee. Invite prominent citizens who are well known and well thought of to an orientation meeting held by some of the key people in the school district, such as the superintendent, principals, board members, teachers, community leaders and others. Use a PowerPoint presentation or other powerful audiovisual means to communicate your message and highlight your cause.

Ask those who choose to volunteer to make a commitment of time and money before the meeting has concluded. Make certain that [these] volunteers contribute their gift first before they approach prospective donors. This will help by providing them with "boasting rights" and



will demonstrate to prospective donors that the cause is so worthy that the volunteers have already made contributions.

**Q: What type of funding arguments will impress corporate and individual donors the most?**

**A:** You will discover that decision makers will be receptive to your ideas (whether it's technology or some other area of need) if you present a clear vision based upon a comprehensive needs assessment, goals that are overarching, objectives that are measurable, activities that are realistic, an evaluation component that is well thought out and a budget that is realistic. You will also find that individual donors, when approached properly, will be receptive to your ideas and will contribute big bucks to technology if you involve them in the planning process, listen to their ideas, welcome their input and ask for the gift when the time is just right!

**Q: What are the biggest mistakes K–12 educators make in seeking grants?**

**A:** I think the biggest mistakes that educators make in seeking grants is not identifying the most competent people to complete the grant application, not matching the district's needs with the funding agency's interests, not following directions, not providing enough time to complete the task at hand and not asking for enough money. I also believe that school districts across the United States should be establishing development offices

(just like at colleges, universities and private schools) and go after big grants and gifts, rather than spending a lot of time on bake sales, candy sales and car washes. A development office, with reasonable expectations, will become a profit center for your school district in two to three years or less. What a deal!

**Q: What are the most important things to remember when writing grant applications?**

**A:** Writing successful grant applications takes a lot of time and expertise. However, there are a lot of resources out there to assist you. In most grant applications, whether they are mini-grants or major grants, there are six basic components. These are needs

assessment, goals, objectives, activities, evaluation specifications and budget. I always recommend that you first learn how to write a mini-grant (under \$5,000) before attempting to write a major grant, especially a federal or state grant. I also recommend that schools and school districts consider going after corporate and foundation grant opportunities because they have fewer requirements and more funding cycles. For example, the feds usually have just one funding cycle a year, while many corporations and foundations have multiple funding cycles. Also, you will find that corporations and foundations usually require grant applications of 1 to 10 pages, while the feds and some states require applications of 50 to 100 pages. It would be worth your while to explore funding opportunities at the corporate and foundation levels.

**Q: Where can administrators go to search for new grant opportunities?**

**A:** The federal and state governments usually announce new grant opportunities on their websites.... Additionally, I would recommend readers visit the *eSchool News* website for the latest technology and funding info and subscribe to the site's very comprehensive e-mail newsletter called "Grants and Funding Alert."

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*Jacob Milner is a freelance education writer and editor based in northern California. His last contribution to i.e. magazine was a feature article titled "Tap into Your School's Technology Mentors."*



# Lowdown on RSS Feeds

The term RSS may be part of the normal vocabulary of teachers attending conferences like the National Educational Computing Conference, but mention RSS to many teachers, administrators, and parents, and you're likely to receive some blank stares. However, RSS is a cornerstone of the second-generation Web 2.0 world, and understanding its potential uses can open up a multitude of possibilities for you and your students. So here's an overview of this key piece of technology that is helping to define a new era of interactive content publishing.

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## Defining RSS

Wikipedia (the largest and most accessed encyclopedia resource in the world) explains that RSS means either

- Really Simple Syndication
  - Rich Site Summary
  - RDF Site Summary
- 

**M**eaningless abbreviation explanations aside, an RSS feed is basically something you subscribe to so you can be notified of and receive the latest content posted on a website, blog etc. Instead of thinking about a definition of RSS, think about a metaphor. E-mail spam is an example of a *pushed* information source. You do not ask for spam, yet it arrives in your e-mail inbox nonetheless, unbidden and unwelcome. Spam and other types of e-mail are often *pushed* to you whether you want them or not.

In contrast, RSS is an example of a *pulled* information source. When you use or access an RSS feed, you are requesting and pulling information from somewhere on the Internet to your computer. This is an extremely powerful form of idea sharing because once you subscribe to an RSS feed, you immediately have access to new content published by that

source. This is the way free podcast subscriptions work in the iTunes application, for example.

You don't have to define it or even understand it in depth to use RSS. At a minimum, know that RSS means *pulling* rather than *pushing* information to your computer. It's a basic idea but one full of potential power for you and your students.

## Using RSS for student research

Most schools in the United States are wired for Internet access, thanks in large part to the E-Rate program administered by the Schools and Libraries Division of the U.S. Universal Service Administrative Company. A Pew Internet Project survey of U.S. students found that 87 percent of them report they use the Internet, and



78 percent of them report using the Internet at school. Although reasons for using the Internet vary considerably, school use of the Internet often focuses on research.

RSS can offer tremendous research power for both students and teachers.

Rather than repeatedly using Internet search engines like Google, users can create pre-defined RSS searches, which pull search results directly to a Web browser such as Mozilla Firefox. To do this, two basic things are needed: an aggregator (software that is capable of interpreting RSS code and pulling it into a Web browser in a readable format), and the RSS (or news) feed for each desired information source.

A dizzying array of aggregators is available and most personal portal services like My Yahoo and Google provide content areas for RSS feeds. Bloglines is an example of a Web-based RSS aggregator that can become a customized digital newspaper, pulling content from a variety of sources. To see an example of my feeds, visit Bloglines at <http://bloglines.com/public/wfryer>. RSS feeds are available in a wide variety of categories that I have created and customized.

Google News permits users to create and use customized RSS feeds for searches, which can then be saved into a Bloglines account or other aggregator. After searching in Google News for a topic, click on the link labeled RSS in the left sidebar, then copy the link of the page you are directed to and add it to the bloglines aggregator. (You will need to sign in to

do this). The computer code you see will return a canned search for the specified query whenever it is accessed in an aggregator and can make the process of researching a topic much faster and more efficient.

Now that the new version of Internet Explorer for Windows-based computers has been released, a larger segment of the education population can learn about RSS because it is natively supported. So why not start using RSS for student research projects now?

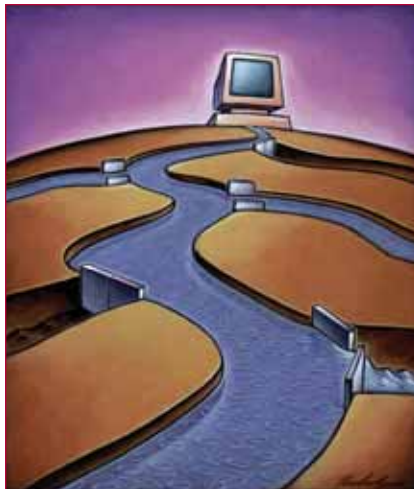
### RSS for parent communication

Another way to think about RSS feeds is to use a metaphor of a river. Think of an RSS feed as a virtual river of information to which people might want to subscribe. Water from a river can be diverted and channeled to flow into an adjacent canal. Some schools are recognizing the potential value of setting up separate RSS feeds for information about classroom and school news, so parents can subscribe to receive just the information they want.

Mabry Middle School in Cobb County, Georgia, has also embraced RSS under the leadership of principal Tim Tyson. Dr. Tyson's blog offers parents and others in the community a direct line of communication with him and keeps them abreast of school news. A wide array of teachers and other school staff members blog at Mabry, demonstrating the power and potential of RSS to provide customized rivers of desired information to a wide variety of education stakeholders.

### RSS for professional development

In addition to using RSS feeds for student research and parent communication, RSS can become the best source of teacher professional



**“Think of an RSS feed as a virtual river of information to which people might want to subscribe. Water from a river can be diverted and channeled to flow into an adjacent canal.”**

development available. As an added bonus, most RSS content is completely free!

Since many blogs are equipped with RSS feeds, educators can easily keep abreast of the latest additions bloggers make to their sites. As education read-and-write Web leader Will Richardson writes in the preface to his book, *Blogs, Wikis, Podcasts and Other Powerful Web Tools for Classrooms*, “In the 4½ years that I have kept my blog at Weblog-ed.com, I have learned more about the world, more about education, more about people and more about myself than in my 40-odd non-blogging years, 20 of them spent as a classroom teacher.”

RSS is the core technology that continues to enable these blogging conversations so Richardson and many other educators around the

world can learn from each other. And RSS can provide not only your ticket to these conversations, but also to a robust and accessible highway of information in the weeks and months to come.

The global conversation about education, teaching and learning in the 21st century is continuing to attract more voices and perspectives. Join the discussions online, and talk about them face-to-face with your colleagues at school. RSS is a technology that can be a powerful ally in the quest to further develop literacy skills in our present era of dynamic change. Embrace the wave and surf it with your students. New and amazing possibilities for collaboration and learning await us all.

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*Wesley Fryer is an educator, author, digital storyteller and change agent. With respect to school change, he describes himself as a “catalyst for creative educational engagement.” His blog, “Moving at the Speed of Creativity” ([www.speedofcreativity.org](http://www.speedofcreativity.org)) was selected as the 2006 “Best Learning Theory Blog” by eSchool News and Discovery Education. He is the director of education advocacy for AT&T in the state of Oklahoma.*

### Recommended websites

Aggregators  
[www.newsonfeeds.com/faq/aggregators](http://www.newsonfeeds.com/faq/aggregators)

[www.bloglines.com](http://www.bloglines.com)

Principal Tyson's Blog  
<http://mabryonline.org/blogs/tyson>

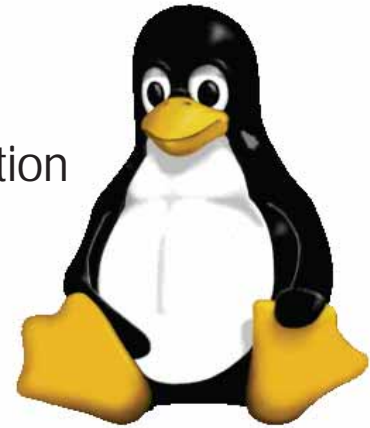
My Yahoo!  
<http://my.yahoo.com>

Google  
[www.google.com/ig](http://www.google.com/ig)

by Wendy McMahon

# Moving to Linux?

## New SMART Board software eases the transition



Taking the lead from the many schools and districts across the United States who are turning to Linux operating systems as an affordable way to provide more students with computers, SMART Technologies Inc. has created SMART Board software 9.5 for Linux operating systems – SMART’s most powerful Linux version of the software to date.

“Whether it’s a district or state searching for an affordable way to provide a computer for every student or an individual school wanting input into the upgrades and features of their computer operating systems – more and more schools across the United States are opting for open-source Linux-based systems,” says SMART Board software product manager Giselle Goncalves.

“Now, we have a version of SMART Board software for Linux users that is as robust as

corresponding content library, drawing tools and connectors, advanced object control, and support for five languages. The software supports many popular distributions, including SUSE 10, Red Hat Enterprise and Fedora Core 3+.

Michael Russo, technology facilitator and computer teacher at Hiem Middle School, says his school isn’t currently a Linux environment, but he participated in the beta testing program for the software because he’s noticed the trend of schools switching to Linux operating systems.

“Districts in my state and across the country are definitely looking into Linux; that’s why I got into it. As we look at the whole issue of total cost of

Windows and Linux versions of the software won’t be that noticeable.

“The software looks and behaves a lot like the Windows version, so getting up to speed on how to use the Linux version of SMART Board software shouldn’t be an issue,” says Goncalves.

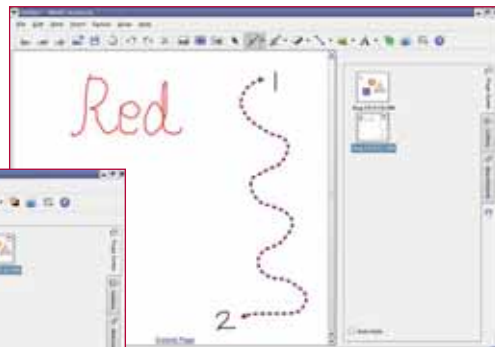
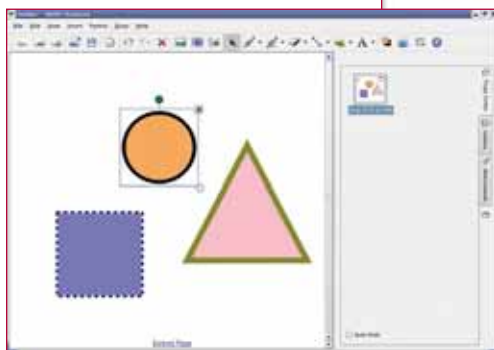
Russo, who has been using SMART Board interactive whiteboards in a mixed Windows- and Mac-based environment for the past two years, agrees.

“I liked the similarities that it had to the Windows and Mac versions that I’m used to,” explains Russo. I didn’t feel like I was using new software at all. Obviously there were some differences here and there, but the big thing I noticed was that the software didn’t get in the way of what I wanted to do; it was ready to go, just like the Windows version I’m used to.”

Russo says he would absolutely recommend the Linux version of SMART Board software 9.5 to districts considering a Linux implementation.

“I think about it in terms of the transition. This software is going to make the transition that much easier. If you use SMART Boards and you’re going to Linux, don’t worry about SMART Board software because it’s already there.”

SMART Board software 9.5 for Linux is available as a free download to SMART customers at [www.smarttech.com/support/software](http://www.smarttech.com/support/software).



ownership, Linux is making a lot of sense, and it’s getting much more user friendly. As a result, I think it’s something that’s going to be coming on the horizon for a lot more people.”

For users who are accustomed to using SMART Board software in a Windows-based environment and may be switching to a Linux-based environment, Goncalves says that with the exception of no Flash support, the differences between the

our Windows version. This new version makes most major features available for educators to use in their classrooms, and as a result, this is our best Linux version ever,” explains Goncalves.

The software features full drag-and-drop capabilities, the Gallery and its

by Cara Erenben

# Tools for Schools

Digital resources for the interactive classroom



## Tour the solar system

Teachers and students can explore a 3D model of the solar system, complete with the newest classifications for Pluto, Ceres and Xena (UB313) using Poser 5 (an art and

animation software) and its 3D Solar System model. Owned by the Japanese company e frontier, Poser 5 works like a virtual 3D photography studio. Content Paradise, a division of e frontier, expanded the product for education use by creating 3D models of the solar system, the White House, the Oval Office and more. When looking at the 3D Solar System model, which was created from NASA images, students can see the relationship between the planets from any camera angle. They can also zoom in as close as a couple of hundred square miles on the Earth to see the Mississippi River or the

Canadian Rockies. Or zoom out to see what Earth looks like from Mars or the moon. The 3D Solar System model costs US\$34.95 and Poser 5 costs US\$19.99.

Go to [www.contentparadise.com/3d\\_solar\\_system\\_product](http://www.contentparadise.com/3d_solar_system_product).

## Create Flash fun

Teachers interested in developing Flash-based teaching activities should check out Adobe Captivate 2 from Adobe Systems Inc. With this software, teachers can quickly create Flash-based interactive simulations, software demonstrations and training modules for their students without having any prior programming knowledge. Handy for explaining concepts, teachers can use this tool to create content that can be incorporated into lessons, e-mailed, published on the Web or added to a PDF document. Teachers can add images, video, audio and quizzes to their Flash simulations to give them a truly professional-looking quality. The intuitive interface and automated features allow anyone to develop content. The software uses a slide-based format, which makes it easy to edit, update and storyboard content. New features in the latest version of Adobe Captivate let users re-use and manage media content in a project library. Adobe Captivate 2 produces high-quality content, while maintaining small file size, and generates multiple file formats such as SWF, EXE or MP3 for podcasts. Adobe Captivate 2 is priced for education at US\$199.

Go to [www.adobe.com/go/captivate](http://www.adobe.com/go/captivate).

## Watch and learn

Showing National Geographic films, such as Tibet's Hidden Kingdom and Inside the NFL, just got easier, thanks to a service offered by Open Media Network (OMN). Instead of borrowing movies from the school library, teachers can download DVD-quality educational videos from the Internet. OMN is a nonprofit organization that makes it possible for noncommercial networks, such as National Geographic, the Public Broadcasting Service (PBS), and National Public Radio (NPR) to distribute HDTV- and DVD-quality video via the Internet. Although the technology behind OMN is offered to networks for free, some video providers do charge fees. Each National Geographic episode costs US\$2.69 for a four-day rental with unlimited playbacks during that time. PBS videos



are download-to-own and cost US\$1.99 each, with some exceptions. Unlike streaming video, OMN's content is completely reliable. Despite the large file sizes, downloads are fast because OMN uses its peer-to-peer grid network. The packets that make up each video file come from every user who has already downloaded the file. Schools and universities can also distribute their video content for free via OMN. Institutions wishing to participate can sign up at OMN's website.

Go to [www.omn.org](http://www.omn.org).

# Online Library

## Web resources for the interactive educator

### Science

#### DNA Interactive

[www.dnai.org](http://www.dnai.org)

Build your own DNA lessons using this site's Lesson Builder tool, or download lessons related to the study of DNA. Lessons include objectives, national education standards and student worksheets.

Secondary

#### The Great Plant Escape

[www.urbanext.uiuc.edu/gpe/gpe.html](http://www.urbanext.uiuc.edu/gpe/gpe.html)

Help Detective Leplant and his partners unlock the mysteries of plant life. Bring your students to this site, and through a series of mysteries, students will improve their understanding of plant science and how foods grow. This site includes a teacher's guide, lesson plans and group or individual activities.

Elementary

#### The Virtual Laboratory

[www.chemcollective.org/applets/vlab.php](http://www.chemcollective.org/applets/vlab.php)

Design and perform diverse experiments in acid-base chemistry, thermochemistry, solubility and redox chemistry with this virtual chemistry lab. Download the lab or run it from the Web.

Secondary

### Reading and language arts

#### Gamegoo.com

[www.cogcon.com/gamegoo/gooney.html](http://www.cogcon.com/gamegoo/gooney.html)

Check out the literacy- and research-based, education games at GameGoo. These activities help students develop early reading and language skills with the help of rich stories and characters.

Elementary

#### Starfall

[www.starfall.com](http://www.starfall.com)

Inspire students to read with the help of fun Adobe Flash activities that help students practice reading, letter sounds and language

skills. This site makes reading lessons fun for children and easy for educators.

Elementary

#### The Literacy Center

[www.literacycenter.net/lessonview\\_en.htm](http://www.literacycenter.net/lessonview_en.htm)

Find more than a million free, high-quality, research-based literacy lessons on this website. The interactive language games are perfect for an interactive whiteboard.

Elementary

#### Cross-Curricular

##### A to Z Teacher Stuff

[www.atozteacherstuff.com](http://www.atozteacherstuff.com)

Find lesson plans, thematic units, teacher tips, discussion forums for teachers, downloadable teaching materials, e-books, printable worksheets, emergent reader books and more on this teacher-created site.

Elementary/Secondary

#### Chateau Meddybemps

<http://www.meddybemps.com/teachersguide.html>

Use the Flash software activities on this site to help pre-school and primary students learn to read and write, listen, use language, think, develop social skills and understand math concepts.

Elementary

### Math

#### Balanced Assessment

<http://balancedassessment.concord.org/tasksalpha.html>

Access over 300 mathematics assessment tasks developed at the Harvard Graduate School of Education, between 1993 and 2003. The many topics and activities include averages, sums, chances of survival, detective stories, genetic codes, gestation, logarithms, triangles and volume.

Elementary/Secondary

### Figure This!

[www.figurethis.org](http://www.figurethis.org)

Use these English and Spanish math puzzles to help students master high-level concepts in the classroom and at home. The site was developed by the National Council of Teachers of Mathematics in cooperation with the National Action Council for Minorities in Engineering, Widmeyer Communications and the Learning First Alliance.

Secondary

### History

#### Angie's Electronic Classroom

<http://teams.lacoe.edu/documentation/classrooms/angie/angie.html>

Find a wealth of information relating to history and social sciences, including online activities, parent resources, teacher's corner and student projects.

Elementary/Secondary

### Google Video

<http://video.google.com/nara.html>

Bring historical videos from the U.S. National Archives and Records Administration into your lessons easily with the help of Google Video.

Elementary/Secondary

### Arts

#### Artsconnected.org

[www.artsconnected.org](http://www.artsconnected.org)

Access images, information and educational resources from the Walker Art Center and The Minneapolis Institute of Arts. You'll also find more than 80 online lesson plans, curriculum units and online activities.

#### ArtsWork

<http://artswork.asu.edu/arts/teachers/index.htm>

Search this site's education database to find dynamic, Web-based resources and education materials for visual arts, dance, music, drama and theater. This site also includes standards information, curriculum examples, lesson plans and assessment methods for arts education.

Elementary/Secondary



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Good to grow



## The new SMART Board™ 600 series interactive whiteboard

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