

SchoolNet

CONNECTING LEARNERS

SPRING
'99

O F F - L I N E

SchoolNet's Magazine for the Educational Community

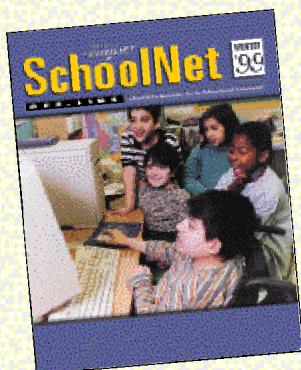


SchoolNet

SPRING
ISSUE

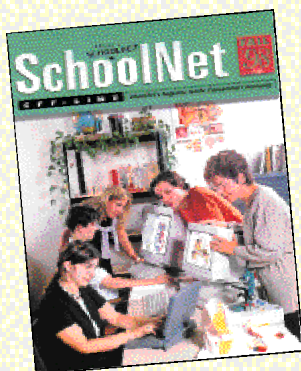
O F F - L I N E

SchoolNet's Magazine for the Educational Community



Here this Spring

SchoolNet Off-Line Magazine is a high quality publication--the first of its kind--dedicated to the application of the Internet for classroom-based teaching. SchoolNet's innovative partnership has successfully made Canada the first nation in the world to connect its schools and libraries to the Information Highway. SchoolNet supports the effective use of Information and Communications Technologies so that young Canadians develop the skills and competencies required to succeed in the knowledge-based economy. But to harness the full potential of the Information Highway in learning, teachers need the know-how. Off-Line's tight editorial focus addresses the needs of readers' special interests. It is all about teachers talking to teachers.



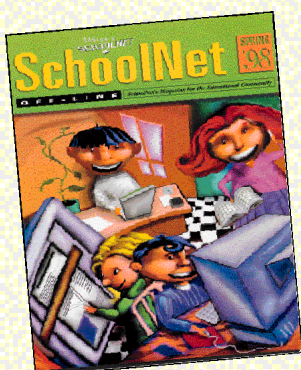
NOW YOU CAN SUBSCRIBE DIRECTLY TO SCHOOLNET OFF-LINE

THREE INFORMATION-PACKED ISSUES FOR JUST \$10.95 !

FOR SUBSCRIPTION INFORMATION PLEASE CONTACT:

TEACH Magazine at: 258 Wallace Ave. Ste 206 Toronto, Ontario M6P 3M9
tel (416) 537-2103 fax (416) 537-3491 email: teachmag@istar.ca

SEE THE SCHOOLNET ONLINE VERSION AT: www.schoolnet.ca



CONTENTS

Stock photos provided by Quadrant Educational Media Services Inc.



Cover photo: Guy McCrum

In this Issue

- 5 Virtual school is for real in Alberta
by James Chow
- 7 11 great tips! Make the most of your time on the Internet
by Marjan Glavac
- 8 New book puts Canada in the classroom
- 8 See what's new at Network to Savings
- 9 Technology coaches teach teachers about IT
by Jennifer Fowler
- 11 Don Kindopp: Steering a town onto the Information Highway
by James Chow
- 12 Page Masters to help teachers find the best of SchoolNet
by Melanie Seal
- 13 Junior GrassRoots brings young learners to the Web
- 14 The thing in the corner
by Wayne Hamilton
- 15 Web the key ingredient for B.C. cultural project
by Angela Bowles
- 15 On-line conferences: the virtual staff room
- 15 CBC offers plenty for kids on-line
- 16 Old computers get a new lease on life
by Karen Zak
- 22 Here's the DEAL

- Editorial Sponsor**

- 20 Anytime Anywhere Learning Goes Global



More and more educators are using information and communications technology (ICT) to realize their dreams.

For example, in her article about SchoolNet's new Page Masters project, Melanie Seal shows how teachers from across Canada are pooling their expertise to solve a tough problem: how to find the latest and best educational resources on the Web, separating them from the mountain of junk searches usually dredge up. And while individual educators have neither the time nor the range of expertise to tackle this monumental task alone, quite the opposite is true of the collaborative network of teachers who are at the centre of the project know all about the Web's resources in their individual subject areas. Add to this the expert resources of school boards to ensure the learning needs of all ages are addressed, and what emerges is a spectacular educational resource. Quite a dream to make real!

Moreover, it's noteworthy that making a dream real does not have to depend on possessing the hottest technology, as Karen Zak explains in her article on recycling old computers. Creativity, of course, is the key to dreaming up new applications for aging technology in schools, and Canada's educators certainly have plenty of creativity. Old or new, ICT components are becoming like Lego to many innovative educators, who build new tools with them to enhance their students' learning.

James Chow points to this innovative spirit in his article about a virtual school in Alberta that delivers the entire provincial curriculum around the clock to students worldwide. Not only is this school unusual because it is 100 percent virtual, it is also extraordinary because of its imaginative use of (at first sight) low-tech ICT to accomplish pedagogical feats of excellence.

Look how far we have all come in just a few short years. Not long ago, we teachers grimly laboured in isolation behind the walls of our schools. Now, we routinely share best practices and innovations with the world. We are growing used to working together virtually to pinpoint student needs, and to inventing and sharing the new tools we dream up to meet those needs. The new state-of-the-art in teaching and learning is being facilitated by ICT, of course, and by our growing fluency in thinking and teaching with it.

I hope you enjoy this issue of *SchoolNet Off-Line* as much as we enjoyed putting it together for you.

Doug Walker, Editor
(walker.doug@ic.gc.ca)

PUBLISHER

Wili Liberman

Editor

Doug Walker

Associate Editors

Beth Clarke, Jocelyne Voisin

Writing and Editing

Whitehall Associates

Contributing Writers

*Angela Bowles, James Chow,
Jennifer Fowler, Marjan Glavac,
Wayne Hamilton, Melanie Seal
Karen Zak*

Project Co-ordinator

Lyne Martin

Art Director

Vinicio Scarci

Advertising Manager

Catherine P. Lenihan

SchoolNet Off-Line Magazine is published by Industry Canada/SchoolNet and Quadrant Educational Media Services Inc., Publisher of TEACH Magazine.

© Her Majesty the Queen in Right of Canada, (Industry Canada) 1999

No authorization is required to reproduce, store in a retrieval system or transmit in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), provided that the reproduction is accurate and not sold, and that acknowledgement of the source work and Industry Canada as author is included.

ISSN: 1206-0062

For more information, please contact Quadrant Educational Media Services Inc., 258 Wallace Ave., Ste. 206, Toronto, On M6P 3M9, Tel: 416-537-2103, Fax: 416-537-3491, E-mail: teachmag@istar.ca. To contact SchoolNet, call 1-800-575-9200. Visit the Web site at www.schoolnet.ca and www.schoolnet.ca/info/magazine



Virtual school is for real in Alberta

by James Chow

No students mill about the hallways of St. Paul's Academy in Okotoks, Alberta, and no teachers write lessons on the chalkboards. In fact, there are no chalkboards or hallways.

There are students and teachers, though. It's just that St. Paul's Academy is not a school in the physical sense. It's a virtual school.

Located within the Christ the Redeemer School Division near Calgary, St. Paul's has, for the past three years, been educating students in grades 5–12 outside the classroom using the Internet and information technology. The curriculum features on-line versions of all the subjects offered in a traditional school.

Michael O'Brien, who is the Director of Technology and Career and Technological Studies for the school division, helped launch St. Paul's. He says the virtual school is an example of how technology is rapidly changing the future of learning. "Technology is everywhere. You can't do a job without a computer playing a role anymore."

St. Paul's started out as a phone and fax operation in 1996 with approximately 80 students. In 1997, it brought in computer technology to add a virtual element and enrolment jumped to approximately 260 students. In 1998, enrolment increased to nearly 450 students, with many eager applicants waiting to apply for the next school year.

O'Brien says that all types of students enrol at St. Paul's. "It's mainly used by kids who live at great distances from a traditional school," he says. "We have one child living in Singapore. But people who have kids on the go use virtual schooling, too. There are many students who are involved with competitive sports.

We have one parent who's divorced. He's a salesman, and he travels around a lot. He didn't want to have his two children grow up without him or his influence, so he bought two laptops and the children travel with him."

Families play an important role

Parents, in fact, are a key part of the St. Paul's community. Students do their lessons on their own, can e-mail their teachers to get help, or participate in chat rooms, but there is a set amount of daily supervision that parents or guardians must do to ensure the students are getting their work done properly.

"Whether or not you are in a virtual or traditional school setting, I believe the parent or guardian is the primary educator of a child, unless the child doesn't have one," O'Brien says. "The more a parent plays a role in the education of a child, in my opinion, the stronger the child will be as a student. We work with parents and guardians to develop their skill sets so they can help their child. It helps

the parent become more understanding, and it helps the student dramatically.”

One concern about the virtual classroom, though, is the lack of personal contact with other students or teachers. How does the virtual school compensate for this?

“Teachers and students get their interactivity through the computer, and by using e-mail and audio technology,” O’Brien says. “They can also participate in chat rooms.” See “Funding and wiring the virtual school,” below.

In addition to interaction with teachers, students must get normal social interaction, something not easy to achieve when they are spread miles apart and leading busy lives. “Kids in today’s society are not like those of 20 years ago, when they would come home and play with neighbourhood friends. Kids today are heavily involved. They are into dance, hockey, Brownies, Cubs,” O’Brien explains.

“We do have student get-togethers. We still take field trips and run science labs. For students who cannot attend those, we do them virtually. We also have the Student Lounge, which is a chat room.”

What about gym class? “As for physical activity, we involve family or other institutions,” says O’Brien. “Anything that is done outside the school, including sports, usually costs extra.”



A virtual reality

Virtual schooling is another option in an increasing array of ways to educate children today. As the number of technologies increases, so will the number of teaching methods.

O’Brien believes that the virtual school can, in fact, improve teaching. “Imagine yourself in a traditional classroom,” he says. The teacher asks a question of the class, five or six students put up their hand, one gives the answer and the teacher moves on. “That’s not great teaching. But it happens a lot. In virtual schooling, all the kids are asked ‘What’s one plus one?’ Every student must answer that question. That’s much better teaching.”

Many people have praised virtual schooling, O’Brien says. “Some parents have called me to say ‘thank goodness’ for virtual schooling. Otherwise their kids would spend three-and-a-half hours travelling on a bus each day to get to school.”

St. Paul’s Academy works because it has made technology work. For the concept to work in other schools, O’Brien says that people have to realize that the world is becoming technologically complex. “The more we understand and control technology, the better our lives will be.”

James Chow is a public relations student at Mount Saint Vincent University in Halifax, Nova Scotia, on special assignment with Canada’s SchoolNet.

Funding and wiring the virtual school

How does St. Paul’s cover its costs?

“We receive the same funding from the Alberta government as we would if the students were in a traditional school setting,” says Michael O’Brien of the Christ the Redeemer School Division. “Virtual schooling is not cheaper. We just direct our money to different things. For example, we have to pay for Internet service providers, technicians, computers, repairs, shipping and software licensing.” The only additional cost for students is \$100 for the registration package they receive upon acceptance.

In addition to textbooks, students get the latest computer system

available, including a printer and their own e-mail accounts, which allow them to get access to daily lessons through the Internet. The school has its own Web site and has created on-line chat rooms for teacher and student discussions.

St. Paul’s Academy also uses Spread Spectrum Technology, which the military used during World War II for communications, to get information to students. “We use the radio waves to transmit information,” says O’Brien. The technology transforms digital information into a signal similar to background noise, which makes it hard for anybody to intercept and decipher.

Another tool, WebSpyder, from ACPE Computer Solutions, provides a graphical interface that allows computers to access the Internet at speeds much faster than with a Pentium chip.



11 great tips!

Make the most of your time on the Internet by Marjan Glavac



ASK JEEVES!

❶ Focus, focus, focus

When students ask to go on the Internet to get a piece of information, get them to check print resources first. When they've exhausted those sources and know what their topic is all about, then let them go on-line.



❷ Check, double check and triple check

If you're positive you've typed the URL of a site you're looking for correctly, but you still get an ERROR 400 or other error message, try shortening the address. For example, if <http://www.glavac.com/mg> doesn't work, try <http://www.glavac.com/> instead. Or try at another time.



❸ Bookmark, bookmark, bookmark

Save favourite site addresses using the bookmark function in your browser. Once an address is bookmarked, just call it up from your bookmark file instead of typing it in.



❹ Save, save, save!

Bookmark files do crash. So do e-mail accounts. Save your bookmarks in a separate file or on another drive on your computer. Save them on a diskette as well. Do the same with your important e-mails.



❺ But I forgot!

Write down URLs, file names, user names/nicknames and passwords in a notebook and put it in a safe place. As long as you don't lose the notebook, you'll never be locked out of your files or favourite sites again!

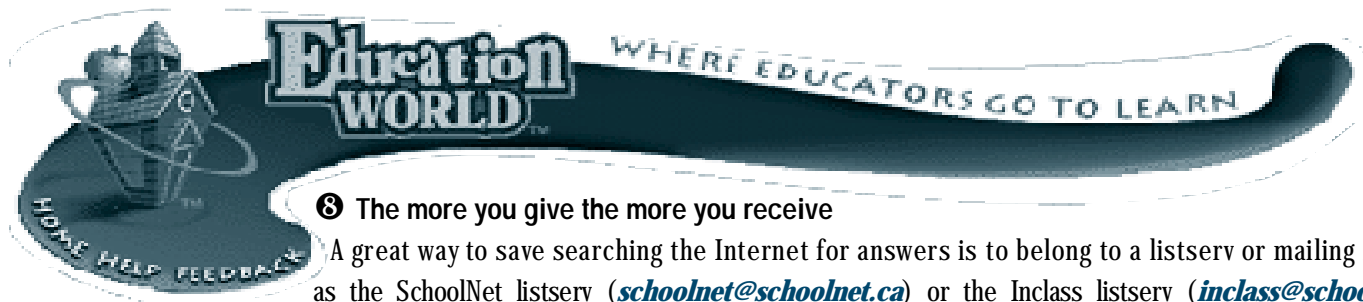


❻ Hide and seek

Sometimes the best-known search engines aren't the most appropriate ones for students and teachers to use. Try these. They're geared for educators and students and are user-friendly: AskJeeves (<http://www.askjeeves.com/>), Education World (<http://www.education-world.com/>) and Homework Heaven (<http://www.homeworkheaven.com/>).

❼ But I need an expert

Do your students ask you questions you can't answer? Try these sites: Great Canadian Scientists (<http://www.science.ca>), AskEric (<http://ericir.syr.edu/>), KidsConnect (<http://www.ala.org/ICONN/kidsconn.html>) and Pitsco's Ask An Expert (<http://www.askanexpert.com/askanexpert/index.html>).



⑧ The more you give the more you receive

A great way to save searching the Internet for answers is to belong to a listserv or mailing list, such as the SchoolNet listserv (schoolnet@schoolnet.ca) or the Inclass listserv (inclass@schoolnet.ca). Librarians, try LM_NET listserv (http://ericir.syr.edu/lm_net). Teachers, check out K-12 OPPS and Hilites (<http://gsn.org/majordomo>). More than 90,000 mailing lists can be found on the LISZT site (<http://www.liszt.com/>).

⑨ Information overload

Popular lists can give you up to 50 e-mail messages or more a day! Save the unsubscribe information you receive when you join in a separate file and on a disk. If you ever need to get off the list, this information will come in handy. To save time, check to see if you can receive a digest of mailings once a day or week. Check if there is an archive you can access instead of receiving the mailings.

⑩ How do I keep up without surfing?

Try Kim Komando's Weekly E-Zine (<http://www.komando.com/>), the Netsurfer Digest (<http://www.netsurf.com/nsd/>) and @SchoolNet Today (<http://www.schoolnet.ca/today>). TipWorld (<http://tipworld.com>) will let you subscribe to more than 80 free daily and weekly newsletters.

⑪ Avoid rush hour and traffic jams

The Internet is like a highway with high traffic and congestion. To get the most of your time on the Internet, try connecting early in the morning or late at night. You'll notice a difference in access speeds that will save you time, frustration and improve your Internet experience.

Marjan Glavac is a speaker, teacher and author of The Busy Educators's Guide to the World Wide Web from London, Ontario.



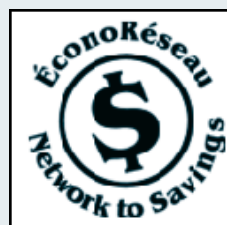
New book puts Canada in the classroom

Teachers in all disciplines can add a touch of Canada to their lessons thanks to the *Canada Year Book 1999*, published by Statistics Canada.

This comprehensive research tool is relevant across the curriculum — from history and social studies to business, government, lifestyles and art. Four theme sections — The Environment, The People, The Economy, The Nation — are illustrated with tables, graphs and photographs.

Also available in French and as a bilingual CD-ROM, the *Canada Year Book 1999* costs \$54.95, which includes a 30 per cent discount for educators.

To find out more, go to <http://www.statcan.ca:80>



See what's new at Network to Savings

SchoolNet's Network to Savings (NTS) program has a new interactive site to go along with its great prices on hardware, software, books and services.

NTS brings together more than 70 information technology and software companies, educational publishers, schools and libraries to give today's students the tools they need to learn and prepare for the working world. Look for products from Software Spectrum, Education International, Early Reading, Millennium Communications, DNA Media, Eduvurse and many other leading firms.

See what's new at Network to Savings (<http://www.schoolnet.ca/savings>). You might find the very thing you have been looking for to enhance your classroom experience.

Information technology (IT) tools have become as much a part of education as the pencil and eraser. Educators in the Ottawa area have recognized this, and are encouraging teachers to move to an IT way of thinking and teaching.

The push towards integrating technology into Ottawa classrooms began in 1995 when the Ottawa Centre for Research and Innovation (OCRI) began a program to develop technology-literate teachers and students. This program, known as the Technology Integrator (Coach) Project, brings energetic, skilled educators into schools to instruct teachers and students in IT. These Tech Coaches possess special skills in both technology applications and curriculum development.

Before the Tech Coach program began, there was very little staff

Industry Canada provided seed funding to Dr. William J. Egnatoff of the Faculty of Education at Queen's University to get the Tech Coach program going, but once educators started to take an interest in learning about and integrating new technology, school boards reallocated funding for it. The program has grown from four coaches in four school boards to 27 in five boards, and is now being used as a model in Alberta and New Brunswick.

On February 11, Industry Canada honoured the Tech Coach program at an event held at the Ottawa-Carleton Educational Media Centre. Doug Hull, on behalf of Industry Minister John Manley presented certificates to the five school boards in and around Ottawa for their "outstanding innovation in using information technology in learning" and for embracing the OCRI Tech Coach program.

TECHNOLOGY COACHES

teach

TEACHERS ABOUT IT

by Jennifer Fowler

development in the area of IT. Barb McNally, Vice-president of Education and Human Resources Development for OCRI, explains that until recently staff development in technology typically involved taking teachers out of their school to a central computer lab. This limited teachers because they were learning skills on computers that weren't in their classrooms, and they found the time commitment outside of the classroom difficult to make. This caused some teachers to become frustrated, which sent a message that teachers weren't interested in learning the new technology.

"I think we were able to show that this was really a mistaken impression," says McNally. "Once teachers got help [through the Tech Coaches] in their own environment, they showed they were willing to give up lunch hour and time after school to learn more. The teachers were lining up to work with the coaches. I think this was, and still is, a very positive thing. This kind of professional development is really working."



Technology Coach Heather Fairbanks behind teacher Sean Oussoren with students of Fielding Drive Public School.

"The school boards see the value in this program. From the staff development side, these people are providing a special level of service," says McNally. The Tech Coach program is not a part of the curriculum so schools do not have to use it; however, none of them have refused.

Other Ottawa educational institutions have also embraced this program and are continuing to support it. Daniel Merritt is a specialist in New Media Learning with OCRI and a former Tech Coach. "What OCRI is doing is developing a Learning Edge Team," he explains. "This team consists of classroom teachers and former educators now working with OCRI on educational programs that integrate technology into the classroom as a professional development tool — using technology to help teachers and enhance Ottawa's educational community."

Most of the Tech Coaches have an educational background. Some are retired teachers who bring their experience and love for teaching to the program. Their knowledge brings a unique perspective to



Technology Coach Richard Michaud with students.

the program. They know how the system works, understand the pressures teachers are under and know which technology tool would suit the teachers' needs.

Others are graduates fresh from teachers' college, and the program has helped them too. When coaching first began, many of Ontario's new teachers couldn't find work. The program has allowed these young coaches to develop a network of colleagues within the schools while gaining valuable teaching experience.

Cathy Lewis is one such person. This job has given her the opportunity to apply her IT and teaching skills. "The learning curve is straight up," she exclaims. "We're just learning, learning, learning, learning. It would be nice if we had a lot more coaches. I personally answer hundreds of e-mails a day."

Learn IT, use IT, teach IT, lead IT

These four steps summarize the objectives of the Tech Coach approach to staff development. Through workshops, personalized



Technology Coach Richard Michaud with students.

training sessions, presentations, team teaching and working with students, Tech Coaches help teachers become self-sufficient in classroom use of IT.

The coaches supply some technical support as well as teach the teachers why and how technology can enhance their teaching. They discover new technology tools, share them with teachers and discuss them with students. They conduct presentations, provide support on topics such as Internet in the classroom, curriculum integration of educational software, Internet search skills, database and spreadsheet integration, and other strategies for using IT in the classroom. They are also involved in developing acceptable-use policies and in specific initiatives, such as showing teachers how to use and manage electronic report cards.

The Tech Coaches also develop and implement a variety of innovative activities and resources: electronic portfolios, on-line book reports, board-wide Intranets for academic research, electronic newspapers, and numerous school and classroom Web projects.



Technology Coach Sonia Manchen with a student.

Wendy Santo, a teacher at Terry Fox Elementary School, affirms that "thanks to the coaches, more progress has been made this year than ever before."

The ultimate goal of the Tech Coaches is, ironically, to work themselves out of a job. By reaching this goal, every teacher in the Ottawa area would possess the tools they need to prepare their students for the technology future.

"I would love it if that happened," says Lewis, "but with technology changing so rapidly, I think there will always be some new tool teachers will need to know. I hope we will always have the resources to supply them with someone to teach it to them."

Jennifer Fowler studies journalism at Mount Royal College in Calgary, Alberta and is on special assignment with Canada's SchoolNet.

Ever since the Information Highway began to take shape, Don Kindopp has been making sure that Estevan, Saskatchewan, could take advantage of it.

Kindopp admits with a chuckle that he first took note of the Internet “some years after I got my Commodore 64,” but it was just prior to helping launch a Community Access Program project in 1996 to develop Internet skills throughout the community that he really got involved.

“I was interested in the idea of connectivity. Being a librarian and focussing on resource-based learning, I was struck by the fact that students have the opportunity to get information themselves. The idea that I can sit here in Estevan and connect to some place in Australia is incredible. The Internet really is a powerful tool that you can put in the hands of students.”

For more than 34 years, Kindopp worked in Estevan as a teacher, principal and part-time computer coordinator and librarian. He served as technology media coordinator for the local school boards from 1997 until he retired in 1998, and is staying on for three more years at the boards’ request.

Three years ago, Kindopp, as part of a multimedia committee, launched several projects after the Saskatchewan Department of Education put funds forward to support technology in the classroom. One project involved designing a Web site based on novel studies.

“None of us had any previous Web experience,” he says. “It was a tremendous learning experience. The teachers did a fantastic job.”

The multimedia committee also recommended a computer instruction program called Techworks for Estevan schools. The

Don Kindopp

Steering a town onto the Information Highway

by James Chow



Left to right: Don Kindopp, Steeves Tremblay, Industry Minister John Manley, Marvin Gill and Greg Salmers at a Connecting Canadians Day on October 14, 1998 in Estevan, Saskatchewan.



Industry Minister John Manley and Don Kindopp.

program sequences and provides lesson plans for teachers wishing to communicate computer and network skills to students at all grade levels.

Today, Kindopp continues to contribute to the integration of technology into learning. In addition to his role as technology media coordinator, he oversees two SchoolNet GrassRoots projects.

Kindopp’s efforts have not gone unnoticed. The federal government recently recognized his role in facilitating the integration of technology into school curricula, naming him an Information Highway Hero in October. In 1996, he received the SACE (Saskatchewan Association for Computers in Education)/Apple Award for teacher excellence. SACE is a special subject council of the Saskatchewan Teachers’ Federation that promotes technology in the classroom.

“The fact that I was recognized by other educators was very special to me,” says Kindopp. “You look around and see others doing great things and you wonder how you got the award.”

Kindopp thinks that technology is a good thing for learning and has some advice for integrating technology into the classroom.

“Be patient. We’ve come a long way in the past five to seven years. It’s like a new photocopier or VCR. One or two people will embrace it enthusiastically; the rest will stand back and let others use it and base a decision upon their observations. We need people to take the time to learn these technologies to see how they can impact their lives and their teaching.”

James Chow is a public relations student at Mount Saint Vincent University in Halifax, Nova Scotia, on special assignment with Canada’s SchoolNet.

The reality many teachers are finding about the Web is that while there's a ton of great information in cyberspace that will thrill kids in the classroom it's hard to find it all quickly.

That's the feedback SchoolNet heard again and again from teachers: "The information is there. It just takes too long to find what's right for my class."

It's also difficult to find out what's true and accurate for school use in the great flood of information posted on Web sites. "The biggest problem for many teachers is that there's all this wonderful material and all this terrible material. How can you trust it?" asks Doug Walker, a teacher working with SchoolNet.

Another issue is finding quality sites that will capture the students' attention. "Show a Web site to real teachers with real kids, and you'd better impress them. They're the ones in the front lines, the ones who know what works in the classroom," Walker says. "They don't have time to mess around. If a site doesn't suit their needs, they just turn it off."

With colleagues Louise White and Bonnie Viney, Walker researched and designed the Page Masters program by drawing on the combined expertise of Industry Canada, teachers and school boards to give educators easy access to the best and latest on-line educational resources.

"People were getting bogged down looking for teachable material. We realized we needed professional educators choosing good links to top resources on the Web that could be used in the classroom," Walker adds.

And so they called in the experts — subject experts to find the Web's best resources for learning and state-of-the-art information specialists to make the resources fast to find.

The method behind the masters

The solution that SchoolNet's David McCallum, a former parliamentary librarian, developed was a metadata system, modelled after the famous Dublin Core, an educational search engine based in Dublin, Ohio.

Page Masters
to help teachers find
the best of SchoolNet
by Melanie Seal



Modified for Canadian schools and existing in both official languages, this huge virtual "information desk" is the answer to teachers' Web-searching woes.

McCallum designed the user interface and the information indexing system, which runs on a database designed by Ottawa's Global X-Change, so that the Page Masters can index Web sites according to their title, address, description, subject matter and the students' grade or age level.

Filling up the system with information will really be a virtual barn-raising effort, Walker explains, a co-operative project between teachers working as Page Masters, Industry Canada, which is funding the effort, and school boards across the country, chosen for their outstanding expertise in subject areas,

that coordinate the teachers' Web research.

By the end of this spring, 55 English Page Masters and 55 French Page Masters will be chosen and start selecting the world's finest and most up-to-date educational resources to be added to the metadata system.

"This is a good idea!"

Teachers, McCallum adds, are the most realistic candidates to decide what other teachers are looking to use in their classroom. It's also a wonderful way to directly involve teachers. "The ones who

work in the field know it best. A history teacher knows what to look for in history."

The concept is already popular among Canadian teachers.

"It's a great idea, and a system I will use," one teacher said in an e-mail to SchoolNet. "I hope I am chosen to be one of the Page Masters."

This is a good idea, agrees Susan Dykstra, a teacher in Scarborough, Ontario. Primary reading needs and research tend to be forgotten by Web designers, she points out. A team of teachers can overcome that by tracking down level-specific information, and information that is important for students to find.

"By far the largest problems are ads that

confuse the kids and junk sites that offer no truly factual material," Dykstra says. For example, one student asked Dykstra for her credit card number after he found a John Deere Web site. He wanted to buy the inner-city school a tractor. Advertising sites embedded in search engines had struck again, slowing down Dykstra's junior-level students with general learning disabilities in their quest for information.

But the students in Dykstra's class in the next millennium searching for information on farm equipment won't find themselves parked at a John Deere Web site. The SchoolNet metadata system should help teachers and students find information specific to what they're teaching and learning.

"Today's SchoolNet site is like a scrapbook, with information and links to sites scattered everywhere. Tomorrow you will be able to search all of SchoolNet to find exactly what you're looking for," says system designer McCallum.

McCallum says the metadata system will help teachers such as Dykstra, who find that locating grade-level material is more challenging than setting aside the time to search for it.

Even more challenging is that her students with learning disabilities don't work at any particular grade level. By using



the metadata search engine, Dykstra will be able to find information suited to her students' needs more quickly.

The bilingual search thesaurus in this giant data system is something else for teachers to get excited about, McCallum explains. It's the

only one of its kind in the world. The Page Masters project has garnered international attention for other reasons, too. Other countries are interested in the national dimension of the project and the fact that it is bilingual, and they are impressed that so many teachers are working with the government to make it happen.

Going to a model of the metadata system, McCallum types in a request for any links that match the keyword "robotics." He customizes the request so the search will find Web sites with information for students in grades 7 to 13 and ages 12 to 17.

"This is where you can see where you can go for other sources. You don't have to dream up fancy keywords," McCallum says. On the screen in front of him appears a list of 10 possible links offering information about robotics and other keywords linked to robotics.

"And this, this is where my heart goes a-flutter."

To find out more, go to <http://www.schoolnet.ca/meta>
Melanie Seal is a freelance journalist on special assignment with Canada's SchoolNet.

Junior GrassRoots

Junior GrassRoots brings young learners to the Web

Young students from 880 schools across Canada recently became Web Surfers, Web Wizards, Web Builders and Web Mentors through the Junior GrassRoots program.

As a pilot project in 1998, Junior GrassRoots offered these four progressive skill levels, which students could achieve as they acquired and demonstrated their information and communications technology skills. Participating schools each received \$150 for their efforts.

Danya Jaworsky, who teaches grades 5 and 6 at Lord Nelson Elementary School in Winnipeg, says her students were excited

about participating in the program. "Some of the students were thrilled they knew so much already and could easily move onto the next level. For others, it was a place to start. Students were able to work at different levels in the classroom."

Junior GrassRoots is a joint initiative of SchoolNet's GrassRoots Program and software developer Ingenuity Works Inc.'s Canadian Heritage Interactive Journey (CHIJ). CHIJ is an exciting Internet and real-time bicycle journey across Canada that started in April and finishes in June.

For more information on Junior GrassRoots, look in the Special Features section of SchoolNet's GrassRoots program. (<http://www.schoolnet.ca/grassroots>).

The THING in the corner

by Wayne Hamilton

For many teachers, the introduction of computers into the classroom has meant dealing with the “thing in the corner” and learning how to integrate it into established teaching practices.

For years, we used computers to accomplish tasks more suited to conventional tools such as calculators and pens. Hence, students would learn to use applications to learn about computers. A teacher’s classroom management style also affected the amount and the type of learning the “thing” was allowed to take part in. With the introduction of the Internet, development again took the familiar path. We taught Internet search techniques and sent e-mails to build student skill sets.

Yet, the breadth of resources revealed by the Internet allows for divergence on a scale never before imagined. So teachers find themselves once more asking “What can I do with that thing in the corner?”

Teachers now use the computer as one of many tools in the classroom that contribute to active learning. We see students creating a neighbourhood map from a geographic information system program to help collect environmental data in a field study. We see students incorporating digital images and multimedia from on-line sources into the day’s school announcements, or a class avidly debating an issue, after researching arguments on-line and before e-mailing their elected representative.

So is all this changing our teaching practices?

According to D. N. Perkins in *Technology meets constructivism: Do they make a marriage?*, classrooms that actively and properly integrate technology share five features:

▲ **information banks:** students and teachers accessing data sources

▲ **symbol pads:** students and teachers constructing and manipulating data

▲ **task managers:** teachers setting specific directives and outcomes

▲ **construction kits:** students assembling ideas, concepts and actions

▲ **phenomenaria:** students accessing ideas and/or concepts for further manipulation and discussion.

A program such as SimCity demonstrates the last two well: as they build an imaginary city, students apply both learned concepts and experiential knowledge to move toward an expected outcome, and can manipulate that outcome as they explore and acquire concepts.

Teachers inevitably struggle over which technology to use for each lesson and class, but soon discover that the more we attempt, the easier it gets. Yet we need some clear indications that we are heading in the right direction.

As such, I offer these observations to help you determine if your classroom is on its way to integrating “the thing in the corner” into the learning framework:

▲ As an outside observer, would you see student activity or technology first?

▲ Is the technology being used by students to actively meet a known goal?

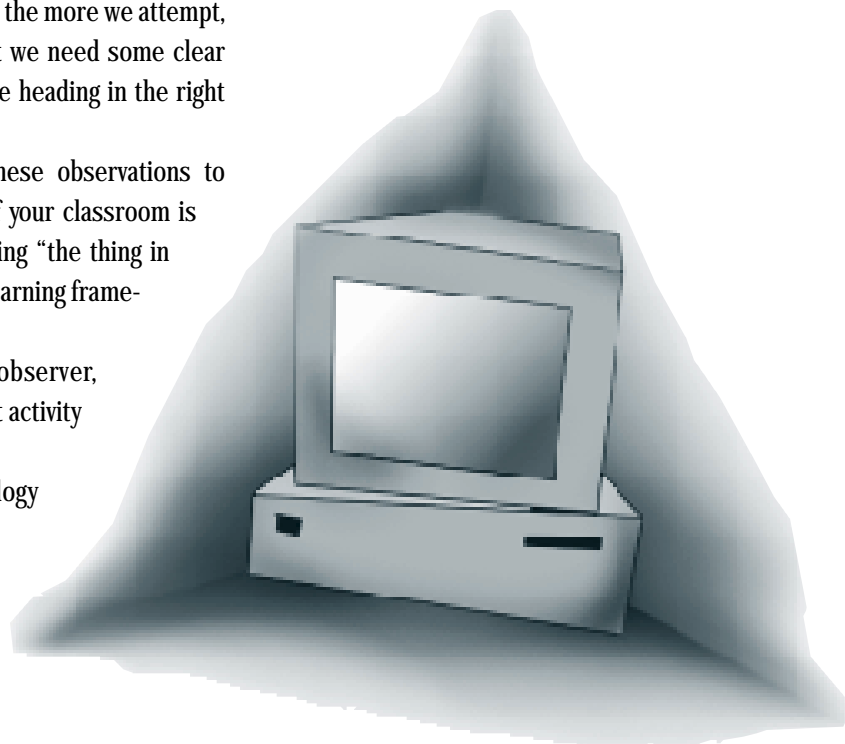
▲ Can you still accomplish this goal without the technology?

▲ Are students discussing and challenging each other about the goal, rather than conversing with “the thing” alone?

▲ Are students so involved that they are using the technology to try something new that you didn’t anticipate?

The acid test for inclusion of “the thing” is your approach and plan for moving it out of its corner to become an active tool permitting students to accomplish real goals.

Wayne Hamilton is a teacher and, currently, an information technology consultant with the Nova Scotia Department of Education and Culture in Halifax.

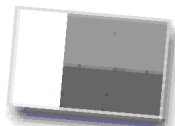


Web the key ingredient for B.C. cultural project

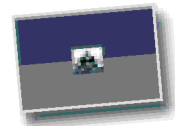
by Angela Bowles



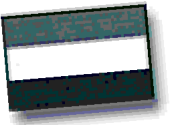
French Immersion teacher Daniel Gallagher recently mixed together information technology, geography and food to cook up a delicious and informative school and community event.



Gallagher's SchoolNet GrassRoots project at Parkland Junior Secondary School in Cranbrook, B.C., started life as a way to highlight the school's French Immersion program. It ended up drawing in other Grade 8 and 9 students from the school and almost 500 townspeople.



Students chose a Francophone country and set out to learn all about it. They researched its food, related recipe ingredients to the country's environment, produced a recipe book (with the help of teacher-librarian Janice Mayer), and topped it off by cooking an international meal for the community. Teacher Penny Medig's French as a Second Language students prepared travel pamphlets on the countries, and wrote letters of invitation to the dinner. Information Technology students mounted the research reports the students prepared on each country on the Web.



The Internet was an indispensable research tool. Gallagher says in a community such as Cranbrook the amount of information available on a country such as Haiti is barely enough for a general introduction. Details of diet, the environment, and the physical and social geography had to come from the Net.

The project was an all-round success. The Information Technology students' Web site was an enrichment project that worked so well that teacher Dalton Hamilton says it's now part of his regular curriculum. Other B.C. teachers have asked Gallagher to show them how they can do the project at their schools.

Look up the ingredients of this successful school-community project at <http://www.cintek.com/~parkland>

Angela Bowles is a SchoolNet representative in Vancouver, B.C.

On-line conferences: the virtual staff room



Looking for a place to chat with other educators about what's happening in education today? Try the

SchoolNet On-Line Educator's Forum, which is run through ENO, the Educational Network of Ontario.

ENO maintains 150 national on-line discussions (conferences). Topics range from school funding to technology in the classroom. The discussions run through newsgroups. To participate all you do is post a message to the newsgroup.

For more information, visit <http://www.schoolnet.ca/forum>

CBC offers plenty for kids on-line



Check out what Canada's public broadcaster has to offer on-line.

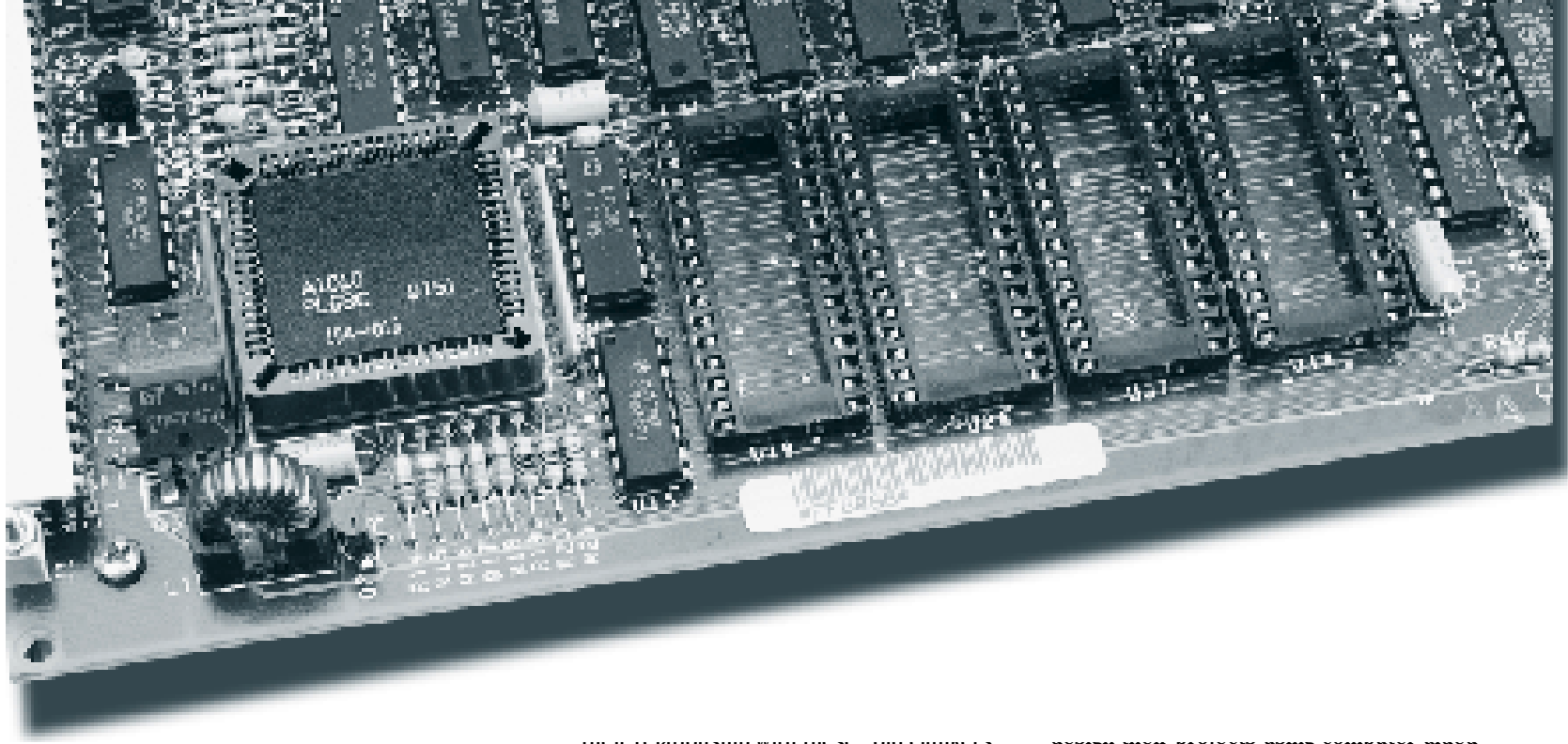
In addition to providing up-to-date news coverage of world events and information about its many programs, the CBC has a wealth of information for kids.

CBC4KIDS contains news, sports, drama, science and music pages assembled from CBC resources.

CBC for Schools is a current affairs audio subscription series. Schools and libraries can download Canadian-focussed programs from the Internet on topics taken from the headlines.

Newslink is a 15-minute newscast produced every day by CBC Newsworld in Calgary for Cable in the Classroom. It comes with a lesson plan.

To find out more, visit <http://www.cbc.ca/>



Old computers get a new lease on life

by Karen Zak

Like the family dog, an old computer is often regarded as a trusted friend. But can you teach it new tricks?

As technology becomes ever more sophisticated, and especially in light of fears that older computers will not work in 2000 due to a bug in their programming,

their relationship with these old clunkers.

Before you call in the dump truck, however, Dave Miller, Supervisor of Networks and Telecommunications for the Ottawa-Carleton District School Board and Co-chair of a year 2000 project committee, counsels an optimistic approach tempered with caution.

"These computers are not all going to go up in smoke come January 1," he says. "In many cases, problems that occur that day or later can be rectified with a lot of muttering under your breath."

By using Norton 2000 or any number of utilities available free on the Internet, Miller says, you can already check your computer. Norton 2000 will identify and fix some hardware problems. Although nothing will fix software problems, some "compensation" may do the trick, he says. Only those computers used for critical applications such as payroll may need to be replaced.

So how do you extend the usefulness of 286s, 386s and 486s, all older-generation IBM-compatible computers?

Who needs sophistication?

Whit Prophet, LAN Manager and Head of Computer Studies at South Grenville District High School, in Prescott, Ontario,

designed their project using computer-aided design (CAD) programs that run on 286s. "The DOS-based CAD program we use serves the purpose very well," says Prophet. "In one lab, we have six 286s without hard drives because the software is stored on a server and runs from it. Anyone can do it. We use Novell as our server — it's a 386; nothing sophisticated."

Many teachers who accept secondhand equipment must also accept responsibility for repairs: this forms the foundation of a new program at South Grenville. As of next year, the school will run the Information Technology Management Program, through which students will learn to service and maintain computer networks, printers and other faulty equipment in the classroom and throughout the school and the feeder schools. In the classroom, they will work on aged apparatus donated by DuPont Canada, the school's business-education partner.

As computer engineering courses, with their focus on hardware applications, gain more prominence in the Ontario secondary school curriculum, Prophet will teach students how to set up security systems or fire alarms at home, using old Apple 2Es. "Many security systems don't need sophisticated

equipment. Hardware doesn't make all that much difference," he says. "It's the idea of the interface between computers and security systems that matters. Apple 2Es, 286s and 386s all make excellent resources for computer engineering." The latter two computers, he adds, are used to study animation with a 1990 program called Disney Animation Studio that emulates Walt Disney's principles of cell animation. In the library, students use three 286s to look up books and other reference material.

Much of what can be done requires creativity, admits Miller. If you don't have to pay labour costs, you could, with minimum money and time, load up on memory and disk drives to extend a computer from 80 to 600 megabytes of disk space. With some more creative scrounging, he says, you can connect 386s and 486s to the Internet by installing one of the earliest browsers such as Netscape Navigator 1, 2 or 3, or by getting someone in the know to strip down a more recent browser. With such browsers (and a lot of patience), it is possible to access some of the less sophisticated graphics in Web sites on a 386 that has the following minimum specifications: eight megabytes of RAM, a 120-megabyte disk or better, a 512K video board and at least a 14.4 modem. One deterrent may be speed or lack thereof. "On a 386, Internet access is so slow that it's not always worth the effort," says Prophet.

Making the old work like new

Software exists that can give older computers some of the capabilities of machines containing Pentium processors. For starters, there is the NewDeal SchoolSuite, which has a Windows-like environment that runs on anything from a Pentium on down, whether networked or not. With NewDeal, which costs \$59.99, students can connect to the Internet, use e-mail, create Web pages



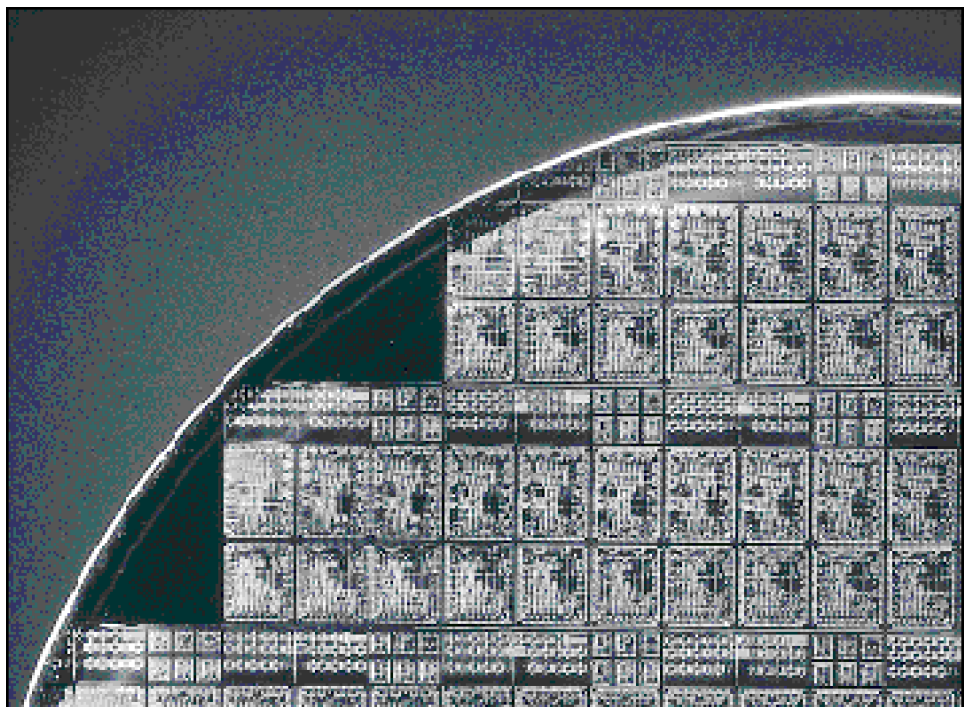
and have access to a full array of computer applications, including word processors, spreadsheets, databases, and desktop publishing programs.

Education ministries in Quebec and B.C. have licensed NewDeal, which comes out of Montreal-based USI, for all their schools.

Computers for Schools, a program that distributes refurbished computers to schools and libraries throughout Canada, loads it on to many of its machines. NewDeal, which needs only one megabyte of RAM to run, is carried in a few stores. To find if there's one near you, call 1-877-507-2537.

Another route to Pentium-hood is through the "thin client" technology employed by Almerco Intl. of Gatineau, Quebec. Once computers, whether PCs or Macintoshes, are connected to Backnet, an Almerco server with the capability to run Pentium-level programs and all Windows applications, people using these computers can access sophisticated programs and have Pentium-level performance when using the Internet.

Almerco will customize a school's network to run all programs requested by school staff. Confederation High School in Nepean, near Ottawa, uses Backnet technology "so everyone can have access to the same application at the same time, regardless of the platform," says Mike Landreville, Almerco's Director of Sales and Marketing. "The school runs some



high-end applications that demand very fast computers. Without Backnet, some of their older PCs and Macs wouldn't support these programs."

Most students who are connected to the school Web site can access the same programs at home regardless of their computer's capabilities. Using Backnet, a school adds a new server each time it puts in another lab, an easy and cheap approach, explains Landreville, adding that "it is cheaper than putting a new computer on each student's desk." He recommends schools with "legacy equipment look at working with small high-tech companies that may have innovative solutions" for hardware limitations.

To be compatible with Backnet, a school's computers should, at the very least, be able to run DOS, and have four megabytes of RAM, a network card and driver, and a one megabyte video card.

Something for nothing?

Well, maybe. QNX, a company that develops real-time, embedded operating systems, has a free demonstration file on its Internet site that Web surfers can download. One of the byproducts of this demo (if it is compatible with your computer's drivers) is that it gives older computers the latest Internet technology and makes them faster. This means, for instance, that even on a 386, you could connect to Web sites with Java script and animation. "Our operating system runs happily on half the resources that Windows needs to operate — eight megabytes is enough," says Frank Friesacher, Manager of Educational Relations for QNX. QNX's operating system uses its own Windows interface.

Go to <http://www.QNX.com> and download Cool Demo onto a floppy disk. Insert the disk into your computer and reboot. Once the computer is reactivated, it will

run off QNX's operating system and "will not touch your hard drive," says Friesacher. Using this operating system, you can surf the Internet without a hard drive, which gives your computer more protection from viruses so you can safeguard confidential school documents on a centralized server.

The real benefit of QNX technology, says



Friesacher, is that a school could set up a computer network throughout the building for less than \$30 a computer.

Some computers may be old but they're still gold, according to Dave Miller, who says most 286s, 386s and 486s could last another 20 years. The next few months may actually afford more opportunities than ever to scoop up these weathered machines as the dawn of the millennium will see many people eager to shed the old for the new.

Even when there is little left to do with aged computers, unexpected uses may still abound. Whit Prophet's students, for instance, take apart obsolete computers and use the hardware to build electric cars that have won prizes in the annual electric car contest sponsored by Queen's University in Kingston, Ontario. They also stockpile motherboards, chips and software. If all else fails, used computers make good door stops, boat anchors and have even been known to shelter homeless goldfish.

Karen Zak is a freelance writer who specializes in education. She is currently on contract with TEACH magazine.

participation ad

Anytime Anywhere Learning Goes Global

Editorial Sponsorship

The Anytime Anywhere Learning initiative began in 1993 down under. In Australia, many schools provided their students with portable computers or laptops that could be used at any time during the day and anywhere they chose. Today, educators in the United States, the UK and Canada are helping students take advantage of the same opportunities. In Canada, Compaq Canada is the driving force behind this movement. What educators are finding out around the globe is that Anytime Anywhere Learning (AAL) significantly affects the way teachers teach and students learn. A dramatic transformation is under way.

Teachers agree that teaching students to think, i.e., critically analyze, synthesize and hypothesize is a vital part of the learning experience. Often, there is too little time and too few tools and resources available. Anytime Anywhere Learning delivers computers connected to the Internet with information a few mouse-clicks away. The latest word processing software facilitates writing and editing of assignments so students may revise until their work is of the highest standard. Students explore topics in a deeper, more meaningful way and education as a process becomes more active and participatory where students interact with their peers as they explore ways to find and organize information. Students are engaged and motivated to learn.

Since the first trials of computer-based learning began decades ago, educators and parents have been concerned that sitting in front of a computer isolates students impeding socialization skills. The image of a class full of students sitting in front of computers tuning everything out has become abhorrent to many.

Interestingly, the AAL experience suggests that collaboration and interaction increases among teachers and students. Learning becomes project-based and students form work groups to complete their projects. Teamwork is an integral part of the process as online collaboration accelerates. All of the tools--word processing, spreadsheets, presentation programs, databases--provide the means for teachers and students to work together. Teachers and students are able to work side-by-side, helping one another exploit the technology. Portable computing allows students to expand this sphere of collaboration taking the work home and sharing with parents, friends and siblings.

With 30 or more students in many classrooms, it is a challenge for teachers to work one-on-one. They taught for the "average" student

Stock photos and illustrations provided by Quadrant Educational Media Services Inc.



in the class unable to fully meet the needs of those who struggled and those who moved ahead easily. With AAL, students may follow more of an individualized path. As the "guide on the side", teachers help students learn at their own pace and in a way that's best for them. In follow-up research, teachers have reported that reluctant learners have blossomed while the advanced students can satisfy their insatiable appetite for learning.

In the UK, the AAL movement began in earnest in March, 1998. Two hundred educators attended a summit to learn more about it. Educators from Australia were on hand to lend their experience and expertise. By lunch time on the first day of the two day summit, UK teachers were convinced of the educational validity of AAL. Given the state of education in Britain at the time, many asked if the program was even affordable. That afternoon, the Australian speakers went through a series of strategies, some involving parental purchases, others had schools leasing equipment then renting it to parents at a low cost, others suggested local sponsorship, fundraising and grants from school boards. The implication was that a way could be found to pay for the program given versatility and cooperation among all the stakeholders in a given community.

Other questions the delegates tackled included grappling with new information and issues, how programs were implemented and managed, available training for staff and how the program would be delivered and how to ensure access for all students to the technology regardless of who and where they were. The speakers had been through the process and delivered pragmatic responses to the delegates' questions. Over 100 schools wanted to take part in the initial



UK-based pilot program. That was whittled down to 30 who were judged to be in the best state of readiness. The pilot began in September 1998. The chosen schools represented the gamut of UK schools from primary to secondary, from urban to rural. A group of mentors was established and were made available to the participating schools. By the end of the summer 1998, all of the pilot schools received training in the technology tools they would use. The training and a help line made sure that all of the teachers were comfortable with the program before entering the classroom.

The Mentors visited all of the pilot schools and attended community meetings held to present the program. Naturally, one of the key concerns was affordability. That is a concern of parents everywhere. In Canada, the same is true. Compaq Canada is making available Public Sector Program pricing to schools when acquiring a Compaq notebook for the program. This program delivers significant savings as well as flexibility in the way AAL can be financed. Just as parents and schools in the U.S. and the UK have discovered, these flexible pricing strategies can provide universal access for students.

In the UK training sessions, teachers attended a 3-day workshop and learned how to create animated teaching tools, talking documents, bookmarks and hyperlinks to create multi-level branching documents, as well as mechanisms for recording and reporting student progress. Each participant was required to create a new learning resource for their own subject area and demonstrate what they'd done. Teachers at the sessions were amazed how quickly they learned and how easily their colleagues adapted to these new teaching and learning tools.

The Australian experience was similar. Teachers were given the time to work with the technology before heading off into the classroom and that was enormously beneficial. It also stimulated dialogue between teachers about teaching and learning in general. The Australians also identified key people within each school who helped develop the curriculum and build the materials needed to ensure AAL was a success. These people became mentors to the others in the school. After implementation, teachers saw their students becoming more active learners. Desks were grouped together rather than in rows and this aided teamwork and collaboration. The Australians found that focusing on teachers first and giving them all the resources was the key to their success. And staff were recognized and rewarded for their success by school administrators.

Les Compagnons-de-Cartier High School in Quebec City has 128 Grade 7 and 8 students who have purchased their own Compaq notebook computers. In Toronto, Marshall McLuhan Catholic Secondary School has purchased some 90 Compaq notebooks for the purpose of implementing a "just-in-time model of delivery in education," says Michael Pautler, principal of the brand new school. Pautler calls this "technology à la cart" literally, where a cart is loaded up with notebooks and sent off to the classes that need them for a particular application or project. These schools are the latest recruits in the global trend to portable computing.

In Canada, the program is still in its infancy and yet, significant signs of the impact of laptop technology are evident. The program in Quebec City is built on Microsoft applications such as Microsoft Office 97, Word, Excel and Powerpoint. "Providing students with access to personal computers in the classroom is a great step towards breaking down barriers to learning and opening the world to students," says Mark Miller, English Language Arts teacher at Les Compagnons-de-Cartier.

Pautler of Marshall McLuhan is also seeing the benefits of AAL. "It is a tremendous motivator for students," he says. The approach, "reinforces technology as a tool rather than an end in itself and that improves our ability to stretch resources to achieve the maximum impact."

Canada too, is on the cusp of this global learning phenomenon.

For more information about Anytime Anywhere Learning please see the following web site: www.compaq.ca/aal

COMPAQ



HERE'S THE DEAL

Illegal drugs can be a harmful, even deadly, force in students' lives. Now, there's a force for the better on the Internet.

DEAL (Drug Education and Awareness for Life) is a Web site sponsored by the RCMP, SchoolNet and a variety of private sector partners that features stories, chat rooms, on-line libraries and contests all aimed at getting students educated about the dangers of drug use. The site not only educates youth about the dangers of drugs but also shows them many positive opportunities and lifestyle choices.

Designed by youth, for youth, DEAL is a sometimes scary, but always honest, look at the effects drug use can have on young people and their families.

Visit <http://www.deal.org/> to find out more.

ADVERTISERS INDEX

Let us know what you think of SchoolNet Off-Line.

If you want more information about the companies and products listed below please Fax, Mail, Call or Email us at: Quadrant Educational Media Services Inc., 258

Wallace Ave., Ste. 206, Toronto, On

Ph: 416-537-2103, Fax: 416-537-3491,

email: teachmag@istar.ca.

<input type="checkbox"/> Compaq Canada editorial sponsorship20
<input type="checkbox"/> Microsoft Canada23
<input type="checkbox"/> Participation19
<input type="checkbox"/> Toronto Stock ExchangeOBC

New this September... Generations CanConnect

Generations CanConnect is a new Industry Canada initiative that support Canadian youth in creating searchable, digital records of the memories, personal treasures and contributions of Canadian senior citizens.

Generations CanConnect is an opportunity for young Canadians to create a new dialogue between the generations, using 21st century media, so that the vibrant and colourful culture of our communities can continue to flourish in the new millennium.

Students from grades five to twelve will be invited to interview a senior citizen and ask about a special object that they treasure, or a memorable lives. The students will then write a short profile of the senior, object or memory, including, if possible, digitized photographs. They will then create a web site, post the profile on the Internet and share their work with the world!

For more information on this exciting new opportunity for schools and communities, call 1-800-575-9200 or visit the web site at: <http://generations-canconnect.ic.gc.ca>

